

R.S.M.

LARVÆ
OF THE
BRITISH LEPIDOPTERA.





Vincent Brooks Day & Son Lith.

THE
LARVÆ
OF THE
BRITISH LEPIDOPTERA
AND THEIR
FOOD PLANTS.

BY
OWEN S. WILSON,
MEMBER OF THE ENTOMOLOGICAL SOCIETY OF LONDON.

With Life-sized Figures, Drawn and Coloured from Nature,

BY
ELEANORA WILSON.

“To everything that creepeth upon the earth, wherein there is life, I have given every green herb for meat.”—*Genesis*, chap. i., ver. 30.

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DESCRIPTION OF THE ILLUSTRATIONS.

PLATE I.—FRONTISPIECE.

1. *Papilio Machaon*. Swallow Tail. Wild Carrot, *Daucus Carota*. 1A (young).
2. *Pieris crataegi*—Black-veined White. Whitethorn, *Crataegus Oxyacantha*.
3. *Pieris brassicae*—Large White. Nasturtium, *Tropeolum*.
4. *Pieris rapae*—Small White. Wild Mignonette, *Reseda lutea*.
5. *Anthocharis cardamines*—Orange-tip. Cuckoo Flower, *Cardamine pratense*.
6. *Gonopteryx rhamni*—Brimstone. Alder Buckthorn, *Rhamnus Frangula*.
7. *Colias edusa*—Clouded Yellow. Dutch Clover, *Trifolium repens*.

PLATE II.—PAGE 8.

1. *Argynnis Paphia*—Silver-washed Fritillary. Dog Violet, *Viola canina*.
2. *Argynnis Aglaia*—Dark Green Fritillary. Dog Violet, *Viola canina*.
- 3, 3A. *Argynnis Adippe*—High Brown Fritillary (Duponchel). Dog Violet, *Viola canina*.
4. *Argynnis Niobe*—Niobe. Heartsease, *Viola tricolor*. 4A Niobe (Frey.). 4B (Dup.).
5. *Melitea Artemis*—Greasy Fritillary. Foxglove, *Digitalis purpurea*.
6. *Melitea Cinxia*—Glanville Fritillary. Narrow-leaved Plantain, *Plantago lanceolata*.
7. *Melitea Athalia*—Heath Fritillary. Meadow Cow Wheat, *Melampyrum pratense*.

PLATE III.—PAGE 12.

1. *Vanessa C-album*—Comma. Elm, *Ulmus*.
2. *Vanessa urticae*—Small Tortoiseshell. Nettle, *Urtica dioica*.
3. *Vanessa polychloros*—Large Tortoiseshell. Elm, *Ulmus*.
4. *Vanessa Antiopa*—Camberwell Beauty. Willow, *Salix*.
5. *Vanessa Io*—Peacock. Nettle, *Urtica dioica*.
6. *Vanessa Atalanta*—Red Admiral. Nettle, *Urtica dioica*.
7. *Vanessa cardui*—Painted Lady (Duponchel). Thistle.
8. *Limenitis Sibylla*—White Admiral. Honeysuckle, *Lonicera Periclymenum*.
9. *Apatura Iris*—Purple Emperor. Sallow, *Salix Caprea*.

PLATE IV.—PAGE 26.

- 1, 1A. *Arge Galatea*—Marbled White. Grass.
2. *Satyurus Megcera*—Wall. Grass.
3. *Satyurus Janira*—Meadow Brown. Grass.
4. *Satyurus Tithonus*—Large Heath. Timothy Grass, *Phleum pratense*. 4A brown variety.
Meadow Fescue Grass, *Festuca pratensis*.
5. *Satyurus hyperanthus*—Ringlet (green variety). Grass.

6. *Thecla rubi*—Green Hair-streak. Bramble, *Rubus fruticosus*.
7. *Thecla quercus*—Purple Hair-streak. Oak, *Quercus Robur*.
8. *Thecla W-album*—Black Hair-streak. Wych Elm, *Ulmus montana*.
9. *Thecla betulae*—Brown Hair-streak. Blackthorn, *Prunus spinosa*.
10. *Polyommatus phlaeas*—Small Copper. Sorrel, *Rumex Acetosa*. 10A (variety).
11. *Lycæna Alexis*—Common Blue. Rest Harrow, *Ononis arvensis*. 11A (variety).
12. *Lycæna Corydon*—Chalk Hill Blue. Tufted Horseshoe Vetch, *Hippocrepis comosa*.
13. *Lycæna Argiolus*—Holly Blue. Holly, *Ilex Aquifolium*. 13A (variety) Bramble, *Rubus fruticosus*. 13B (before pupation).
14. *Nemeobius Lucina*—Duke of Burgundy Fritillary. Cowslip, *Primula veris*.
15. *Hesperia linea*—Small Skipper. Grass.
16. *Hesperia Actæon*—Lulworth Skipper. Wood Small reed, *Calamagrostis Epigejos*.

PLATE V.—PAGE 32.

1. *Smerinthus ocellatus*—Eyed Hawk-Moth. Apple, *Pyrus Malus*. 1A (young).
- 2, 2A, 2B. *Smerinthus populi*—Poplar Hawk-Moth. Aspen, *Populus tremula*.
3. *Smerinthus tilia*—Lime Hawk-Moth. Lime, *Tilia europea*.

PLATE VI.—PAGE 34.

1. *Acherontia Atropos*—Death's Head Hawk-Moth. Bitter Sweet, *Solanum Dulcamara*.
1A (brown variety) Deadly Nightshade, *Atropa Belladonna*.
2. *Sphinx ligustri*—Privet Hawk-Moth. Privet, *Ligustrum vulgare*.

PLATE VII.—PAGE 36.

1. *Deilephila euphorbiae*—Spurge Hawk-Moth. Sea Spurge, *Euphorbia Paralias*. 1A (variety).
2. *Chærocampa elpenor*—Elephant Hawk-Moth. Evening Primrose, *Oenothera biennis*.
2A (green variety) Fuchsia.
3. *Macroglossa fuciformis*—Broad-bordered Bee Hawk-Moth. Field Scabious, *Scabiosa arvensis*.

PLATE VIII.—PAGE 38.

1. *Deilephila galii*—Bed Straw Hawk-Moth. Yellow Bed Straw, *Galium verum*.
2. *Deilephila lineata*—Striped Hawk Moth (Mr. W. C. Marshall). Dock, *Rumex obtusifolius*.
3. *Chærocampa porcellus*—Small Elephant Hawk-Moth. Hedge Bed Straw, *Galium Mollugo*.
3A (variety).
4. *Macroglossa stellatarum*—Humming-Bird Hawk-Moth. Hedge Bed Straw, *Galium Mollugo*. 4A and 4B (varieties).

PLATE IX.—PAGE 42.

1. *Sesia myopiformis*—Red-belted Clearwing. Apple, *Pyrus Malus*.
2. *Sesia culiciformis*—Large Red-belted Clearwing. Birch, *Betula alba*.
3. *Sesia formiciformis*—Red-tipped Clearwing Willow, *Salix*.
- 4, 4A. *Sesia tipuliformis*—Currant Clearwing. Black Currant, *Ribes nigrum*.

5. *Sesia asiliformis*—Dusky Clearwing. Poplar, *Populus*.
6. *Sesia bembiciformis*—Hornet Clearwing of the Osier. Osier, *Salix viminalis*.
- 7, 7A. *Sesia apiformis*—Hornet Clearwing. Poplar, *Populus*.
8. *Zeuzera asculi*—Leopard Moth. Poplar, *Populus*. 8A (young).
9. *Cossus ligniperda*—Goat Moth. Elm, *Ulmus campestris*. 9A (young).
10. *Hepialus Sylvanus*—Wood Swift. Roots of Dandelion, *Taraxacum officinale*.
11. (Number omitted on Plate.) *Hepialus humuli*—Ghost Swift. Roots of Dead Nettle, *Lamium purpureum*.

PLATE X.—PAGE 52.

1. *Limacodes testudo*—Festoon Moth. Oak, *Quercus Robur*.
2. *Zygæna Minos*—Transparent Burnet. Birdsfoot Trefoil, *Lotus corniculatus*.
3. *Zygæna trifolii*—Broad-bordered Five-spotted Burnet. Tufted Horseshoe Vetch, *Hippocrepis comosa*.
4. *Zygæna meliloti*—New Forest Burnet. Birdsfoot Trefoil, *Lotus corniculatus*.
5. *Zygæna loniceræ*—Narrow-bordered Five-spotted Burnet. Purple Clover, *Trifolium pratense*.
6. *Zygæna filipendulæ*—Six-spotted Burnet. Birdsfoot Trefoil, *Lotus corniculatus*.
7. *Syntomis Phegea*—Devil's-bit Scabious, *Scabiosa succisa*.
8. *Nola cucullatella*—Short-cloaked Moth. Blackthorn, *Prunus spinosa*.
9. *Nola Albula*—Kent Black Arches. Dewberry, *Rubus cæsius*. 9A (variety).
- 10, 10A. *Nudaria mundana*—Muslin. Lichens on Walls.
11. *Setina irrorella*—Dew Moth. Lichens on Stones.
12. *Lithosia aureola*—Orange Footman. Lichens on Oak.
13. *Lithosia helveola*—Buff Footman. Lichens on Oak.
14. *Lithosia complanula*—Common Footman. Lichens on Blackthorn.
15. *Lithosia complana*—Scarce Footman. Lichens on Blackthorn.
16. *Lithosia griseola*—Dingy Footman. Lichens on Poplar.
17. *Lithosia quadra*—Four-spotted Footman. Lichens on Oak. 17A (half grown).
18. *Lithosia rubricollis*—Red-necked Footman. Lichens on Pear.

PLATE XI.—PAGE 62.

1. *Eulepia grammica*—Feathered Footman. Mugwort, *Artemisia vulgaris*.
2. *Eulepia cribrum*—Speckled Footman. Bilberry, *Vaccinium Myrtillus*.
3. *Deiopeia pulchella*—Crimson-speckled. Field Scorpion Grass, *Myosotis arvensis*.
4. *Euchelia jacobææ*—Cinnabar. Ragwort, *Senecio Jacobææ*.
5. *Callimorpha Hera*—Jersey Tiger. Field Scorpion Grass, *Myosotis arvensis*. 5A (young).
6. *Callimorpha dominula*—Scarlet Tiger. Houndstongue, *Cynoglossum officinale*.
7. *Euthemonia russula*—Clouded Buff. Mouse-ear Hawkweed, *Hieracium Pilosella*.
8. *Chelonia plantaginiis*—Wood Tiger. Violet, *Viola odorata*.
9. *Chelonia caja*—Tiger. Field Scorpion Grass, *Myosotis arvensis*. 9A (young), Dog's Mercury, *Mercurialis perennis*.
10. *Chelonia villica*—Cream-spot Tiger. Chickweed, *Stellaria media*.

PLATE XII.—PAGE 66.

- 1, 1A. *Arctia fuliginosa*—Ruby Tiger. Self-heal, *Prunella vulgaris*. 1B (brown variety) Grass. 1C (yellow variety) Grass.
2. *Arctia mendica*—Muslin Moth. Spotted Persicaria, *Polygonum Persicaria*. 2A (young).

3. *Arctia lubricepeda*—Buff Ermine. Dog Rose, *Rosa canina*.
4. *Arctia menthastri*—White Ermine. Spotted Persicaria, *Polygonum Persicaria*.
5. *Liparis chrysorrhœa*—Brown-tail Moth. Whitethorn, *Cratægus Oxyacantha*. 5A (young).
5B (winter nest).
6. *Liparis auriflua*—Yellow-tail Moth. Whitethorn, *Cratægus Oxyacantha*.
7. *Liparis salicis*—Satin Moth. Poplar, *Populus*.
8. *Liparis dispar*—Gipsy. Barberry, *Berberis vulgaris*. 8A (young).
9. *Liparis monacha*—Black Arches. Oak, *Quercus Robur*.

PLATE XIII.—PAGE 70.

1. *Orgyia pudibunda*—Light Tussock. Hop, *Humulus Lupulus*. 1A (pink variety). 1B (dark variety). 1C (young).
2. *Orgyia fascelina*—Dark Tussock. Hazel, *Corylus Avellana*. 2A (variety). 2B (young).
3. *Orgyia gonostigma*—Scarce Vapourer. Whitethorn, *Cratægus Oxyacantha*. 3A (young).
4. *Orgyia antiqua*—Common Vapourer. Pear, *Pyrus communis*.
5. *Demas coryli*—Nut Tree Tussock. Hazel, *Corylus Avellana*.
6. *Trichijura cratægi*—Pale Oak Egger. Whitethorn, *Cratægus Oxyacantha*. 6A (variety).
7. *Pœcilocampa populi*—December Moth. Oak, *Quercus Robur*.
8. *Eriogaster lanestrîs*—Small Egger. Whitethorn, *Cratægus Oxyacantha*, 8A (young).

PLATE XIV.—PAGE 74.

1. *Bombyx neustria*—Lackey. Whitethorn, *Cratægus Oxyacantha*.
2. *Bombyx castrensis*—Coast Lackey. Wild Carrot, *Daucus Carota*.
3. *Bombyx rubi*—Fox Moth. Bramble, *Rubus fruticosus*. 3A (young).
- 4, 4A. *Bombyx quercus*—Oak Egger. Whitethorn, *Cratægus Oxyacantha*. 4B (young).
5. *Bombyx trifolii*—Grass Egger. Broom, *Cytisus scoparius*. 5A (young).

PLATE XV.—PAGE 76.

1. *Odonestis potatoria*—Drinker. Meadow Soft Grass, *Poa pratensis*. 1A (young).
2. *Lasiocampa quercifolia*—Lappet. Blackthorn, *Prunus spinosa*. 2A (young). 2B (young at rest).
3. *Endromis versicolor*—Kentish Glory. Birch, *Betula alba*.
4. *Saturnia carpini*—Emperor. Cross-leaved Heath, *Erica Tetrax*.

PLATE XVI.—PAGE 82.

1. *Uropteryx sambucaria*—Swallow-tail. Elder, *Sambucus nigra*. 1A (two young).
2. *Epione advenaria*—Little Thorn. Bilberry, *Vaccinium Myrtillus*.
3. *Rumia cratægata*—Brimstone. Whitethorn, *Cratægus Oxyacantha*. 3A (variety).
3B (variety).
4. *Venilia maculata*—Speckled Yellow. Hedge Woundwort, *Stachys sylvatica*.
5. *Angerona prunaria*—Orange Moth. Blackthorn, *Prunus spinosa*. 5A (young).
6. *Metrocampa margaritata*—Light Emerald. Whitethorn, *Cratægus Oxyacantha*. 6A (not full grown).
7. *Ellopiæ fasciaria*—Barred Red. Scotch Fir, *Pinus sylvestris*. 7A (showing the back).
8. *Eurymene dolabraria*—Scorched-wing. Oak, *Quercus Robur*.
9. *Pericallia syringaria*—Lilac Beauty. Privet, *Ligustrum vulgare*. 9A (pale variety).
10. *Selenia illunaria*—Early Thorn. Sallow, *Salix Caprea*. 10A (dark variety). 10B (pale variety).
11. *Selenia lunaria*—Lunar Thorn. Blackthorn, *Prunus spinosa*.
12. *Selenia illustraria*—Purple Thorn. Birch *Betula alba*.

PLATE XVII.—PAGE 86.

1. *Odontopera bidentata*—Scalloped Hazel. Oak, *Quercus Robur*. 1A (variety) Blackthorn, *Prunus spinosa*. 1B (variety). 1C, Birch, *Betula alba*.
2. *Crocallis elinguaris*—Scalloped Oak. Beech, *Fagus sylvatica*. 2A (dark variety).
3. *Ennomos alniaria*—Canary-shouldered Thorn. Oak, *Quercus Robur*.
4. *Ennomos fuscantaria*—Dusky Thorn. Ash, *Fraxinus excelsior*.
5. *Ennomos erosaria*—September Thorn. Oak, *Quercus Robur*.
6. *Ennomos angularis*—August Thorn. Birch, *Betula alba*.
7. *Himera pennaria*—Feathered Thorn. Oak, *Quercus Robur*. 7A (red variety). 7B (young).

PLATE XVIII.—PAGE 90.

- 1, 1A. *Phigalia pilosaria*—Pale Brindled Beauty. Oak, *Quercus Robur*.
- 2, 2A. *Nyssia zonaria*—Belted Beauty. Yarrow, *Achillea Millefolium*.
3. *Nyssia hispidaria*—Small Belted Beauty. Oak, *Quercus Robur*.
4. *Biston hirtarius*—Brindled Beauty. Pear, *Pyrus communis*.
5. *Amphidasys prodromaria*—Oak Beauty. Hazel, *Corylus Avellana*.
- 6, 6A. *Amphidasys betularia*—Peppered Moth. Oak, *Quercus Robur*.

PLATE XIX.—PAGE 94.

1. *Cleora glabraria*—Dotted Carpet. Lichens on Oak.
2. *Cleora lichenaria*—Brussels lace. Lichens on Apple.
- 3, 3A. *Boarmia repandata*—Mottled Beauty. Bilberry, *Vaccinium Myrtillus*.
4. *Boarmia rhomboidaria*—Willow Beauty. Ivy, *Hedera Helix*.
- 5, 5A. *Boarmia perfumaria*—Ivy, *Hedera Helix*. (See errata.)
- 6, 6A. *Boarmia roboraria*—Great Oak Beauty. Oak, *Quercus Robur*.
7. *Tephrosia consonaria*—Square Spot. Birch, *Betula alba*.
8. *Tephrosia biundularia*—Engrailed. Oak, *Quercus Robur*.

PLATE XX.—PAGE 104.

1. *Pseudopteryna cytisaria*—Grass Emerald. Broom, *Cytisus scoparius*.
2. *Geometra papilionaria*—Large Emerald. Alder, *Alnus glutinosa*.
3. *Iodes vernaria*—Small Emerald. Clematis.
4. *Iodes lactearia*—Little Emerald. Sallow, *Salix Caprea*.
- 5, 5A, 5B. *Hemithea thymiaris*—Common Emerald. Whitethorn, *Crataegus Oxyacantha*.
6. *Ephyra punctaria*—Maiden's Blush. Oak, *Quercus Robur*.
7. *Ephyra orbicularis*—Dingy Mocha. Sallow, *Salix Caprea*.
8. *Ephyra pendularis*—Birch Mocha. Birch, *Betula alba*.
- 9, 9A. *Asthena candidata*—Small White Wave. Hornbeam, *Carpinus Betulus*.
10. *Asthena Blomeri*—Blomer's Rivulet. Wych Elm, *Ulmus montana*.
11. *Eupisterid heperata*—Dingy Shell. Alder, *Alnus glutinosa*.
- 12, 12A, 12B. *Venusia cambrica*—Welsh Wave. Mountain Ash, *Pyrus Aucuparia*.

PLATE XXI.—PAGE 114.

- 1, 1A. *Acidalia scutulata*—Single-dotted Wave. Great Bed-straw, *Galium Mollugo*.
- 2, 2A. *Acidalia bisetata*—Small Fan-footed Wave. Great Yellow Loosestrife, *Lysimachia vulgaris*.
3. *Acidalia contiguaria*—Greening's Wave. Heather, *Calluna vulgaris*.
- 4, 4A. *Acidalia rusticata*—Least Carpet. Knot Grass, *Polygonum Aviculare*.
- 5, 5A. *Acidalia subsericeata*—Satin Wave. Knot Grass, *Polygonum Aviculare*.
- 6, 6A. *Acidalia immutata*—Lesser Cream Wave. Knot Grass, *Polygonum Aviculare*.
- 7, 7A. *Acidalia remutata*—Cream Wave. Sallow, *Salix Caprea*.
8. *Acidalia strigilata*—Subangled Wave. Knot Grass, *Polygonum Aviculare*.

9. *Acidalia imitaria*—Small Blood Vein. Sorrel, *Rumex Acetosus*.
- 10, 10A. *Acidalia aversata*—Riband Wave. Meadow-sweet, *Spiraea ulmaria*.
11. *Acidalia inornata*—Plain Wave. Sallow, *Salix Caprea*.
12. *Acidalia emarginata*—Small Scallop. Great Bedstraw, *Galium Mollugo*.
13. *Timandra amataria*—Blood Vein. Sorrel, *Rumex Acetosus*.
14. *Cabera pusaria*—Common White Wave. Sallow, *Salix Caprea*. 14A, green variety; 14B, brown variety.
15. *Cabera exanthemaria*—Common Wave. Sallow, *Salix Caprea*. 15A, variety, without dorsal markings.
16. *Corycia taminata*—White Pinion-spotted. Wild Cherry, *Prunus Avium*.

PLATE XXII.—PAGE 128.

1. *Halia vauaria*—The V Moth. Gooseberry, *Ribes Grossularia*.
- 2, 2A. *Numeria pulveraria*—Barred Umber. Sallow, *Salix Caprea*.
- 3, 3A, 3B. *Scodiona belgaria*—Grey-scalloped Bar. Heather, *Calluna vulgaris*.
4. *Fidonia atomaria*—Common Heath. Birds-foot Trefoil, *Lotus corniculatus*.
5. *Fidonia piniaria*—Bordered White. Larch, *Pinus Larix*.
6. *Aspilates citraria*—Yellow Belle. Hop Trefoil, *Trifolium procumbens*.
- 7, 7A. *Abraxas grossulariata*—Magpie Moth. Red Currant, *Ribes rubrum*.
8. *Abraxas ulmata*—Clouded Magpie. Elm, *Ulmus campestris*.
- 9, 9A. *Lomaspolis marginata*—Clouded Border. Sallow, *Salix Caprea*.
- 10, 10A. *Hybernia rupicaprararia*—Early Moth. Whitethorn, *Cratægus Oxyacantha*.
- 11, 11A, 11B, 11C. *Hybernia progenmaria*—Dotted Border. Sallow, *Salix Caprea*.
- 12, 12A. *Hybernia defoliaria*—Mottled Umber. Whitethorn, *Cratægus Oxyacantha*.

PLATE XXIII.—PAGE 136.

- 1, 1A. *Chimatobia brumata*—Winter Moth. Apple, *Pyrus Malus*.
2. *Chimatobia boreata*—Northern Winter Moth. Birch, *Betulus alba*.
- 3, 3A, 3B. *Oporabia dilutata*—November Moth. White Willow, *Salix alba*.
- 4, 4A. *Larentia didymata*—Twin Spot Carpet. Wood Sage, *Teucrium Scorodonia*.
5. *Larentia multistrigaria*—Mottled Grey. Heath Bedstraw, *Galium saxatile*.
- 6, 6A, 6B. *Larentia caxiata*—Grey Mountain Carpet. Fine-leaved Heath, *Erica cinerea*.
- 7, 7A. *Larentia pectinitaria*—Green Carpet. Woodruff, *Asperula odorata*.
8. *Emmelesia decolorata*—Sandy Carpet. Red Champion, *Lychnis diurna*.

PLATE XXIV.—PAGE 142.

1. *Eupithecia venosata*—Netted Pug. Bladder Champion, *Silene inflata*.
- 2, 2A. *Eupithecia linariata*—Toad Flax Pug. Toad Flax, *Linaria vulgaris*.
- 3, 3A, 3B. *Eupithecia pulchellata*—Foxglove Pug. Foxglove, *Digitalis purpurea*.
4. *Eupithecia centaureata*—Lime Speck. Common Centuary, *Erythræa Centaurium*.
4A. (Orange variety) Ragwort, *Senecio Jacobea*. 4B. (Pale green variety)
4C. Showing side.
- 5, 5A. *Eupithecia subfulvata*—Tawny Speck. Yarrow, *Achillea Millifolium*.
6. *Eupithecia subumbrata*—Shaded Pug. Hair Bell, *Campanula rotundifolia*.
7. *Eupithecia isogrammata*—Haworth's Pug. Traveller's Joy, *Clematis Vitalba*.
- 8, 8A. *Eupithecia satyrata*—Satyr Pug. Black Knapweed, *Centaurea nigra*. 8B. *Eupithecia callunaria*, variety of *satyrata*. Heather, *Calluna vulgaris*.
- 9, 9A. *Eupithecia lariciata*—Larch Pug. Larch, *Pinus Larix*.
- 10, 10A. *Eupithecia fraxinata*—Ash Tree Pug. Ash, *Fraxinus excelsior*.
- 11, 11A. *Eupithecia nanata*—Narrow-winged Pug. Heather, *Calluna vulgaris*.
- 12, 12A. *Eupithecia assimilata*—Currant Pug. Black Currant, *Ribes nigrum*.
13. *Eupithecia exigua*—Mottled Pug. Oak, *Quercus Robur*.

PLATE XXV.—PAGE 150.

1. *Eupithecia castigata*—Grey Pug. Bramble, *Rubus fruticosus*. 1A (pale variety). 1B (red variety). Red Campion, *Lychnis diurna*.
2. *Eupithecia trisignaria*—Triple Spot Pug. Wild Angelica (seeds), *Angelica sylvestris*.
3. *Eupithecia virgaureata*—Golden Rod Pug. Great Yellow Loosestrife, *Lysimachia vulgaris*. 3A (variety).
4. *Eupithecia albipunctata*—White Spot Pug. Cow Parsnip (seeds), *Heracleum Sphondylium*. 4A (variety).
5. *Eupithecia irriguata*—Marbled Pug. Oak *Quercus Robur*.
6. *Eupithecia pimpinellata*—Pimpernel Pug. Common Burnet Saxifrage, *Pimpinella Saxifraga*. 6A (variety).
7. *Eupithecia subnotata*—Plain Pug. Good King Henry, *Chenopodium Bonus Henricus*.
8. *Eupithecia vulgata*—Common Pug. Golden Rod *Solidago Virgaurea*.
9. *Eupithecia expallidata*—Bleached Pug. Golden Rod, *Solidago Virgaurea*. 9A (variety). Ragwort, *Senecio Jacobæa*.
10. *Eupithecia absynthiata*—Wormwood Pug. Mugwort, *Artemisia vulgaris*. 10A, 10B (varieties), Ragwort, *Senecio jacobæa*. 10C (variety), Mugwort, *Artemisia vulgaris*.
11. *Eupithecia minutata*—Ling Pug. Heather, *Calluna vulgaris*. 11A, 11B, 11C, 11D, 11E (varieties), Devil's-bit Scabious, *Scabiosa succisa*.
12. *Eupithecia abbreviata*—Brindled Pug. Oak, *Quercus Robur*. 12A (variety).
13. *Eupithecia coronata*—V. Pug. Hemp Agrimony, *Eupatorium cannabinum*.

PLATE XXVI.—PAGE 166.

1. *Lobophora lobulata*—Early Tooth-Striped. Sallow, *Salix Caprea*. (See errata.) (For *Scotosia dubitata* and *S. vetulata* see Plate 27, figs. 1 and 2.)
2. *Ypsipetes imphuviata*—May Highflyer. Alder, *Alnus glutinosa*. (See Errata.)
3. *Ypsipetes elutata*—July Highflyer. Hazel, *Corylus Avellana*.
- 4, 4A. *Melanthia ocellata*—Purple Bar. Great Bedstraw, *Galium Mollugo*.
5. *Melanippe unangulata*—Sharp-angled Carpet. Chickweed, *Stellaria media*.
6. *Melanippe subtristata*—Common Carpet. Yellow Bedstraw, *Galium verum*.
- 7, 7A. *Melanippe montanata*—Silver Ground Carpet. Primrose, *Primula vulgaris*.
- 8, 8A. *Melanippe galiata*—Galium Carpet. Yellow Bedstraw, *Galium verum*.
9. *Melanippe fluctuata*—Garden Carpet. Red Cabbage. *Brassica capitata rubra*.
10. *Anticlea sinuata*—Royal Mantle. Great Bedstraw, *Galium Mollugo*.
11. *Anticlea rubidata*—Flame. Rough Bedstraw, *Galium Aparine*.
- 12, 12A, 12B, 12C. *Anticlea badiata*—Shoulder Stripe. Dog Rose, *Rosa canina*.
13. *Anticlea derivata*—Streamer. Dog Rose, *Rosa canina*.
14. *Coremia propugnata*—Flame Carpet. Red Cabbage, *Brassica capitata rubra*.
15. *Coremia ferrugata*—Red Twin Spot Carpet. Ground Ivy, *Nepeta Glechoma*.
16. *Coremia quadrifasciaria*—Large Twin Spot Carpet. Primrose, *Primula vulgaris*.
17. *Phibalopteryx lignata*—Oblique Carpet. Yellow Bedstraw, *Galium verum*.
- 18, 18A. *Phibalopteryx vitalbata*—Small-waved Umber. Traveller's Joy, *Clematis Vitalba*.

PLATE XXVII.—PAGE 180.

1. *Scotosia dubitata*—Tissue. Alder Buckthorn, *Rhamnus Frangula*. (See errata.)
2. *Scotosia vetulata*—Brown Scallop. Alder Buckthorn, *Rhamnus Frangula*. (See errata.)
3. *Scotosia rhamnata*—Dark Umber. Alder Buckthorn, *Rhamnus Frangula*.
- 4, 4A. *Scotosia certata*—Scarce Tissue. Barberry, *Berberis vulgaris*.
5. *Cidaria miata*—Autumn Green Carpet. Oak, *Quercus Robur*.
6. *Cidaria corylata*—Hazel Carpet. Hazel, *Corylus Avellana*. (See errata.)

- 7, 7A. *Cidaria picata*—Short Cloaked Carpet. Chickweed, *Stellaria media*. (See errata.)
- 8, 8A. *Cidaria sagittata*—Marsh Carpet. Yellow Meadow Rue, *Thalictrum flavum*.
- 9, 9A, 9B. *Cidaria russata*—Common Marbled Carpet. Strawberry, *Fragaria vesca*.
10. *Cidaria immanata*—Dark Marbled Carpet. Sallow, *Salix Caprea*.
11. *Cidaria suffumata*—Water Carpet. Rough Bedstraw, *Galium Aparine*.
- 12, 12A. *Cidaria prunata*—Phoenix. Gooseberry, *Ribes Grossularia*.
13. *Cidaria testata*—Chevron. Sallow, *Salix Caprea*.
14. *Cidaria populata*—Northern Spinach Moth. Bilberry, *Vaccinium Myrtillus*.
15. *Cidaria fulvata*—Barred Yellow. Dog Rose, *Rosa canina*.
16. *Cidaria pyraliata*—Barred Straw. Rough Bedstraw, *Galium Aparine*.
17. *Scotosia undulata*—Scalloped Shell. Sallow, *Salix Caprea*. (See errata.)
18. *Eubolia cervinaria*—Mallow. Common Mallow, *Malva sylvestris*.
- 19, 19A. *Eubolia lineolata*—Oblique striped. Yellow Bedstraw, *Galium verum*.
- 20, 20A. *Anaitis flagiata*—Treble Bar. Perforated St. John's Wort, *Hypericum perforatum*.
21. *Chesias spartiata*—Streak. Broom, *Cytisus scoparius*.
22. *Chesias obliquaria*—Broom Tip. Broom, *Cytisus scoparius*.
23. *Pelurga comitata*—Dark Spinach. Good King Henry, *Chenopodium Bonus Henricus*.

PLATE XXVIII.—PAGE 188.

- 1, 1A. *Platypteryx lacertula*—Scalloped Hook-tip. Birch, *Betula alba*.
2. *Platypteryx falcula*—Pebble Hook-tip. Birch, *Betula alba*.
3. *Platypteryx unguicula*—Barred Hook-tip. Beech, *Fagus sylvatica*.
4. *Cilix spinula*—Chinese Character. Blackthorn, *Prunus spinosa*.
5. *Dicramura furcula*—Sallow Kitten. Sallow, *Salix Caprea*.
6. *Dicramura bifida*—Poplar Kitten. Aspen, *Populus tremula*.
7. *Dicramura vinula*—Puss Moth. Aspen, *Populus tremula*. 7A. Sallow, *Salix Caprea*.
7B, 7C. Willow.
- 8, 8A. *Stauropus fagi*—Lobster. Beech, *Fagus sylvatica*.

PLATE XXIX.—PAGE 194.

1. *Petasia cassinea*—Sprawler. Oak, *Quercus Robur*.
- 2, 2A, 2B. *Pygæra Bucephala*—Buff-tip. Oak, *Quercus Robur*. Hazel, *Corylus Avellana*.
3. *Clostera curtula*—Chocolate-tip. Black Poplar, *Populus nigra*.
4. *Clostera anachoreta*—Scarce Chocolate-tip. Black Poplar, *Populus nigra*.
5. *Clostera reclusa*—Small Chocolate-tip. Sallow, *Salix Caprea*.
- 6, 6A. *Ptilophora plumigera*—Plumed Prominent. Maple, *Acer campestre*.
7. *Ptilodontis palpina*—Pale Prominent. Sallow, *Salix Caprea*.

PLATE XXX.—PAGE 200.

- 1, 1A. *Notodonta camelina*—Coxcomb Prominent. Whitethorn, *Cratægus Oxyacantha*.
2. *Notodonta carmelita*—Scarce Prominent. Birch, *Betula alba*.
3. *Notodonta dictæa*—Swallow Prominent. Black Poplar, *Populus nigra*.
4. *Notodonta dictæoides*—Lesser Swallow Prominent. Birch, *Betula alba*.
- 5, 5A. *Notodonta dromedarius*—Iron Prominent. Alder, *Alnus glutinosa*.
- 6, 6A. *Notodonta ziczac*—Pebble Prominent. Sallow, *Salix Caprea*.
7. *Notodonta trepida*—Great Prominent. Oak, *Quercus Robur*.
8. *Notodonta chaonia*—Lunar Marbled Brown. Oak, *Quercus Robur*.
9. *Notodonta dodonea*—Marbled Brown. Oak, *Quercus Robur*.
10. *Diloba cæruleocephala*—Figure of Eight Moth. Whitethorn, *Cratægus Oxyacantha*.

PLATE XXXI.—PAGE 206.

1. *Cymatophora flavicornis*—Yellow Horned. Birch, *Betula alba*.
2. *Cymatophora ridens*—Frosted Green. Oak, *Quercus Robur*.
3. *Bryophila glandifera*—Marbled Green. Lichens on stones.
4. *Bryophila perla*—Marbled Beauty. Lichens on stones.
5. *Diphthera orion*—Scarce Marveil-du-Jour. Oak, *Quercus Robur*.
- 6, 6A. *Acronycta alni*—Alder. Oak, *Quercus Robur*.
7. *Acronycta ligustri*—Coronet. Ash, *Fraxinus excelsior*.
8. *Acronycta myrica*—Sweet Gale. Sweet Gale, *Myrica Gale*.

PLATE XXXII.—PAGE 210.

1. *Acronycta tridens*—Dark Dagger. Blackthorn, *Prunus spinosa*.
2. *Acronycta psi*—Grey Dagger. Whitethorn, *Cratægus Oxyacantha*.
3. *Acronycta leporina*—Miller. Alder, *Alnus glutinosa*.
4. *Acronycta aceris*—Sycamore. Sycamore, *Acer pseudo-platanus*.
5. *Acronycta megacephala*—Poplar Grey. Aspen, *Populus tremula*.
6. *Acronycta strigosa*—Grisette. Whitethorn, *Cratægus Oxyacantha*.
7. *Acronycta rumicis*—Knot Grass. Knot Grass, *Polygonum Aviculare*.
8. *Acronycta auricoma*—Scarce Dagger. Bramble, *Rubus fruticosus*. 8A. Young in nest.
- 9, 9A. *Acronycta meryanthis*—Light Knot Grass. Sweet Gale, *Myrica Gale*.

PLATE XXXIII.—PAGE 224.

1. *Simyra venosa*—Powdered Wainscot. Common Reed, *Phragmites communis*.
2. *Leucania lithargyria*—Clay. Grass.
3. *Leucania albipuncta*—White Point Grass.
4. *Leucania obsoleta*—Obscure Wainscot. Common Reed, *Phragmites communis*.
- 5, 5A. *Leucania putrescens*—Devonshire Wainscot. Grass.
6. *Leucania littoralis*—Shore Wainscot. Marram Grass, *Psamma arenaria*.
7. *Nonagra typhae*—Bull Rush. Stem of Bull Rush, *Typha latifolia*.
8. *Gortyna flavago*—Frosted Orange. Marsh Thistle, *Cnicus palustris*.
- 9, 9A. *Axylia putris*—Flame. Lettuce, *Lactuca sativa*.
- 10, 10A. *Xylophasia polyodon*—Dark Arches. Grass.
- 11, 11A. *Xylophasia scolopacina*—Slender Clouded Brindle. Grass.

PLATE XXXIV.—PAGE 246.

1. *Aporophyla australis*—Feathered Brindle. Grass.
2. *Nevria saponarice*—Bordered Gothic. Ragged Robin, *Lychnis Flos-cuculi*.
3. *Heliophobus hispidus*—Beautiful Gothic. Grass.
- 4, 4A. *Charceas graminis*—Antler. Grass.
5. *Mamestra brassicæ*—Cabbage Moth. Fleabane, *Pulicaria dysenterica*.
- 6, 6A. *Mamestra persicaricæ*—Dot. Water-Pepper, *Polygonum Hydropiper*.
7. *Apamea oculæa*—Common Rustic. Grass.
8. *Miana literosa*—Rosy Minor. Grass.
9. *Celæna Haworthi*—Haworth's Minor. Cotton Grass, *Eriophorum vaginatum*.
10. *Caradrina blanda*—Rustic. Chickweed, *Stellaria media*.

11. *Agrotis saucia*—Pearly Underwing. Narrow-leaved Plantain, *Plantago lanceolata*.
12. *Agrotis segetum*—Turnip Moth. Ox-eye Daisy, *Chrysanthemum leucanthemum*.
13. *Agrotis exclamatoris*—Heart and Dart. Dandelion, *Taraxacum officinale*.
14. *Agrotis corticea*—Heart and Club. Good King Henry, *Chenopodium Bonus Henricus*.
15. *Agrotis ripæ*—Sand Dart. Prickly Saltwort, *Salsola Kali*.
- 16, 16A. *Agrotis agathina*—Heath Rustic. Cross-leaved Heath, *Erica tetralix*.
- 17, 17A. *Agrotis porphyrea*—True Lover's Knot. Heather, *Calluna vulgaris*.
18. *Agrotis præcox*—Portland Moth. Milkwort, *Polygala vulgaris*.

PLATE XXXV.—PAGE 258.

1. *Triphæna janthina*—Lesser Broad Border. Hornbeam, *Carpinus Betulus*.
2. *Triphæna fimbria*—Broad Bordered Yellow Underwing. Birch, *Betula alba*.
3. *Triphæna orbona*—Lesser Yellow Underwing. Primrose, *Primula vulgaris*.
- 4, 4A. *Triphæna pronuba*—Large Yellow Underwing. Primrose, *Primula vulgaris*.
5. *Noctua augur*—Double Dart. Sorrel, *Rumex Acetosa*.
- 6, 6A. *Noctua plecta*—Flame Shoulder. Rough Bedstraw, *Galium Aparine*.
7. *Noctua ditrapezium*—Triple Spotted Clay. Dandelion, *Taraxacum officinale*.
8. *Noctua triangulum*—Double Spotted Square Spot. Birch, *Betula alba*.
9. *Noctua brunnea*—Purple Clay. Dock, *Rumex*.
10. *Noctua festiva*—Engrailed. Dock, *Rumex*.
11. *Noctua rubi*—Small Square Spot. Sorrel, *Rumex Acetosa*.
12. *Noctua baja*—Dotted Clay. Red Whortleberry, *Vaccinium Vitis-Idæa*.
13. *Noctua neglecta*—Grey Rustic. Heather, *Calluna vulgaris*.
14. *Noctua xanthographa*—Square Spot Rustic. Grass.

PLATE XXXVI.—PAGE 272.

1. *Tæniocampa gothica*—Hebrew Character. Oak, *Quercus Robur*.
2. *Tæniocampa leucographa*—White Marked. Narrow-leaved Plantain, *Plantago lanceolata*.
- 3, 3A. *Tæniocampa rubricosa*—Red Chestnut. Dock, *Rumex*.
4. *Tæniocampa instabilis*—Clouded Drab. Oak, *Quercus Robur*.
- 5, 5A, 5B. *Tæniocampa opima*—Northern Drab. Sallow, *Salix Caprea*.
6. *Tæniocampa stabilis*—Common Quaker. Oak, *Quercus Robur*.
- 7, 7A. *Tæniocampa miniosa*—Blossom Underwing. Oak, *Quercus Robur*. 7B. Winter nest.
8. *Tæniocampa munda*—Twin Spotted Quaker. Oak, *Quercus Robur*.
- 9, 9A, 9B. *Tæniocampa cruda*—Small Quaker. Oak, *Quercus Robur*.
10. *Orthosia ypsilon*—Dismal. Yellow Willow, *Salix vitellina*.
11. *Orthosia lota*—Red Line Quaker. Sallow, *Salix Caprea*.
12. *Anchocelis rufina*—Flounced Chestnut. Oak, *Quercus Robur*.
13. *Cerastis vaccinii*—Chestnut. Sallow, *Salix Caprea*.
14. *Scopelosoma satellitia*—Satellite. Oak, *Quercus Robur*.
15. *Oporina croceago*—Orange Upper Wing. Oak, *Quercus Robur*.
16. *Xanthia citrigo*—Orange Sallow. Lime, *Tilia Europæa*.
17. *Xanthia cerago*. The Sallow. Sallow, *Salix Caprea*.
18. *Xanthia silago*—Pink Barred Sallow. Sallow, *Salix caprea*.
19. *Xanthia gilvago*—Dusky Lemon Sallow. Sallow, *Salix caprea*.
- 20, 20A. *Cirrhoidia xerampelina*. Centre Barred Sallow. Ash, *Fraxinus excelsior*.

PLATE XXXVII.—PAGE 284.

1. *Tethea subtusa*—Olive. Poplar, *Populus*.
2. *Tethea retusa*—Double Kidney. Sallow, *Salix Caprea*.
3. *Cosmia trapezina*—Dun-bar. Oak, *Quercus Robur*.
4. *Cosmia pyralina*—Lunar Spotted Pinion. Pear, *Pyrus communis*.
5. *Dianthæcia capsincola*—Lychnis. Red Campion, *Lychnis diurna*.
6. 6A. *Dianthæcia albimacula*—White Spot.
7. *Dianthæcia cæsia*—Grey. Bladder Campion, *Silene inflata*.
- 8, 8A. *Hecatera dysodea*—Small Ranunculus. Lettuce, *Lactuca sativa*.
9. *Polia chi*—Grey Chi. Sow-thistle, *Sonchus oleraceus*,
10. *Polia nigrocincta*—Black Banded. Thrift, *Armeria vulgaris*.
11. *Polia flavicincta*—Large Ranunculus. Field Bindweed, *Convolvulus arvensis*.
12. *Dasypteria templi*—Brindled Ochre. Cow Parsnip, *Heracleum Sphondylium*.
13. *Epunda lutulenta*—Deep Brown Dart.
- 14, 14A. *Epunda nigra*—Black Rustic. Rough Bedstraw, *Galium Aparine*.
15. *Epunda viminalis*—Minor Shoulder Knot. Sallow, *Salix Caprea*.
- 16, 16A. *Epunda lichenea*—Feathered Ranunculus. Dandelion, *Taraxacum officinale*.
Devil's-bit Scabious, *Scabiosa succisa*.
17. *Valeria oleagina*—Green Brindled Dot. Blackthorn, *Prunus spinosa*.
18. *Miselia oxyacanthæ*—Green Brindled Crescent. Whitethorn, *Cratægus Oxyacantha*.
- 19, 19A. *Agriopsis aprilina*—Merveille-du-Jour. Oak, *Quercus Robur*.

PLATE XXXVIII.—PAGE 298.

- 1, 1A, 1B. *Phlogophora meticulosa*—Angle Shades. Comfrey-leaved Hound's-tongue
Cynoglossum Omphalodes. Groundsel, *Senecio vulgaris*.
- 2, 2A. *Euplexia lucipara*—Small Angle Shades. Foxglove, *Digitalis purpurea*. Bracken
Pteris aquilina.
3. *Aplecta herbida*—Green Arches. Dock, *Rumex*.
4. *Aplecta advena*—Pale Shining Brown. Knot-grass, *Polygonum Aviculare*.
- 5, 5A. *Hadena adusta*—Dark Brocade. Sallow, *Salix Caprea*.
6. *Hadena chenopodii*—Nutmeg. White Goosefoot, *Chenopodium album*.
7. *Hadena atriplicis*—Orache Moth. Orache, *Atriplex patula*.
8. *Hadena oleracea*—Bright-line Brown-eye. Sow-thistle, *Sonchus oleraceus*.
- 9, 9A. *Hadena pisi*—Broom Moth. Bracken, *Pteris aquilina*.
10. *Hadena thalassina*—Pale Shouldered Brocade. Knot-grass, *Polygonum Aviculare*.
11. *Hadena rectilinea*—Saxon. Bramble, *Rubus fruticosus*.
12. *Xylocampa lithoriza*—Early Grey. Honeysuckle, *Lonicera Periclymenum*.
- 13, 13A. *Calocampa exoleta*—Sword Grass. Bladder Campion, *Silene inflata*. Sheep's
Scabious, *Jasione montana*.
14. *Xylina rhizolitha*—Grey Shoulder-knot. Oak, *Quercus Robur*.

PLATE XXXIX.—PAGE 306.

1. *Cucullia verbasci*—Mullein. Great Mullein, *Verbascum Thapsus*.
2. *Cucullia scrophulariæ*—Water Betony. Knotted Figwort, *Scrophularia nodosa*.
3. *Cucullia lychnitis*—Striped Lychnis. Black Mullein, *Verbascum nigrum*.

- 4, 4A. *Cucullia asteris*—Starwort. Golden Rod, *Solidago Virgaurea*.
 5. *Cucullia absinthii*—Wormwood. Wormwood, *Artemisia absinthium*.
 6 X. *Cucullia chamomilla*—Chamomile Shark. Corn Feverfew, *Matricaria inodora*.
 7. *Anarta myrtili*—Beautiful Yellow Underwing. Heather, *Calluna vulgaris*.

PLATE XL.—PAGE 320.

- 1, 1A. *Erastria fuscata*—Marbled White Spot. Bramble, *Rubus fruticosus*.
 2, 3A, 3B. *Abrostola triplasia*—Dark Spectacle. Hop, *Humulus lupulus*.
 4, 4A. *Plusia iota*—Plain Golden Y. Honeysuckle, *Lonicera Perichlymenum*. Groundsel,
Senecio vulgaris.
 5, 5A. *Plusia gamma*—Silver Y. Purple Dead-nettle, *Lamium purpureum*.
 6. *Gonoptera libatrix*—Herald. Willow, *Salix*.
 7. *Amphipyra pyramidea*—Copper Underwing. Oak, *Quercus Robur*.
 8. *Amphipyra tragopogonis*—Mouse. Broad Plantain, *Plantago major*.
 9. *Mania typica*—Gothic. Pear, *Pyrus communis*.
 10. *Mania maura*—Old Lady. Ivy, *Hedera Helix*.
 11. *Toxocampa pastinum*—Black Neck. Tufted Vetch, *Vicia cracca*.
 12. *Stilbia anomala*—Anomalous. Grass.
 13. *Catephia alchymista*—Alchymist. Oak, *Quercus Robur*.
 14. *Catocala nupta*—Red Underwing. Willow, *Salix*.

INTRODUCTION.

THROUGHOUT the published works on Natural History by British authors there does not appear to be one that treats sufficiently of lepidopterous insects during the earlier stage of their existence, and of the Food Plants necessary for them.

As many seem to think such a work is much required, I have the pleasure of offering it to the public in the following pages.

The work is intended for the amateur and beginner in the study of the Lepidoptera, as well as for the Entomologist; and it is principally written for those who, without much knowledge of insect life, are often anxious to obtain information with regard to the curious caterpillars which from time to time come under their notice, and for those who are glad to learn something of the insects they see without wading through more scientific works.

It is very desirable that the farmer and gardener should be able to know and distinguish between those insects which are noxious and those which are beneficial to him, so that he may take steps to eradicate the former and encourage the latter. It is in the larva state that the injury is done, or the benefit gained: it is to the larva, therefore, that attention must be turned, and a knowledge of it will enable him to distinguish between his friend and his foe.

A description of a caterpillar which occupies four closely-printed pages of a magazine, and which is written in entomological language or in Latin,—though of the greatest value as an addition to entomological lore,—is not exactly what is appreciated by the excited student, who, having just captured a specimen, rushes in eager haste to his books for an account of it. The description he fails to understand, the book is thrown aside, the insect released, and the occupation gone.

To search through the descriptions of larvæ contained in works principally devoted to the perfect insect, or through magazines for information, is an endless task; it is to simplify this that the present work is written; and the descriptions,—together with, in many cases, the figure,—the food plant, and the time each caterpillar may be found, will, it is hoped render the investigation more easy.

I have endeavoured to place before the reader, as clearly as possible, all the necessary information he may require, so as to avoid those weary researches which many have experienced; and if I have not entered into those minutiae which some entomologists may think would have made the work more complete, I have omitted to do so for the express purpose of rendering the book more explicit to those who require it most.

I wish to describe the caterpillar in such a manner as to place the insect before the eye in as few words as may be consistent with clearness, and, avoiding all elaborate descriptions, to use as many only, and as simple words, as shall be necessary for identification; to present to the reader the general appearance of the caterpillar at the first glance by directing attention to its colour, its shape, or to any peculiarity it may have; and then, by entering more particularly into details, to enable the reader to come to some reasonable conclusion as to its identity. In some instances caterpillars so much resemble each other that the descriptions are necessarily somewhat long; but my desire is not to make an elaborate and microscopic description,—not to enter too deeply into every detail, except when necessary,—and by at once pointing out the colour, shape and peculiar markings of each individual, to enable those whose observation it has attracted to distinguish it from any other species. Colour and peculiarity of form may, in many instances, be almost sufficient without anything further.

Shape and colour, then, as a rule, are the first things I have mentioned; I have then called attention to the various markings, to the several lines and stripes—longitudinal, transverse, or oblique; and when necessary, I have pointed out the colour of the spiracles and segmental divisions. The head and corslet, the legs and claspers, I have in most cases described; the attitude the caterpillar assumes under different circumstances, the manner it rests, and any characteristic it may possess.

Insects have been considered by many to be rather an insignificant branch of Natural History, and this is, perhaps, owing to their comparatively small size, as their habits are much more wonderful and their forms more varied and peculiar than those of many of the larger animals. The study, therefore, of insects has not generally been a favourite one, except amongst a limited number of persons. Many look upon them with some degree of repugnance; others with absolute fear and abhorrence, only because they are unacquainted with them, and have only noticed the most repulsive. Many people, too, have eyes and see not, and would pass by *Papilio Machaon*, with its delicate green-ground colour, its black velvety bands and bright yellow spots, without observing any beauties in it; but let them take the next green caterpillar they find into their hand and examine it with care and attention, and they will see what wonderful beauties it can reveal.

I wish to encourage the reader in the study of Entomology to lay before him such matter as will surprise him, and to open a new world as a subject

of interest to many who now merely crush the caterpillar as they pass it. This I hope to do not alone by describing the caterpillar in plain terms, but by giving a tolerable insight into its domestic economy, by a concise, though sufficient, life-history of each insect, to throw interest into the subject.

The gaudy butterfly, flying high in air, or basking in the sun upon a flower, is by many considered to be only something to be captured, killed, set with wings outstretched, and eventually to be placed in a cabinet and labelled with a name; and there are many people who have collected the imago for years, and numbers of persons interested in the study of butterflies and moths, who are greatly at a loss when they come across a caterpillar of perhaps quite a common species; and numbers of intelligent persons who scarcely know that every moth that flies, and every butterfly that passes them, commences life as a caterpillar: my object is not only to show that it did so, but to trace it from the egg through its various stages to the perfect state, to show in what manner and how it supported life as a caterpillar, what length of time and where it rests in the chrysalis state, and when it breaks through its self-made prison and issues forth perfect.

I wish to show in what state the insect is to be found at the various seasons of the year, whether as larva, pupa, or imago; and also, when possible, how long the egg remains unhatched. Either as an egg, or in one of its three different phases, the insect must be during all the months of the year, and my purpose is to follow it from the egg until its career is at an end. The difficulty of accomplishing this will be some excuse for any errors which may be found, and will readily present itself to all those possessing a knowledge of the deep recesses in which many of these insects pass their caterpillar life.

Desiring to write for the general reader as well as for the entomologist, I must begin at the beginning and answer the question,—What is an insect?

Some may consider every small creeping thing or little flying animal an insect, but it is not so; an insect is not necessarily small, neither is every small creeping animal an insect. An insect is an articulate animal having six legs, two antennæ, and two compound eyes; respiring by tracheæ, or tubes passing along each side; the head is distinct from the thorax, and the adult state is attained through a series of transformations or metamorphoses. The body of an insect is divided into three parts, the head, the thorax, and the abdomen, and into thirteen segments, or divisions, of which the head is the first; the thorax is composed of three, and the abdomen of nine. The second, third, and fourth segments have each a pair of legs. In winged insects the wings are attached to the third, or third and fourth segments.

Having shown what is an insect, it now remains for me to explain what is a lepidopterous insect.

Since the time of Aristotle, insects have been subjected to various classifications; Linné divided them into seven orders, and Latreille into eleven, of which the Lepidoptera are one. Under the order Lepidoptera are collected those insects which have four membranous wings covered with minute scales, the fore and hind wings of the same texture, a proboscis or trunk, and no sting; they are called Moths and Butterflies.

The eggs of Moths and Butterflies are very remarkable in form and colour, being of the most varied shapes, seldom with the smooth surface common to birds' eggs, but being shaped and fashioned after the most curious designs. The eggs from which lepidopterous caterpillars hatch have generally a rough and uneven surface, caused by the designs which are traced upon them; these are most complete and finished, and in all cases are made with the utmost care and elaboration, and the variety of them is remarkable: some appear to be tessellated, or crossed and recrossed in every direction with stripes and lines; some are incased, as it were, in network, or ribbed, or studded with rough, raised nodules and shining warts; whilst some may be found with a smooth and shining surface, like metal or ivory, or China ware.

These eggs are laid in all kinds of situations and in different positions: some are placed side by side in regular order, row after row; some in long strings like miniature necklaces; others in masses like bunches of grapes; some glued together and fastened firmly to the bark of a tree, to a leaf, or to something in close proximity to the food plant; again others are deposited singly upon the leaves or flowers, and many are thrown and scattered at random amongst the herbage. *Bombyx neustria* (a favourite example) lays her eggs in a ring like a bracelet round a twig or branch of an apple (or other) tree, upon the *leaves* of which her offspring feed; here they remain tightly fixed until the caterpillars make their exit. *Cossus ligniperda* fixes her eggs to the bark of any tree, upon the *wood* of which the young larvæ subsist, whilst the *Hepialidæ* and many other moths shower their eggs loosely on the surface of the earth, to enable the larvæ to penetrate to the *root* of the plant upon which they feed. Many larvæ, however, which live exclusively upon leaves, have the eggs from which they are hatched laid in the same apparently careless manner amongst the food-plants upon which they subsist; and these larvæ, upon being hatched, ascend the stem and commence upon that part of the plant which is natural to them.

Instinct teaches the Moth or Butterfly to deposit her eggs either upon the food-plant itself, or where the young larvæ when hatched will have no difficulty in procuring it, and she chooses those situations which afford the best protection. Often when glued to the branches of trees they are

covered with soft down, which the moth procures from her own body, and thus covered they much resemble the bark of a tree. The eggs are laid at different seasons of the year, some being destined to remain many months before hatching, whilst others are hatched in a few days. Many of the eggs laid in July, August, and September remain unhatched until the following March, April, and May; whilst from some the tiny caterpillars emerge in a week or less.

Caterpillars are always posthumous children, born orphans (as the moth, after having deposited her eggs, seldom lives many days), and immediately upon finding themselves in the world they have to set about getting a living; in this they have no difficulty, as their food-plant is always at hand, and they either commence upon the leaf, climb the stem, or prepare at once to descend to the root.

There are three periods in the existence of a Moth or Butterfly after issuing from the egg—the larva, the pupa, and the imago states; and the present work will be devoted principally to the insect during the first of these periods.

It is at this time that the insect matures itself by the means in its power, choosing its food-plant, protecting itself from its enemies, providing a safe retreat if destined to pass the winter in the caterpillar state, or finding sufficient protection if exposed for many months, through a long summer, to the many foes by which it is surrounded. It is the caterpillar which employs all its instinct in performing those acts which lead to its eventually arriving at maturity; it rolls the leaf in which to retire when at rest or for safety; it burrows its way into the hard wood of trees, if such is its nature, or it passes its life in the stem or root of the plant; it fashions its tent, or forms its cradle or hammock, in which to remain secure throughout the winter; it lies concealed at the roots of its food-plant when the earth is covered with snow or bound up in frost, or it enters the earth making its own subterranean passage, and eventually spins its wonderful cocoon of silken threads or makes its earthen case. It then gives up its labours; and having in several ways—but invariably with the utmost care—provided for its future safety, it passes into the second period of its existence, assuming the almost inactive state of pupa or chrysalis.

A lepidopterous caterpillar, like all other insects, is composed of thirteen segments or divisions, more or less distinct; in some species they are separated by deep indentations, as in the larvæ of *Saturnia carpini*, for example; in others they are less conspicuously marked. In some the segmental divisions are of a different colour to that of the body, whilst in other species, particularly amongst the Geometræ, they are very often scarcely perceptible. The first segment is the head, and is furnished with jaws or mandibles wherewith to masticate its food: they are placed perpendicularly, from the upper to the lower part of the face,—not horizontally.

like those of the larger animals,—and work from side to side, thus enabling the caterpillar to bite the thin edges of leaves in a natural manner and without turning the head. These mandibles are for the most part very powerful, being in some cases equal to the task of biting and masticating the hardest wood, upon which substance some caterpillars entirely live; they are always sufficiently strong to enable the insect to devour the vast quantity of food necessary for its growth, and it continues to feed with but little intermission from its birth until it becomes full grown: when this event is accomplished, the main feeding for life is at an end,—in the chrysalis state the insect takes nothing, and as an imago but little.

The mouth is used exclusively for biting, eating, and spinning, the respiratory organs being a series of air-holes placed along the side of the body, and called spiracles: these air-holes communicate with wind-pipes or tracheæ, as before mentioned, which run along the sides; they are eighteen in number, nine on each side, and are placed on the second, fifth, sixth, seventh, eighth, ninth, tenth, eleventh and twelfth segments: they are much more conspicuous in some species than in others, and in some are only to be detected by the use of a magnifying-glass; the motion of breathing may, however, be clearly distinguished in many species, and the opening and shutting of the spiracles easily perceived.

The first segment is the head; the legs, as in the perfect insect, are six in number, and are placed in pairs on the three following segments; they are horny, jointed and hooked at the end, and are used by the animal to hold its food, and also for the purpose of locomotion; the claspers are membranous, and concave at the base like the foot of a fly, thus enabling the caterpillar to retain a strong hold upon its food-plant, and to stand firm and steady when the wind blows hard, and its power of adhesion is so remarkable that it often requires considerable force to remove it. The claspers vary in number from ten to four. The larvæ of Butterflies have invariably ten, placed in pairs on the seventh, eighth, ninth, tenth and thirteenth segments.

Amongst the Moths, in many species, the number of claspers is the same, though the rule is by no means general; both the Sphingæ and Bombyces have ten, and they are placed in the same manner and on the same segments as in the Diurni. The Geometræ have usually four, but there are exceptions. *Bumia cratægata* (the Brimstone Moth) and *Odontopera bidentata* (the Scalloped Hazel) have each eight, and *Metrocampa margaritata* (the Light Emerald) and *Ellopiæ fasciaria* (the Barred Red) are each provided with six. In those Geometræ which have the usual number, four, they are placed on the tenth and thirteenth segments.

The larvæ of the Drepanulidæ and Pseudo-Bombyces have eight or ten claspers, the anal pair being sometimes replaced by long tails, sometimes altogether wanting, and if not absent very frequently useless, and when

the animal rests remain elevated in the air. The Noctuæ have in most species ten claspers, but occasionally six or eight; the genera *Erastria* and *Euclidia* having six, and the genus *Plusia* eight.

The Geometræ, from the circumstance of having their legs and claspers so widely separated,—that is, placed at such extreme parts of the body,—have a peculiar manner of progression, from which they have derived the name of Geometers or Land-measurers, seeming to measure the earth by the long strides which they take; they have also been called “Loopers” from the manner in which they bring up their bodies into the form of a loop when moving from place to place. Extending their bodies to their full length, they seize with their legs the branch of a tree, the edge of a leaf, or whatever they may wish to reach; then bringing forward the claspers and placing them close to the legs, they form the body into a complete loop: these claspers are then firmly fixed, and the legs again brought forward in a second stride as they proceed.

Some of the Noctuæ larvæ walk in the same manner as geometers—amongst others those which are deficient in the number of claspers, and thus it must not be inferred that every looping caterpillar found is necessarily a geometer; but a fuller examination will enable any one soon to come to the right conclusion as to which group the caterpillar belongs.

Lepidopterous caterpillars are more or less hairy, even those which have the appearance of being the most smooth and velvety have a few short bristles scattered over the body.

Many of the Bombyces and a few of the Noctuæ are clothed with a thick covering of hairs; some have large tufts or tussocks of brush-like bristles, others soft short down, and some long and silky hairs. In one or two species the hairs possess a power similar to the nettle and if touched cause much irritation to the skin; but, for the most part, they may all be handled without any inconvenience whatever.

All lepidopterous caterpillars have the power, more or less, of spinning silk; and for this purpose are provided with the material from which it is constructed, and furnished with the suitable apparatus for its manufacture; the material is contained in two bags placed along each side of the intestines, and consists of a kind of liquid glue. In some species the power of spinning silk is much greater than in others, and the silk bags are regulated in size according to the quantity of silk it is the nature of the caterpillar to spin; some (as the silk-worms) produce a comparatively large supply, others again but little.

The uses to which the insect applies its spinning powers and its silk are various; some of the hibernating larvæ employ them in the construction of their silken coverings, and sometimes combined with leaves, into the nests in which to pass the winter. Some species reside together in these nests in large numbers in the winter, or when young, and are thence called social;

some spin for themselves a temporary web, remaining in it alone until the spring approaches, whilst others are content to use the silk at this time, only for the purpose of securing their bodies against the winter winds by lashing them hard and fast to a branch or twig of whatever tree may serve them as a food-plant.

During the summer months some caterpillars turn over and fasten together the edges of a leaf, or fasten two or three leaves together, forming a residence and a place of safety, to which they can retire from danger when not feeding, or for the purpose of pupation. In many species the caterpillar, when alarmed, falls from its food-plant, suspended by a thread: this thread the caterpillar spins on the instant; it takes from the silk bag one drop of gum, fixes it where it wishes, and, dropping into the air, continues to fall at pleasure. The gum immediately hardens on its exposure to the air and forms the silken line, up which, with the aid of its hooked legs and retentive claspers, the caterpillar is able to reascend when the danger is past. But with a great number of larvæ the principal use of their silk is for the construction of the warm and soft cocoon, in which they pass the chrysalis state; though some even at this time only employ it for the purpose of attaching the pupa to its food-plant, or to secure it in a safe position.

At certain intervals every lepidopterous caterpillar is compelled to cast its skin—at such times it ceases to eat: the outer skin does not expand in proportion to the insect's growth; it hardens and becomes dull in colour, and the caterpillar at last, breaking through it, extricates itself from its folds and appears in a new and brighter dress—and often in one totally different in appearance, in colour and in markings, to the last. The old skin is entire, and has almost the appearance of the living larva. In some instances the skin is devoured by the insect before it returns to its natural food-plant. Many caterpillars die during the process of moulting, owing to their inability to cast their skins either partially or entirely. The first moult sometimes takes place in a few days, and the last very soon before assuming the pupa state. Some lepidopterous larvæ change their skins many times, others but very few; *Sphinx ligustri* but once.

Lepidopterous caterpillars are called social or solitary according to their habits. Some pass a considerable part of their lives huddled together in company, or in nests or webs, whilst some are hatched from a solitary egg, laid in an isolated position on a leaf or flower, and continue to live alone during the first portion of their lives, only associating with their fellows after they assume the imago state.

Caterpillars reside in various situations; some, as previously mentioned, roll up a leaf in which to pass their time. The greater number live exposed upon the leaves or branches of the trees, eating only the leaves thereof; some species live upon and partake only of the flowers, others of

the flowers and seeds; some inhabit and eat the wood only, others the stem, and remain in it during the larva and pupa states; some take up a residence at and about the roots, eating the small rootlets, or ascending the stems of grasses and low plants, and devouring them by night; and several enter the root itself, and live within it, eating away sufficient space for their bodies to occupy as they increase in size, and passing from plant to plant as the supply of their sustenance fails or falls short.

Whilst some caterpillars remain and live peacefully and amicably together, others are not of such a gentle disposition, and some are the most undoubted cannibals—cannibals without the paltry excuse of hunger, for they will seize and devour their own, or any other species in the midst of abundance, and in a state of nature. Besides the danger of attack from their own species, or at any rate their own order, lepidopterous caterpillars are also commonly a prey to insects of other orders, namely Hymenoptera and Diptera; to the first of these belongs the ichneumon fly. These ichneumons search for and hunt out their victims, and deposit their eggs, either singly or otherwise, in the body of the caterpillar, without very great apparent injury to the insect; the injury, however, is there, and the caterpillar is doomed.

Sometimes the ichneumon's eggs are hatched very shortly, and the young parasitical larvæ live within the body of the lepidopterous caterpillar, and feed upon it, becoming quickly full fed, and changing to the chrysalis state whilst their victim is still alive, when the pupa-cases of the ichneumons may be frequently seen protruding from its body. At other times the lepidopterous larva survives in apparent health to enter the chrysalis state; the only result being that an unwelcome fly takes the place of the desired imago, and the collector is often surprised, puzzled, and disappointed, to find this the only return for his pupa digging. The length of time passed in the larva state varies very much in different species; some require two, or even three, years to attain their full growth, whilst others will be full fed in as many months.

The manner of hibernating, or passing the winter, is performed by the long-lived larvæ in various ways, some of which have already been mentioned; but some have no recourse to their silk for this purpose, merely burying themselves in the earth, going deeper as the frost is more severe, and returning to the surface at the approach of mild weather; some hide away in holes and crevices, or lie close to the roots of low plants, and nibble at their leaves; those which occupy the interior of trees and plants are already sufficiently protected.

A few words as to the manner of taking larvæ may be useful. At nearly all seasons of the year caterpillars may be obtained; in the spring and autumn (May and September) they are most plentiful; but all through the summer they may be obtained in good numbers, and in the winter a few will

turn up. The best means of taking lepidopterous caterpillars is no doubt by the eye, as they are then obtained without any chance of injury; but though hundreds and thousands of larvæ may be found in this manner by an experienced person in one season, by examining the leaves and flowers, still many other means are employed by entomologists. A sweeping net used over long grass at night-time will be found successful, and a white umbrella into which they can be beaten from the trees and hedges will be of use. If the umbrella is held beneath the tree in an inverted position, and the branches are then beaten with a stout stick, a shower of larvæ is almost sure to follow, in company with insects of other orders, from which the Lepidoptera may easily be selected; and by this means very many rare species are taken. But this method has its disadvantages, for which the collector must be prepared, as the larvæ are often injured either by being impaled on the thorns of a tree, crushed between its branches, or killed by the blows of the stick. Those caterpillars which burrow into the ground, or hide away beneath the surface of the earth during the day, may be taken by pulling up low plants by the roots; but many of these are better secured by searching the plants with a lantern at night when the caterpillars are feeding.

Another mode of obtaining caterpillars, either for a collection or for the purpose of studying their habits, is that of rearing them from the egg; and as it is the most laborious, so is it the most satisfactory; for thus we have them before our eyes from first to last, observing them during each change of skin, and noting their habits during the whole of their lives.

Eggs laid in confinement are frequently deposited in a chip box, and not on their natural food-plant; and when they hatch the young larvæ must be placed upon the plant they require. The food must be kept as fresh as possible: delicate plants and flowers require to be either placed in bottles of water, the necks of which are protected by cotton-wool or paper, or stuck into damp sand. Many plants will retain their freshness sufficiently long without these precautions; but the less frequently the caterpillars have to be moved the better they will thrive. When first hatched some young larvæ show considerable uneasiness and often great restlessness, even when the proper food-plant is provided, leaving it again and again, and wandering away in every direction; others again take their food at once, and never leave it. Many larvæ require only to have fresh food placed within their reach, and they will move themselves on to it with great alacrity; others will never leave the withered plant, and, if assistance is not given them, will die of starvation whilst still attached to it. The great secrets in larvæ rearing are to move them as little as possible, to feed them regularly and as often as they require it, to give them sufficient room, plenty of air, and keep them clean; and those who pursue this plan will generally carry them safely into the pupa state.

In the same way that larvæ are found in very different places, so are pupæ observed in most variable situations. Those of many of the Diurni are suspended from houses, walls, palings, trees, plants, blades of grass, &c.; those of the Nocturni are frequently found under the moss and bark on trees, or spun up amongst leaves and rubbish on the surface of the earth, or on old stumps. Other larvæ spin together the leaves of a deciduous tree, and in this apparently insecure retreat assume the chrysalis state; as the seasons change the leaf falls, the pupa is carried with it, and here it remains beneath the tree, or is blown by the wind a short distance, here or there, and thus remains sometimes without further protection during the winter; but with many caterpillars which pupate in this manner, the final change takes place and the moth emerges early in the spring, before the operations of husbandry have thoroughly commenced, and previous to the cattle being turned out to graze; otherwise it would appear that the total destruction of the insect would be inevitable. The greater number of pupæ are subterranean, and may be found anywhere, but much more commonly at or near trees, in the forked crevices and corners formed by the roots. If search is to be made for pupæ it should be begun as soon after they have assumed this form as possible, for at this time they are much more numerous than after being exposed to all the dangers surrounding them; they *may*, however, be found during the whole time they are in the pupa state. What length of time that is varies according to the species,--from two years to a few weeks; those insects which have passed comparatively long lives in the larva state frequently occupy but a short time as pupæ.

The imagos emerge at all seasons, including the months of November and December. As a general rule they do not remain long on the wing, their mission being to meet their partners, to lay their eggs, and die. Some few imagos live many months in their perfect state, hibernating in sheds and houses, or elsewhere, and laying their eggs and dying in the early spring or summer. The food-plants of the Lepidoptera are most numerous; many are partaken of freely by several species, some only by a few, and other plants are entirely rejected. The prevailing idea appears to be that all larvæ live on lettuce or cabbage; the former from the fact of the silkworm (*Bombyx mori*) eating it in this country when mulberry leaves cannot be had; the latter on account of *Mamestra brassicæ* being so unpleasantly often served up with our greens; and whether it be the caterpillar of *Acherontia atropos* or *Agriopsis aprilina*, it is pretty certain to be brought to you on a leaf of one or the other. Although many lepidopterous larvæ are polyphagous, and will take to almost any green leaf without showing much preference, a great number can only support life on one kind of food; plants of the same order and having the closest affinity will in many cases not serve as substitutes. To others, substitute plants may be supplied; and although one species of plant is invariably chosen in a state of nature by the moth on

which to deposit her eggs, other plants that are not their natural food may be given to the larvæ with advantage. For this reason, and as many persons have devoted much time in the endeavour to find something on which they can rear the young offspring of a rare moth or butterfly, some of these substitute plants have been introduced into this work with the words *in confinement* placed after them.

A great number of Geometers—I think all, or nearly all, the ACIDALIIDÆ—will eat knot-grass (*Polygonum aviculare*) in confinement, and many of those whose natural food is bedstraw (*Galium*) will do well on sweet woodruff (*Asperula odorata*). *Agrotis ripæ*—an insect which, whilst in the larva state, lies buried deep in the sand on the sea-coast, and whose natural food-plants are prickly saltwort (*Salsola kali*) and sea starwort (*Aster tripolium*)—will thrive on cut slices of carrot, supplied fresh every evening. Some kinds of plants seem to be more frequently chosen than others. Amongst trees, perhaps the oak is the first favourite, or sallow; but numbers of larvæ will feed indifferently on most of the forest trees; and among the low plants, especially to NOCTUÆ larvæ, dock, plantain, or grass, may generally be offered with success.

I have in many instances not attempted to enumerate all those plants upon which some larvæ will feed; in many cases it would be scarcely possible, and generally quite unnecessary. I have, however, always given a sufficient number of plants, to enable those living in towns or localities where a variety of plants is not easily obtained, to rear any polyphagous larvæ that may come into their hands.

The arrangement of species followed has been that of the late Henry Doubleday's 'Synonymic List,' published in 1873. There have been several arrangements of the Lepidoptera,—that of Doubleday, Stephens, Stainton, Knaggs, &c.; and many authors have not adhered to any of these, but have instituted systems of their own. As Doubleday's is the latest, and perhaps the best, I have adopted it.

The English names will be found in this work, together with the scientific ones; but I earnestly hope that even the youngest beginner will pay no attention to them; they are more puzzling, and much less easily learnt than the scientific names, and only lead to confusion; indeed, no one after the very first start in the race after insects ever thinks of them again, and they would not have appeared here had not a lady asked me, almost with tears in her eyes, to "have the English names." It is strange that a few hard words should prove such an obstacle to so fascinating a pursuit as the study of insects; but such is the case. It is amusing to see the look of horror and distrust with which so many people regard a scientific work on Entomology; and, after bestowing upon it some suspicious glances, they look up and say—"What is Coleoptera?"

The plates are by my wife, the figures having been drawn entirely from

Nature, with the exception of four species. The figures of *Argynnis Adippe* have been taken from Duponchel's 'Iconographie des Chenilles,' and a figure of *Argynnis Niobe* has been taken from that work, and one also from the work of Freyer; *Vanessa cardui* is from Duponchel; and *Deilephila lineata* is copied from a drawing, by Mr. W. C. Marshall, of a larva taken in Cornwall, and described in the 'Entomologist's Monthly Magazine.'

I have endeavoured as much as possible to write from my own personal knowledge, and for some years past have received a constant supply of ova, larvæ, and food-plants, from a large number of the most earnest and energetic entomologists residing in all parts of Great Britain, Ireland, and the Channel Islands, who have at the same time sent me abundant information gathered from their own experience, which is much more valuable than that taken from published books.

The invaluable and untiring assistance given me by Messrs. G. T. Porritt, G. C. Bignell, and G. F. Mathew, R.N., has added much to the value of the work, and I here take the opportunity of expressing to them my warmest thanks. To Mrs. Boley, the Revs. Harpur Crewe, Joseph Greene, P. H. Jennings, T. Crallan, G. H. Raynor, H. Burney, and G. A. Smallwood, and to Messrs. F. Bond, J. Batty, J. E. Fletcher, W. H. Harwood, C. G. Barrett, E. Birchall, W. Machin, G. B. Corbin, A. Doncaster, W. Luff, H. Ruston, H. Wittich, W. Holland, and B. Lockyer, I acknowledge my sincere gratitude. And I also return my best thanks to the following gentlemen for their co-operation and assistance:—Messrs. J. W. Dunning, C. S. Gregson, J. B. Hodgkinson, G. J. Hearder, M.D., J. E. Robson, W. D. Cansdale, J. Ross, F. D. Wheeler, B. W. Neave, G. R. Dawson, W. Simmons, J. Harrison, J. Povall, W. H. Tunley, J. R. S. Clifford, W. Slade, C. Fenn, W. Talbot, W. A. Forbes, W. G. Guthrie, G. Dawson, W. Johnes, N. M. Richardson, J. Croker, H. B. Adkins, A. Pickard, and C. L. Adams.

When information has not otherwise been obtainable I have quoted from the works of Newman and Stainton; and also from the magazines.

THE LARVÆ OF LEPIDOPTERA.

DIURNI.

PAPILIONIDÆ, Gn.

PAPILIO, *Linn.*

Papilio Machaon, *Linn.* THE SWALLOW-TAIL BUTTERFLY.

LARVA. Pale yellowish green and velvety with the segmental divisions clearly defined; there is a black band placed transversely across each segment; these bands, except on the second and thirteenth segments, are ornamented with six orange-coloured spots, and on all those segments between the fourth and thirteenth they terminate in an oblique direction; the upper part of each segmental division is also black; there is a black spot above each clasper and the legs are tipped with black; the head is smaller than the second segment, with a black spot above the mouth, two curved lines down the face, and a black line on each cheek. *Plate I., fig. 1.*

When young, the larva is black, with a cream-colour patch on the sixth and seventh segments, and with short yellow spines. *Plate I., fig. 1a.*

When annoyed, the caterpillar has the power of putting forth two yellowish horns from immediately behind the head.

FOOD-PLANTS. Angelica, Carrot (wild or cultivated), Cow parsnip, Fennel, Marsh Hogs-fennel, Meadow Sweet (*occasionally*), Rue.

PUPA. Suspended.

Time of appearance { *Larva.* June to August.
 { *Pupa.* July to May.
 { *Imago.* May to August.

LOCALITIES. Cambridgeshire fens, Norfolk fens.

PIERIDIDÆ, Gn.

LEUCOPHASIA, *Steph.*

Leucophasia sinapis, *Linn.* THE WOOD WHITE.

LARVA. About nine lines long; ground colour green, with numerous very short whitish hairs; the front part of the body minutely speckled with black;

dorsal line dark green, bordered with yellowish stripes; spiracular line dark green above, yellow below; ventral area, legs, and claspers, green.

FOOD-PLANTS. Tuberous Bitter Vetch, Tufted Vetch, Birdsfoot Trefoil, Hop Trefoil.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June.} \\ \text{Pupa. July.} \\ \text{Imago. August.} \end{array} \right. \begin{array}{l} \text{August to beginning of November.} \\ \text{September to May.} \\ \text{April and May.} \end{array}$

LOCALITIES. Common in some parts of England, and taken in Wales.

PIERIS, *Schr.*

Pieris cratægi, *Linn.* THE BLACK-VEINED WHITE.

LARVA. Hairy; dorsal area black, with two interrupted orange-brown dorsal stripes, composed of orange-brown spots and hairs of the same colour; the sides and ventral area are pale slate-colour, speckled with minute black dots, and having a number of pale hairs; spiracles black; the head and second segment are dark grey, the legs the same, the claspers pale slate-colour. *Plate I., fig. 2.*

FOOD-PLANTS. Apple, Blackthorn, Cherry, Pear, Plum, Whitethorn.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Berks, Glamorganshire, Gloucestershire, Hants, Herefordshire, Huntingdonshire, Isle of Wight, Kent, Monmouthshire, Northamptonshire, Somersetshire, Sussex, Worcestershire.

Pieris brassicæ, *Linn.* THE LARGE WHITE.

LARVA. Pale green; upon the dorsal surface are a number of black markings of unequal size, and also many black and shining warts; these warts each emit a short hair; the black markings give place to a dorsal line of a much yellower colour than the body; the spiracular line is yellow dotted with brown, and the margins of all these three lines are ill-defined and fade into the ground colour of the body; the spiracles are pale yellow encircled with brown; the ventral area greenish yellow. The head is smaller than the second segment, pale yellowish grey marked with black, and with a number of small black warts; there is also a yellowish mark about the mouth. *Plate I., fig. 3.*

FOOD-PLANTS. Cabbage (all kinds), Canary Creeper, Horseradish, Mignonette, Nasturtium, Turnip.

PUPA. Suspended.

Time of appearance	{	<i>Larva.</i>	May and June.	July to October.
		<i>Pupa.</i>	June and July.	September to April.
		<i>Imago.</i>	June to August.	April to June.

LOCALITIES. Common everywhere.

Pieris rapæ, Linn. THE SMALL WHITE.

LARVA. Smooth, velvety, transversely wrinkled, and slightly tapering towards both extremities; dorsal area dark green, with numerous minute black dots, from which proceed short hairs; dorsal line yellow; along each side is a row of yellow spots, one on each of the second, third, and fourth segments, and two on the remainder; the spiracles are black, and are situated immediately behind the yellow spots; the head is the same colour as the dorsal area, the ventral area paler green. *Plate I., fig. 4.*

FOOD-PLANTS. Cabbage (all kinds), Forget-me-not, Horseradish, Mignonette, Nasturtium, Turnip, Treacle-mustard, Wallflower, Watercress.

PUPA. Suspended to trees, walls, outhouses, etc.

Time of appearance	{	<i>Larva.</i>	June.	Sept. to Dec.
		<i>Pupa.</i>	July.	Sept. to April.
		<i>Imago.</i>	July and August.	April to June.

LOCALITIES. Common everywhere.

Pieris napi, Linn. THE GREEN-VEINED WHITE.

LARVA. Smooth, velvety, transversely wrinkled, and slightly tapering towards the head; dorsal area dark green, with numerous minute black dots, from which proceed short hairs; spiracles black, encircled with yellow; the head the same colour as the dorsal surface, ventral area a paler green; the warts on the head and on the ventral area are generally white.

FOOD-PLANTS. Flixweed, Garlic-mustard, Hedge-mustard, London Rocket, Rape, Treacle-mustard, Watercress, Wintercress.

PUPA. Suspended.

Time of appearance	{	<i>Larva.</i>	May and June.	July to September.
		<i>Pupa.</i>	June and July.	August to April.
		<i>Imago.</i>	July and August.	April to June.

LOCALITIES. Common everywhere.

Pieris Daphidice, Linn. THE BATH WHITE.

LARVA. Duponchel figures the caterpillar of a pale lavender colour, speckled with black, and having some large black spots, from which proceed black hairs; there are two stripes of two shades of yellow on each side, one subdorsal, one spiracular; the head is small, round, and yellow.

FOOD-PLANTS. Flixweed, Weld, Wild Mignonette, Tower-mustard.

PUPA. Suspended.

Time of appearance	{	Larva.	May and June.	September.
		Pupa.	July and August.	September to April.
		Imago.	August.	May.

LOCALITIES. Cambridgeshire, Devonshire, Essex, Hants, Kent, Suffolk

ANTHOCHARIS, *Bdv.*

Anthocharis cardamines, *Linn.* THE ORANGE TIP.

LARVA. Dark bluish green, somewhat wrinkled, and tapering towards the anal extremity; the whole of the body is covered with minute black warts, varying in size; from these warts proceed short hairs; the hairs are pale on the sides, and black on the dorsal and ventral areas; a pure white lateral skinfold overlaps the ventral area, and fades into the ground colour of the dorsal surface; spiracles white encircled with green, situated in the lower part of the white lateral skinfold; ventral area yellower green than the dorsal, legs and claspers the same colour; the head is rather a duller green than the body, and is speckled with black. *Plate I., fig. 5.*

When young, the larva is brownish green and shining, with numerous warts and a large head.

The eggs were laid about the 15th of May, hatched from the 19th, and the caterpillars were full fed from the 10th of June to the middle of July.

FOOD-PLANTS. Cuckoo Flower or Lady's Smock, Flixweed, Hedge-mustard, Tower-mustard, Wintereress, London Rocket, Penny-cress, Treacle-mustard, preferring the seeds.

PUPA. Suspended.

Time of appearance	{	Larva.	May to July.
		Pupa.	July to April.
		Imago.	April to June.

LOCALITIES. Common everywhere.

RHODOCERIDÆ, *Gn.*

GONOPTERYX. *Leach.*

Gonopteryx rhamni, *Linn.* THE BRIMSTONE.

LARVA. Long, rather flat, wrinkled transversely, and tapering towards the posterior extremity; of a dull green colour, fading into a creamy white at the spiracular line; the whole body is covered with minute black dots, from each of which proceeds a short hair. The head is smaller than the second

segment, and is speckled with black like the body; the ventral area is a paler yellow green, legs and claspers the same. *Plate I., fig. 6.*

The eggs in my possession were hatched on the 6th of May.

FOOD-PLANTS. Buckthorn, Alder Buckthorn.

PUPA. Suspended.

Time of appearance { *Larva.* May and June.
Pupa. June and July.
Imago. July to June.

LOCALITIES. Tolerably common in many parts of England, taken also in Wales and the south of Ireland.

COLIAS, *Bdo.*

Colias edusa, *Fab.* THE CROUDED YELLOW.

LARVA. Cylindrical, but tapering somewhat to the anal extremity, and transversely wrinkled; ground colour rather dark green, with numerous black warts surrounded with white, each wart emitting a pale hair. Spiracular line rather narrow, distinct, and white, and within it, on each segment is a deep salmon-colour spot, with a black spot beneath and rather to the rear of it; the spiracles are immediately in front of the pink spot, and are white, and clearly discernible. The head is round, and paler than the body, the mouth black. *Plate I., fig. 7.*

FOOD-PLANTS. Clover, Dutch Clover, Lucerne, Birdsfoot Trefoil.

PUPA. Suspended.

Time of appearance { *Larva.* June and July, and sometimes Sept. and
Pupa. July and sometimes October. [Oct.
Imago. August to Nov., and sometimes to June.

NOTE.—Some eggs sent me by Mr. Luff, hatched on the 22nd of September, and the larva at the present time (October 19th) are doing well; and Mrs. Boley was good enough to supply me, on the 4th and 18th of October, with larva, and with an account of them. The Butterfly was taken by Mrs. Boley, in Guernsey, on the 2nd of September; it commenced laying on the 4th, continued laying for nine days, and laid fifty-six eggs. These hatched in regular order, commencing on the 13th. Mrs. Boley reared them all (with the exception of those sent to me by Mr. Luff, which were part of the same batch), and by the 15th of October four of them had changed into the pupa state. The first imago appeared on the 17th November, two more on the 18th.

LOCALITIES. Common in some seasons on the south, east, and west coasts of England, and in Wales.

Colias hyale. *Linn.* THE PALE CLOUDED YELLOW.

LARVA. In Duponchel's figure the larva is green, speckled with black, and with a number of short pale hairs; dorsal, subdorsal, and spiracular lines rather bright yellow; head green, speckled with black.

FOOD-PLANTS. Birdsfoot Trefoil, Clover, Dutch Clover, Lucerne, Hop Trefoil.

PUPA. Suspended.

Time of appearance { *Larva.* June and July, sometimes Sept. and Oct.
Pupa. July, and sometimes October.
Imago. August to November, sometimes to June.

LOCALITIES.—Sometimes common, occasionally tolerably plentiful in many English counties.

VANESSIDÆ, Gn.**ARGYNNIS, Och.****Argynnis Paphia, Linn.** THE SILVER-WASHED FRITILLARY.

LARVA. Nearly black, with two yellow dorsal lines extending the whole length of the body; the sides are marked with a number of rust-coloured longitudinal streaks; two long nearly black spines project forward over the head; the remainder of the spines are rust-coloured tipped with brown; the head is black speckled with brown, and rather paler on the crown. *Plate II., fig. 1.*

FOOD-PLANTS. Dog Violet, Sweet Violet.

PUPA. Suspended.

Time of appearance { *Larva.* August to June.
Pupa. June.
Imago. End of June to beginning of August.

LOCALITIES. More or less abundant in all parts of England and Wales, and occurs in Ireland, rare in Scotland.

Argynnis Aglaia, Linn. THE DARK-GREEN FRITILLARY.

LARVA. Dark purplish grey mottled with black, and paler at the segmental divisions; with a number of spines; these spines are black, branched, and long, with the exception of those on the second segment, which are not branched, are shorter than the others, and are directed over the head; the second, third, and fourth segments have each four spines, the remaining segments six; dorsal line black and narrow, bordered with dull yellow; along each side is a row of bright red blotches; spiracles black, head black and shining. *Plate II., fig. 2.*

FOOD-PLANTS. Dog Violet, Sweet Violet.

PUPA. Suspended from a leaf.

Time of appearance { *Larva.* August to June.
 Pupa. June and July.
 Imago. July and August.

LOCALITIES. Tolerably common in England and Wales, common in Scotland, and taken in Ireland.

Argynnis Adippe, *Fab.* THE HIGH BROWN FRITILLARY.

LARVA. *Note.*—Having made every endeavour to obtain the caterpillars of this and the following species without success, I withhold making any description of them; the descriptions already written, as far as I can gather, are taken only from figures, and not actually from larvæ. Mr. Newman in his "British Butterflies" has described the caterpillars from the figures of Hübner; and Mr. Stainton's description of *Argynnis Adippe* is taken from Duponchel. In Plate II., figs. 3 and 3*a* are larvæ of *Argynnis Adippe* as represented by Duponchel. Fig. 4 is *Argynnis Niobe*, taken from a preserved German specimen, and probably paler than the living caterpillar. Figs. 4*a* and 4*b* are *Argynnis Niobe*, copied from the works of Freyer and Duponchel.

FOOD-PLANTS. Dog Violet and Sweet Violet, Heartsease.

PUPA. Suspended.

Time of appearance { *Larva.* August to June.
 Pupa. June and July.
 Imago. July and beginning of August.

LOCAL in England and Wales; but sometimes common where it occurs

Argynnis Niobe, *Linn.*

LARVA. See Plate II., figs. 4, 4*a*, and 4*b*.

FOOD-PLANTS. Dog Violet, Sweet Violet, Heartsease.

PUPA. Suspended.

Time of appearance { *Larva.* August to June.
 Pupa. June and July.
 Imago. June and July.

LOCALITIES. Reported from Hants, Lancashire.

Argynnis Lathonia, *Linn.* THE QUEEN OF SPAIN FRITILLARY.

LARVA. About an inch and three-eighths long, with a number of short conical pink spines, those on the thirteenth segment are directed backwards. The body is dull smoke colour, with a double series of pale oblique streaks

along each side of the back; there appears to be a nearly black spiracular line, bordered above and below with ochreous; the head is yellow, mouth black, legs also black. *Duponchel's figure.*

FOOD-PLANTS. Dog Violet, Sweet Violet, Wild Heartsease.

PUPA. Suspended.

Time of appearance { *Pupa.* August to June.
June and July.
Imago. July to September.

LOCALITIES. Cambridgeshire, Devon, Dorset, Essex, Hauts, Isle of Wight, Kent, Norfolk, Suffolk, Surrey, Sussex, Yorkshire, Ireland.

Argynnis Euphrosyne, Linn. THE PEARL-BORDERED FRITILLARY.

LARVA. Black, the dorsal area sparingly speckled with white; the body has a number of spines; the two on the second segment are directed forwards; the spines on the back are yellow at the base and black at the tip; along each side are a number of whitish markings, forming themselves into a broad spiracular stripe, which is sometimes intersected by a narrow black line; the ventral area and claspers are dingy red, the legs black.

FOOD-PLANT. Dog Violet.

PUPA. Suspended.

Time of appearance { *Larva.* June to April.
Pupa. June and July.
Imago. May and June.

LOCALITIES. Common in England, Wales, and Scotland.

Argynnis Selene, Fab. THE SMALL PEARL-BORDERED FRITILLARY.

LARVA. One inch long; colour dark brown, nearly black, with apparently several longitudinal rows of pale yellow spines, tipped with black; those on the second segment pointing forwards. The head and legs are black, the claspers dull red.—*Duponchel's figure.*

FOOD-PLANT. Dog Violet.

PUPA. Attached to the stem of the plant.

Time of appearance { *Larva.* July to May.
Pupa. May.
Imago. May and June.

LOCALITIES. Generally distributed in England and Wales, common in Scotland.



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MELITÆA, *Fab.***Melitæa Artemis, *Fab.* THE GREASY FRITILLARY.**

LARVA. About an inch long, the segmental divisions deeply cut. Black and spinous, with numerous white dots, forming a series of three longitudinal speckled lines, one dorsal and two spiracular; head black and shining, legs black, claspers flesh-colour. *Plate II., fig. 5.*

FOOD-PLANTS. Devil's-bit Scabious, Foxglove, Plantain, Field Scabious.

PUPA. Suspended.

Time of appearance { *Larva.* June to May.
 { *Pupa.* May and June.
 { *Imago.* May and June.

LOCALITIES. Local in England and Wales, rare in Scotland and Ireland.

Melitæa Cinxia, *Linn.* THE GLANVILLE FRITILLARY.

LARVA. Rather more than an inch long, with the segmental divisions clearly marked, black with short black spines, and a double row of pure white spots encircling the caterpillar at the segmental divisions; spiracles black in white rings, head red, legs black, claspers dingy reddish. *Plate II., fig. 6.*

FOOD-PLANT. Plantain.

PUPA. Suspended.

Time of appearance { *Larva.* June to May.
 { *Pupa.* April to June.
 { *Imago.* May and June.

LOCALITIES. Hants, Isle of Wight, Kent, Wiltshire.

Melitæa Athalia, *Esp.* THE HEATH FRITILLARY.

LARVA. Rather more than an inch long, ground colour black and mottled, with nine longitudinal rows of conical spines, each of which is covered with short minute black bristles, the dorsal row of spines is pale ochreous, and those immediately on each side of it are darker ochreous; all these are tipped with white; the remainder of the spines are white; head black, speckled with white, legs black, claspers dark grey. *Plate II., fig. 7.*

FOOD-PLANTS. Cow-wheat, Germander Speedwell, Wood-sage, Plantain, broad and narrow.

PUPA. Suspended.

Time of appearance { *Larva.* July to June.
 { *Pupa.* May and June.
 { *Imago.* May to July.

LOCALITIES. Buckinghamshire, Cornwall, Devonshire, Essex, Gloucestershire, Kent, Staffordshire, Suffolk, Sussex, Wiltshire, Ireland.

VANESSA, *Och.**Vanessa C-album*, *Linn.* THE COMMA.

LARVA. Ground colour grey, marked with reddish ochreous lines, and with numerous spines; there is a broad white dorsal stripe commencing on the seventh segment, and extending to the twelfth; the thirteenth segment has a white mark on each side of it; the spines on the third, fourth, fifth, and sixth segments are ochreous, those which proceed from the white stripe are white tipped with ochreous, and those situated along the side, below the white stripe, are ochreous tipped with white; head black, marked with grey, and surmounted by two horns of the same colour as the face. *Plate III., fig. 1.*

FOOD-PLANTS. Blackthorn, Currant, Elm, Gooseberry, Hop, Stinging Nettle, Honeysuckle.

PUPA. Suspended.

Time of appearance	{	<i>Larva.</i>	May and June.	August.
		<i>Pupa.</i>	June and July.	September.
		<i>Imago.</i>	July and August.	September to May.

LOCALITIES. Buckinghamshire, Cambridgeshire, Carmarthenshire, Cheshire, Cumberland, Derbyshire, Glamorganshire, Gloucestershire, Hampshire, Herefordshire, Huntingdonshire, Lancashire, Lincolnshire, Middlesex, Monmouthshire, Northamptonshire, Northumberland, Nottinghamshire, Oxfordshire, Radnorshire, Shropshire, Somersetshire, Staffordshire, Warwickshire, Worcestershire, Yorkshire, Devonshire.

Vanessa urticæ, *Linn.* THE SMALL TORTOISESHELL.

LARVA. Dorsal area dark brown, ventral surface paler; dorsal line dark brown bordered with yellow; the whole of the body and head is covered with minute yellow dots, and also with whitish spines; there are two rows of black shining tubercles along the back, from which proceed tufts of white hairs; spiracles brown, bordered with yellow; legs brown, claspers greenish. *Plate III., fig. 2.*

FOOD-PLANT. Stinging Nettle.

PUPA. Suspended.

Time of appearance	{	<i>Larva.</i>	May to June.
		<i>Pupa.</i>	July.
		<i>Imago.</i>	June to May.

LOCALITIES. Common everywhere.

Vanessa polychloros, *Linn.* THE LARGE TORTOISESHELL.

LARVA. Blue grey, speckled with black, with numerous pale hairs, and a number of ochreous-yellow branched spines; dorsal line black, edged with

yellow; on the side of each segment, between the spines, is a black velvety mark; spiracles black, encircled with yellow; head black, with short light hairs; legs black, claspers brown. *Plate III., fig. 3.*

FOOD-PLANTS. Aspen, Cherry, Elm and Wych Elm, Osier, Pear, Sallow, White Beam Tree, Willow.

PUPA. Suspended amongst the food plants.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June and July.} \\ \textit{Pupa.} \quad \text{July and August.} \\ \textit{Imago.} \quad \text{July to May.} \end{array} \right.$

LOCALITIES. Generally but sparingly distributed throughout England and Wales; rare in Ireland.

Vanessa Antiopa, Linn. THE CAMBERWELL BEAUTY.

LARVA. Black, with short pale hairs, and numerous black spines; down the centre of the back is a row of rich red spots extending from the fourth to the eleventh segments, both inclusive, one on each segment; the head is round, black, and hairy, the claspers dull red, the legs black and shining. *Plate III., fig. 4.*

FOOD-PLANTS. Birch, Stinging Nettle, Willow, Poplar.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June and July.} \\ \textit{Pupa.} \quad \text{July.} \\ \textit{Imago.} \quad \text{August to May.} \end{array} \right.$

LOCALITIES. Occasionally taken on the wing in most parts of England.

Vanessa Io, Linn. THE PEACOCK.

LARVA. Black and velvety, with the segmental divisions clearly defined; the body is covered with long black branched spines, and numerous white warts; the head is large, black, and shining, having warts sprinkled over it; legs black, claspers flesh-colour. *Plate III., fig. 5.*

FOOD-PLANT. Stinging Nettle.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June and July.} \\ \textit{Pupa.} \quad \text{July and August.} \\ \textit{Imago.} \quad \text{August to June.} \end{array} \right.$

LOCALITIES. Common in England and Wales, rare in Scotland, taken in Ireland.

Vanessa Atalanta, Linn. THE RED ADMIRAL.

LARVA. Yellowish green, irrorated with black, somewhat wrinkled about the segmental divisions, and having numerous long branched spines,

the same colour as the body, tipped with black, each proceeding from a yellow disk; there is a spiracular line along each side, yellower than the body; ventral area more dingy than the dorsal; spiracles black; head black, shining, and speckled with white warts; legs black and shining; claspers the same colour as the ventral area. *Plate III., fig. 6.*

This caterpillar varies much in colour.

FOOD-PLANT. Stinging Nettle.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August to June.} \end{array} \right.$

LOCALITIES. Common everywhere.

Vanessa cardui, Linn. THE PAINTED LADY.

LARVA. Variable, black or brown or dark grey, with long branched spines and a number of hairs; on the dorsal area there are generally a number of yellow warts; the lateral skinfold is also yellow; the head is black, the legs and claspers sometimes dull red, sometimes grey, but vary in different individuals. *Plate III., fig. 7.*

FOOD-PLANTS. Thistle, Field Thistle, Nettle, (in confinement), Scotch Thistle, Burdock, Mallow.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August to June.} \end{array} \right.$

LOCALITIES. Occasionally common in England, Wales, and Scotland, common in Ireland.

NYMPHALIDÆ, Gn.

LIMENITIS, Bdr.

Limenitis sibylla, Linn. THE WHITE ADMIRAL.

LARVA. Pale delicate green, with numerous white dots, and branched purplish-red spines, two on each segment, except the second and thirteenth; on the third, fourth, sixth, eleventh, and twelfth segments these spines are long; on the fifth, seventh, eighth, ninth, and tenth they are short; there are also four very short spines on the thirteenth. The colour of the caterpillar becomes lighter as it approaches the spiracles, which are white encircled with black, and are placed just above a white spiracular line, in which, beneath each spiracle, is a bright yellow blotch; above the spiracles is



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a broad purple stripe; the head is pink, marked with brown, covered with white dots, and surrounded with spines; legs pale brown, claspers greenish, tipped with pale buff. *Plate III., fig. 8.*

FOOD-PLANT. Honeysuckle.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June and July.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Essex, Hampshire, Northamptonshire, Suffolk, Isle of Wight.

APATURA, *Och.*

Apatura Iris, *Linn.* THE PURPLE EMPEROR.

LARVA. Large and sluglike in shape, tapering towards both extremities, but less abruptly to the posterior segment, which terminates in two points; the face green and flat, with two horns proceeding from the head; the body is green, with seven pale yellow oblique streaks on each side, the two anterior ones extending into the horns, and the third pair, which are longer and larger than the others, almost meet on the back; spiracular line yellow, spiracles brown, encircled with white; legs and claspers green. *Plate III., fig. 9.*

FOOD-PLANTS. Poplar, Sallow, Oak.

PUPA. Suspended from the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June and July.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Berks, Buckinghamshire, Cambridgeshire, Devonshire, Dorsetshire, Essex, Gloucestershire, Hampshire, Huntingdonshire, Kent, Lincoln, Middlesex, Monmouthshire.

SATYRIDÆ, Gn.

ARGE, *Esp.*

Arge Galatea, *Linn.* THE MARBLED WHITE.

LARVA. Pale brownish ochreous or pale green.

Variety 1.—Pale brownish ochreous, and transversely wrinkled, with numerous minute warts and short pale hairs; shuttle shaped, tapering abruptly towards the head, and gradually towards the thirteenth segment, which terminates in two pinkish points; dorsal line reddish brown, subdorsal line the same colour, but narrower, and bordered above with pale ochreous; this line extends into the pinkish points behind; between the dorsal and subdorsal lines

is a less distinct longitudinal waved brown line ; spiracles black and distinct. Both above and below the spiracles there is a pale longitudinal line, bordered above with an indistinct narrow brown line ; head rough, and pale reddish. *Plate IV., fig. 1.*

Variety 2.—Pale green, the darker lines all dark green, the spiracular line yellowish, the anal points pinkish, and the head pale reddish.

FOOD-PLANTS. Grasses.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{September to June.} \\ \textit{Pupa.} \quad \text{June and July.} \\ \textit{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Common in many parts of England and Wales.

EREBIA, *Bdv.*

Erebia Cassiope, Fab. THE MOUNTAIN RINGLET.

LARVA. Some eggs of this species were kindly sent me from Cumberland, by Mr. George Dawson, but unfortunately I was unable to rear the larva. Mr. Wailes, in the "Transactions of the Tyneside Naturalists' Field Club," describes it thus : "Pale green, with numerous darker green longitudinal lines shading into the ground colour, and with a well-defined white line along each side, in the region of the spiracles."

FOOD-PLANTS. Annual Meadow Grass, Sheep's Fescue Grass, Small Mat Grass.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{September to May.} \\ \textit{Pupa.} \quad \text{May and June.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Cumberland, (Croagh Patrick, near Westport, Ireland,) Westmoreland, Lancashire, Rannock, Ben Lomond, Loch Vennachar, Ben Nevis.

Erebia Blandina, Fab. THE SCOTCH ARGUS.

LARVA. "The head is rather narrower than the second segment, into which it is partially received ; it is scarcely at all divided on the crown, has a slightly convex face, and a rough surface resembling shagreen, and composed of approximate warts, each of which emits a hair from its summit ; the body is obese, decidedly thickest in the middle, and diminishing towards both extremities ; the division into segments is not very manifest, and is rather concealed by a division of each segment into four sections, each of which seems composed of a transverse series of warts ; thus the eye is attracted by the minor divisions,

and the major divisions or segments, properly so called, may readily escape notice. The body terminates in two short and blunt processes, directed backwards; the legs and claspers form two approximate series under the belly, and are not perceptible from above, whether the caterpillar is at rest or in motion. The general colour of both the head and body is wainscot brown, the ocelli are black, and one on each side is unusually prominent, appearing almost pedunculate; the body has a narrow medio-dorsal stripe, almost black, and the colour on each side of this is paler than the general ground colour, thus rendering the medio-dorsal stripe more conspicuous; the spiracles are intensely black; half-way between the spiracles and the medio-dorsal stripe is a side stripe, paler than the general ground colour, but bordered, especially below, by a darker margin, which is broken up into elongate spots, but these are rather vague, and not very noticeable; the legs, claspers, and under-surface are nearly of the same tint as the dorsal surface; the warts are of a very pale hue, almost white, each having in the centre a small black hair."—*Newman's Brit. Butterflies*, page 84.

FOOD-PLANTS. Brown Bent Grass.

PUPA. Suspended.

Time of appearance { *Larva.* September to May.
 { *Pupa.* June and July.
 { *Imago.* July and August.

LOCALITIES. Cumberland, Durham, Lancashire, Westmoreland, Yorkshire, and local in Scotland.

SATYRUS, *Bdv.*

Satyrus Egeria, *Linn.* THE SPECKLED WOOD.

LARVA. Pale green (or pale reddish brown), rough and transversely wrinkled, with numerous minute warts and short pale hairs; the body tapers towards both extremities, but more gradually towards the anal segment, which terminates in two points; dorsal line narrow, dark, bordered on either side by a pale stripe; there is a similar stripe composed of a dark line bordered with a pale colour along each side; the head is rather larger than the second segment, and the same colour as the body.

FOOD-PLANTS. Grasses, Couch-grass.

PUPA. Suspended from a blade of grass.

Time of appearance { *Larva.* September to March. June and July.
 { *Pupa.* March and April. July.
 { *Imago.* April and May. July and August.

LOCALITIES. Common everywhere but the north of Scotland, where it is rare.

Satyrus Megæra, Linn. THE WALL.

LARVA. Shuttle-shaped and tapering towards both extremities, the anal extremity forked, terminating in two points, rather yellower green than the body, which is dull green in colour, wrinkled, and covered with white warts, from which proceed short hairs; dorsal stripe darker green than the body, edged on each side with a narrow pale line; subdorsal line pale green and narrow; spiracular line somewhat scalloped, rather broad, and nearly white; the head is the same colour as the body, and speckled with white warts.
Plate IV., fig. 2.

FOOD-PLANTS. Grasses, Cocksfoot-grass.

PUPA. Suspended.

Time of appearance	{	<i>Larva.</i>	September to April.	June and July.
		<i>Pupa.</i>	April and May.	July.
		<i>Imago.</i>	May.	August.

LOCALITIES. Common everywhere but the north of Scotland.

Satyrus Semele, Linn. THE GRAYLING.

LARVA. About an inch and a half long, and somewhat obese, but shuttle-shaped, tapering abruptly towards the head, and gradually towards the thirteenth segment, which terminates in two points of the same colour as the body. The colour of the body is pale drab, slightly mottled and rough. Down the back are three distinct dark longitudinal lines, dorsal and subdorsal, commencing at the head and meeting at the anal points. The dorsal line is olive brown, faintly edged with whitish; the subdorsal line is the same colour, edged above and below with a distinct white stripe. Between the dorsal and subdorsal lines are a series of longitudinal dark streaks. Spiracular line pale, rather broad, edged above and below with brownish white; spiracles black, ventral area drab; the head is brown, with three lines down the face.

FOOD-PLANTS. Couch-grass, Early Hair-grass, Tufted Hair-grass, Marram-grass.

PUPA. In earth.

Time of appearance	{	<i>Larva.</i>	August to June.
		<i>Pupa.</i>	June and July.
		<i>Imago.</i>	June to September.

LOCALITIES. Tolerably common.

Satyrus janira, Linn. THE MEADOW BROWN.

LARVA. Shuttle-shaped and tapering towards both extremities, with a

number of long pale hairs directed backwards. Body bluish green, rough and wrinkled; dorsal line dark green and distinct; lateral dilation rather pale, terminating in two pinkish points; spiracles pink; head larger than the second segment, rough, round, hairy, and slightly darker green than the body. *Plate IV., fig. 3.*

FOOD-PLANTS. Grasses. Smooth-stalked Meadow-grass.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Abundant everywhere.

Satyrus Tithonus, *Linn.* THE LARGE HEATH.

LARVA. Pale green (or pinkish buff), slightly wrinkled and rough, with numerous white warts and short downy pale hairs; the body is somewhat obese, but tapers towards both extremities, more gradually towards the anal segment, which terminates in two pinkish points directed backwards; the dorsal line is dark green (or brown), the subdorsal line is pale, and the spiracular line yellowish green (or pinkish), bordered above with a darker shade; spiracles black; the head larger than the second segment, pinkish buff and hairy; the legs and claspers the same colour as the body. *Plate IV., figs. 4 and 4a.*

FOOD-PLANTS. Grasses, Couch-grass, Autumnal Meadow-grass,

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Tolerably abundant in England and Wales, not common in Scotland and Ireland.

Satyrus hyperanthus, *Linn.* THE RINGLET.

LARVA. Pinkish buff, transversely wrinkled and rough, with numerous warts and short downy pale hairs; the body is somewhat obese, but tapers towards both extremities, more gradually towards the thirteenth segment, which terminates in two pinkish points, directed backwards; dorsal line brown, rather darker towards the anal extremity; spiracular line pale, spiracles black; head larger than the second segment, pinkish buff, hairy and rough. *Plate IV., fig. 5.*

Some eggs were sent me by Mr. Fletcher on the 6th of August, and they hatched on the 7th. Only three larvæ survived the winter, and of these the first entered the pupa state on the 21st of April.

FOOD-PLANTS. Grasses, Millet-grass, Annual Meadow-grass, Couch-grass, Tufted Hair-grass.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to July.} \\ \text{Pupa. April to July.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Widely distributed.

CHORTOBIUS, *Gn.*

Chortobius Davus, *Fab.* THE MARSH RINGLET.

LARVA. The following description is that of Mr. Newman, under the head of *Cænonympha Davus*, var. *Rothliebii*.—"The head is rather wider than the second segment, distinctly exserted; prone and rough with minute warts; the body is cylindrical, and very gradually attenuated towards the anal extremity, which terminates in two parallel points above the anal flap, and directed backwards; the surface of the body is almost smooth; warts, indeed, are observable, but so minute as not to communicate a scabrous appearance, nor are there any noticeable hairs or bristles. The colour of the head and body is apple-green, inclining to olive-green; the head is dull, opaque, and uniformly coloured; the body is striped; there is a narrow medio-dorsal stripe, dark purple green, bordered on each side by a still narrower yellow stripe; these three stripes terminate before the anal points; on each side are two pale yellow stripes, one above, the other below, the pale brown spiracles; the upper of these is bordered above and below with dark bluish green, and terminates in the anal flap, which is tinged with pink; the lower terminates before the anal flap; the ventral surface, legs, and claspers are bottle-green."—*Newman's British Butterflies.*

FOOD-PLANT. Beak Rush.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Generally considered to be a northern insect, but it has been taken abundantly in the south of Ireland. The var. *Rothliebii* has been taken in Cheshire, Cumberland, Durham, Lancashire, Northumberland, Staffordshire, Westmoreland, Yorkshire.

Chortobius Pamphilus, *Linn.* THE SMALL HEATH.

LARVA. Apple-green and rough; the head is rather wider than the second segment, and the body tapers towards the thirteenth, where it

terminates in two pinkish points; dorsal line dark green, edged on either side by a pale stripe; subdorsal line dark green above, yellowish green below; spiracular line broad, dark green, bordered beneath with a yellowish line; spiracles pale brown.

FOOD-PLANTS. Annual Meadow-grass, Crested Dog's-tail Grass, Small Mat-grass, and other Grasses.

PUPA. Suspended.

Time of appearance	{	<i>Larva.</i>	May and June.	July and August.
		<i>Pupa.</i>	June.	July to May.
		<i>Imago.</i>	July and August.	May and June.

LOCALITIES. Common, but local.

LYCÆNIDÆ, Gu.

THECLA, *Fab.*

Thecla rubi, *Linn.* THE GREEN HAIRSTREAK.

LARVA. The body is shield shaped, rising high on the back, and overlapping the feet, the colour being delicate green ornamented with reddish hairs; the segmental divisions from the third overlap each other; the central dorsal area is green, and has on each side of it, on each segment, a yellowish green oblique streak, which is much darker on its outer edge; the spiracular line is of the same yellowish green colour; the head, which can be withdrawn into the second segment, is very small, pale brown and shining; the second segment is bright green, with numerous reddish hairs. *Plate IV., fig. 6.*

FOOD-PLANTS. Bramble, Broom, Furze, Dyers' Greenweed.

PUPA. In a cocoon amongst the food-plant.

Time of appearance	{	<i>Larva.</i>	June and July.
		<i>Pupa.</i>	July to May.
		<i>Imago.</i>	May and June.

LOCALITIES. Generally distributed.

Thecla quercus, *Linn.* THE PURPLE HAIRSTREAK.

LARVA. Shield shaped and velvety; the colour is brown, with eight arrow heads of a lighter colour along the back, edged on the outer side with white and darker brown; a dorsal line of the same dark brown, edged with white, passes through them; there is a light interrupted spiracular line, bordered with brown; spiracles brown; head brown, bright and shining. *Plate IV., fig. 7.*

FOOD-PLANTS. Oak, Sallow.

PUPA. On or in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Common in England and Wales ; local in Scotland and Ireland.

Thecla W-album, Illig. THE BLACK HAIRSTREAK.

LARVA. Shield shaped, the segments overlapping each other, and the whole body overlapping the feet. The colour of the body is pale pinkish buff, but greenish at the segmental divisions, and covered with soft downy hairs ; the dorsal area is divided down the centre, the inner part of the incision being brown, and the top of each ridge formed by it, from the fourth to the eleventh segments, pale yellow, with a pale yellow oblique streak passing from it on each segment ; ventral area pale green ; head dark brown and very small, and can be withdrawn into the second segment ; legs and claspers the same colour as the ventral area. *Plate IV., fig. 8.*

FOOD-PLANTS. Blackthorn, Elm, Wych Elm.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Berkshire, Buckinghamshire, Cambridgeshire, Derbyshire, Dorsetshire, Essex, Gloucestershire, Hampshire, Herefordshire, Kent, Shropshire, Staffordshire, Somersetshire, Suffolk, Surrey, Sussex, Worcestershire, Yorkshire.

Thecla pruni, Linn. THE DARK HAIRSTREAK.

LARVA. Convex above, and sloping towards the extremities, with numerous pale hairs ; ground colour dull yellowish green, with a deeply cut dorsal ridge ; this dorsal ridge and the lateral dilation are edged with yellow, and there is a row of oblique yellowish lines along the side. *Duponchel's figure.*

FOOD-PLANT. Blackthorn.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Buckingham, Huntingdoushire, Northamptonshire, Suffolk.

Thecla betulæ, Linn. THE BROWN HAIRSTREAK.

LARVA. Bright yellow green, and rising to a high ridge on the back ; the ridge is abrupt from the head to the fourth segment, and then slopes more gradually to the thirteenth ; it is bordered on each side, on each segment, by a

pale yellow streak ; on each side of each segment also are two pale yellow oblique streaks, and the spiracular line is the same colour ; spiracles whitish ; the caterpillar is covered with numerous short white hairs ; head brown, and much smaller than the second segment, into which it can be withdrawn.

Plate IV., fig. 9.

FOOD-PLANTS. Blackthorn, Birch.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May and June.} \\ \textit{Pupa.} \quad \text{June and July} \\ \textit{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITIES. Berkshire, Buckinghamshire, Cambridgeshire, Carmarthen-shire, Devonshire, Essex, Glamorganshire, Gloucestershire, Hampshire, Huntingdoushire, Isle of Wight, Kent, Lancashire, Lincolnshire, Northamptonshire, Suffolk, Sussex, Westmoreland.

POLYOMMATUS, *Bdv.*

Polyommatus hippothoe, *Linn.* THE LARGE COPPER.

LARVA. Green and wood-louse shaped, the dorsal portion being rounded, and the ventral area flat ; the segmental divisions are clearly marked, and overlap each other ; there is a dorsal line rather darker than the ground colour ; the head is very small and retractile.

FOOD-PLANTS. Great Water-dock, Water-dock.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June and July.} \\ \textit{Pupa.} \quad \text{July.} \\ \textit{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Formerly taken in Cambridge and Huntingdonshire, supposed now to be extinct.

Polyommatus phlœas, *Linn.* THE SMALL COPPER.

LARVA. Convex above, flattened below, and rounded at the extremities ; dull green in colour ; the segmental divisions overlap, and are rather clearly marked ; the body is covered with minute white warts and short hairs : the hairs are dark, with the exception of those along the lateral dilation, which are pale ; the dorsal line is deep purplish red, and the lateral dilation dull pink ; the head is small and retractile. *Plate IV., fig. 10.*

In some varieties the larva is pale glaucous green, and the purplish red tints are totally absent. *Plate IV., fig. 10a.*

NOTE.—Mrs. Boley caught the butterfly in Guernsey on the 23rd of September ; it laid on Dock on the same day, and from the 23rd to the 28th laid 32 eggs. They began to hatch on the 30th.

FOOD-PLANTS. Broad-leaved Dock, Fiddle-headed Dock, Sorrel, Sheeps' Sorrel, Ragwort.

PUPA. Attached to a leaf.

Time of appearance	{	Larva.	May and June.	Aug. and Sept.	Oct. to March?
		Pupa.	June.	Sept.	March?
		Imago.	June to Aug.	Sept. and Oct.	April.

LOCALITIES. Common everywhere.

LYCÆNA, Tr.

Lycæna Ægon, Bork. THE SILVER-STUDED BLUE.

LARVA. "The head is small and retracted when at rest or alarmed, the second segment the longest, rounded, and very slightly flattened above, the others, as far as the tenth, with raised prominences on each side of the back, and a dorsal hollow between them, the sides sloping to the lateral ridge; the ventral surface is rather flattened; the legs all placed well underneath. The three last segments without dorsal ridges, and sloping gradually to the sides and anal extremity; their sides rather concave, a very prominent wart on each side of the twelfth; the segmental divisions not observable on these last, but well cut in all the others. In colour the larva is now a bright yellow green, with the dorsal stripe blackish brown edged with whitish from the beginning of the third to the end of the tenth segment; it is widest on the third and fourth, being on them of a rather rounded lozenge form, with a whitish dot near the edge on each side; a dull dark-brown small plate in front of second segment, and a broad semi-lunar shaped blotch of same colour a little behind, and divided in the middle by a fine line of the green ground colour. The dorsal stripe on the eleventh segment becomes broad and squarish, but resumes its linear shape on the twelfth and thirteenth. The subdorsal line is visible from the beginning of the third to the end of the eleventh segment, as a greenish yellow line running between two green ones, darker than the ground colour. At the bottom of the sides, along the lateral ridge, commencing on the third segment, and continued round the anal extremity, is a whitish line. Between the dorsal and subdorsal, on segments three to ten, are faintly paler oblique lines of yellow-green, viz., one on each segment, sloping downwards and backwards; the warts on the twelfth segment are very often suddenly projected considerably, and then a circle of fine short hairs is visible on their extremities. The surface of the body is also clothed with similar hairs; the head is black, havnig the base of papillæ, and a streak across over the mouth of buff colour."—*Ent. Mo. Mag.*, vol. v., p. 241.

FOOD-PLANTS. Birdsfoot Trefoil, Birdsfoot.

PUPA. Attached to the food-plant, near its roots.

Time of appearance { *Larva.* May and June.
 { *Pupa.* June and July.
 { *Imago.* July and August.

LOCALITIES. Cambridgeshire, Cheshire, Devonshire, Dorsetshire, Durham, Essex, Glamorganshire, Gloucestershire, Hampshire, Herefordshire, Huntingdonshire, Isle of Wight, Kent, Lancashire, Lincolnshire, Middlesex, Monmouthshire, Norfolk, Northamptonshire, Somersetshire, Staffordshire, Suffolk, Surrey, Sussex, Warwickshire, Westmoreland; rare in Scotland.

Lycæna Agestis, W.V. THE BROWN ARGUS.

LARVA. "The full-grown caterpillar is six lines and a half in length; its body is much arched, and so contractile that the creature can appear a line and a half shorter, whereby it naturally becomes more deeply arched. The retractile black head has a whitish transverse streak above the mouth; the dark palpi are whitish at the base. The ground colour of the body is an agreeable pale green; the deeply seated brownish purple coloured medio-dorsal stripe reaches from the beginning of the mesothorax to the beginning of the penultimate segment; the rather flat anal plate is semi-oval, and in the middle of each side slightly concave. On each side of the body from above, obliquely downwards and backwards, are faint pale stripes, only just perceptible, and in many points of view quite invisible. The incisions of the segments are deep above, whereby, on each segment, near the dorsal line, an eminence arises which bears a multitude of white bristles of unequal length, almost radiating. Below this wart-like eminence is a second, less conspicuous, with similar bristles. Both eminences have hollows in the middle, which the caterpillar can raise or depress at will. The lateral wart, clothed with longer projecting bristles, in which the spiracle is not perceptible, is purple red, and forms the rather broad lateral stripe, which, however, does not reach the head, since the prothorax is either altogether green at the sides, or is only pale reddish posteriorly. The anal plate is purple coloured only for a narrow space anteriorly at the sides; the belly is pale green, with many whitish bristles; the claspers are short, pale yellowish, rather transparent, with short cylindrical feet, with a darker yellowish circle of hooks; the legs are spotted with black anteriorly. When the time of pupation approaches, the caterpillar becomes of a paler green, and crawls about restlessly to seek a place for spinning."—Zeller, *Newman's Butterflies*, p. 125.

FOOD-PLANTS. Hemlock Stork's-bill, Rock Rose.

Time of appearance { *Larva.* August to April. July.
 { *Pupa.* April and May July.
 { *Imago.* May and June. August.

LOCALITIES. Scotland only.

Lycæna Alexis, *Hüb.* THE COMMON BLUE.

LARVA. Bluish green, speckled with numerous black warts, and having a number of reddish-brown hairs. Wood-louse shaped, the body rising high on the back, and being flat beneath; down the centre of the back is a rather deeply cut longitudinal ridge, the interior of this cleft is dark green; the segmental divisions are most clearly marked, and overlap each other; the body overlaps the feet, and the lateral skinfold is pale. The legs and claspers are placed well underneath the body, and are pale green; the head is very small, retractile, and brown, marked with darker brown. *Plate IV., fig. 11.*

Variety.—Yellowish green, the edges of the ridge and the lateral skinfold being almost yellow. *Plate IV., fig. 11a.*

The larvæ in my possession were full fed about the 9th of July.

FOOD-PLANTS. Bird's-foot Trefoil, Black Medick, Milk Vetch, Clover, Rest-harrow.

PUPA. Amongst the food-plant.

Time of appearance	{	<i>Larva.</i>	April and May.	July and August.
		<i>Pupa.</i>	May.	August.
		<i>Imago.</i>	May and June.	August to October.

LOCALITIES. Abundant everywhere.

Lycæna Adonis, *Fab.* THE CLIFDEN BLUE.

LARVA. Dull green, speckled with minute black warts, and with numerous black hairs. The body is wood-louse shaped, rising high on the back, and the ventral area is flat; there is a longitudinal ridge or furrow along the back, edged on all the segments from the third to the tenth with a bright yellow streak; the body overlaps the feet, and the dorsal area is bordered with bright yellow; spiracles black; the head very small, retractile, and dark brown.

FOOD-PLANT. Tufted Horseshoe Vetch.

PUPA. Just below the surface of the earth.

Time of appearance	{	<i>Larva.</i>	Sept. to April.	June.
		<i>Pupa.</i>	May	July and August.
		<i>Imago.</i>	May and June.	August and Sept.

LOCALITIES. South of England, extending to Buckinghamshire and Gloucestershire.

Lycæna Corydon, *Fab.* THE CHALK HILL BLUE.

LARVA. Seven-tenths of an inch long; yellowish green, speckled with minute black warts, and with a number of pale reddish-brown hairs. Wood-louse shaped, but rising higher on the back, and becoming smaller at the

extremities; the ventral area is flat. Along the centre of the back is a concave ridge, tipped on all the segments from the third to the tenth with a yellow streak; the body overlaps the feet, which are placed well underneath, and the extreme edge of the whole of the dorsal area is bordered with yellow; the spiracles are black, the head very small, retractile, and dark brown. *Plate IV., fig. 12.*

FOOD-PLANTS. Tufted Horseshoe Vetch, Birdsfoot Trefoil, Kidney Vetch.

PUPA. Just below the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May (?) , June.} \\ \text{Pupa.} \quad \text{May (?) , June, and July.} \\ \text{Imago.} \quad \text{End of May and July, July and August.} \end{array} \right.$

LOCALITIES. South of England, always on chalk.

NOTE.—The larvæ of this and the preceding species, *Adonis*, resemble each other in such a remarkable manner that I have extracted the following observations from the *Entomological Monthly Magazine*, where Mr. Hellins, after the most careful experiments, says as follows: “As far, therefore, as our means of comparison have gone, our materials to work upon being some dozen and a half larvæ of *Adonis* on the one hand, and this one larva of *Corydon* and figures of others taken in 1862, on the other, we can say that the two species resemble each other in the larval state, in every particular of form and ornamentation, except these two points: *Adonis* has its ground colour deeper green, with the hairs or bristles black, while *Corydon* has the ground colour of a lighter, brighter green (a green with more yellow in its composition), and the hairs light brown.

“I have been thus minutely circumstantial in relating what was done by us, because the result we have arrived at is not altogether in agreement with what we have been able to find already published. Thus in Stainton’s ‘Manual’ there are descriptions from Freyer which, according to our observations, rightly distinguish between the green of *Corydon* and the deep green of *Adonis*, but err in making the number of yellow dorsal streaks different, for *Adonis* certainly has but eight in a row, and not twelve.

“The only other author accessible to us, Boisduval, speaks of ‘le grand rapport qu’il y a entre cette chenille (*Corydon*) et celle d’*Adonis*,’ and gives every point of figure and marking as identical; but goes on so say that *Adonis* ‘est d’un fort très pâle un peu jaunâtre,’ and calls its tubercules not black but ‘bruns;’ while *Corydon* ‘se distinguera toujours assez facilement au premier coup d’œil par sa couleur d’un vert foncé, et par la petitesse de ses stigmates;’ and this is directly contrary to what we saw in our examples, viz., the deep green in *Adonis*, and the yellowish green in *Corydon*, and the spiracles of the same size and form in both.”—*Entomological Monthly Magazine*, vol. xi., p. 115.

Lycæna Acis, *W.V.* THE MAZARINE BLUE.

LARVA. I find no description of this larva.

FOOD-PLANT. Yellow Melilot.

TIME OF APPEARANCE. *Imago*, June and July.

LOCALITIES. Formerly in Cambridgeshire, Dorsetshire, Glamorganshire, Gloucestershire, Hampshire, Herefordshire, Lincolnshire, Monmouthshire, Somersetshire, Warwickshire.

Lycæna Alsus, *Fab.* THE LITTLE BLUE.

LARVA. Yellowish brown or pinkish, varying in different individuals, with a number of short brown hairs; shield shaped, the segmental divisions clearly marked, with a shallow ridge down the back; the dorsal and subdorsal lines are darker than the body, the latter being formed by a series of oblique lines; there is a dark plate on the second segment. The head is small, black, shining, and retractile. Before changing, the larva becomes green.

FOOD-PLANT. Kidney-vetch.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to May (?)} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Widely distributed, but scarce.

Lycæna Argiolus, *Linn.* THE HOLLY BLUE.

LARVA. *Var. 1.* Shield shaped; the body overlapping the legs; ground colour dirty yellowish green, body velvety, speckled with pale dots and having a number of minute hairs, segmental divisions greener, and deeply cut; the mediodorsal area is slightly pinker than the other part of the body, the ventral area is a paler green than the dorsal, and the legs and claspers are the same. The head is very small, jet black, shining and retractile. *Plate IV., fig. 13.*

Var. 2. General ground colour bright green; the dorsal line broad and crimson, passing through a series of white arrowhead-shaped marks; the sides below these arrow-heads are green, variegated with white; the spiracular line white, spotted with crimson; the fifth segment is green and crimson, the white arrow-head mark being almost obliterated by these colours; ventral area pale green. *Plate IV., fig. 13a.* Before changing, the body was entirely suffused with pink, the red markings becoming of a deeper crimson than before. *Plate IV., fig. 13b.*

NOTE.—Larvæ of this variety were sent me by Mrs. Boley, who caught the butterfly on the 26th of August. It refused to lay on holly or ivy; but, as she caught it on the blackberry blossom, she gave it a spray on the 30th of



Vincent Brooks Day & Son Lith.

August, and it at once commenced laying; it continued to do so until the 4th of September, and laid altogether twenty-six eggs. These began hatching on the 14th of the same month, and changed on the 5th of October.

FOOD-PLANTS. Holly, Ivy, Blackberry, Buckthorn, Alder Buckthorn (the flowers and seeds).

PUPA. In a web attached to a leaf of the food-plant.

Time of appearance	{ Larva. June.	August to October.
	{ Pupa. June and July.	September to April.
	{ Imago. July to September.	April and May.

LOCALITIES. Generally distributed throughout England, Wales, and Ireland.

Lycæna Arion, Linn. THE LARGE BLUE.

LARVA. At eleven days old Mr. Porritt thus describes the caterpillar : "Length, about one-sixth of an inch; stout, but tapering towards the head, which is much smaller than the second segment; the general colour was dirty pink, the head brown and shining; behind the head is a large, almost plate-like, dull black mark, from which extends the rather broad, conspicuous, rust-coloured dorsal line; the body is sparingly clothed with light-brown hairs." —*Entomologist*.

Mr. W. C. Marshall kindly sent me some eggs of this species on the 24th of June, 1875, but I was unable to rear the larvæ.

FOOD-PLANT. Wild Thyme.

Time of appearance	{ Larva. June to May.
	{ Imago. June, and first ten days of July.

LOCALITIES. Bedfordshire, Buckinghamshire, Devonshire, Dorsetshire, Gloucestershire, Hampshire, Herefordshire, Huntingdonshire, Northamptonshire, Somersetshire, Wiltshire.

ERYCINIDÆ, Gn.

NEMEOBIUS. Steph.

Nemeobius Lucina, Linn. DUKE OF BURGUNDY FRITILLARY.

LARVA. Nearly half an inch in length, and wood-louse shaped, the body overlapping the legs; the segmental divisions are clearly defined. The colour of the caterpillar is a dirty greenish white; it is hairy, the hairs on the sides being pale grey; there is a row of dark-brown spots down the back, having the appearance of an interrupted dorsal line; on each side of these are a number of orange-coloured markings, speckled with black, and emitting a few dark hairs; head brown, smaller than the second segment, and retractile.

When touched, the head and thirteenth segment nearly approach each other.
Plate IV., fig. 14.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June to September.} \\ \text{Pupa. September to June.} \\ \text{Imago. June.} \end{array} \right.$

FOOD-PLANTS. Cowslip, Primrose.

PUPA. Attached to the food-plant.

LOCALITIES. Bedfordshire, Berkshire, Buckinghamshire, Cumberland, Derbyshire, Devonshire, Dorsetshire, Essex, Gloucestershire, Hampshire, Herefordshire, Hertfordshire, Huntingdonshire, Isle of Wight, Kent, Lancashire, Lincolnshire, Northamptonshire, Oxfordshire, Somersetshire, Suffolk, Surrey, Sussex, Westmoreland, Wiltshire, Worcestershire, Yorkshire.

HESPERIIDÆ, Gn.

SYRICHTHUS, *Bdv.*

Syrichthus alveolus, *Hüb.* THE GRIZZLED SKIPPER.

LARVA. "When full grown, the length is rather over five-eighths of an inch, the figure very stout, the head horny, globular, and stuck like a knob on the second segment, which, however, is not so strikingly narrow as in *Thanaos Tuges*; the skin granulated in appearance; the head and whole body covered thickly with short, fine, pale hairs; the general colour a pale ochreous green, the second segment pinkish, and a faint reddish tinge over the back of the other front segments; a thin dorsal, and somewhat broader subdorsal line, not easy to be seen, of ground colour, and a faint spiracular line; the spiracles not much darker than the ground colour, ringed with the same tint as the lines; the belly freckly; the head and collar very dark purplish brown; the upper lip paler."—*Hellins, Entomological Monthly Magazine*, vol. xi., p. 236.

FOOD-PLANTS. Bramble, Raspberry.

PUPA. Between the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June to September.} \\ \text{Pupa. September to April (?).} \\ \text{Imago. End of May, and June.} \end{array} \right.$

LOCALITIES. Common in England and Wales, not common in Scotland, unknown in Ireland.

THANAOS, *Bdv.*

Thanaos Tages, *Linn.* THE DINGY SKIPPER.

LARVA. "Pale green, with two yellow lines on each side, and a row of black spots above them. (*Dup.*)"—*Stainton*, vol. i., p. 66.

FOOD-PLANT. Birdsfoot Trefoil.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July, September to April.} \\ \text{Pupa.} \quad \text{July (?), April (?).} \\ \text{Imago.} \quad \text{August, May and June.} \end{array} \right.$

LOCALITIES. Common in England and Wales, and in the South of Scotland.

HESPERIA, *Bdv.*

Hesperia Paniscus, *Fab.* THE CHEQUERED SKIPPER.

LARVA. "Brown, with two yellow dorsal stripes; head black; second segment edged with yellow. (*Dup.*)"—*Stainton's Manual*, vol. i., p. 66.

FOOD-PLANT. Plantain.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September (?).} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Hants, Huntingdon, Lincolnshire, Northamptonshire, Nottinghamshire, Oxfordshire, Suffolk.

Hesperia Sylvanus, *Fab.* THE LARGE SKIPPER.

LARVA. "Dull green, with darker dorsal line, dotted with black; head brown; beneath, on the tenth and eleventh segments, are snow-white transverse spots. (*Zeller.*)"—*Stainton's Manual*, vol. i., p. 69.

FOOD-PLANT. Meadow soft grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{June, July, and August.} \end{array} \right.$

LOCALITIES. Generally distributed throughout England, Wales, and Scotland, and taken in Ireland.

Hesperia comma, *Linn.* THE SILVER-SPOTTED SKIPPER.

LARVA. "Dull green, mixed with reddish; second segment white; two white spots near the bottom of the ninth and tenth segments. (*Dup.*)"—*Stainton*, vol. i., p. 69.

FOOD-PLANT. Birdsfoot Trefoil.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Berkshire, Buckinghamshire, Cambridgeshire, Devonshire, Dorsetshire, Gloucestershire, Hampshire, Hertfordshire, Kent, Northamptonshire, Surrey, Wiltshire Yorkshire.

Hesperia linea, Fab. THE SMALL SKIPPER.

LARVA. Shuttle shaped, slightly wrinkled, and tapering towards both extremities. Pale delicate green, speckled with very minute black dots; dorsal line broad, and darker than the body, edged with a line of a slightly paler colour than the body; subdorsal line pale and narrow, lateral dilation nearly white; segmental division yellowish; ventral area rather bluer green than the dorsal; anal flap round; head larger than the second segment, with five black dots arranged in a semi-circle down the face; the mouth is also black. *Plate IV., fig. 15.*

FOOD-PLANTS. Fescue grass and other grasses.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June and July.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Abundant in England and Wales, and taken in Ireland.

Hesperia Actæon, Esp. THE LULWORTH SKIPPER.

LARVA. The body is cylindrical, but tapers somewhat towards the extremities. The colour pale sea-green, with two yellowish longitudinal lines down the back, the space between them being rather darker than the ground colour; there is a yellowish side stripe, and the lateral skinfold is edged with the same colour; the anal flap is also edged with yellow. The ventral area is marked on the tenth and eleventh segments with a snow-white patch. The head is pinkish green, with two lines down the face; the legs and claspers rather paler than the body. *Plate IV., fig. 16.*

FOOD-PLANT. Wood Small reed, grasses (various).

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May and June.} \\ \text{Pupa. June and July.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Devonshire, Dorsetshire.

NOCTURNI, GN.

SPHINGES AND BOMBYCES, LINN.

SPHINGIDÆ, Gn.

SMERINTHUS, *Lat.*

Smerinthus ocellatus, *Linn.* THE EYED HAWK MOTH.

LARVA. Delicate green and rough, and of a lighter colour on the dorsal surface, with seven white oblique streaks on each side, bordered above with bluish green, the last extending into the horn or tail, which is blue; body covered with white dots; spiracles pinkish white, encircled with red; face green, bordered with yellow. *Plate V., figs. 1 and 1a.*

FOOD-PLANTS. Apple, Poplar, Willow, Sallow, Osier, Lime, Pear.

PUPA. In the earth.

The eggs in my possession hatched on the 1st of July and two or three following days; others, laid on the 9th of the same month, hatched on the 19th.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September to June.} \\ \text{Imago. May to beginning of July.} \end{array} \right.$

LOCALITIES. Generally distributed, rare in Ireland.

Smerinthus populi, *Linn.* THE POPLAR HAWK MOTH.

LARVA. Pale yellowish green, and rough, with numerous yellow dots, some of which form themselves into seven oblique streaks on each side, the seventh extending to the end of the tail; spiracles red; the horn at the tail yellow, and red at the base; face green, bordered with yellow; legs red; claspers green. *Plate V., figs. 2 and 2b.*

Variety.—A variety sometimes occurs, in which there is a row of red spots along each side, and the spiracles are situated in a spot of a darker red colour than themselves; there is a red spot on the crown, and one on each

side of the lower part of the face; the claspers are also tipped with red. *Plate V., fig. 2a.*

FOOD-PLANTS. Aspen, Birch, Laurel, Laurestinus, Poplar, Sallow, Willow, Osier.

PUPA. Rough and dull-looking, beneath the earth.

Eggs which were laid on the 10th July hatched on the 24th, and the larvæ were full fed from the 10th of September to about the 18th.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August to October.} \\ \textit{Pupa.} \quad \text{September to June.} \\ \textit{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Generally distributed.

Smerinthus tiliæ, Linn. THE LIME HAWK MOTH.

LARVA. Yellowish green and rough, with seven oblique yellow stripes on each side, and a red mark on the upper side of each; the body is covered with bright yellow dots; the horn at the tail blue above, yellow beneath, and red where it meets the body; behind the horn is a rough red plate, edged with yellow, shaped somewhat like a shield; spiracles red. *Plate V., fig. 3.*

FOOD-PLANTS. Elm, Lime, Sycamore (once, by Mr. Bond).

PUPA. Rough, dirty looking, and beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August to October.} \\ \textit{Pupa.} \quad \text{October to June.} \\ \textit{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Widely distributed; rare in Scotland.

ACHERONTIA, Och.

Acherontia atropos, Linn. THE DEATH'S HEAD HAWK MOTH.

LARVA. About five inches long when extended, and yellowish green, speckled with dark purple, with seven oblique violet stripes on each side, meeting each other on the back; the lower part of these oblique streaks is edged on the under side with a pale colour; the spiracles are black; the horn at the tail is rough, and yellow, speckled with yellowish white, curved downwards and then up. There is a plate on the thirteenth segment; claspers the same colour as the body. *Plate VI., fig. 1.*

Variety.—Brown, and covered with minute white spots, with seven oblique dark-brown stripes on each side, meeting together on the back; spiracles black; the horn at the tale is speckled with yellowish white, and curved downwards and then up; second, third, and fourth segments are delicate pinkish white, having a broad brown dorsal line passing through them, intersected by a white streak; the lower part of these segments is brown; on



the thirteenth segment is a brown horny plate; legs and claspers dark brown.
Plate VI., fig. 1a.

FOOD-PLANTS. Deadly Nightshade, Jasmine, Potato, Tea Tree, Bittersweet, Spindle-tree, Privet (once by Mr. F. Bond).

PUPA. Subterranean.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to October.} \\ \text{Pupa. September to June.} \\ \text{Imago. June and July, and sometimes to October.} \end{array} \right.$

LOCALITIES. Widely distributed, taken occasionally in Scotland and Ireland.

SPHINX, *Linn.*

Sphinx convolvuli, *Linn.* THE CONVOLVULUS HAWK MOTH.

LARVA. Mr. Doubleday, translating Dr. Boisduval's description of this larvæ, says: "This larva varies greatly, not only in the markings but also in the ground colour, which is sometimes of a bright green, sometimes of a dark green, very often of a light brown, and sometimes of a dark brown. Among the green individuals we have observed three varieties. The first is of a bright green, with two rows of black spots along the back, and seven oblique white lateral stripes, and the horn is fawn-coloured on the upper side, and black beneath. The second variety is of a dark green, with two black lines along the back, and seven oblique stripes of the same colour on the sides. The third variety is green, with six longitudinal rows of black or brown spots, and the head and horn ferruginous. The brown individuals are equally variable: the first variety, which is rather common, is of an olive brown, with two black lines along the back, and seven oblique stripes of the same colour on the sides; the head and the first segment of the body are of a ferruginous red: we may also remark that there is upon the sides of each segment a large white spot. In the second variety the three anterior segments have whitish longitudinal lines. The third variety is entirely brown, with the back darker than the sides. Besides these six varieties, intermediate ones are not rare, and sometimes almost the whole of the body of this larva is intersected transversely by a multitude of fine black lines."—*Entomologist*, vol. vi., p. 561.

FOOD-PLANTS. Balsam (Common Yellow), Balsam (Garden), Convolvulus, Field Bindweed, Great Bindweed.

PUPA. Subterranean.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July.} \\ \text{Pupa. July to September.} \\ \text{Imago. August to October.} \end{array} \right.$

Dr. Boisduval says. "Part of the pupæ remain through the winter, and the moths appear in May and June."—*Entomologist*, vol. vi., p. 562.

LOCALITIES. Has occurred occasionally in most parts of the country. In 1875 it was recorded from Northumberland, Durham, Yorkshire, Derbyshire, Gloucestershire, Essex, Middlesex, Devonshire, and Kent, has also occurred in Scotland and Ireland.

Sphinx ligustri, Linn. THE PRIVET HAWK MOTH.

LARVA. Bright yellowish green in colour, with seven oblique stripes on each side; these stripes are lilac above and white below; spiracles yellow; the horn at the tail is black above and at the tip, and yellow below. *Plate VI.*, *fig. 2.*

FOOD-PLANTS. Privet, Lilac, Holly, Ash, Guelder Rose, Laurestinus. Portugal Laurel, Spindle Tree (once by Mr. Bond), Dogwood.

PUPA. In earth, and of a reddish colour.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August to October.} \\ \textit{Pupa.} \text{ October to June.} \\ \textit{Imago.} \text{ May to July.} \end{array} \right.$

LOCALITIES. Common in England and Wales, rare in Scotland and Ireland.

DEILEPHILA, Och.

Deilephila euphorbiæ, Linn. THE SPURGE HAWK MOTH.

LARVA. The larva tapers somewhat towards the head, which is very small; ground colour brown, being sometimes reddish or greenish brown, speckled with white dots, and having a red dorsal line; along each side of the back are two longitudinal rows of yellowish flesh-coloured spots, situated upon a black surface, and between each pair of spots is a red blotch; there is also a row of red blotches along each side; the spiracles are pale yellowish; horn at the tail red, tipped with dark brown; head red. *Plate VII.*, *figs. 1 and 1a.*

FOOD-PLANTS. Cypress Spurge, Portland Spurge, Sea Spurge.

PUPA. In the sand.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August and September.} \\ \textit{Pupa.} \text{ September to June.} \\ \textit{Imago.} \text{ June.} \end{array} \right.$

LOCALITIES. Devonshire, Yorkshire, Hants, Essex.

Deilephila galii, W.V. THE BEDSTRAW HAWK MOTH.

LARVA. Two inches and five-eighths long, rather stout, shining, and tapering towards the head, which is small. Colour purplish brown, with a faint indication of a dorsal line; along each side of the back is a row of round pale flesh-coloured spots, situated on a black ground colour, those two on the



thirteenth segment and immediately below the horn are elongated and pear-shaped; the spiracles are pale ochreous encircled with black, and a fine black line appears to connect them together; the horn at the tail is rough and red, the head pinkish brown, the corslet the same; the mouth is black, the legs black, and the claspers are tipped with the same colour. *Plate VIII., fig. 1.*

The larva varies considerably in different specimens.

FOOD-PLANTS. Yellow Bedstraw, Great Bedstraw, Fuchsia, Willowherb.

PUPA. Just beneath the earth, amongst portions of the food-plant.

Time of appearance	{	<i>Larva.</i>	August to October.
		<i>Pupa.</i>	October to June.
		<i>Imago.</i>	June to August.

LOCALITIES. Rare in Essex, Devonshire, Derbyshire, Durham, Glamorganshire, Gloucestershire, Herefordshire, Lancashire, Northumberland, Nottinghamshire, Sussex, Yorkshire, Scotland, Ireland.

Deilephila lineata, *Fab.* THE STRIPED HAWK MOTH.

LARVA. The caterpillar of this species is little known, and varies considerably. The following description is written by Mr. G. C. Bignell:—

“About three inches and a half in length, smooth and black, but so covered with yellow dots as to appear nearly yellow; the head dull pink; the upper part of the second segment has a semi-circular plate-like appearance of the same colour; the dorsal line yellow; each segment blotched with dull red, and bordered with black; the black on the front part of the segments, from the fourth to the eleventh, expands into a would-be square spot, but for a series of eight yellow semi-circular spots resting on the subdorsal line, the centres of which are pale pink; subdorsal line yellow; spiracles yellow, with a pink blotch behind and below them; the belly claspers and pro-legs whitish yellow, the lower extremities of the pro-legs black; a large black oval spot on the front part of all the claspers; the upper part of the anal claspers and flap are of the same colour as the head; the horn straight and very rough, red, tipped with black.”—*Entomologist*, vol. v., p. 169.

The following description is that of a figure sent me by Mr. W. C. Marshall, of a larva taken by Mr. L. Cumming near the Lizard, Cornwall.

Rather stout, and tapering towards the head; body pale greenish yellow, speckled with dark green; the dorsal surface is divided by seven dark-green transverse bands; dorsal and subdorsal lines pale greenish yellow; ventral area the same colour; the head, the hind claspers, and the horn at the tail are deep salmon colour; the claspers the same as the ventral area, and the legs greenish. *Plate VIII., fig. 2.*

In some varieties the head is described as black.

FOOD-PLANTS. Bedstraw, Vine, Dock.

PUPA. Among leaves on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June and July.} \\ \text{Pupa. July.} \\ \text{Imago. July to September.} \end{array} \right.$

LOCALITIES. Rare in Carmarthenshire, Cornwall, Dorset, Devon, Glamorganshire, Gloucester, Worcester, Kent, Essex, Isle of Man, Yorkshire, Scotland, Ireland.

CHÆROCAMPA, Dup.

Chærocampa celerio, Linn. THE SILVER-STRIPED HAWK MOTH.

LARVA. "Green or purplish brown. On the fifth and sixth segments are two round black spots, dotted with yellow, and encircled with a yellow ring; those on the fifth segment larger; horn brown, very slender, and quite straight (*Freyer*)."—*Stainton's Manual*, vol. i., p. 96.

FOOD-PLANTS. Bedstraw, Vine, Wild Carrot.

PUPA. Amongst leaves at the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. August and September.} \\ \text{Imago. August to October (?).} \end{array} \right.$

LOCALITIES. This species has occurred in Devonshire, Gloucestershire, Yorkshire, Sussex, Warwick, Kent, Norfolk, Berwick, and very rarely in Scotland.

Chærocampa porcellus, Linn. THE SMALL ELEPHANT HAWK MOTH.

LARVA. Either brown or green, mottled with black. In the brown variety the upper portions of the second, third, fourth, fifth, and sixth segments are pinkish white, and on each side of the fifth and sixth segments is a pink eye-like mark, centred with purple and edged with black; the fifth and sixth segments are also somewhat swollen, those in front of them tapering abruptly towards the head, which is very small; there is no horn at the tail, the twelfth segment being merely raised; the green variety is similar in shape and markings. *Plate VIII., figs. 3 and 3a.*

FOOD-PLANTS. Bedstraw, Yellow Bedstraw, Willowherb.

PUPA. Beneath the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. August to June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Not uncommon in England, Wales, Scotland, and Ireland.



Chærocampa elpenor, *Linn.* THE ELEPHANT HAWK MOTH.

LARVA. Brown or green, with a dark spot enclosing a light kidney-shaped mark, which is situated near the upper portion of it; on the fifth and sixth segments the dorsal area is variously mottled, and marked with black; some of the markings forming almost a dorsal line; the head is very small, and the horn at the tail black. *Plate VII., figs. 2 and 2a.*

FOOD-PLANTS. Fuchsia, Enchanter's Nightshade, Evening Primrose, Vine, Willowherb, Water Bedstraw, Hedge Bedstraw, Rough Bedstraw, Yellow Bedstraw.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September to June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Not uncommon in England and Wales, rare in Scotland, common in Ireland.

Chærocampa nerii, *Linn.* THE OLEANDER HAWK MOTH.

LARVA. "Green, spotted with white, the two first segments being of a lemon yellow, whilst the third bears two white spots surrounded with bright blue, and beyond this with black. At the fifth segment begins on each side a white band leading to the tail-horn, often bordered with blue in its hinder portion, and accompanied both above and below with an irregular number of white spots."—*Trans. Ent. Soc.*, 1877, p. 207.

FOOD-PLANTS. Oleander, Periwinkle.

PUPA. Under the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September.} \\ \text{Imago. September and October.} \end{array} \right.$

LOCALITIES. Sussex, Warwickshire.

MACROGLOSSA, *Och.***Macroglossa stellatarum**, *Linn.* HUMMING-BIRD HAWK MOTH.

LARVA. Ground colour bright green, dark olive green, almost approaching to brown, or reddish brown, and speckled with numerous white dots; there is a dark dorsal line, and along each side a white subdorsal line, which terminates in the horn at the tail; below this is a yellow spiracular line, which extends from the head to the twelfth segment; the anal flap is also edged with yellow; the horn is blue, tipped with a yellowish or reddish colour; the head green or brown, the legs reddish, the claspers green or brown. *Plate VIII., figs. 4, 4a, and 4b.*

In the reddish-brown variety the subdorsal line is pinkish, and the spiracular line of an ochreous yellow colour.

FOOD-PLANTS. Bedstraw (Great, Yellow, Water, and Rough).

PUPA. On the surface of the earth, amongst leaves, etc.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. August and September.} \\ \text{Imago. September to February.} \end{array} \right.$

NOTE.—The larvæ in my possession pupated at the beginning of August, and the imagos began to appear on the 6th of September following.

LOCALITIES. Generally distributed throughout England and Wales, not uncommon in Scotland and Ireland.

Macroglossa fuciformis, Linn. THE BROAD-BORDERED BEE HAWK MOTH.

LARVA. Yellowish green and rough, being of a bluer tinge on the dorsal area; the body is covered with dots, which are yellow on the sides and white on the back; the dorsal line is darker green than the body, and interrupted, and along each side is a bright yellow line, terminating in the horn at the tail, which is bright crimson; there are eight crimson oval marks along each side, which are bordered by yellow dots, and some of which contain a spiracle; the ventral area, legs, and claspers are crimson; and the face green, surrounded with yellow dots. *Plate VII., fig. 3.*

FOOD-PLANTS. Honeysuckle, Bedstraw, Field Scabious, Ragged Robin, Campion (Red and White).

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June to August.} \\ \text{Pupa. August to May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Not common in England, taken in Scotland.

Macroglossa bombylifomis, Och. THE NARROW-BORDERED BEE HAWK MOTH.

LARVA. "Green, dotted with yellowish white; two rows of dull reddish spots on each side of the fifth to twelfth segments; the white spiracles are placed in the lower row of reddish spots; horn slightly rough, short, pointed, reddish; legs reddish, except the anal pair, which are green (*Dup.*)."—*Stainton's Manual*, vol. i., p. 100.

FOOD-PLANTS. Devilsbit Scabious, Field Scabious.

PUPA. Amongst leaves on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August to May.} \\ \text{Imago. May to July.} \end{array} \right.$

LOCALITIES. Not uncommon, more particularly in the northern counties and Wales; not common in Scotland, taken in Ireland.



SESIIDÆ, Gn.

SEZIA, *Fab.**Sesia myopiformis*, *Bork.* THE RED-BELTED CLEARWING.

LARVA. Somewhat obese and wrinkled, dirty yellowish white, with some pinkish warts; head brown. *Plate IX., fig. 1.*

FOOD-PLANTS. Apple, Mountain Ash, Pear, wood of.

PUPA. In the wood.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to May.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{May to June.} \end{array} \right.$

LOCALITIES. Common in England, local in Ireland.

Sesia culiciformis, *Linn.* THE LARGE RED-BELTED CLEARWING.

LARVA. Yellowish white, rather flat and wrinkled, and not shiny, with a scarcely perceptible darker dorsal line, and a few short hairs; the head, corslet, and anal flap are shiny; the head flat, dark reddish brown; the corslet is of a much yellower brown, and the anal flap yellow; spiracles brown, encircled with darker brown. *Plate IX., fig. 2.*

FOOD-PLANTS. Birch, wood of, Lime, wood of.

PUPA. In the trunks of the trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to May} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Tilgate Forest, Glamorganshire, Scotland.

Sesia formiciformis, *Esp.* THE RED-TIPPED CLEARWING.

LARVA. Long when extended, and somewhat obese and wrinkled when contracted; nearly white, with a faintly distinguishable dorsal line; the head is bright brown, retractile, and shining, with a few hairs; the corslet is yellowish brown, with two curved lines extending from near the dorsal line to the lower part of the head; spiracles pale, surrounded with brown, and very conspicuous; the legs are brown, and the hind claspers yellowish. *Plate IX., fig. 3.*

FOOD-PLANTS. Osier, White Willow, wood of.

PUPA. In the wood.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to May.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Middlesex, Yorkshire.

Sesia chrysidiformis, Esp. THE FIERY CLEARWING.

LARVA. "About five-eighths to three-fourths of an inch in length, tapering a very little posteriorly; the head rather broad and slightly flattened, the body rather pellucid, smooth, plump, and shining. In colour it is of a dirty brownish white, with the dorsal vessel showing through as a dark-grey internal pulsating streak, and visible as far down as the beginning of the tenth segment. The head rather reddish brown, and a narrow plate of the same colour on the second segment; the anal segment has also a plate of a yellowish colour; above the spiracles are very minute blackish punctures."—*William Buckler, Entomologist's Monthly Magazine*, vol. iv., p. 14.

FOOD-PLANTS. Dock, Sorrel, Sowthistle.

PUPA. In the roots.

Time of appearance { *Larva.* July to May.
 { *Pupa.* May.

LOCALITY. Folkestone.

Sesia ichneumoniformis, W.V. THE SIX-BELTED CLEARWING.

LARVA. "About half an inch long, rather thick in proportion to its length; the head is less flattened than usual in this genus, and the body rounded, plump, and full; the second segment is the longest, and the third and fourth are rather thicker than the others, with puffed or swollen subdivisions; the rest of the segments have rather an overlapping tendency, and the three hinder ones taper gradually. The head is pale brownish flesh colour, with three broad stripes of brown down each lobe, and a triangular brown patch between them; the mouth is blackish brown. The second segment has a semi-transparent polished plate of flesh colour, through which can be faintly seen the back parts of the head, slightly tinged with brown. All the other segments are of an uniform pale yellowish flesh colour, rather opaque, with a slight trace here and there visible of a darker dorsal vessel. The tubercles are not raised, but the situation of each of them is indicated by a very fine pale-brown hair. The spiracles are flesh-coloured, outlined with brown; the pro-legs same as the body, the anterior legs pale brown."—*W. Buckler, Ent. Mo. Mag.*, vol. vi., p. 90.

FOOD-PLANT. Birdsfoot Trefoil (stems and roots).

PUPA. In the roots of the food-plant.

Time of appearance { *Larva.* August to June.
 { *Pupa.* End of June to beginning of July.
 { *Imago.* July.

LOCALITIES. Isle of Wight, Folkestone, Pembrokeshire, Wolverton, Bucks.

Sesia cynipiformis, Och. THE YELLOW-LEGGED CLEARWING.

LARVA. "Whitish, with a brown head (*Westw.*)"—*Stainton's Manual*, vol. i., p. 105.

FOOD-PLANTS. Elm (?), Oak, wood of.

PUPA. Under the bark of the tree, in a slight cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to May.} \\ \textit{Pupa.} \quad \text{May and beginning of June.} \\ \textit{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Common in Darenth Wood and elsewhere, taken in Hyde Park.

Sesia musciformis, View., 1789. THE THRIFT CLEARWING.

LARVA. When nearly full fed, the caterpillar is about five lines long, tapering very slightly towards the anal extremity, with the segmental divisions clearly marked; ground colour nearly white, shining, pellucid, with a faintly distinguishable pulsating vessel extending to the twelfth segment; head rather flat, pale chestnut-brown, and shining; corslet and anal flap paler and also shining.

FOOD-PLANT. Thrift.

PUPA. In the stem.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June to May.} \\ \textit{Pupa.} \quad \text{May and June.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Isle of Man, Pembrokeshire, Torquay, Scotland.

Sesia tipuliformis, Linn. THE CURRANT CLEARWING.

LARVA. Seven lines long when extended, five when contracted, smooth and shining, and pale yellowish white, with numerous raised warts of the same colour, each emitting a short, dark, bristly hair; dorsal line slightly darker than the body, spiracles brown; the segmental divisions are clearly marked; the head is burnt sienna brown and shining, with a triangular mark down the face; mandibles very dark brown; corslet pale brown and transparent, showing the head through; hind claspers darker than the body. *Plate IX., figs. 4, 4a.*

FOOD-PLANT. Currant, pith of.

PUPA. In the stem.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to May.} \\ \textit{Pupa.} \quad \text{April and May.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Generally distributed.

Sesia allantiformis, Newm. THE ORANGE-TAILED CLEARWING.

LARVA. I know nothing of this larva.

Time of appearance. *Imago*. June.

LOCALITIES. Very rare, Greenhithe, Darent Wood.

Sesia scoliiformis, Hub. THE WELSH CLEARWING.

LARVA. "When full fed, it is nearly one inch long, flattish, flesh coloured, with a darker dorsal ganglia seen through its somewhat transparent body; the head is brown, pointed, hornlike; corslet lighter coloured."—*C. S. Gregson in "Notes on Insects injurious to Fruit and Forest Trees."*

FOOD-PLANT. Birch, wood of.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August to April.} \\ \textit{Pupa.} \quad \text{May (?)} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Bryn Hyfred, Valle Crucis Abbey, Llangollen, Wales; said to have been taken in Scotland.

Sesia spheciformis, W.V. THE WHITE-BARRED CLEARWING.

LARVA. I believe unknown.

FOOD-PLANT. Alder, stems of.

PUPA. In the stem.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{April (?)} \\ \textit{Pupa.} \quad \text{Second week in May (?)} \text{ and June.} \\ \textit{Imago.} \quad \text{About the second week in June to the} \\ \quad \quad \quad \text{end of the month.} \end{array} \right.$

LOCALITIES. Rare, Tilgate Forest, Waltons Wood, Staffordshire.

Sesia asiliformis, W.V. THE DUSKY CLEARWING.

LARVA. Whitish, the anterior portion of the body being yellower than the remainder; there is an indistinct darker dorsal line; the segmental divisions are clearly marked, spiracles pale in brown rings; the head is long, flat, and shining, pale reddish brown, marked with darker brown; the corslet yellow, the third and fourth segments yellower than the rest of the body, and the anal flap is bordered behind with yellow. *Plate IX., fig. 5.*

FOOD-PLANTS. Ash, Aspen, Poplar, stems and roots.

PUPA. In the stems and roots.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{April.} \\ \textit{Pupa.} \quad \text{May.} \\ \textit{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITY. England, but rare.



Sesia bembiciformis, *Hüb.* THE HORNET CLEARWING OF THE OSIER.

LARVA. About one inch and a half long when extended; smooth, yellowish white, and translucent, with rather an indistinct darker dorsal line and a few scattered hairs; in shape rather obese, and terminating in a somewhat blunt point at the thirteenth segment; the spiracles are pale, encircled with brown; the skinfolds overlap each other; the head is long, retractile, burnt sienna brown, and shining, with a few bristles; the mouth is a darker brown, the corslet yellow brown; legs short, brown, and shining; the hind claspers yellow brown. *Plate IX., fig. 6.*

FOOD-PLANTS. Osier, Sallow, Willow, wood of.

PUPA. In the wood.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August to May.} \\ \textit{Pupa.} \quad \text{May.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Abundant in some localities in England and Wales, and also in Ireland.

Sesia apiformis, *Linn.* THE HORNET CLEARWING.

LARVA. About one inch and a half long, smooth, translucent, and yellowish white, with a few scattered hairs and a darker dorsal line. In shape the caterpillar is obese; the thirteenth segment is smaller than the others, and comes to a blunt point; the skinfolds overlap each other; spiracles pale, encircled with brown, and very conspicuous; the head is large, retractile, bright chestnut brown, and shining, with a few short hairs; the corslet is also shiny, yellowish brown, with two dark-brown curved lines commencing on each side of the dorsal line, and widening towards the head; the legs are very short, brown, and shining; the hind claspers the same colour as the second segment. *Plate IX., figs. 7 and 7a.*

FOOD-PLANTS. Aspen, Poplar, wood of.

This caterpillar often lives for two years in the wood of the above trees.

PUPA. In poplars and aspens.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August to April.} \\ \textit{Pupa.} \quad \text{May.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Generally distributed; not common in Scotland, taken in Ireland.

ZEUZERIDÆ, Gn.

MACROGASTER, Dup.

Macrogaster arundinis, Hub. THE REED MOTH.

LARVA. Mr. G. H. Raynor thus describes the larva: "Bulk slender in proportion to length; head flattened, about half the size of the second segment, and retractile within it; form cylindrical, but tapering towards the extremity; a corneous plate with ten black spots on the second segment. The larva is covered with a number of warts emitting some six short hairs on each segment, but more numerous on the last; spiracles pink, and not easily perceptible; general colour a pale rose; head dull ochreous; mouth black, with two black spots on each side; medio-dorsal line conspicuous, being of a darker tint than the general colour; subdorsal line broader, interrupted, and of a brownish colour; spiracular line very indistinct. Each segment excepting the first two is mottled with two patches of brown, nearly coalescing. The under surface is pinkish white; hind-legs blackish pink; claspers of a dull white colour."—*Entomologist*, vol. vii., page 21.

FOOD-PLANT. Reed, common.

PUPA. Within the stems of reeds.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June to May.} \\ \text{Pupa. May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Huntingdonshire.

ZEUZERA, Lat.

Zeuzera æsculi, Linn. THE LEOPARD MOTH.

LARVA. Two inches long and cylindrical, yellowish white in colour, with a number of black warts, each emitting a hair; on the third and fourth segments they are arranged in a transverse row, and on the twelfth segment there is a double row; the spiracles are pale in brown rings; the head is dark brown and shining; the corslet and anal flap almost black. *Plate IX., figs. 8 and 8a.*

FOOD-PLANTS. Alder, Apple, Elm, Hornbeam, Horse-chestnut, Pear, Guelder Rose, Sycamore, Oak, Plum, Holly, Willow, Ash, Whitethorn, Walnut, Lilac, Box, Aspen, Poplar, Lime.

PUPA. In the branches or roots.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Generally distributed throughout England.

COSSUS, *Fab.**Cossus ligniperda*, *Fab.* THE GOAT MOTH.

LARVA. The caterpillar is very large, about four inches long when full fed; the dorsal area is deep dark cherry colour; the sides and ventral area yellowish flesh colour; there are some pale bristly hairs scattered over the body, and there is a dark-brown plate on the second segment; spiracles brown; head black; claspers the same colour as the ventral area. *Plate IX., fig. 9.*

When young, the caterpillar is much darker in colour. *Plate IX., fig. 9a.*

The eggs were laid on the 13th of June and hatched in exactly a month, viz., on the 13th of July.

FOOD-PLANTS. Ash, Aspen, Elm, Lilac, Lime, Oak, Pear, Sallow, Poplar, Willow, Walnut, in the wood of.

PUPA. Generally within the tree, but it has been found occasionally in a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ July to June (two years in the larva state).} \\ \textit{Pupa.} \text{ Sometimes two years.} \\ \textit{Imago.} \text{ June and July.} \end{array} \right.$

NOTE.—A full-fed larva taken on August 14th pupated the same day, and another found beneath the earth on the 5th of April pupated on the following day.

The larva has a very powerful and peculiar smell like a goat, from which circumstance it takes its name. It lives sometimes, it is said, for four years.

LOCALITIES. Common in England and Wales, scarce in Scotland and Ireland.

HEPIALIDÆ.

HEPIALUS, *Fab.**Hepialus hectus*, *Linn.* THE GOLD SWIFT.

LARVA. "Greyish; shining; head yellowish; second, third, and fourth segments dark grey (*Freyer*)."—*Stainton*, vol. i, p. 110.

FOOD-PLANTS. Dandelion, Bracken, in the roots of.

PUPA. At the roots of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ July to the following April twelve} \\ \text{months (?), probably living two years.} \\ \textit{Pupa.} \text{ May and June.} \\ \textit{Imago.} \text{ June.} \end{array} \right.$

LOCALITIES. Generally distributed in England and Wales, local in Scotland and Ireland.

Hepialus lupulinus, Linn. THE COMMON SWIFT.

LARVA. "Whitish ochreous; head reddish brown; second segment with a reddish brown plate in front; spiracles black (*Hub.*)"—*Stainton*, vol. i., p. 111.

FOOD-PLANTS. White Deadnettle, Daffodil, Black Horehound, Plantain.

PUPA. At the roots of the food-plant.

Time of appearance { *Larva.* July to the following April twelve months (?), probably living two years.
Pupa. May and June.
Imago. May and June.

LOCALITIES. Common in England and Wales and Ireland, local and not common in Scotland.

Hepialus Sylvanus, Linn. THE WOOD SWIFT.

LARVA. Ground colour whitish ochreous, and tapering towards the extremities, with a yellowish plate on the second segment; head reddish. *Plate IX., fig. 10.*

The eggs were hatched on the 12th of September.

FOOD-PLANTS. Dandelion, roots of Sorrel, Dock.

PUPA. Amongst the roots of the food-plant.

Time of appearance { *Larva.* Sept. to May (?). Said to live two years.
Pupa. June (?)
Imago. July and August.

LOCALITIES. Distributed throughout England, Wales, Scotland, and Ireland.

Hepialus vellea, Esp. THE NORTHERN SWIFT.

LARVA. Rather long, and tapering somewhat towards the extremity; whitish; dorsal line rather darker; spiracles black; head reddish; corslet yellowish brown; anal flap the same.

Mr. Buckler says (*Entomologist's Monthly Magazine*, vol. vii., p. 84): "The third and fourth segments have pale brownish orange plates on the back, viz., a large drop-shaped one on the middle, extending from the back down either side, with a shuttle-shaped one before, and another behind."

FOOD-PLANT. Bracken.

PUPA. Amongst the roots of the food-plant.

Time of appearance { *Larva.* July to the following April twelve months. Said to live two years before being full fed.
Pupa. April to June.
Imago. June to August.

LOCALITIES. North of England, Orkney, Scotland, and Ireland, Quantoch Hills, Maidenhead, Sussex.

Hepialus humuli, Linn. THE GHOST SWIFT.

LARVA. About one inch and five lines long, cylindrical, and about the same thickness throughout, though the head is rather larger than the second segment; creamy white and shining, with a number of pale-brown blotches, some of which encircle the ordinary dots, which are darker brown, with black hairs; spiracles black; head red brown and shining, with a few hairs; corslet yellowish brown and shining; anal flap and claspers pale yellowish; legs yellowish and shining; ventral claspers the same as the body. *Plate IX., fig. 11.*

The eggs were laid on the 13th of June, and hatched on the 8th of July. A larva taken on the 19th of March spun up on the 8th of April.

FOOD-PLANTS. Burdock, Hop, White Deadnettle, Daffodil, Dock, Marsh Thistle, Black Horehound, Stinging Nettle, roots of.

PUPA. Amongst loose earth at the roots of the food-plant.

Time of appearance { *Larva.* July to May. Said to feed for two years.
 { *Pupa.* April and May.
 { *Imago.* June.

LOCALITIES. Common everywhere.

COCHLIPODIDÆ.

LIMACODES, Lat.

Limacodes asellus, W.V. THE TRIANGLE MOTH.

LARVA. The larvæ of this and the next species resemble in shape those of the *Lycænidæ*.

Ground colour pale yellowish green, somewhat jelly-like, with a number of dimpled undulations; the body about half an inch long, concave above, flat beneath, with a somewhat shallow dorsal furrow; there is a greenish-brown saddle-like mark on the back, bordered with yellow, extending from the third to the thirteenth segments, with a brown pulsating vessel passing through it; head green, marked about the mouth with brown, small, retractile, smooth and shining; claspers not perceptible.

FOOD-PLANTS. Beech, Oak, Poplar.

PUPA. In a cocoon under a leaf.

Time of appearance { *Larva.* August to October.
 { *Pupa.* October to July
 { *Imago.* June and July.

LOCALITIES. New Forest; Marlow, Bucks.

Limacodes testudo, W.V. THE FESTOON MOTH.

LARVA. Ground colour bright yellowish green, with a number of dimpled undulations; the body about half an inch long, rounded in front, concave above,

flat beneath, with a broad but somewhat shallow furrow along the back; the edges of the furrow are pale yellow, and have on their inner edge a row of pink marks; the spiracles are white, encircled with dark green; the whole of the body overlaps, and is bordered with yellow, the bordering above the head being brighter yellow and broader; the belly and legs are green and jelly-like; the claspers not perceptible; the head green, marked about the mouth with brown. *Plate X, fig. 1.*

FOOD-PLANT. Beech, Oak.

PUPA. In a cocoon upon a leaf.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to October.} \\ \text{Pupa. October to June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITY. Kent.

PROCRIDÆ.

PROCRIS, *Fab.*

Procris statices, *Linn.* THE FORESTER.

LARVA. "Short, stout, and dumpy, very dingy green, with a stripe of black spots down the middle of the back and a pale stripe on each side."—*Newman's Moths*, p. 22.

FOOD-PLANT. Sorrel.

PUPA. In a cocoon on a leaf of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to June.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Generally distributed in England, Wales, and Ireland, local in Scotland.

Procris Geryon, *Hub.* THE CISTUS FORESTER.

LARVA. "The head is very small and entirely retractile within the second segment; the body is obese, almost onisciform, gradually decreasing in size towards both extremities; the incisions between the segments are well marked, the segments being distinctly divided; on each segment are six warts, neither of them conspicuous, but each emitting a thin fascicle of short radiating bristles, among which are interspersed a few longer silken hairs; every part of the dorsal surface, the warts alone excepted, is covered with minute papilliform black dots; the head is black and shining, the second segment dingy yellow in front, black and rather shining on the disk, and purplish flesh-coloured beneath; the medio-dorsal stripe is dingy white, narrowly bordered with very

dark reddish purple; exterior to these narrow borders is a broad dingy yellow stripe on each side, swelling on each segment into a rounded lobe; the sinuous exterior margin of the yellow stripes is bordered with black, which is gradually shaded off into reddish purple in the spiracular region; the belly and claspers are dingy flesh colour; the legs black."—*Newman's British Moths*, p. 472.

FOOD-PLANTS. Rock Rose, Sorrel.

PUPA. In a thin cocoon amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May} \\ \text{Pupa. May (?)} \\ \text{Imago. May to July.} \end{array} \right.$

LOCALITIES. Herefordshire, Sussex, Surrey, Yorkshire, Worcestershire.

Procris globulariæ, Hüb. THE SCARCE FORESTER.

LARVA. "Blackish, with a row of triangular green spots on the back, and a blue stripe on each side, in which is a row of yellow dots (Hüb.)."—*Stainton's Manual*, vol. i., p. 78.

FOOD-PLANTS. Greater Knapweed, Plantain.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May.} \\ \text{Pupa. May (?)} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Folkstone, Glamorganshire, Sussex.

ZYGÆNIDÆ, Gn.

ZYGÆNA, Fab.

Zygæna Minos, W.V. THE TRANSPARENT BURNET.

LARVA. Short and thick, narrowing towards the extremities, and when in repose raised high on the back; ground colour pale greenish yellow, with pale hairs; dorsal line dark and narrow; along each side of the back is a row of black spots or marks, two on each side of each segment: beneath these, along each side, is another row of smaller black spots; and there is a third row of still smaller spots placed above the legs; head black and very small, legs tipped with black, claspers the same colour as the body. *Plate X., fig. 2.*

FOOD-PLANTS. Bird's-foot Trefoil, Tufted Horseshoe Vetch, Mountain Trefoil.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. June to July.} \\ \text{Imago. Middle of June.} \end{array} \right.$

LOCALITIES. Galway, Ireland.

Zygæna nubigena, *Ld.* THE IRISH BURNET.

LARVA. The full-grown larva is thus described by Mr. Hellins: "They were of the usual fat soft *Zygæna* figure, measuring in length when in motion $\frac{6}{8}$ of an inch, when at rest $\frac{5}{8}$. Colour all over a rich dark olive-green; dorsal line dirty whitish, showing broadest and palest at commencement of each segment; on each side of it a row of eleven black velvet round dots, placed on front of each segment from 3rd to 13th; below this a row of eight yellow spots, on segments 4th to 11th, placed on the hinder part of the segments in such a way that the yellow spot of each comes just below the black dot of the segment behind it; the spiracles black; the belly rather paler than the back, the usual dots not visible; each segment bearing, in a transverse row, eight fascicles of stiff white hairs, five or six in a fascicle."—*Entomological Monthly Magazine*, vol. v., p. 73.

FOOD-PLANT. Wild Thyme.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to April.} \\ \text{Pupa. May.} \\ \text{Imago. End of June.} \end{array} \right.$

LOCALITIES. Galway, Clare, Ireland; and has occurred in Scotland.

Zygæna exulans, *Hoch.* THE SCOTCH BURNET.

LARVA. "Of the usual *Zygæna* type: the head small and retractile within the 2nd segment, it is black and shinign; the body is dingy ochreous, each segment having a transverse series of fascicles of radiating black bristles, which impart a very dingy appearance to the larva; on each side is a sub-dorsal series of pale spots, each spot being transversely elongated; the legs are black, horny, and glabrous; the claspers are inconspicuous, being placed a good way under the body, their colour, as well as that of the belly, is obscure."—*Edward Newman, Ento.*, vol. vi. p. 22.

FOOD-PLANTS. Heath, Whortleberry, Couch-grass, Dutch Clover, Knot-grass (*in confinement*).

PUPA. Attached to grasses, heath, etc.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June (?).} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITY. Braemar, Scotland.

Zygæna meliloti, *Esp.* THE NEW FOREST BURNET.

LARVA. Short and stout, extending to both extremities; pale yellowish green, with a few pale hairs, the skinfolds at the segmental divisions being yellower than the body; along each side of the back is a row of ten *small* black spots, *one* on the anterior part of each segment, except the 2nd and 13th;

spiracles black, encircled with pale yellowish green, and then again with black; head small, black, shining, and retractile. *Plate X., fig. 4.*

FOOD-PLANT. Bird's-foot Trefoil.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{End of July to June.} \\ \textit{Pupa.} \quad \text{June and July.} \\ \textit{Imago.} \quad \text{Last week in June and July.} \end{array} \right.$

LOCALITY. New Forest.

Zygæna trifolii, *Esp.* THE BROAD-BORDERED FIVE-SPOTTED BURNET.

LARVA. Short and stout, narrowing towards both extremities, and when in repose much raised on the back; of a pale yellowish-green colour, with pale hairs, the skinfolds at the segmental divisions being yellow on the upper part of the body; along each side of the back is a row of black spots or marks, two on each side of each segment, pointing towards each other upwards; beneath these, on each side, is a second row of smaller divided black spots; and a third row of still smaller marks is placed above the legs, the marks in this row are of a more dusky colour than those above it, and form an almost uninterrupted line; spiracles black, encircled with yellow, and surrounded again with black; ventral area dusky greenish yellow, with a dusky central ventral line; head very small, and black; claspers the same as the ventral area. *Plate X., fig. 3.*

FOOD-PLANTS. Clover, Tufted Horseshoe Vetch, Large Trefoil, Hop Trefoil, Mountain Trefoil.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{End of July to May.} \\ \textit{Pupa.} \quad \text{May and June.} \\ \textit{Imago.} \quad \text{2nd week in May to 2nd week in June.} \end{array} \right.$

LOCALITIES. South of England—Sussex, Kent, Stowe Wood Marsh, Oxfordshire; and Barnwell Wold, Northamptonshire; Scotland; and Galway, Ireland.

Zygæna loniceræ, *Esp.* THE NARROW-BORDERED FIVE-SPOTTED BURNET.

LARVA. Short and stout, narrowing towards both extremities, and when in repose much raised on the back; of a pale greenish yellow, with long pale hairs, the skinfolds of the segmental divisions on the upper part of the body being bright yellow; along each side of the back is a row of black spots or marks, two on each side of each segment, pointing towards each other, upwards; beneath these, on each side, is a second row of smaller divided black spots, and a third row of still smaller marks is placed above the legs; ventral

area dusky greenish, with a dusky stripe; spiracles black, head black, small, and shining. *Plate X., fig. 5.*

FOOD-PLANTS. Clover, Bird's-foot Trefoil, Yellow Vetchling.

PUPA. Suspended.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to May.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Hill-sides; South of England, Herefordshire, Tarrington, Beds; Huntingdonshire.

Zygæna filipendulæ, Linn. THE SIX-SPOTTED BURNET.

LARVA. Short and stout, narrowing towards both extremities, and when in repose much raised on the back; of a pale yellowish-green colour, with pale hairs, the skinfolds at the segmental divisions being yellow on the upper part of the body; along each side of the back is a row of black spots or marks, two on each side of each segment, pointing towards each other upwards; beneath these, on each side, is a second row of smaller divided black spots, and a third row of still smaller marks is placed above the legs; in this last row the marks assume a crescentic form. Spiracles black, encircled with greenish yellow, and surrounded again with black; the ventral area dusky greenish, with a central ventral dusky line; head black, very small; claspers yellowish green. *Plate X., fig. 6.*

Eggs laid June 25th, hatched July 11th.

FOOD-PLANTS. Bird's-foot Trefoil, Trefoil, Yellow Vetchling.

PUPA. Attached to the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to May.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Common in England, Wales, and Ireland; local in Scotland.

SYNTOMIDÆ.

SYNTOMIS, *II.*

Syntomis Phegea, Linn.

LARVA. Dull brown, with a brushlike tuft of brownish smoke-coloured hairs on the back of each segment, proceeding from several brown warts; there are also some warts along each side, from which proceed short tufts of hair; the head is bright red, small and shining; legs and claspers pink. *Plate X., fig. 7.*

FOOD-PLANTS. Sorrel, Plantain Narrow, Dandelion, Devilsbit Scabious.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITY. Said to have occurred in Kent.



Vincent Brooks, Day & Son Lith

NACLIA, *Bdv.**Naclia ancilla*, *Linn.* THE HANDMAID.

LARVA. "The head is quite as wide as the second segment; the body is slightly depressed and warty, each wart emitting a fascicle of radiating black hairs; the colour of the head is black, of the body black, with five yellow stripes, the broadest being medio-dorsal and bright yellow, very conspicuous, the others lateral, narrow, and very pale; its appearance altogether is that of a *Lithosia* caterpillar."—*Newn. Brit. Moths*, p. 473.

FOOD-PLANT. "Epidendric Lichens."—*Newman*.

PUPA. In a silken cocoon.

Time of appearance. *Imago.* June.

LOCALITY. Sussex. Very rare.

NOLIDÆ.

NOLA, *Leach.**Nola cucullatella*, *Linn.* THE SHORT-CLOAKED MOTH.

LARVA. The body somewhat depressed and hairy; ground colour pale grey or lavender, the hairs proceeding from shining reddish tubercles; dorsal line pale grey, bordered with a darker shade, passing through, and dividing a series of dark-grey dorsal patches or squares; the hairs on the sides are grey. *Plate X., fig. 8.*

FOOD-PLANTS. Blackthorn, Plum, Pear, Apple, Whitethorn, Mountain Ash.

PUPA. In a slight web.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May and June.} \\ \textit{Pupa.} \quad \text{May and June.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Generally distributed.

Nola cristulalis, *Hüb.* THE LEAST BLACK ARCHES.

LARVA. "Dull whitish yellow, with three black lines on the back, and one on each side; sides more reddish, hairs yellowish brown (*Hüb.*)"—*Stain. Man.*, vol. ii., p. 157.

FOOD-PLANT. Oak.

PUPA. In a slight web.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to May.} \\ \textit{Pupa.} \quad \text{May.} \\ \textit{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Generally distributed throughout England and Wales, and taken in Wicklow, Dublin, and Howth, in Ireland, and in Scotland.

Nola strigula, W.V. THE SMALL BLACK ARCHES.

LARVA. Pale pinkish buff, with a number of tubercles, from which proceed numerous hairs, those on the anterior and posterior parts of the body being longer than the others; dorsal line broad, yellowish, edged with a darker colour, subdorsal lines interrupted and brownish; there is a dark patch on the 8th segment, ventral area pale pinkish.

FOOD-PLANT. Oak.

PUPA. In a cocoon on the bark of the tree.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Generally distributed, though not common, in England; Killarney in Ireland.

Nola centonalis, Hüb. THE SCARCE BLACK ARCHES.

LARVA. I know nothing of this caterpillar.

Time of appearance. *Imago*, July and August.

LOCALITY. Freshwater, Isle of Wight.

Nola Albula, Hüb. THE KENT BLACK ARCHES.

LARVA. About half an inch in length; ground colour pale yellowish green, or bright orange yellow, with a number of tubercles, six on each segment, each of which bears a fascicle of very long pale hairs; down the back there are two rows of black marks, sometimes forming interrupted lines, and on the 7th and 11th segments these lines are joined by transverse black bands; head pale brown or black. *Plate X., figs. 9, 9a.*

FOOD-PLANTS. Dewberry, Common Bramble *in confinement.*

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to July.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITY. North Kent.

LITHOSIIDÆ.

NUDARIA, *Hav.**Nudaria senex*, Hüb. THE ROUND-WINGED MUSLIN.

LARVA. About five lines long, and pinkish grey in colour, with a number of tubercles, six on each segment, from which proceed dense tufts of short hairs; the head is black; the legs pale grey, tipped with black; claspers pale grey and translucent.

FOOD-PLANTS. Lichens, *Hypnum sericeum*, *Weissia cirrata*, *Lichen caninis*, and in confinement decayed leaves of Sallow and Bramble.

PUPA. In a silken cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to June.} \\ \textit{Pupa.} \quad \text{June.} \\ \textit{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Generally but sparingly distributed in England, rare in Scotland.

Nudaria mundana, Linn. THE MUSLIN.

LARVA. About four lines long, and of a sage-grey colour, with a number of tubercles, six on each segment, from which proceed tufts of long hairs; dorsal and subdorsal lines darker grey; down each side the back is a broad sulphur yellow stripe, and on the 8th segment a black velvety mark or saddle; ventral area without markings; head pale, with two dark-brown blotches. *Plate X., fig. 10.*

FOOD-PLANTS. Lichens on walls.

PUPA. In a silken cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{September to June.} \\ \textit{Pupa.} \quad \text{June.} \\ \textit{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Common everywhere.

SETINA, Steph.

Setina irrorella, Linn. THE DEW MOTH.

LARVA. About three-quarters of an inch long; the ground colour of the body is nearly black, the sides dark grey, with numerous black tubercles, from which proceed rather long black hairs; down the centre of the back is a series of bright yellow marks or ornamentations; there is a subdorsal series of smaller marks of a duller yellow colour, and a third series in the region of the spiracles; the head black and shining; the legs dark brown; the claspers pale brown. *Plate X., fig. 11.*

FOOD-PLANTS. Lichens on stones on the sea shore; also, in confinement, on Tree Lichens, if sprinkled every morning with salt and water, and placed in the sun.

PUPA. In a cocoon amongst stones.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August to May.} \\ \textit{Pupa.} \quad \text{June.} \\ \textit{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Common in the south of England and on the Irish coast, not common in Scotland.

CALLIGENIA, *Dup.**Calligenia miniata*, *Forst.* THE ROSY FOOTMAN.

LARVA. About half an inch long; dark drab in colour, and waxy in appearance, with numerous fascicles of dark-grey hairs.

FOOD-PLANTS. Lichens on Oaks, *Lichen caninis*; withered Oak and Sallow in confinement.

PUPA. Spun up on trees.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August to May.} \\ \textit{Pupa.} \text{ May and June.} \\ \textit{Imago.} \text{ June and July.} \end{array} \right.$

LOCALITIES. Not uncommon in England and Wales, Galway in Ireland.

LITHOSIA, *Fab.**Lithosia mesomella*, *Linn.* THE FOUR-DOTTED FOOTMAN.

LARVA. Nearly black, with a black patch on the 2nd segment, and very hairy; the hairs also black; head black and shining; the legs grey and transparent; the claspers black and shining.

FOOD-PLANTS. Lichens on Oaks.

PUPA. In a cocoon under moss, etc.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August to May.} \\ \textit{Pupa.} \text{ June.} \\ \textit{Imago.} \text{ June and July.} \end{array} \right.$

LOCALITIES. Generally distributed, but not common, in England, Wales, and Scotland; no locality known in Ireland.

Lithosia muscerda, *Hüb.* THE DOTTED FOOTMAN.

LARVA. Dorsal area nearly black, but mottled with reddish grey; ventral area reddish grey; the body has a number of tubercles, from which proceed numerous tufts of dark-brown hairs. On the 2nd segment are two red spots, and one on the 13th; there is a reddish interrupted stripe along each side; head black and shining; legs and claspers nearly black and shining.

FOOD-PLANTS. Probably Lichens on Sallows.

PUPA. In a cocoon amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August to May.} \\ \textit{Pupa.} \text{ June.} \\ \textit{Imago.} \text{ July and August.} \end{array} \right.$

LOCALITY. Norfolk.

Lithosia aureola, *Hüb.* THE ORANGE FOOTMAN.

LARVA. Ten lines long and nearly black, irrorated and mottled with pale golden-yellow markings; down the centre of the back these marks form two stripes nearly approaching each other on the anterior part of each segment, and forming almost V shaped marks; on each segment there are six red tubercles, each emitting tufts of long brown hairs; spiracles yellow, encircled with black; head black and shining. *Plate X., fig. 12.*

FOOD-PLANTS. Lichens on Larches, Oaks.

PUPA. On the tree under the lichen.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Widely distributed in England, Killarney in Ireland.

Lithosia pygmæola, *Dbl.* THE PIGMY FOOTMAN.

LARVA. Brown, with a number of black tubercles, from which protrude short brown hairs; dorsal area darker brown; dorsal line black; subdorsal lines darker brown than the dorsal area; spiracular line dingy white; head black.

FOOD-PLANT. Lichens.

PUPA. In a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITY. Near Deal.

Lithosia caniola, *Hüb.* THE HOARY FOOTMAN.

LARVA. Striped, with a number of rough warts, each emitting a fascicle of hairs; the dorsal stripe is very narrow and black, bordered by a narrow grey line; there is then a smoky black stripe, then an irregular pale orange one, and next to this a black stripe marked with grey. Spiracles pale orange, with a dingy orange stripe below them; ventral area, smoky flesh colour.

FOOD-PLANT. Lichens on stones.

PUPA. Under bark.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to July.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. Torquay, Bolthead, Dartmouth, Devonshire; Howth, and near Waterford, Ireland.

Lithosia molybdeola, *Gn.* THE NORTHERN LACKEY.

LARVA. "Head slightly smaller than the 2nd segment, and when the larva is at rest, drawn within it; intensely black, highly polished, notched and rounded on the crown; body of the larva dark umber brown, slightly

attenuated towards each extremity, considerably so anteriorly when in motion. Medio-dorsal line velvety black, narrow; subdorsal line also velvety black; seated on this line, on the 5th and each succeeding segment, is an oblong spot of a dull orange colour, becoming almost white anteriorly, this whiteness appearing most conspicuously on the fourth, fifth, sixth, and seventh spots; detached from these spots, and situated on the segment immediately preceding, there is another much smaller white spot which occurs also on the 3rd segment, although there is no orange spot on the succeeding segment; these small white spots are only visible when the larva is in motion, being situated deeply in the incisions of the segments. On each segment, and immediately behind each orange spot, where those spots are present, is a wart, from which springs an abundant tuft of short brown hairs; a similar wart is also situated below each spot, and a third below the second; this third wart is placed immediately below the spiracular line, which partakes very much of the dull orange colour of the dorsal spots, and is edged on either side by a narrow line of velvety black; from all the warts there spring similar tufts of short brown hairs. The ventral space is greyish; claspers light brown, furnished with short hairs at their juncture with the body."—*P. H. Jennings, Ento.*, vol. x., p. 46.

FOOD-PLANTS. Lichens.

PUPA. In a cocoon between leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Bury, Lancashire.

Lithosia helveola, *Och.* THE BUFF FOOTMAN.

LARVA. Black, tinged with green, with a pale yellowish-green ornamentation down the back, through which passes an irregular line; on the dorsal surface there are also some short longitudinal markings and green warts; along each side is a double row of similar warts, two on each segment, and from the lower row protrude a few hairs; head black and shining; legs and claspers yellowish green, the latter tipped with brown. *Plate X., fig. 13.*

FOOD-PLANTS. Lichens on Oaks.

PUPA. In a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to June.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. New Forest.

Lithosia complanula, *Bdv.* THE COMMON FOOTMAN.

LARVA. Black, with a number of dark-grey tubercles, from which proceed tufts of hair,—the hairs are black and yellowish mixed, and paler on the

sides; along each side, in the region of the spiracles, is an interrupted rust-coloured line composed of short lateral streaks, commencing on the 5th segment and extending to the 12th; ventral area paler than the dorsal; head black and shining; legs and claspers pale yellowish. *Plate X., fig. 14.*

FOOD-PLANTS. Lichens on Blackthorn, Larch, Oak, Poplar, Ash, Elm, Walls.

PUPA. Spun up on the tree.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Generally distributed in England, Wales, and Ireland; local in Scotland.

Lithosia complana, Linn. THE SCARCE FOOTMAN.

LARVA. Ground colour dark blackish grey, the head smaller than the 2nd segment; each segment has several brown tubercles, from which proceed a few short brown hairs; dorsal stripe black; there is a subdorsal row of spots of an oval shape, the anterior ones, to the 4th segment, being white, the remainder, to the 13th segment, orange red; the spiracular line is rust coloured and rather broad; colour of the head nearly black and shining. *Plate X., fig. 15.*

FOOD-PLANTS. Lichens on Blackthorn and Fir.

PUPA. Under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Principally in the New Forest.

Lithosia griseola, Hüb. THE DINGY FOOTMAN.

LARVA. About ten lines long, and nearly black, the segmental divisions deeply cut; each segment has a number of black velvety tubercles, and each of these bears a tuft of short hairs; along each side of the back is an interrupted orange-coloured subdorsal line; these lines approximate and then widen on the 2nd and 3rd segments, and on the 12th take the form of two orange spots; the ventral area is rather paler than the dorsal; legs and claspers the same; head small, black, and shining. *Plate X., fig. 16.*

FOOD-PLANTS. Lichens on Poplar; Plantain, and withered Sallow in confinement.

PUPA. Under moss on the tree.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Not uncommon in England and Wales; rare in Scotland.

Lithosia quadra, *Linn.* THE FOUR-SPOTTED FOOTMAN.

LARVA. About one inch and five lines long; the whole of the dorsal area, with the exception of the second segment, is occupied by a broad creamy-yellow ornamentation, streaked and interrupted with dark-grey lines, with a blackish mark on the fourth, eighth, and twelfth segments, and a row of bright red tubercles along each side of it; on the fourth segment there are two black tubercles and two red ones; on the eighth, two black tubercles, with a blackish mark behind them, and two red ones; on the twelfth, four black tubercles, and immediately behind them, on the thirteenth segment, two, also black; the sides are dark grey, with a few interrupted yellow lateral lines and a row of yellowish-grey warts, from which proceed rather long hairs; head black and shining, legs black, claspers grey. *Plate X., figs. 17, 17a.*

FOOD-PLANTS. Lichens on Apple, Beech, Oak, *Parmetia caperata*, etc.

PUPA. In a cocoon.

Time of appearance { *Larva.* August to July.
 { *Pupa.* June and July.
 { *Imago.* July and August.

LOCALITIES. Widely distributed, but rare. New Forest; Middlesex; very rare in Scotland.

Lithosia rubricollis, *Linn.* THE RED-NECKED FOOTMAN.

LARVA. Dark olive-green, approaching to brown, variously mottled with lighter and darker shades of the same colour; on each segment are several pale-brown tubercles, from which proceed a few light-brown hairs; the head is brown, with two whitish curved lines meeting above the face. *Plate X., fig. 18.*

FOOD-PLANTS. Lichens on Apple, Pear, Oak, Larch, Elm, Stones.

PUPA. Amongst the lichens.

Time of appearance { *Larva.* August to February.
 { *Pupa.* March and April.
 { *Imago.* May to July.

LOCALITIES. Generally distributed in England and Ireland; not very common in Scotland.

EULEPIA, *Curt.***Eulepia grammica**, *Linn.* THE FEATHERED FOOTMAN.

LARVA. Black, with a number of yellowish tubercles, from which proceed tufts of short brown hairs; dorsal line orange-yellow; spiracular line rather broad and dull white; head black and shining. *Plate XI., fig. 1.*

FOOD-PLANTS. Grasses, Fescue Grass, Heather, Mugwort.

Time of appearance { *Larva.* May and June.
 { *Imago.* June and July.

LOCALITIES. Windsor (?), and Anglesea (?).

Eulepia cribrum, *Linn.* THE SPECKLED FOOTMAN.

LARVA. The following description is that of a preserved specimen.

About an inch and a quarter long, and tapering towards the head; ground colour pale ochreous, freckled sparingly with brown; dorsal and subdorsal lines paler; each segment has a transverse series of black tubercles, from which spring tufts of black and white hairs; spiracles black; head small, dark brown, and shining. *Plate XI., fig. 2.*

The larva is otherwise described in the works of Newman and Stainton.

FOOD-PLANTS. Dog Violet, Heather, Bilberry, Heath.

Time of appearance { *Larva.* August to May.
 { *Imago.* June to August.

LOCALITIES. Dorsetshire, Hampshire, Surrey.

EUCHELIIDÆ.

DEIOPEIA, *Curt.***Deiopeia pulchella**, *Linn.* THE CRIMSON SPECKLED.

LARVA. About an inch and a half long, and tapering considerably towards the head, which is ochreous marked with brown, and with a white Λ shaped mark on the face. The segmental divisions are clearly defined; the body is cream colour, with a purplish smoke-coloured pattern or stripe down each side the back; these stripes are connected together on each segment by a transverse band of the same colour, with scalloped edges, having an orange-red transverse line placed upon it; there are a number of warts on the body, from which proceed a few hairs; spiracles black, the sides above the feet are smoke colour marked with cream colour, ventral area pale, legs black. *Plate XI., fig. 3.*

I am not aware that the caterpillar has ever been taken in this country.

FOOD-PLANT. Field Scorpion-grass.

Time of appearance { *Larva.* July.
 { *Imago.* May to October.

LOCALITIES. Brighton, Little Hampton, and on the south coast from Kent to Cornwall, also at Reading; Suffolk, Monmouthshire, Glamorganshire, and said to have been taken at Scarborough, Yorkshire.

EUCHELIA, *Bdv.***Euchelia jacobææ**, *Linn.* THE CINNABAR.

LARVA. Long and rather attenuated, becoming smaller towards the head, which is of less size than the second segment. Ground colour brilliant orange yellow, with a few black hairs and a broad black band encircling each

segment; those bands on the 2nd and 13th segments are narrower than on the others. Head and legs black, claspers orange colour tipped with black.

Plate XI., fig. 4.

FOOD-PLANTS. Ragwort, Groundsel.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August to June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Common in England, Wales, and Ireland; local in Scotland.

CALLIMORPHA, *Lat.*

Callimorpha Hera, *Linn.* THE JERSEY TIGER.

LARVA. Dorsal area purple, with a bloom like a plum; ventral area ochreous brown; there is a broad ochreous dorsal line edged with dark purple, which shades off into the ground colour; in the region of the spiracles on each segment are two almost white spots, meeting each other at the segmental divisions; these spots are surrounded on their outer edge with dark brown, shading off into the ground colour; each segment has a number of shining ochreous warts, from which proceed hairs of a pale brown colour; the spiracles are brown, legs brown, claspers ochreous; head black and shining. *Plate XI., figs. 5 and 5a.*

FOOD-PLANTS. Dandelion, Forget-me-not, Groundsel, Ground Ivy, Field Scorpion-grass, Lettuce, Hound's-tongue, Honeysuckle, Borage, White Deadnettle, Nettle, Whitethorn, Plantain.

PUPA. On or below the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. April and May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Guernsey, Jersey, Exeter, Brighton, Wales.

Callimorpha dominula, *Linn.* THE SCARLET TIGER.

LARVA. Black, with a series of bright yellow dorsal ornamentations, forming an interrupted dorsal line; between each of these marks on each segment are a few whitish markings, two on some, three on others; in the region of the spiracles is another interrupted line of yellow and white markings of a somewhat similar appearance; upon each segment are a number of black shining tubercles, from which proceed tufts of very short black hairs; ventral area pale bluish grey, with a darker central ventral line; head black and shining, legs black and shining, claspers pale. *Plate XI., fig. 6.*

FOOD-PLANTS. Ash, Borage, Field Scorpion-grass, Forget-me-not,



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Hound's-tongue, Plum, Comfrey, Groundsel, Sallow, White Deadnettle, Honeysuckle, Meadowsweet, Plantain, Stinging Nettle, Strawberry, Purple Deadnettle, Willow.

PUPA. In a cocoon on the surface of the earth, or amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. April to June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England. Said to have been taken in Ireland.

CHELONIIDÆ, Gn.

EUTHEMONIA, Steph.

Euthemonia russula, Linn. THE CLOUDED BUFF.

LARVA. Colour of the body brown, with a number of black tubercles, from which proceed tufts of rather long brown hairs; dorsal line orange-coloured or ochreous, spiracles ochreous, head dark brown and shining, legs black, claspers brown. *Plate XI., fig. 7.*

FOOD-PLANTS. Dandelion, Heath, Hawkweed, Hound's-tongue, Mouse-ear, Hawkweed, Plantain, Scabious, Chickweed, Lettuce.

PUPA. In a cocoon amongst its food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Common everywhere.

CHELONIA, Lat.

Chelonia plantaginis, Linn. THE WOOD TIGER.

LARVA. Black, with numerous black shining tubercles, from which proceed tufts of hair; on the 2nd, 3rd, and 4th segments these hairs are black; on the 5th, 6th, and 7th they are bright red brown; on the 8th and 9th there are two of these tufts of red hairs; on the posterior segments the hairs are much longer, and of a dark-brown colour; there is a line of red hairs along each side, just above the legs and claspers; head very black and shining, legs black, claspers pale flesh colour. *Plate XI., fig. 8.*

FOOD-PLANTS. Groundsel, Forget-me-not, Field Scorpion-grass, Laburnum, Lilac, Plantain, Violet, Heather.

PUPA. In a web amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Generally distributed.

Chelonia caja, *Linn.* THE TIGER.

LARVA. Velvety black, each segment having a number of black shining tubercles, from which proceed very long hairs, those on the dorsal area are mixed grey and black, those on the 2nd and 3rd segments amber brown; along each side the hairs are of a lighter brown; the spiracles are golden; head, legs, and claspers shining black. *Plate XI, figs. 8 and 9a.*

The eggs are generally laid and hatched in July.

FOOD-PLANTS. Numerous: amongst others—Apple, Broom, Bramble, Burdock, Buttercup, Cherry, Elder, Deadnettle (Black, Red, and White), Chickweed, Stinging Nettle, Dock, Dog's Mercury, Foxglove, Forget-me-not, Hazel, Elm, Endive, Grass, Groundsel, Ground Ivy, Hemp Nettle, Honeysuckle, Hollyhock, Laburnum, Lilac, Lettuce, Lilly of the Valley, Monk's-hood, Black Horehound, Oak, Orache, Plantain, Plum, Pear, Sycamore, Field Scorpion-grass, Sallow, Strawberry, Shepherd's Purse, Violet, Wallflower, Whitethorn, Willow, Henbane, Valerian, etc., etc.

PUPA. In a cocoon amongst the food-plant.

Time of appearance	{	<i>Larva.</i>	July to May.
		<i>Pupa.</i>	June.
		<i>Imago.</i>	June and July.

LOCALITIES. Common everywhere.

Chelonia villica. THE CREAMSPOT TIGER.

LARVA. Black, with dark-brown shining tubercles, from each of which proceeds a tuft of long nearly black hairs; the head is dark red, legs and claspers the same. *Plate XI, fig. 10.*

FOOD-PLANTS. Black Horehound, Cabbage, Chickweed, Currant, Bramble (once), Yarrow, Endive, Field Scorpion-grass, Narrow-leaved Plantain, Dandelion, Dock, Forget-me-not, Grass, Groundsel, Honeysuckle, Lettuce, Privet, Rose, Strawberry, Wallflower, Furze, and Blackthorn.

PUPA. In a web amongst the food-plant.

Time of appearance	{	<i>Larva.</i>	September to May.
		<i>Pupa.</i>	May and June.
		<i>Imago.</i>	June and July.

LOCALITIES. Not common in England, generally distributed.

ARCTIA, *Bdv.***Arctia fuliginosa**, *Linn.* THE RUBY TIGER.

LARVA. Dark grey, with numerous tubercles, from which proceed tufts of brown, red-brown, red, or yellowish hairs; the head is black, small, and

shining; the legs black and shining; claspers brown, tipped with pink. *Plate XII., figs. 1, 1a, 1b, 1c.*

When young, the caterpillar is of a yellowish-grey colour, with a distinct ochreous dorsal line.

FOOD-PLANTS. Common Bugle, Forget-me-not, Foxglove, Groundsel, Heather, Houndstongue, Dock, Grass, Nettle, Plantain, Ragwort, Dandelion, Lettuce, Lilac, Plum, Poplar, Red Campion, Rose, Tufted Vetch, Strawberry, Snowberry, Spotted Persicaria, Field Scorpion-grass, Self-heal.

PUPA. In a Web.

Time of appearance { *Larva.* June to August, September to May.
 { *Pupa.* August and September, May and June.
 { *Imago.* August and September, June.

LOCALITIES. Great Britain and Ireland, common.

Arctia mendica, Linn. THE MUSLIN MOTH.

LARVA. Grey, with a number of shining tubercles, each of which bears a fascicle of rather long reddish hairs; the head and legs are also reddish *Plate XII., fig. 2.*

When young, the larva is greenish or sage-grey, and the fascicles of hair are short and paler in colour. *Plate XII., fig. 2a.*

FOOD-PLANTS. Chickweed, Dock, Lettuce, Nettle, Oak, Persicaria, Foxglove, Plantain, Forget-me-not, Field Scorpion-grass, Honeysuckle.

PUPA. In a cocoon.

Time of appearance { *Larva.* July to September.
 { *Pupa.* August to June.
 { *Imago.* April to June.

LOCALITIES. England, Wales, and Scotland, common.

Arctia lubricipeda, Linn. THE BUFF ERMINE.

LARVA. Of a greenish-grey colour, with numerous yellow tubercles, from which proceed tufts of hairs; dorsal line white and narrow, with a broad dark-grey area on each side of it, which reaches to the spiracular line; the spiracular line is white, and has a series of oblique pale lines attached to it; spiracles white, head and legs yellow, claspers the same colour as the ventral area, *Plate XII., fig. 3.*

FOOD-PLANTS. Apple, Bindweed Great, Bramble, Dock, Cabbage, Chickweed, Cat Mint, Honeysuckle, Hop, Nettle, Plantain, Elder, Horseradish, Knotgrass, Rose, Raspberry, Lettuce, Lilac, Marigold, Mignonette, Mint, Pea, Persicaria, Snowberry, Strawberry, Traveller's-joy, Vetch, Violet, Valerian, Willowherb.

PUPA. In a cocoon amongst leaves on or near the ground.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to October.} \\ \text{Pupa. October to June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, common; somewhat local in Scotland.

Arctia menthastri, W.V. THE WHITE ERMINE.

LARVA. Brown, with very long brown hairs, proceeding from numerous brown shining tubercles; dorsal line rather broad and ochreous yellow; spiracles white and shining; head black and shining, lighter over the mouth; legs brown, claspers rather paler than the body. *Plate XII., fig. 4.*

The larvæ emerged on the 1st of July (from eggs laid in June), and pupated in August.

FOOD-PLANTS. Honeysuckle, Chickweed, Knotgrass, Spotted Persicaria, Lily of the Valley, Dock, Plantain small and great, Lilac, Currant, Oak, Lettuce, Mint, Cat Mint, Nettle, Buttercup, Eyebright, Self-heal, Strawberry, Violet.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. August to April.} \\ \text{Imago. April to July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

Arctia urticæ, Esp. THE WATER ERMINE.

LARVA. "Dark brown, with long hairs; spiracles yellow (*Hub.*)."—*Stain. Man.*, v. i., p. 147.

FOOD-PLANTS. Dock, Mint, Sallow, Violet.

PUPA. In a web amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August.} \\ \text{Pupa. August to May.} \\ \text{Imago. June, July.} \end{array} \right.$

LOCALITIES. England and Scotland, rare.

LIPARIDÆ.

LIPARIS, Och.

Liparis chrysorrhœa, Linn. THE BROWN-TAIL MOTH.

LARVA. Ground colour dark grey, with numerous tubercles and long golden-brown hairs; on each side, from the 5th to the 12th segment, is a row of white brush-like fascicles of hair; there are two narrow yellowish lines along the back, more perceptible on the segments from the 7th to the 11th; the 10th and 11th segments have each a scarlet concave mark on the middle of the back; head brown. *Plate XII., figs. 5, 5a, 5b.*

FOOD-PLANTS. Blackthorn, Bramble, Whitethorn, Plum, Elm, Hornbeam, Oak.

PUPA. In a web amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. England and Ireland, rare in Scotland.

Liparis auriflua, *Fab.* THE YELLOW-TAIL MOTH.

LARVA. Black, with two rows of tubercles and with two scarlet stripes along the back, interrupted on the 5th segment by a large black velvety hump, ornamented with white, and almost surrounded with scarlet; on the 6th segment is a smaller black velvety hump, with a white centre; from this segment to the 10th the two scarlet lines are continued without interruption; on the 10th and 11th there rises a scarlet cup-shaped projection; the 12th segment bears a hump similar to that on the 6th, and on the 13th the scarlet lines are continued; along each side, on each segment, is a bright white mark, and below these marks is a red line; the caterpillar has long black hairs proceeding from the tubercles; on the 2nd segment they proceed from red tubercles, and point forward, on the 12th they are directed backwards; head, legs, and claspers black. *Plate XII., fig. 6.*

FOOD-PLANTS. Apple, Beech, Buckthorn, Blackthorn, Bramble, Elm, Hornbeam, Oak, Rose, Whitethorn, Holly, Hazel, Lime, Pear, Plum, Poplar, Willow.

PUPA. In a web amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, common; rare in Scotland.

Liparis salicis, *Linn.* THE SATIN MOTH.

LARVA. Pale grey, irrorated with a darker colour; dorsal area black, with a row of large cream-coloured blotches or marks down its centre; this area is bordered by an interrupted cream-coloured subdorsal line; the 2nd segment has four red warts, the 3rd and 4th segments six, and the remainder four; from each of these proceeds a small tuft of pale brown and yellow hairs mixed; head black, legs black, claspers pinkish. *Plate XII., fig. 7.*

FOOD-PLANTS. Poplar, Aspen, Willow, Sallow, Osier, Oak.

PUPA. On the ground or on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. England and Ireland, common; rare in Scotland.

Liparis dispar, Linn. THE GIPSY.

LARVA. Light grey, speckled with dark grey; dorsal area so much more numerous irrorated as to appear almost black, with a pale yellow dorsal line; on each segment, from the 2nd to the 12th, are two tubercles, those on the 2nd, 3rd, 4th, 5th, and 6th are deep blue, the remainder blood red; from each of these proceeds a tuft of hairs; those on the back are short and dark brown, those on the sides lighter; there are also several yellow marks along each side; head yellow, marked with black; there are two red cup-like marks on the 10th and 11th segments, and a row of brown tubercles along each side. *Plate XII., fig. 8.*

When young, the caterpillar has two bright yellow marks on the back of the 4th and 5th segments, and an orange mark on the 9th, in addition to the other markings; the head in some specimens is much yellower than in others, and the yellow markings are more numerous. *Plate XII., fig. 8a.* The eggs commenced hatching on the 18th April, and continued to hatch through that month and the next.

FOOD-PLANTS. Apple, Blackthorn, Oak, Lime, Plum, Whitethorn, Barberry, Beech, Birch, Poplar, Hornbeam, Horse-chestnut, Lime, Lilac, Medlar, Pear, Peach, Rose, Sallow, Sea Buckthorn, Snowberry, Spanish Chestnut, Guelder Rose, Willow, Sweetgale.

PUPA. In a web amongst leaves.

Time of appearance	{	<i>Larva.</i>	April to July.
		<i>Pupa.</i>	June to August.
		<i>Imago.</i>	June to August.

Liparis monacha, Linn. THE BLACK ARCHES.

LARVA. Yellowish creamy white, variously marked and marbled with black, with numerous tubercles, four on each segment, from which proceed tufts of hair; the two outer tubercles on the 2nd segment have long horn-like tufts of hair, and the 3rd segment has a transverse black velvety mark in which are two black shining tubercles; the 4th, 8th, and 9th segments are less darkly marked than the others, and the 9th and 10th have each a red concave mark on the back; the head is large, and speckled down the face; claspers very long. *Plate XII., fig. 9.*

The eggs were hatched on the 7th of April.

FOOD-PLANTS. Apple, Beech, Birch, Evergreen Oak, Fir, Horse-chestnut, Hornbeam, Lime, Oak, Rose, Spanish Chesnut, Yew.

PUPA. In a cocoon on the bark of the tree.

Time of appearance	{	<i>Larva.</i>	April to July.
		<i>Pupa.</i>	July.
		<i>Imago.</i>	July and August.

LOCALITIES. England, not common.

ORGYIA, *Och.**Orgyia pudibunda*, *Linn.* THE LIGHT TUSSOCK.

LARVA. *Variable.* *Var.* 1. Ground colour pale green, with yellow hairs and four conspicuous tufts or tussocks of yellow hairs on the back of the 5th, 6th, 7th, and 8th segments; between the 5th and 6th, 6th and 7th, and 7th and 8th segments is a black velvety band, and there are some small black marks on other parts of the body; on the 12th segment is a tail formed of rather long crimson hairs; the head is the same colour as the body. *Plate XIII., figs. 1 and 1c.*

Var. 2. The yellow hairs are entirely absent, being uniformly green.

Var. 3. Hairs almost white, tussocks pink. *Plate XIII., fig. 1a.*

Var. 4. Tussocks and tail black. *Plate XIII., fig. 1b.*

FOOD-PLANTS. Alder, Birch, Bramble, Beech, Elm, Hornbeam, Horse-chestnut, Hazel, Hop, Lime, Oak, Sallow, Spanish Chestnut, Walnut, Willow.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to October.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, common.

Orgyia fascelina, *Linn.* THE DARK TUSSOCK.

LARVA. Dark grey, with numerous long hairs; on each of those segments from the 5th to the 8th is a thick brush-like tuft of black hairs, with pale grey hairs on each side of it; round the head the hairs are dark grey and are directed outwards and forwards; on the 12th segment is a tail of long black hairs, and upon the 10th and 11th a reddish-brown tubercle. Head, legs, and claspers black, the latter long. *Plate XIII., fig. 2.*

Sometimes the hairs on each side of the tussocks are white. *Plate XIII., fig. 2a.*

When young, the ground colour is dark grey, with numerous tubercles, from which proceed tufts of short dingy yellowish hairs, with a few black hairs scattered amongst them; on the 2nd segment the hairs are more numerous and longer, and there is a tuft of short black hairs on the 12th. *Plate XIII., fig. 2b.*

FOOD-PLANTS. Bird's-foot Trefoil, Black Medick, Blackthorn, Broom, Dock, Elm, Furze (flowers of), Heath, Heather, Hazel, Oak, Plum, Sallow, Willow.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. North of England and Scotland.

Orgyia cænosa, Hub. THE REED TUSSOCK.

LARVA. Nearly black, with numerous tubercles, from which proceed a number of yellowish hairs; those segments from the 5th to the 8th have each a thick brush-like tuft of yellowish hairs. On the 2nd segment there are two long tufts of brownish hairs pointing forwards, and on the 12th a tail of long hairs.

FOOD-PLANTS. Reed, Sedge.

PUPA. In a cocoon on the leaves or stems of the food-plant.

Time of appearance { *Larva.* July to September.
 { *Pupa.* October to May.
 { *Imago.* June to August.

LOCALITY. Cambridgeshire.

Orgyia gonostigma, Linn. THE SCARCE VAPOURER.

LARVA. Grey, with numerous hairs. On each side of the back is an orange-red longitudinal line, and on each side of the body a spiracular line of the same colour. The 5th, 6th, 7th, and 8th segments have each a dorsal tussock of pale brownish hairs, the remaining segments each a pair of tufts of white hairs; the 10th and 11th segments have each a white wart. On each side the head is a long horn-like tuft of black hairs pointing forwards, and on the 12th segment is a similar tuft of long black hairs directed backwards. *Plate XIII., figs. 3, 3a.*

FOOD-PLANTS. Alder, Aspen, Blackthorn, Oak, Poplar, Sallow, White-thorn, Willow.

PUPA. In a web amongst the food-plant.

Time of appearance { *Larva.* August to May.
 { *Pupa.* May and June.
 { *Imago.* June and July.

LOCALITY. England, not common.

Orgyia antiqua, Linn. THE COMMON VAPOURER.

LARVA. Grey, with long hairs. From four red warts on the 2nd segment proceed tufts of hair, the outer ones long, black, and feathery, and pointing over the head, the others pale yellow; the 5th, 6th, 7th, and 8th segments have each a tussock of yellowish hairs rising from black velvety marks; the 9th, 10th, and 11th segments have each several red warts, placed on a black velvety ornamentation which terminates on the 12th segment in a long tail of black feather-like hairs; on each side of the 5th segment is a tuft of long black hairs, and along each side of the body is a row of red coral-like warts, from which proceed long light hairs. *Plate XIII., fig. 4.*

Eggs in my possession commenced hatching on the 26th of May.

6. 1. 2. 2^d abdominal



FOOD-PLANTS. Alder, Apple, Beech, Bilberry, Birch, Bramble, Blackthorn, Hazel, Hornbeam, Lime, Oak, Pear, Plum, Poplar, Rose, Sallow, Strawberry, Whitethorn, Willow.

PUPA. In a web amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to September.} \\ \text{Pupa.} \quad \text{June to September.} \\ \text{Imago.} \quad \text{July to October.} \end{array} \right.$

NOTE.—Probably more than one brood in the year.

LOCALITIES. England, Scotland, and Ireland, common; taken in Wales.

DEMAS, *Steph.*

Demas coryli, *Linn.* THE NUT TREE TUSSOCK.

LARVA. Dark pinkish grey, with pale grey hairs and yellowish-white markings, some of which form themselves into an interrupted spiracular line; there is a tuft of brown hairs on the 5th and 6th segments, and a tuft of black hairs on the 12th; on each side of the head is a tuft of long black hairs directed forwards; head black and shining. *Plate XIII., fig. 5.*

FOOD-PLANTS. Alder, Beech, Birch, Blackthorn, Elm, Hornbeam, Hazel, Oak, Willow, Lime.

PUPA. In a web at the roots of trees.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva.} & \text{May to July.} & \text{August to September.} \\ \text{Pupa.} & \text{July and August.} & \text{October to April.} \\ \text{Imago.} & \text{August.} & \text{April and May.} \end{array} \right.$

LOCALITIES. England and Wales, not common; common in Ireland.

BOMBYCIDÆ.

TRICHIURA, *Steph.*

Trichiura cratægi, *Linn.* THE PALE OAK EGGER.

LARVA. Delicate grey, irrorated with minute black dots, dorsal area marked with black; on each segment there are two reddish-brown marks and a number of reddish-brown hairs; on each side of each segment is a semi-oblique streak, white and pale buff, bordered with black; spiracular line indistinct and buff; ventral area pale reddish brown, with a number of pale brown hairs; spiracles pale buff, surrounded with brown. *Plate XIII., fig. 6.*

In some specimens the oblique streaks on the sides are white only, and almost form a scalloped line, the buff spiracular line is also more distinct in some specimens than in others. *Plate XIII., fig. 6a.*

FOOD-PLANTS. Alder, Blackthorn, Whitethorn.

PUPA. In a cocoon amongst the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{March to June.} \\ \text{Pupa.} \quad \text{June to August.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland, generally distributed, but not common; Killarney in Ireland.

PÆCILOCAMPA, *Steph.*

Pæcilocampa populi, *Linn.* THE DECEMBER MOTH.

LARVA. Rather more than two inches long, and slightly depressed; ground colour pale grey, freckled with dark brown; along the back is a series of ten brown ornamentations, connected by a pale brown dorsal line; on the 2nd segment is a red corneous plate. From a number of raised tubercles proceed short hairs, those on the back dark brown, those on the sides grey and longer than the others; there is an indistinct interrupted yellowish subdorsal line; head pale grey, speckled with black, and yellower on the crown; the ventral area yellowish, with a series of large black spots down the centre. *Plate XIII., fig. 7.*

FOOD-PLANTS. Alder, Ash, Aspen, Birch, Elm, Lime, Oak, Poplar, Sallow, Whitethorn, Willow.

PUPA. In a web amongst leaves or grass, or under bark.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{July to November.} \\ \text{Imago.} \quad \text{November and December.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, common; not uncommon in Scotland.

ERIOGASTER, *Gn.*

Eriogaster lanestris, *Linn.* THE SMALL EGGER.

LARVA. Black tinged with blue, with two red-brown marks surrounded with black on the dorsal part of each segment, from which proceed tufts of long red-brown hairs; along each side is a series of pale primrose-coloured angular markings extending half-way up the body, and also forming an interrupted spiracular line; ordinary dots primrose yellow; head black, legs black, claspers red. *Plate XIII., fig. 8.*

When young, the red-brown marks on the back are absent. Plate XIII., fig. 8a.

FOOD-PLANTS. Blackthorn, Elm, Plum, Whitethorn.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to August.} \\ \text{Pupa.} \quad \text{July to February.} \\ \text{Imago.} \quad \text{February to April.} \end{array} \right.$

LOCALITIES. England and Ireland; not common in Scotland and Wales.

BOMBYX, *Linn.*

Bombyx neustria, *Linn.* THE LACKEY.

LARVA. Long and flaccid; ground colour blue, speckled with black, and

striped as follows: Dorsal line brilliant white, bordered with black; subdorsal line orange colour, bordered below with a narrow black stripe, and above with a broad black stripe speckled with blue; between the dorsal and the subdorsal lines is an orange-red stripe; above the spiracles there is a scalloped orange-coloured line, bordered above and below with black; between this and the subdorsal line is a broad space of the ground colour of the caterpillar, and within it, on the 3rd, 4th, and 12th segments, is a black spot; below the spiracles is an interrupted waved orange-red stripe. The lines on the dorsal surface are interrupted on the 12th segment by a black velvety hump, from which proceed long black hairs; the head is blue, with two eyelike marks on the forehead; there are two black marks also on the corslet; the hairs on the back are dark brown, those on the sides lighter; legs black. claspers smoke colour. *Plate XIV., fig 1.*

When young; the dorsal stripe is of the colour of the body, and the orange-colour stripes are pale ochreous. *Plate XIV., fig. 1a.*

FOOD-PLANTS. Almond, Apple, Blackthorn, Bramble, Elm, Hazel; Laurel, Oak, Pear, Plum, Poplar, Rose, Whitethorn.

PUPA. In a thick cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, common.

Bombyx castrensis, Linn. THE COAST LACKEY.

LARVA. Long, rather thin, and slightly hairy; the ground colour bluish grey; down the whole length of the back are two broad orange-brown stripes, streaked and marked with interrupted longitudinal black lines; the sides slightly mottled with ochreous; the spiracles pale grey encircled with brown, and above them is an orange-brown interrupted line marked with black; legs black; claspers ochreous, tipped with the ground colour of the body. *Plate XIV., fig. 2.*

The eggs in my possession were hatched on the 26th of April.

FOOD-PLANTS. Bloody Cranesbill, Carrot (wild), Sea Wormwood, Sea Carrot.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITY. Isle of Sheppy.

Bombyx rubi, Linn. THE FOX MOTH.

LARVA. About three inches and a half long, and hairy; the hairs on the

dorsal area rich golden brown; on the sides dark brown, inclining to grey where they meet; on the ventral surface the hairs are nearly black, and shorter. The segmental divisions black, and on the dorsal portion of each there is a bright transverse orange streak. *Plate XIV., fig. 3.*

When young, the larva is black, and the segmental divisions orange yellow. *Plate XIV., fig. 3a.*

FOOD-PLANTS. Bramble, Bird's-foot Trefoil, Black Medick, Grass, Hazel, Heath, Heather, Hop, Meadowsweet, Raspberry, Sallow, Willow.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

Bombyx quercus, Linn. THE OAK EGGER.

LARVA. About three inches long, and hairy; dorsal area blue-black and velvety; the hairs on the 2nd, 3rd, and 4th segments are sienna brown; on the sides light brown, and on the head buffish; on each side of the 3rd and 4th segments is a bright orange streak; and on each side above the spiracles a white stripe, slightly freckled with brown, and interrupted at each segmental division by an orange mark; spiracles white, encircled with black, with an oblique ochreous streak between each; ventral area brown; head blue-grey; legs and claspers brown. *Plate XIV., figs. 4 and 4a.*

When young, blue-grey, with a black velvety square patch on the back of each segment, crossed by a transverse orange streak, which is interrupted by a short tuft of ochreous hairs. *Plate XIV., fig. 4b.*

FOOD-PLANTS. Apricot, Ash, Birch, Blackthorn, Bramble, Broom, Hazel, Ivy (in winter), Oak, Sallow, Whitethorn, Willow.

PUPA. In a dark-brown cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

NOTE.—In some parts of England, in Scotland and Ireland, a variety of this species (whose food-plant is said to be heather) remains in the larva state from July to the following September twelvemonths, and in the pupa state during the next winter.

Dr. Staudinger combines *Bombyx quercus, Linn.*, *B. callunæ, Palmer*, and *B. roboris, Schrk.*, under the first name.

Mr. Doubleday considered *quercus* and *callunæ* to be identical, and *roboris* a distinct species.

I know of no difference between them in the larva state.



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Mr. John T. D. Llewelyn informs me that a few years ago his gardener reared a number of larvæ found at daybreak on dwarf-birch, growing amongst heather. They were feeding vigorously on the *birch*. The imagines showed a great variety of marking, taking the form both of *quercus* and *roboris*.

Bombyx trifolii, *W.V.* THE GRASS EGGER.

LARVA. Hairy, black and velvety; the dorsal area covered with bright, though pale, orange hairs; on the 2nd, 3rd, and 4th segments these hairs form a narrow line down the back; the other portions of the caterpillar are thickly clothed with long pale-buff hairs; the 2nd segment is velvety brown, with an orange-coloured ornamentation behind the head; spiracles yellow; head brown, with a triangular mark on the face; legs orange; claspers pink. *Plate XIV., figs. 5 and 5a.*

FOOD-PLANTS. Broom, Clover, Furze (flowers), Grass, Heather, Lucerne, Melilot, Raspberry, Trefoil, Whitethorn.

PUPA. In a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to June.} \\ \text{Pupa. June and July.} \\ \text{Imago. August.} \end{array} \right.$

LOCALITIES. England, rare.

ODONESTIS, *Germ.*

Odonestis potatoria, *Linn.* THE DRINKER.

LARVA. About three inches long, and hairy; dorsal area blue-grey, minutely irrorated with black, and speckled with bright yellow dots, some of these latter almost form a subdorsal line; on each side of the back is a row of short black tufts of hair; along each side is a series of larger tufts of white hairs; above and between these white tufts there are a number of orange-coloured spots and streaks; on each side of the 2nd segment are two warts, from which proceed rather long tufts of hair, and there are long tufts of black hairs on the 3rd and 12th segments; the remaining hairs are pale yellowish brown; spiracles buff; head speckled with two shades of yellow; legs and claspers hairy. *Plate XV., figs. 1 and 1a.* Rolls in a ring when touched.

FOOD-PLANT. Grass. In confinement the food-plant must be kept wetted.

PUPA. In a cocoon amongst grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. June.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, common; not so in Scotland.

LASIOCAMPA, *Lat.*

Lasiocampa quercifolia, *Linn.* THE LAPPET.

LARVA. Nearly four inches long, and flat; dark grey or brown, velvety,

and tapering somewhat from the head to the 13th segment; on the 2nd segment there is a white blotch, somewhat horseshoe shaped, and a series of similar marks more or less distinct along the back. On the dorsal part of the body, between the 2nd and 3rd and 3rd and 4th segments, is a rich purple band more visible when the larva is in motion. There is a hump on the 12th segment. Along each side, just above the claspers, is a row of fleshy tubercles and a fringe of long pale hairs. *Plâte XV., figs. 2, 2a, and 2b.*

FOOD-PLANTS. Blackthorn, Osier, Plum, Sallow, Whitethorn, Willow.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. England, not common.

Lasiocampa ilicifolia, Linn. THE SMALL LAPPET.

LARVA. About one inch and three-quarters long, and hairy; of a creamy-white colour, irrorated and marked with black. The hairs on the back are short and dark, those on the sides mixed, white and dark, and are arranged in fascicles; the dorsal stripe is composed of a number of black markings, and on the back of the 2nd segment is a red spot; on the sides are a number of small black markings. Ventral area marked with a series of black spots; legs reddish, marked with black; claspers pale.

FOOD-PLANTS. Sallow, Whortleberry.

PUPA. In a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August.} \\ \text{Pupa. September to April.} \\ \text{Imago. April and May.} \end{array} \right.$

LOCALITIES. England, not common.

ENDROMIS, Och.

Endromis versicolor, Linn. THE KENTISH GLORY.

LARVA. One inch and three-quarters long, but contracts to an inch and a quarter when annoyed. Pale, delicate yellow-green, becoming darker from the spiracles to the ventral area; the whole of this darker green surface is irrorated with black dots; dorsal line dark green; on each of the segments from the 5th to the 11th is a white oblique streak, edged above and below with dark green; the seventh streak is extended almost to the anal clasper, and the lower part of it is edged above with black; the 12th segment rises to a pointed hump, over which the dorsal line passes, becoming at its extreme summit black and very narrow; on each side of this hump is a white streak. The head is pale green, with six white stripes; the corslet



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the same, the lower stripes taking a lateral direction, and extending to the 4th segment; legs yellow, claspers tipped with brown. *Plate XV., fig. 3.*

FOOD-PLANT. Birch.

PUPA. In a cocoon under moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to August.} \\ \text{Pupa. September to March.} \\ \text{Imago. March and April.} \end{array} \right.$

LOCALITIES. Devonshire, Gloucestershire, Hants, Kent, Suffolk, Sussex, Surrey, Worcestershire, Scotland, Ireland, rare.

SATURNIA, *Schr.*

Saturnia carpini, *Bork.* THE EMPEROR.

LARVA. Brilliant yellowish green, with deeply cut segmental divisions. The segments become smaller towards the extremities; on the upper part of each, from the 4th to the 11th, is a transverse band, in which are six yellow tubercles, ornamented with a few black hairs; on the 2nd and 3rd segments are four yellow tubercles, surrounded with black; there are six on the 12th and two on the 13th; the spiracles and legs pink, claspers green. *Plate XV., fig. 4.*

In some varieties of this larva the black bands are entirely wanting.

FOOD-PLANTS. Apple, Blackthorn, Bramble, Heather, Meadowsweet, Osier, Raspberry, Sallow, Whitethorn, Willow.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to September.} \\ \text{Pupa. July to May.} \\ \text{Imago. April and May.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

GEOMETRINA. LINN.

UROPTERYGIDÆ, Gn.

UROPTERYX.

Uropteryx sambucaria, Linn. THE SWALLOW TAIL.

LARVA. About an inch and three-quarters long, and slender; of different shades of pale brown, with some slender pale lines along each side; the 4th segment is raised into a slight hump; there is a hump on each side of the 7th and on the back of the 9th, and two points project from the anal flap. *Plate XVI., figs. 1 and 1a.*

Eggs laid on the 10th and others on the 23rd of July hatched on the 24th of July and 10th of August.

FOOD-PLANTS. Alder, Apricot, Birch, Bramble, Elder, Field Scorpion-grass, Forget-me-not, Hazel, Honeysuckle, Hop, Ivy, Oak, Poplar, Rose, Sallow, Travellers' Joy, Whitethorn, Willow.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to June.} \\ \text{Pupa. June and July.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

ENNOMIDÆ, Gn.

EPIONE, Dup.

Epione vespertaria, Linn. THE DARK-BORDERED BEAUTY.

LARVA. Ash grey; dorsal line pale and indistinct, bordered with a darker shade; subdorsal line pale, extending only to the 6th segment, on which there is a dark velvety mark. Down the centre of the back are some pale blotches, situated at the segmental divisions; a pale line runs down the ventral claspers; spiracles pale, encircled with black, and bordered again with pale grey.

FOOD-PLANT. Sallow.

PUPA. Amongst leaves or under moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Devonshire, Hampshire, Oxfordshire, Yorkshire, Ireland.

Epione apiciaria, W.V. THE BORDERED BEAUTY.

LARVA. Ash grey, variously marked and mottled with darker and lighter grey. A pale dorsal line bordered with black appears on the corslet, and is continued, though indistinctly, to the 4th segment, where it becomes entirely black and conspicuous; from the 5th segment the pale dorsal line is continued, passing on the 5th, 6th, 7th, 8th and 9th segments through a pale somewhat diamond-shaped mark; on the 6th segment there are four small round black warts, and a pale lateral stripe runs from the 4th segment to the end of the ventral clasper; ventral area paler than the dorsal. Assumes death when touched.

Some eggs laid on the 18th August and 15th of September commenced hatching on the 9th of June. The larvæ were full fed from the second week in July.

FOOD-PLANTS. Alder, Hazel, Oak, Poplar, Sallow, Willow.

PUPA. Bronze, under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{June to September.} \end{array} \right.$

LOCALITIES. England and Wales, common; taken in Scotland and Ireland.

Epione advenaria, Hub. THE LITTLE THORN.

LARVA. Dark brown, short and stumpy, variously marked, and mottled with pale ochreous; on the 5th, 6th, 7th, and 8th segments these markings are almost heart shaped, and each contains two black spots; the two black spots are also apparent on the other segments; on the 12th segment are two small warts; spiracles black, encircled with pale buff; ventral area paler than the dorsal; head variable, green or brown, with two dark lines down the face. *Plate XVI., fig. 2.*

Eggs laid about the 15th of June took a fortnight to hatch, and the larvæ were full fed towards the end of July.

FOOD-PLANTS. Bilberry, Bramble, Sallow.

PUPA. Under moss or amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{July to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Gloucestershire, Kent, Surrey, Worcestershire.

RUMIA, *Dup.**Rumia cratægata*, *Linn.* THE BRIMSTONE.

LARVA. Colour variable, being purplish brown, greenish brown, or pale brown. The caterpillar always resembles a twig. There is a pointed hump on the 7th segment, directed forwards, and two smaller humps on the 9th segment; these humps are generally of a redder colour than the body. The caterpillar has eight claspers, the first and second pairs appearing to be useless. *Plate XVI., figs. 3, 3a, and 3b.*

FOOD-PLANTS. Apple, Blackthorn, Birch, Cherry, Elm, Hazel, Service Tree, Rose, White Beam Tree, Whitethorn.

PUPA. In a cocoon amongst the food-plant.

Time of appearance	{	<i>Larva.</i> April to September.	October to April.
		<i>Pupa.</i> August and September.	April and May.
		<i>Imago.</i> September and October.	April to Sept.

LOCALITIES. Great Britain and Ireland, common.

VENILIA, *Dup.**Venilia maculata*, *S.V.* THE SPECKLED YELLOW.

LARVA. Nearly an inch long, and rather flat; pale, delicate pea-green in colour; dorsal line dark green, intersected by a pale line; subdorsal line pale; between the subdorsal and the dorsal lines is a pale line; spiracular line white, and between it and the subdorsal line is an interrupted pale line; immediately above the spiracular line the ground colour of the body is darker than the other part; face pale green and flat, with black ocelli; ventral area striped with undulating pale lines. *Plate XVI., fig. 4.*

FOOD-PLANTS. Hedge Woundwort, Mignonette.

PUPA. In earth.

Time of appearance	{	<i>Larva.</i> June to September.
		<i>Pupa.</i> July to May.
		<i>Imago.</i> May and June.

LOCALITIES. England, rare; taken in Scotland and Ireland.

ANGERONA, *Dup.**Angerona prunaria*, *Linn.* THE ORANGE MOTH.

LARVA. Long and slender, and pale grey, marked and streaked with darker grey; on the 5th segment are two small humps, on the 9th there is a large hump divided transversely into four points, the outer ones being more prominent than the inner ones, and being pale on the outer side; on the 12th segment also are two small humps, and from the anal extremity proceed a few hairs; on the dorsal part of the 6th, 7th, and 8th segments is a pale

mark; the lateral skinfold conspicuous and pale; spiracles pale, encircled with black; ventral area paler than the dorsal; the face is pale, with a horizontal dark line above the mouth. *Plate XVI., figs. 5 and 5a.*

FOOD-PLANTS. Apple, Beech, Blackthorn, Broom, Ivy, Plum, Sallow, Whitethorn.

PUPA. In a web between two leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. England and Ireland.

METROCAMPA, *Lat.*

Metrocampa margaritata, *Linn.* THE LIGHT EMERALD.

LARVA. With six claspers. Colour, ash grey or brownish grey; body flat and wrinkled, with a fringe along each side; on the back of each segment are two small pale raised warts; on the 12th segment these warts are paler and more conspicuous than on the others; from each wart protrudes a short stiff hair; on the 8th and 9th segments there is a pale blotch; spiracles ash grey encircled with brown; head flat; face pale grey; the forehead and anal flap speckled with black. *Plate XVI., figs. 6 and 6a.*

FOOD-PLANTS. Apple, Broom, Birch, Elm, Hornbeam, Oak, Sallow, Travellers' Joy, Whitethorn.

PUPA. Surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

ELLOPIA, *Tr.*

Ellopia fasciaria, *Linn.* THE BARRED RED.

LARVA. Rather thick, wrinkled, and of a purplish brown colour; the dorsal part of each segment is burnt sienna red, margined with a paler colour; all over the body are a number of reddish pointed protuberances, small pale-yellow warts, and a few short bristly hairs; the protuberances on the 12th segment are larger than the others; spiracles chocolate colour, in buff rings; there is a central ventral pale-greenish stripe. Head shining, and speckled with two shades of brown; legs pale; claspers six in number, and reddish. *Plate XVI., figs. 7 and 7a.*

FOOD-PLANTS. Larch, Scotch Fir.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Cheshire, Glamorganshire, Hants, Staffordshire, Surrey, Yorkshire, Scotland, Ireland.

EURYMENE, Dup.

Eurymene dolabraria, Linn. THE SCORCHED WING.

LARVA. Pale ochreous brown, with a few darker streaks; head pinkish, divided down the centre; the segments immediately behind it are large, swollen, and somewhat raised in the form of a hood thrown back; on the 9th segment is a large, round, raised wart or protuberance; ventral area same colour as the dorsal, with two small black warts on the 5th, 6th, 7th, and 8th segments. *Plate XVI., fig. 8.*

FOOD-PLANTS. Aspen, Beech, Birch, Oak.

PUPA. Beneath moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. England and Wales, generally distributed.

PERICALLIA, Steph.

Pericallia syringaria, Linn. THE LILAC BEAUTY.

LARVA. Dark grey, variously mottled with dark and pale brown; smooth, velvety, and about an inch and a quarter long, decreasing in size towards the head. On the 6th segment are two pointed protuberances; on the 7th, two similar warts, and on the 8th two long curved hooked points directed backwards; along each side of the back are two pale ochreous, wavy, interrupted lines, meeting at the anal flap; head brown and small. *Plate XVI., figs. 9 and 9a.*

FOOD-PLANTS. Ash, Elder, Lilac, Privet, Honeysuckle.

PUPA. Suspended from a leaf.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to June.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England and Wales, generally distributed.

SELENIA, Hub.

Selenia illunaria, Hub. THE EARLY THORN.

LARVA. Ochreous brown, with ochreous yellow markings; on the 8th



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and 9th segments are two red pointed humps, each of those on the 8th partly surrounded by an ochreous horseshoe-shaped mark; there is a larger horseshoe-shaped mark on the 9th segment, which contains the two humps; and two pointed protuberances on the 13th, directed downwards. The sides of the first three segments and of the 9th are ochreous; subdorsal line pale ochreous and indistinct. There is a pale, indistinct, ochreous subdorsal line; on the dorsal area are a number of black and ochreous spots; spiracles ochreous, encircled with black. When *full grown*, the ground colour is often lilac brown, with a bloom like a plum. *Plate XVI., figs. 10, 10a, 10b.*

Eggs laid by different moths on the 19th, 20th, and 21st of July hatched on the 28th and 29th of July, and on the 5th of August, and the first imago appeared on the 27th of February. Eggs laid on the 27th of February hatched on the 9th of April.

FOOD-PLANTS. Apricot, Birch, Blackthorn, Beech, Poplar, Elm, Maple, Hazel, Lilac, Lime, Oak, Plum, Privet, Sallow, Sycamore, Whitethorn, Willow.

PUPA. In a web amongst the food-plant.

Time of appearance	{	<i>Larva.</i>	April to June.	July to October.
		<i>Pupa.</i>	June.	October to February.
		<i>Imago.</i>	July and August.	February to April.

LOCALITIES. Great Britain and Ireland.

Selenia lunaria, W.V. THE LUNAR THORN.

LARVA. Ochreous brown, mottled with a darker shade of the same colour, with an indistinct pale stripe on each side; on the 5th segment are four humps, two small ones in the middle and a larger one on either side; on the 6th is a large bifid hump, with a white crescentic mark in front of it at the base, and two small warts on each side; on the 9th and 10th segments are four humps; the front of the 9th segment is darker, and the 10th lighter than the rest of the body; head brown, and divided down the face. *Plate XIV., fig. 11.*

Eggs laid on the 5th of June hatched on the 25th.

FOOD-PLANTS. Beech, Birch, Blackthorn, Elm, Oak, Dogwood, Hornbeam, Sallow, Hazel, Whitethorn, Ivy, Ash, Lime, Maple, Sycamore.

PUPA. Amongst the food-plant or leaves at the surface of the earth.

Time of appearance	{	<i>Larva.</i>	June to August.
		<i>Pupa.</i>	August to May.
		<i>Imago.</i>	May and June.

LOCALITIES. Great Britain and Ireland, somewhat local.

Selenia illustraria, Hub. THE PURPLE THORN.

LARVA. The caterpillar decreases in size towards the head, which is smaller than the 2nd segment, and somewhat flattened; ground colour pale

ochreous brown, mottled sparingly with darker brown; on both the 5th and 6th segments are two small humps; the 8th and 9th segments are swollen, and each has four humps; placed transversely between these segments is a dull orange band; the 13th segment terminates in two rather blunt points. *Plate XVI., fig. 12.*

FOOD-PLANTS. Ash, Aspen, Beech, Birch, Hazel, Hornbeam, Maple, Oak, Sycamore, Whitethorn.

PUPA. Amongst leaves on the surface of the earth.

Time of appearance	{	<i>Larva.</i> June.	September and October.
		<i>Pupa.</i> June.	October to April.
		<i>Imago.</i> July, August.	April and May.

LOCALITIES. Buckinghamshire, Carmarthenshire, Devonshire, Glamorganshire, Gloucestershire, Hants, Middlesex, Pembrokeshire, Suffolk, Sussex, Somersetshire.

ODONTOPERA, *Steph.*

Odontopera bidentata, *Linn.* THE SCALLOPED HAZEL.

LARVA. With eight claspers, the four anterior ones being very small, and apparently useless. About an inch and three-quarters in length, and attenuated, increasing in size from the head to the 13th segment; colour ash brown or grey, with a semicircular plate on the 12th segment. There is sometimes a series of diamond-shaped marks down the back, and occasionally a dark line along each side. *Plate XVII., fig. 1.*

The larvæ vary considerably. In one variety the ground colour is nearly black, with a pale green pattern down the back, exactly resembling lichens. *Plate XVII., figs. 1a and 1b.*

Eggs laid on the 12th of April hatched on the 7th of May.

FOOD-PLANTS. Apple, Apricot, Ash, Birch, Bird Cherry, Blackthorn, Cherry, Elm, Hazel, Hop, Knotgrass, Laburnum, Lilac, Maple, Pear, Plum, Poplar, Rose, Travellers' Joy, Wild Thyme, Willow, Whitethorn.

PUPA. Amongst leaves on the surface of the earth or under moss.

Time of appearance	{	<i>Larva.</i> May to October.
		<i>Pupa.</i> October to April.
		<i>Imago.</i> April and May.

LOCALITIES. Great Britain and Ireland, common.

CROCALLIS, *Tr.*

Crocallis elinguaris, *Linn.* THE SCALLOPED OAK.

LARVA. About one inch and ten lines long. Ground colour either pale drab or ochreous brown, with numerous dark markings; on the dorsal area are four lyre-shaped marks, each with a small V-shaped mark and some

black dots behind it; on the 12th segment there is a semicircular plate, speckled with a few minute black dots, and bordered with brown; spiracles pale, in black rings. *Plate XVII., figs. 2 and 2a.*

Eggs laid 14th of August hatched the first week in April.

FOOD-PLANTS. Apple, Beech, Birch, Blackthorn, Bilberry, Hazel, Heath, Heather, Honeysuckle, Lime, Oak, Pear, Poplar, Sallow, Whitethorn, Willow.

PUPA. Amongst leaves or under moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

ENNOMOS, *Tr.*

Ennomos autumnaria, *Wernb.* THE LARGE THORN.

LARVA. About two inches and a half long. Ground colour brown, with darker brown and pale markings; subdorsal line pale ochreous. There is a dark blotch on the back of the 5th segment, a transverse hump and two warts on the 6th, a small wart on each side of the 7th, a hump on the 9th, and two small points on the 12th. On the 7th segment there is a ventral enlargement. Head flat, and broad in front.

FOOD-PLANTS. Apple, Apricot, Alder, Beech, Birch, Elm, Hazel, Lime, Peach, Pear, Poplar, Rose, Sallow, Sycamore.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{August.} \\ \text{Imago.} \quad \text{September.} \end{array} \right.$

LOCALITIES. Hampshire, Kent, and Sussex; very rare.

Ennomos alniaria. THE CANARY-SHOULDERED THORN.

LARVA. About one inch and seven lines long; pale brown, rough, and wrinkled, rather slender, and tapering from the 13th segment to the head; the 4th segment is enlarged ventrally; the 6th has a dorsal enlargement in the form of a transverse rounded ridge; the 9th a somewhat similar ridge, tipped with ochreous; the 7th and 8th have each two small warts on the back, and the 7th a series of four warts placed transversely on the ventral surface; there are also two small black warts on the 12th; the anal flap; terminates in two points, directed backwards; head flat, and broad in front. *Plate XVII., fig. 3.*

FOOD-PLANTS. Alder, Beech, Birch, Lime, Oak, Poplar, Sallow

PUPA. Spun up amongst grass, etc., near trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

Ennomos fuscantaria, Haw. THE DUSKY THORN.

LARVA. Pale yellowish green, speckled with white, an inch and a half long, and wrinkled, the skinfolds yellower than the other part of the body; the lateral dilation is pale green, and very conspicuous; the spiracles situated within it; the head flat, and the antennal papillæ very long. On the side of the 7th segment are two small warts, and two points proceed from the 13th segment. Legs brown, claspers tipped with pink. *Plate XVII., fig. 4.*

FOOD-PLANT. Ash.

PUPA. Delicate green, amongst the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to August.} \\ \text{Pupa.} \quad \text{August and September.} \\ \text{Imago.} \quad \text{September.} \end{array} \right.$

LOCALITIES. England, generally distributed, not common.

Ennomos erosaria, W.V. THE SEPTEMBER THORN.

LARVA. Long and somewhat slender, pale ochreous, marked with umber brown; there is a hump on the 3rd segment, a larger and more pointed one on the 6th, one on each side of the 7th, a small one on the 8th, and one of rather larger size both on the 9th and 12th. *Plate XVII., fig. 5.*

FOOD-PLANTS. Birch, Oak.

PUPA. Under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{September.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, not common.

Ennomos angularia, W.V. THE AUGUST THORN.

LARVA. Long, thin, and twig-like; ash-grey in colour, with a few hairs and various dark markings; along each side of the back is a pale streak, reaching from the 2nd to the 6th segment; on the 3rd and 4th segments are two small black dots; the 6th segment has three humps, tipped with yellowish, arranged round the segment like a saddle, the middle one being the largest; the 8th segment has four similar but smaller humps; on the 10th segment there are two humps, with a smaller one on each side of them, and two also on the 12th; the spiracles are pale, surrounded with a darker colour; head flat. *Plate XVII., fig. 6.*



FOOD-PLANTS. Ash, Beech, Birch, Elm, Evergreen Oak, Lilac, Lime, Poplar, Hornbeam, Oak, Sallow, Whitethorn, Willow.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to July.} \\ \text{Pupa.} \quad \text{June to August.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. England and Ireland.

HIMERA. *Dup.*

Himera pennaria, Linn. THE FEATHERED THORN.

LARVA. *Variable.* *Var. 1.* Pale grey or pinkish grey, faintly marked with darker streaks, and with a few hairs; there are two small pointed red protuberances on the 12th segment. Down the centre of the back, from the 3rd to the 11th segments, is a series of diamond-shaped pale marks; on each side of the dorsal part of the 3rd segment are two small pale yellow dots placed close together, and on the remaining segments two similar but paler dots; along each side, immediately behind the spiracles, except the two anterior ones, is a pale yellow raised wart; the spiracles reddish, encircled with brown; ventral area paler than the dorsal, with an indistinct series of pale diamond-shaped marks; the head is large, reddish, and marked with a paler colour; the legs and claspers placed far apart. *Plate XVII., figs. 7 and 7b.*

Var. 2. Reddish brown, with numerous darker longitudinal markings, with a few hairs, and two small pointed red humps on the 12th segment. On each side of the dorsal part of the 3rd segment are two small yellowish dots close together, and there are similar but less distinct dots on all the segments to the 12th; spiracles reddish, encircled with brown, and behind each is a pale indistinct wart; head reddish brown, with pale markings. *Plate XVII., fig. 7a.*

Var. 3. In some varieties, though the diamond-shaped markings are absent, some pale streaks form themselves into two interrupted lateral lines down the back; there is also a smoke-coloured mark immediately behind the spiracular warts, the dark marks on the 5th and 6th segments being the most perceptible.

FOOD-PLANTS. Beech, Birch, Blackthorn, Oak, Sallow, Pear, Whitethorn

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June to September.} \\ \text{Imago.} \quad \text{September to November.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

AMPHIDASYDIDÆ, Gn.

PHIGALIA, Dup.

Phigalia pilosaria, W.V. THE PALE BRINDLED BEAUTY.

LARVA. Pinkish buff and wrinkled, with numerous pink spots and blotches, and a number of black pointed protuberances, four on each of the 5th, 6th, and 7th segments, four smaller ones on the 8th, 9th, 10th, and 11th, and two larger ones on the 12th; each of these emits a hair; on the 6th and 7th segments is a pale semicircular mark; the spiracles ochreous, encircled with black, each situated in a red blotch; the head red, speckled with ochreous, and slightly notched on the crown; the legs and claspers concolorous with the body. *Plate XVIII., fig. 1.*

FOOD-PLANTS. Apricot, Ash, Birch, Blackthorn, Cherry, Elm, Hazel, Hornbeam, Oak, Pear, Plane-tree, Poplar, Sallow, Whitethorn.

PUPA. In earth.

Time of appearance	{	<i>Larva.</i>	May and June.
		<i>Pupa.</i>	August to December.
		<i>Imago.</i>	December to March.

LOCALITIES. Great Britain and Ireland, generally distributed.

NYSSIA, Dup.

Nyssia zonaria, W.V. THE BELTED BEAUTY.

LARVA. Ochreous yellow, speckled with black markings, which form themselves into indistinct and interrupted lines down the back, becoming merged as they approach the spiracles; spiracular line broad and primrose colour; spiracles black; ventral area very dark smoke colour; central ventral line ochreous, edged with blackish, and bordered again with an ochreous stripe; head flesh-colour, speckled with brown. *Plate XVIII., figs. 2 and 2a.*

FOOD-PLANTS. Dog Rose, Yarrow.

PUPA. Beneath the earth.

Time of appearance	{	<i>Larva.</i>	May and June.
		<i>Pupa.</i>	June to April.
		<i>Imago.</i>	April.

LOCALITY. Cheshire.

Nyssia hispidaria, W.V. THE SMALL BELTED BEAUTY.

LARVA. Burnt umber brown, slightly irrorated with pale dots; the body transversely wrinkled, and the lateral dilation overlapping, scalloped, and conspicuous; the head and 2nd segment are larger than the other part of the body; the face flat and yellowish brown, marked with reddish brown; on the

9th segment are two round reddish warts placed far apart; on the 8th are two smaller but similar warts; on the 12th, two pale marks nearly approximate; spiracles pale buff; anal flap round and rough, and redder than the body; the hind claspers large, legs reddish; the ventral area has two small warts on the 7th segment. *Plate XVIII., fig. 3.*

FOOD-PLANT. Oak.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May to July.} \\ \textit{Pupa.} \quad \text{June to February.} \\ \textit{Imago.} \quad \text{February and March.} \end{array} \right.$

LOCALITIES. Hants, Surrey, Yorkshire, and the North of England.

Nyssia lapponaria, Bdv.

LARVA. Albin says, "The caterpillar (*a*) was a kind of *looper*; it was hairy (which is not very common among them), and beautifully marked with several colours; it was found on the Hazel the 1st of June, and on the 14th of the same month it went into the ground and changed into a chrysalis (*b*), and at the beginning of April came the moth (*c, d*)."—*Ento. Mo. Mag.*, vol. viii., p. 17.

Said to have been taken by Mr. Warrington, in Perthshire.

BISTON, *Leach.*

Biston hirtarius, Linn. THE BRINDLED BEAUTY.

LARVA. Reddish brown and darker purple brown in alternate rings, with some indistinct longitudinal darker markings; there is a lateral yellow line or collar immediately behind the head, divided by three brown marks; the 5th, 6th, 7th, 8th, 9th, and 10th segments have each four yellow dots, two on the back, and one on each side; the 12th segment has two slight pointed humps, and the 13th two yellowish dots; spiracles pale, encircled with brown; head brown, with a few short pale hairs on the face; legs reddish. When young, the caterpillar is dark slate colour, and the dark longitudinal lines are much more distinct; the yellow dots on the back are lateral streaks, which almost meet each other, and those on the sides are double. *Plate XVIII., fig. 4.*

The eggs were hatched on the 7th of May.

FOOD-PLANTS. Acacia, Ash, Apple, Alder, Apricot, Barberry, Blackthorn, Birch, Elm, Guelder Rose, Horse-Chestnut, Laburnum, Lime, Lilac, Medlar, Oak, Pear, Plum, Privet, Sallow, Spanish Chestnut, Snowberry, Whitethorn, Rose.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to July.} \\ \text{Pupa. July to April.} \\ \text{Imago. April.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Carmarthenshire, Devonshire, Middlesex, Yorkshire, Scotland, Ireland.

AMPHIDASYS, *Tr.*

Amphidasys prodromaria, *W.V.* THE OAK BEAUTY.

LARVA. Two inches long, and wrinkled; pale ash grey in colour; mottled and speckled with black; on the 8th segment are two humps; on the 9th, two humps larger in size, of a red colour, and situated in a reddish or yellowish blotch, and on the 12th segment two small raised humps; spiracles buff, encircled with brown; the ventral area paler than the dorsal, with a dark mark on the 7th, 8th, and 9th segments; head brown or red-brown, bifid, and marked either with yellow or buff. *Plate XVIII., fig. 5.*

FOOD-PLANTS. Birch, Oak, Elm.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June to August.} \\ \text{Pupa. August to February.} \\ \text{Imago. March and April.} \end{array} \right.$

LOCALITIES. England and Wales, local in Ireland.

Amphidasys betularia, *Linn.* THE PEPPERED MOTH.

LARVA. Two inches and four lines in length, and robust; of various shades and colours, pale chocolate, brown, ash grey, or greenish; on the 9th and 12th segments are two humps; along the back, on each of the other segments from the 3rd, are two pale warts; the lateral dilation is conspicuous, and sparingly marked with a pale colour; spiracles reddish brown; head large, and conspicuously bifid. *Plate XVIII., figs. 6 and 6a.*

FOOD-PLANTS. Alder, Apple, Ash, Beech, Birch, Lime, Oak, Mountain Ash, Lilac, Plum, Elm, Hazel, Sycamore, Whitethorn, Poplar, Sea Buckthorn.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to October.} \\ \text{Pupa. September to May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

BOARMIDÆ, *Gn.*

HEMEROPHILA, *Steph.*

Hemerophila abruptaria, *Thun.* THE WAVED UMBER.

LARVA. "Blackish brown, with a whitish band in the front of the 2nd segment (Wallace Verb Comm)." — *Stain. Man.*, vol. ii., page 23.



FOOD-PLANTS. Blackthorn, Lilac, Rose, Privet.

PUPA. In a cocoon between the forks of trees, or on branches.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{September to April.} \\ \text{Imago.} \quad \text{April to June, August.} \end{array} \right.$

LOCALITIES. England, not common; local in Ireland.

CLEORA, *Curt.*

Cleora viduaria, *W.V.* THE SPECKLED BEAUTY.

LARVA. I find no description of this caterpillar.

Time of appearance. *Imago.* June.

LOCALITIES. New Forest, Hampshire; Sussex.

Cleora glabraria, *Hub.* THE DOTTED CARPET.

LARVA. Pale sea green, with three longitudinal rows of black markings down the back, forming interrupted lines; the lateral dilation is conspicuous; spiracles pale green, encircled with black; and there are a few black markings on the sides and ventral area; head, legs, and claspers the same colour as the body. *Plate XIX., fig. 1.*

FOOD-PLANTS. Lichens on Firs, and Oaks.

PUPA. Under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Hampshire, Westmoreland.

Cleora lichenaria, *W.V.* THE BRUSSELS LACE.

LARVA. About nine lines long, rough and uneven; the skin wrinkled. The body is olive-green, mottled and marked with lighter and darker shades of the same colour. On each of the segments, from the 5th to the 11th, are two warts of the ground colour of the body, those on the 5th segment being larger than the others; on the 12th segment are two rather conspicuous yellow pointed humps, each surmounted with a black wart; spiracles pale, encircled with black; the anal flap pale grey; head bluish grey, speckled with dark green, and marked with a white blotch. *Plate XIX., fig. 2.*

FOOD-PLANTS. Lichens on Oaks and Pears.

PUPA. Under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, not common.

BOARMIA, *Tr.***Boarmia Repandata, Linn.** THE MOTTLED BEAUTY.

LARVA. *Variable.* *Var. 1.* Pale greenish ochreous, and about one and a quarter inch long; the body is slightly wrinkled, marked with brown, and freckled with minute yellow dots; down each side of the back is a row of very small dark warts, from each of which protrudes a hair; on the 2nd segment is the commencement of a brown dorsal line, which fades into the ground colour of the caterpillar after the 5th segment; spiracles greenish ochreous, encircled with brown; along the ventral area are some pale lines, the two central lines being more distinct than the others; legs and claspers colorous with the body. *Plate XIX., fig. 3.*

Var. 2. Smoke colour, with lighter and darker markings, and treckled with minute yellow dots; along each side of the back is a row of dark warts; the dorsal line is very distinct on the 2nd, 3rd, and 4th segments, and continues, though less conspicuously, along the back, and is dark bordered with pale grey, and passes on the posterior segments through a series of pale diamond-shaped marks; ventral area slightly paler than the dorsal. *Plate XIX., fig. 3a.*

Var. 3. In some larvæ of this species the markings appear to be almost entirely absent, with the exception of the short dorsal line on the 2nd, 3rd, and 4th segments.

FOOD-PLANTS. Alder, Birch, Blackthorn, Bilberry, Bramble, Cranberry, Heath, Heather, Hornbeam, Ivy, Oak, Plum, Poplar, Sallow, Spindle Tree, Travellers' Joy, Whitethorn, Willow.

PUPA. Spun up in a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to April.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

Boarmia rhomboidaria, W.V. THE WILLOW BEAUTY.

LARVA. Ground colour variable; reddish brown to dark slate colour, irrorated and marked with very minute darker and lighter dots and lines, which form themselves sometimes into irregular longitudinal lines, sometimes take the form of an interrupted dorsal line, and occasionally into a series of almost diamond-shaped markings; spiracles buff, encircled with reddish brown. Along the ventral area is a moderately broad pale central ventral line; the head notched on the crown, speckled; the face flat. *Plate XIX., fig. 4.*

FOOD-PLANTS. Birch, Blackthorn, Bramble, Elder, Ivy, Lilac, Oak, Plum, Privet, Travellers' Joy, Whitethorn, Yew.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain, common; Ireland, scarce.

Boarmia perfumaria, *Newn.*

This variety in the caterpillar state does not differ from *rhomboidaria*.
Plate XIX., fig. 4a.

Boarmia abietaria, *W.V.* THE SATIN BEAUTY.

LARVA. "Reddish grey, often paler yellowish on the back; subdorsal lines black, interrupted; spiracular line yellowish (*Freyer*)."—*Stain. Man.*, vol. ii., p. 26.

FOOD-PLANTS. Beech, Bilberry, Birch, Box, Larch, Oak, Scotch Fir, Spruce Fir, Yew.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to June.} \\ \text{Pupa. End of June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Bucks, Cotswold Hills, Hants, Kent, Scotland.

Boarmia cinctaria, *W.V.* THE RINGED CARPET.

LARVA. About an inch and a half long, and slender; ground colour delicate pale green, with a number of longitudinal lines of a darker green and pale colour, the pale colour predominating; the pale lines are delicately edged with green. Dorsal line bluish green intersected by a fine pale longitudinal line; subdorsal line whitish; spiracles buff, in black rings; ventral area striped; head lighter than the body.

FOOD-PLANTS. Birch, Heath.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to July.} \\ \text{Pupa. July to April.} \\ \text{Imago. May, June.} \end{array} \right.$

LOCALITIES. Hants, Sussex, Scotland, Ireland.

Boarmia roboraria, *W.V.* THE GREAT OAK BEAUTY.

LARVA. Nearly two inches long; pale ochreous, shaded with darker and lighter markings; body stout and wrinkled, with two large swollen humps on

the 5th segment, and two small humps on the 12th; there is a swollen ridge across the ventral portion of the 6th segment; central ventral stripe dull and indistinct; the body terminates behind in two points; head narrower than the 2nd segment, flat and bifid. *Plate XIX., figs. 6, 6a.*

FOOD-PLANT. Oak.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to June.} \\ \textit{Pupa.} \quad \text{June and July.} \\ \textit{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Berkshire, Devonshire, Dorsetshire, Essex, Hants, Kent, Lancashire, Surrey, Sussex, Yorkshire, Ireland.

Boarmia consortaria, *Fab.* THE PALE OAK BEAUTY.

LARVA. "Greenish grey, with a darker medio-dorsal stripe and a narrow pale lateral stripe; there are two small humps on the back of the 6th segment, and two small black warts on the 12th."—*Newn. Moths*, p. 65.

FOOD-PLANT. Oak.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August.} \\ \textit{Pupa.} \quad \text{September to May (?).} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Devonshire, Essex, Hants, Kent, Suffolk, Sussex, Ireland.

TEPHROSIA, *Bdv.*

Tephrosia consonaria, *Hüb.* THE SQUARE SPOT.

LARVA. About an inch and a half long, slender, wrinkled, and rather shiny, with a few pale warts centred with black, each emitting a hair; greenish ochreous, with numerous dull-red longitudinal waved lines; pulsating vessel dull ochreous, bordered on either side with dull reddish brown; segmental divisions dingy green; spiracles yellow encircled with brown; anal flap pinkish, speckled with white warts, three of which are directed backwards; ventral area pale green; head cream coloured, mottled with dark brown, rather flatter; claspers greenish, tinged with red; legs pale green. *Plate XIX., fig. 7.*

FOOD-PLANTS. Beech, Birch, Fir, Hornbeam, Oak, Sallow, Willow.

PUPA. Under moss.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May to July.} \\ \textit{Pupa.} \quad \text{September to April.} \\ \textit{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. Bucks, Devonshire, Glamorganshire, Hants, Kent, Suffolk, Sussex.



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Tephrosia crepuscularia, W.V. THE SMALL ENGRAILED.

LARVA. About one inch three lines long, and rather stout and wrinkled, with a hump on each side of the 3rd segment, and a dorsal ridge on the 12th; ground colour grey, mottled with darker grey; dorsal line dingy green and interrupted; subdorsal line dark brown, intersected by a reddish line as far as the 5th segment, and turning down to the ventral claspers, where there is a pale yellow mark on the side; on the 6th segment is a V-shaped mark, the apex pointing forwards; spiracles pale, encircled with brown; ventral area dull yellowish, suffused with smoke colour; head grey, mottled with brown.

In some varieties the ground colour is variegated with reddish ochreous, and in others with smoke colour: in the latter case the spot on the side is nearly white.

FOOD-PLANTS. Alder, Beech, Birch, Dyer's Greenweed, Elm, Larch, Oak, Poplar, Scotch Fir, Willow.

PUPA. Under moss or on bark.

Time of appearance { *Larva.* July to September.
 { *Pupa.* September to February.
 { *Imago.* February and March.

LOCALITIES. Great Britain and Ireland.

Tephrosia biundularia, Esp. THE ENGRAILED.

LARVA. Ground colour reddish brown, the four posterior segments paler. The dorsal part of the 6th, 7th, 8th, and 9th segments much darker than the others, and the sides pinker; the 4th segment somewhat swollen; dorsal line dark brownish and indistinct, subdorsal line the same; on the side of the 10th segment, immediately in front of and rather above the clasper, is a pale primrose-coloured blotch; head pale, dull yellowish, marked with reddish brown. *Plate XIX., fig. 8.*

FOOD-PLANTS. Birch, Oak, Plum.

PUPA. Under moss on trees.

Time of appearance { *Larva.* June.
 { *Pupa.* July to March.
 { *Imago.* April to June.

LOCALITIES. England, Wales, and Ireland.

Tephrosia extersaria, Hub. THE BRINDLED WHITE SPOT.

LARVA. "Pale grey, clouded with reddish brown (*Crewe, Intell. iii., 139.*)"—*Stain. Man., vol. ii., p. 29.*

FOOD-PLANTS. Birch, Oak.

PUPA. Under moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Berkshire, Buckinghamshire, Cornwall, Devonshire, Dorsetshire, Essex, Gloucestershire, Hampshire, Oxfordshire, Suffolk, Surrey, Sussex, Worcestershire.

Tephrosia punctulata, W.V. THE GREY BIRCH.

LARVA. About an inch long, and of a somewhat rough appearance; ground colour bright apple green; head tinged with yellow; pulsating vessel yellowish, bordered on each side by a yellowish-white line; subdorsal line yellowish white; between the subdorsal line and the spiracular region are two much finer and more indistinct lines of the same colour; segmental divisions yellow and clearly defined; ventral area the same colour as the dorsal, with pale central and side lines.

FOOD-PLANTS. Alder, Birch.

PUPA. Under moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{October to April.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

GNOPHOS. Tr.

Gnophos obscurata, W.V. THE AMULET.

LARVA. "Grey of various shades, the back paler than the sides, and the fore part of each segment paler than the hind part."—*Newm. Moths*, p. 67.

FOOD-PLANTS. Common Burnet, Creeping Cinquefoil, Heath, Salad Burnet, Rock Rose.

PUPA. Near the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to May (?).} \\ \text{Pupa.} \quad \text{May to July (?).} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Carmarthenshire, Cornwall, Devonshire, Glamorganshire, Hampshire, Pembrokeshire, Somersetshire, Surrey, Sussex, North of England, Scotland, Ireland.

DASYDIA, Gn.

Dasydia obfuscata, W.V. THE SCOTCH AMULET.

LARVA. About an inch long; colour grey; dorsal line double, intersected by a whitish thread on the anterior segments, and afterwards appearing as a

series of small arrow-head marks; subdorsal line pale, waved, very fine, and edged with black, with dark streaks at the segmental divisions; spiracular line dark in colour, with dark streaks at the segmental divisions; spiracles pale encircled with black; below the spiracles is a pale line and some dark streaks; ordinary dots pale encircled with brown, those on the 12th segment more conspicuous than the others, and placed nearer together; ventral area streaked and marked with black; head small.

FOOD-PLANTS. Dyer's Greenweed, Heather, Needle Greenweed, Vetch. Knot-grass in confinement.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Scotland, County Wicklow, Ireland.

PSODOS, *Tr.*

Psodos trepidaria, *Hub.* THE BLACK MOUNTAIN MOTH.

LARVA. Unknown.

Time of appearance. *Imago.* July.

LOCALITY. Scotland.

MNIOPHILA, *Bdv.*

Mniophila cineraria, *W.V.* THE DUSKY CARPET.

LARVA. "Dull grey, greenish or whitish, with a paler line on the back, swelling into a lozenge on each segment, bisected by the dorsal line of the ground colour, and bordered by the blackish subdorsal line (*Gn.*)"—*Stain. Man.*, vol. iii., p. 31.

FOOD-PLANTS. Lichens on walls.

PUPA. In a web amongst lichens.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITY. Once at Tenby, in South Wales.

BOLETOBIIDÆ.

BOLETOBIA, *Bdv.*

Boletobia fuliginaria, *Linn.* THE WAVED BLACK.

LARVA. "Dull black, with the spots reddish (*Gn.*)"—*Stain. Man.*, vol. ii., p. 32.

FOOD-PLANT. Fungi on wood.

PUPA. Beneath the earth.

Time of appearance. *Imago*. June.

LOCALITIES. One or two specimens have been taken in kitchens in London and at Worcester.

GEOMETRIDÆ.

PSEUDOPTERPNA, *Hub.*

Pseudopterpna cytisaria, *W.V.* THE GRASS EMERALD.

LARVA. Emerald green, with minute white dots; dorsal line darker than the ground colour; subdorsal lines pale yellowish green; spiracular line brilliant white shaded with pink, and bordered beneath with purple; this line is somewhat raised, and diverges at the 4th segment, passing down the leg; a short waved line of a similar appearance is continued to the head; the head and 2nd segment are divided, forming four pointed protuberances; the 13th segment is paler than the other part of the body; spiracles yellow, encircled with brown; the ventral area is flatter than the dorsal, and has three pale but distinct ventral lines. *Plate XX., fig. 1.*

FOOD-PLANTS. Broom, Dyer's Greenweed, Furze.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to June.} \\ \textit{Pupa.} \quad \text{June and July.} \\ \textit{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

GEOMETRA, *Linn.*

Geometra papilionaria, *Linn.* THE LARGE EMERALD.

LARVA. Yellowish green, speckled with yellow, and velvety; the 3rd segment is raised to a hump, the point of which is deep pink, speckled with yellow; on the 4th and 5th segments begins a dorsal latticed work ornamentation in pale yellow green, which is carried all along the back; the 5th, 6th, 7th, and 8th segments have each two humps tipped with deep pink and speckled with yellow, those on the 7th segment being the most prominent; the dorsal surface of the 12th and 13th segments is deep pink; claspers the same, the legs are pale yellow, tipped with pink; spiracular line yellow; head pale pinkish red, mottled with a darker colour. *Plate XX., fig. 2.*

FOOD-PLANTS. Alder, Beech, Birch, Hazel, Oak.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England and Wales, common; taken in Scotland and Ireland.

Geometra smaragdaria, Hub. THE ESSEX EMERALD.

LARVA. "Greyish brown, with humps on the 5th to 9th segments (*Freyer*)."—*Stain. Man.*, vol. ii., p. 34.

FOOD-PLANTS. Salad Burnet, Yarrow.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITY. Essex coast.

NEMORIA, Hub.

Nemoria viridata, Linn. THE SMALL GRAY EMERALD.

LARVA. About ten lines long, and slender; ground colour pale green, and rough, with a series of purplish markings down the back, which sometimes form a dorsal line; subdorsal line whitish; lateral dilation pale yellow; head divided into two points, and two also proceed from the 2nd segment; head and legs purplish.

FOOD-PLANTS. Bramble, Osier, White-thorn.

PUPA. Between leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Devonshire, Dorsetshire, Hampshire, Lancashire, Lake District, County Wicklow, Ireland.

IODES, Hub.

Iodes vernaria, Linn. THE SMALL EMERALD.

LARVA. Dingy yellowish green, speckled with white dots, which form themselves into subdorsal and spiracular lines; the spiracles are reddish; the ventral area has a sub-spiracular and central ventral spotted line; the head and face are pinkish drab, and the head is divided into four points. *Plate XX, fig. 3.*

I received the larvæ on the 25th of May, and they died in January of the following year.

FOOD-PLANTS. Travellers' Joy.

PUPA. Amongst the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to May.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Buckinghamshire, Devonshire, Dorsetshire, Gloucestershire, Kent, Herefordshire, Essex, Sussex, Surrey, Worcestershire, Glamorganshire, Ireland.

Iodes lactearia, Linn. THE LITTLE EMERALD.

LARVA. Long and slender, dark green and velvety; down the centre of the back is a series of purple diamond-shaped blotches, edged posteriorly with ochreous; they are placed at the segmental divisions, but from the 9th to the 13th segments form a connected dorsal line; head reddish brown, divided into two points directed forward; anal flap the same colour, and pointed. *Plate XX, fig. 4.*

Eggs laid on the 25th of June hatched on the 5th of July, and the larvæ pupated in August.

FOOD-PLANTS. Birch, Oak, Sallow.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{August to April.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

PHORODESMA, *Bdv.*

Phorodesma bajularia, W.V. THE BLOTCHED EMERALD.

LARVA. "Pale brown with paler humps on the 5th and 9th segments; head dull red (*Hub.*)"—*Stain. Man.*, vol ii., p. 36.

FOOD-PLANT. Oak.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Bucks, Derbyshire, Devonshire, Dorsetshire, Essex, Gloucestershire, Hampshire, Lake District, Norfolk, Suffolk, Surrey, Sussex, Worcestershire, Yorkshire.

HEMITHEA, *Dup.*

Hemithea thymiaria, Linn. THE COMMON EMERALD.

LARVA. Rather more than an inch long and slender, tapering gradually

towards the head; surface of the body rough, ground colour brown; from the head to the 5th segment the body is suffused with pale lavender, through which passes a dorsal, subdorsal, and spiracular line of the ground colour of the body; there is also a somewhat V-shaped mark of the same grey colour on the back of the 6th, 7th, 8th, and 9th segments; spiracles brown; ventral area marked with pale lavender; head brown, divided into two points, and two points also proceed from the 2nd segment; legs and claspers brown.

Varieties. In some varieties the pale lavender markings on the back are nearly white, and in others those segments from the 5th to the 10th are greenish yellow, dull orange, or pinkish. *Plate XX., figs. 5, 5a, 5b.*

Eggs laid on the 17th of July hatched on the 25th; the young larvæ were at first orange colour.

FOOD-PLANTS. Birch, Blackthorn, Hazel, Oak, Sallow, Whitethorn.

PUPA. Amongst the leaves of the food-plant.

Time of appearance { *Larva.* July to May.
 Pupa. May and June.
 Imago. June and July.

LOCALITIES. England and Wales, common; taken in Scotland and Ireland.

EPHYRIDÆ.

EPHYRA, *Dup.*

Ephyra porata, *Fab.* THE FALSE MOCHA.

LARVA: "Green or flesh colour; the head and anal segments red (*Gn. and Albin*)."—*Stain. Man.*, vol. ii., p. 38.

FOOD-PLANTS. Oak, Birch.

PUPA. On a leaf of the food-plant.

Time of appearance { *Larva.* June. September to October.
 Pupa. July. October to May.
 Imago. August. May and June.

LOCALITIES. South of England, as far as Worcester; South Wales.

Ephyra punctaria, *Linn.* THE MAIDEN'S BLUSH.

LARVA. Bright green, with six yellow transverse lines across the dorsal area, ornamented with several scarlet blotches; these yellow lines form oblique streaks as they approach the spiracles; spiracular line dingy green; spiracles brown; head brown, with two yellow lines down it; legs and claspers yellow; claspers tipped with red. *Plate XX., fig. 6.*

In some varieties the ground colour is yellowish buff.

FOOD-PLANTS. Oak, Birch.

PUPA. Fastened to a leaf.

Time of appearance.	{	<i>Larva.</i> July.	September.
		<i>Pupa.</i> July (a fortnight or three weeks).	October to May.
		<i>Imago.</i> August and September.	May and June.

LOCALITIES. Great Britain and Ireland.

Ephyra trilinearia, Bork. THE CLAY TRIPLE LINES.

LARVA. "Reddish brown, with yellow markings (*Crewe, Int. iii. 139.*)"
—*Stain. Man.*, vol. ii., p. 38.

FOOD-PLANT. Beech.

PUPA. Fastened to a leaf.

Time of appearance	{	<i>Larva.</i> August to October.
		<i>Pupa.</i> September to April.
		<i>Imago.</i> May and June.

LOCALITIES. Berks, Devonshire, Dorsetshire, Essex, Huntingdonshire, Hampshire, Kent, Somersetshire, Surrey, Sussex.

Ephyra omicronaria, W.V. THE MOCHA.

LARVA. About an inch long; dorsal area dark green and velvety; dorsal line bright yellow, subdorsal line the same colour and somewhat waved; spiracles black, ordinary dots the same; segmental divisions yellowish above, black beneath; ventral area pale green, with small black dots; head reddish brown above, yellowish white below.

FOOD-PLANT. Maple.

PUPA. Suspended from a leaf.

Time of appearance	{	<i>Larva.</i> June to August.
		<i>Pupa.</i> September to May.
		<i>Imago.</i> May and June.

LOCALITY. South of England.

Ephyra orbicularia, Hub. THE DINGY MOCHA.

LARVA. About an inch and a half long, tapering slightly to the extremities; ground colour pale pinkish putty colour; dorsal line pale; subdorsal line also pale and waved. From the 5th to the 9th segments is a series of oblique lavender-coloured streaks, rather darker at the segmental divisions; colour of the body paler in the spiracular region; ordinary dots black; ventral area striped with five pale longitudinal lines; head yellowish, speckled with brown. *Plate XX., fig. 7.*

The ground colour is sometimes green.

FOOD-PLANT. Sallow.

PUPA. Suspended from a leaf.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August to May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Dorsetshire, Hampshire, Kent, Sussex, Surrey, Worcester-shire.

Ephyra pendularia, Linn. THE BIRCH MOCHA.

LARVA. Rather long and slender, of different shades of dull and pale yellowish green; dorsal line pale, yellowish, and narrow, bordered by an interrupted dark line; subdorsal line pale yellowish; head orange brown; the 2nd, 3rd, and 4th segments tinged with the same colour; in the region of the spiracles the ground colour is paler than elsewhere, along each side is a series of orange-brown blotches, and there is a purplish spot on the 5th segment; those segments from the 10th to the 13th are tinged with purplish pink, becoming darker at the anal extremity; spiracles black, ventral area purplish smoke colour, irrorated with a pale colour, the irroration taking the form of ventral stripes; legs pale; claspers purplish. *Plate XX., fig. 8.*

FOOD-PLANT. Birch.

PUPA. Suspended from a leaf.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva. June.} & \text{September.} \\ \text{Pupa. July.} & \text{October to May.} \\ \text{Imago. August.} & \text{May.} \end{array} \right.$

LOCALITIES. England, Wales, Scotland.

ACIDALIIDÆ.

HYRIA, Steph.

Hyria auroraria, Gn. THE GOLDEN-BORDERED PURPLE.

LARVA. About three-quarters of an inch long; dorsal area brown or pale grey in colour, the extremities tinged with ochreous; dorsal line double, nearly black, widening on those segments from the 5th to the 9th, and also at the segmental divisions; subdorsal line distinct on the anterior and posterior segments, but showing as broken lines on those between them; spiracles black, with some dark dots and oblique streaks below them; ventral area darker than the dorsal, with a pale central ventral line.

The eggs in my possession hatched on the 24th of July.

FOOD-PLANTS. Plantain. Knotgrass (in confinement).

PUPA. In a slight cocoon amongst grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May,} \\ \text{Pupa. June,} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Dorsetshire, Hants, Lancashire, Lake District, Norfolk, Ireland.

ASTHENA, *Hub.*

Asthena luteata, *W.V.* THE SMALL YELLOW WAVE.

LARVA. No description.

FOOD-PLANT. Maple.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June to October.} \\ \text{Pupa. October to May (?)} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland, common.

Asthena candidata, *W.V.* THE SMALL WHITE WAVE,

LARVA. About nine lines long ; pale yellowish green, rather shiny, with numerous pale warts, from which protrude long black hairs ; those segments from the 5th to the 9th are swollen. On the 2nd segment is a crimson mark ; the dorsal surface of the 3rd and 4th is pinkish ; the 5th has a square crimson mark placed diagonally ; the 6th, 7th, 8th, and 9th have each a less distinct but similar mark ; these marks are all cut through the centre by a longitudinal stripe of the ground colour of the body ; from the 10th to the 13th segments is a broad crimson dorsal line ; ventral area pinkish green ; legs and claspers tinged with pink ; head pale, with two conspicuous black rings. In some specimens the square marks on the 6th, 7th, 8th, and 9th segments are absent. *Plate XX., figs. 9 and 9a.*

FOOD-PLANTS. Hazel, Hornbeam, Whitethorn,

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to June.} \\ \text{Pupa. July to April.} \\ \text{Imago. April to June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

Asthena sylvata, *W.V.* THE WAVED CARPET,

LARVA. "Lilac coloured; the sides of the 2nd, 4th, and last two segments green ; above the sides of the 6th and 8th segments are white spots with black centres, and a white oblique streak on the sides (*Freger*)."—*Stain. Man.*, vol. ii., p. 42.

FOOD-PLANT, Alder.

PUPA. Between leaves or amongst moss.



Vincent Brooks Day & Son Lith. London W.C.

L. Reeve & Co London.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August.} \\ \text{Pupa. September (?) to May (?)} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, not common.

Asthena Blomeri, Curt. BLOMER'S RIVULET.

LARVA. About ten lines long, of nearly uniform thickness, and wrinkled, with a few hairs scattered over the body, which is delicate yellowish green; on the 2nd, 3rd, and 4th segments is an elongated claret-coloured blotch, terminating in a point, and bisected by a pale yellowish dorsal line; on either side of the 6th, 7th, and 8th segments is a pale claret-coloured blotch; usual dots dark reddish brown; legs, claspers, and head yellowish and translucent; the face has a chocolate mark down each cheek. *Plate XX., fig. 10.*

FOOD-PLANT. Wych Elm.

PUPA. Amongst leaves or moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to October.} \\ \text{Pupa. October to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Derbyshire, Devonshire, Durham, Glamorganshire, Gloucestershire, Lancashire, Somersetshire, Staffordshire, Worcestershire, Yorkshire,

EUPISTERIA, *Edu.*

Eupisteria heparata, W.V. THE DINGY SHELL.

LARVA. Bright green, with a few scattered hairs; upon the dorsal surface of each segment from the 2nd to the 13th is a square black velvety mark, bordered on each side by a narrow yellow line, and edged at each segment by a yellow segmental division; dorsal line pale yellowish and indistinct; head green; the face with eyelike marks. *Plate XX., fig. 11.*

FOOD-PLANT. Alder.

PUPA. Amongst leaves or moss on bark.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England and Wales.

VENUSIA, *Curt.*

Venusia cambrica, Curt. THE WELSH WAVE.

LARVA. About seven lines long, and wrinkled, with a few scattered hairs proceeding from minute warts. Ground colour pale yellowish green, blotched irregularly with reddish purple; dorsal line pale yellow, and usually passing

through these blotches, but occasionally interrupted by them; lateral dilation distinct; head dirty greenish yellow and shining; legs and claspers pale green, sometimes blotched with purplish red. *Plate XX., figs. 12, 12a, 12b.*

FOOD-PLANT. Mountain Ash.

PUPA. Spun up in a leaf.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August and September.} \\ \text{Pupa. October to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Cheshire, Lake District, Lancashire, Monmouthshire, Northumberland, Yorkshire, Scotland, and Ireland.

ACIDALIA, Tr.

In the larvæ of many of this genus the segments overlap each other, or rather each segment widens posteriorly. The 9th segment is larger than the others, from which the larva tapers towards the head, and also slightly to the 13th. The body has a rough appearance, from the segments being transversely ribbed, and the segmental divisions are clearly defined.

Acidalia ochreata, W.V. THE BRIGHT WAVE.

LARVA. Unknown.

Time of appearance. *Imago.* June to August.

LOCALITIES. Essex, Kent, Surrey.

Acidalia rubricata, W.V. THE TAWNY WAVE.

LARVA. About eight lines long, somewhat depressed and flattened, and tapering towards the head; body greyish brown and rough; dorsal line double, reddish and indistinct; subdorsal line darker, only distinguishable on the four anterior segments, where it is broad and nearly black, but afterwards changes into spots at the segmental divisions; lateral dilation pale; spiracles black; ventral area rather paler than the dorsal, with two darker ventral lines; head bifid, marked with darker grey.

FOOD-PLANTS. Bird's-foot Trefoil. Knotgrass (in confinement).

PUPA. In a cocoon under moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Essex, Norfolk, Suffolk, Surrey, Yorkshire.

Acidalia scutulata, W.V. THE SINGLE DOTTED WAVE.

LARVA. About nine lines long, rough and slender, tapering towards the head; the body is somewhat depressed, flattened, and reddish ochreous in

colour; dorsal line double, brown, and rather broad, darker on the posterior segments, and terminating on the 12th; subdorsal line only distinguishable on the anterior and posterior parts of the body. On those segments from the 5th to the 9th are two brown oblique streaks, in the subdorsal region; lateral dilation pale and conspicuous; spiracles black; ordinary dots brown; ventral area profusely marked with brown, giving it a much darker appearance than the dorsal. *Plate XXI., fig. 1.*

FOOD-PLANTS. Burnet-Saxifrage, Great Bedstraw, Wild Beaked Parsley.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Acidalia bisetata, *Bork.* THE SMALL FAN-FOOTED WAVE.

LARVA. About eight lines long, somewhat depressed and flattened, tapering from the 13th segment to the head; body brown, rough, transversely wrinkled, and mottled along the sides at the segmental divisions with slate colour; the dorsal part of those segments from the 9th to the 13th is ochreous; the 5th, 6th, 7th, 8th and 9th have each a brown V-shaped mark, the apex of the V being dark and directed backwards, and that on the 9th segment extending into a broad brown stripe to the 13th. All along the body passes a distinct pale dorsal line bordered with dark brown; on the four anterior segments a pale subdorsal line is discernible; lateral dilation conspicuous; ventral area ash-grey, slightly freckled with brown. *Plate XXI., fig. 2.*

FOOD-PLANTS. Bird's-foot Trefoil, Cuckoo Flower, Dandelion, Heartsease, Heather, Lilac, Loosestrife (Great Yellow), Red Campion (principally the flowers), Sallow.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Acidalia trigeminata, *Haw.* THE TREBLE BROWN SPOT.

LARVA. About ten lines long, wrinkled, and tapering towards the head; colour dull brown; dorsal line indistinct and pale, bordered at the segmental divisions with black strokes, and extending to the 10th segment, on which there is a whitish spot; subdorsal line blackish and interrupted; there is a series of black V-shaped marks down the back, extending to the 9th segment; lateral dilation edged with pale ochreous; ventral area darker than the dorsal; head small and brown.

FOOD-PLANT. Knotgrass (in confinement).

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July.} \\ \text{Pupa. August to May.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Berks, Devon, Gloucestershire, Hants, Suffolk, Sussex, Surrey, Worcestershire, Scotland, Ireland.

Acidalia contiguaria, Hub. GREENING'S WAVE.

LARVA. About nine lines long, rather stout, slightly depressed, and rough; the body tapers towards the head, which is small and bifid; body pale delicate buff; from the 5th segment commences a dorsal series of dark-brown lines forming oval marks, through which passes an interrupted dark-brown dorsal line. The oval marks cease on the 9th segment, and from the 9th to the 13th the dorsal line is continuous; there is a double dark-brown subdorsal line and an irregular dark line below the spiracles. *Plate XXI, fig. 3.*

FOOD-PLANTS. Crowberry, Cross-leaved Heath, Fine-leaved Heath, Ling-
Chickweed, Groundsel, and Knotgrass (in confinement).

PUPA. In a loose cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. May to July.} \\ \text{Imago. July.} \end{array} \right.$

NOTE.—The eggs hatch in fourteen days, and if the weather is fine the earlier hatched larvæ become full fed in about twenty-eight days, remain fourteen days in the pupa state, the imagines appearing in September.

LOCALITIES. Bangor, Conway, Penmaenawr, North Wales, rare.

Acidalia rusticata, W.V. THE LEAST CARPET.

LARVA. Short, stout, and rough, tapering towards the head. Ground colour pale grey, with dark markings; there is a dark trellis-work pattern down the back, and a series of dark velvety marks along each side; within the diamond-shaped marks formed by the trellis-work on the 6th, 7th, 8th, and 9th segments is a dark †; the 11th, 12th, and 13th segments are paler than the other parts of the body; the corslet is also pale, and without markings; head dark brown. *Plate XXI, figs. 4 and 4a.*

FOOD-PLANT. Knotgrass (in confinement).

PUPA. In a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Dorset, Devon, Kent, rare.

***Acidalia interjectaria*, Bdv. THE DARK CREAM WAVE.**

LARVA. About half an inch long, stout, and tapering towards the head. Ground colour dingy greyish brown, marked with ochreous; those segments from the 9th to the 13th paler than the others; dorsal line pale ochreous bordered with a dark line, interrupted at the segmental divisions between the 6th and 7th, 7th and 8th, 8th and 9th segments by a white spot; lateral dilation ochreous; ventral area the same colour as the dorsal, with an indistinct central ventral line and a series of ochreous marks; head small, bifid, of two shades of ochreous.

FOOD-PLANTS. Dandelion, Pimpernel, Rest Harrow:

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to May.} \\ \textit{Pupa.} \quad \text{May and June.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Bucks, Cambridgeshire Cheshire, Devonshire, Gloucestershire, Yorkshire.

***Acidalia holosericata*, Dup. THE SILKY WAVE.**

LARVA. About half an inch long, and tapering towards the head. Ground colour dingy reddish brown; the posterior segments paler than the others; dorsal line paler than the body, bordered with fine black lines; segmental divisions clearly marked; head small and bifid.

FOOD-PLANT. Knotgrass (in confinement).

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to May.} \\ \textit{Pupa.} \quad \text{May and June.} \\ \textit{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Devonshire, Gloucestershire, Surrey, Worcestershire.

***Acidalia incanaria*, Hub. THE SMALL DUSTY WAVE.**

LARVA. About nine lines long, tapering from the 9th segment to the head; colour ochreous brown or reddish; dorsal line pale ashy grey or ochreous; subdorsal line the same, only clearly distinguishable on the anterior and posterior segments; the intermediate segments are freckled and ringed with brown; those from the 5th to the 9th have a leaflike ornamentation, and also a series of V-shaped marks on the back; the anterior segments are paler than the others; the head is small and bifid.

FOOD-PLANT. Knotgrass (in confinement).

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August and September.} \\ \textit{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland; common in Ireland.

***Acidalia circellata*, Gn. THE CIRCELLATE.**

LARVA. No description.

FOOD-PLANT. Knotgrass (in confinement).

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. England, rare.

Acidalia ornata, Scop. THE LACE BORDER.

LARVA. Nearly an inch long. Dorsal area brownish ochreous; dorsal line fine and interrupted, darkest near the head, afterwards showing pale grey edged with dusky; subdorsal line dark brown; on those segments from the 5th to the 9th are two obtuse Vs, one pointing forward and the other backward, enclosing a blunt diamond of the ground colour, through the centre of which the dorsal line passes; spiracular line pale ochreous, freckled, and edged below with dusky.—See *Entomologist's Monthly Magazine*, vol. iii., p. 45.

FOOD-PLANTS. Wild Thyme, Marjoram, Mint.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to April.} \\ \text{Pupa. April.} \\ \text{Imago. May to August.} \end{array} \right.$

LOCALITIES. England, on chalky soils.

Acidalia promutata, Gn. THE MULLEIN WAVE.

LARVA. About an inch and a half long, slender, and cylindrical. Dorsal area pale slaty olive; dorsal line pale, very fine, and interrupted, contained in a dull olive longitudinal stripe; subdorsal line pale yellowish and indistinct; spiracles black; ventral area pale bluish slate colour; head the same colour as the body.

FOOD-PLANTS. Mallow, Yarrow. Knotgrass (in confinement).

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Cheshire, Devonshire, Essex, Lancashire, Northumberland, South Wales, Ireland.

Acidalia straminata, Tr. THE DOTTED BORDERED CREAM WAVE.

LARVA. About an inch long, and slender. Body pale slate colour; dorsal line pale and narrow, bordered with black; the black edging is interrupted at the segmental divisions between the segments, from the 4th to the 11th; subdorsal line pale and indistinct; between it and the dorsal line is a series of black streaks; head small and bifid.

FOOD-PLANT. Knotgrass (in confinement).

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to June.} \\ \text{Pupa. June and July.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Buckinghamshire, Dorsetshire, Hampshire, Surrey.

Acidalia subsericeata, Haw. THE SATIN WAVE.

LARVA. About nine lines long, transversely wrinkled, rather flattened and depressed, and tapering from the 9th segment to the head. Ground colour pale ochreous marked with brown; dorsal line pale ochreous bordered with brown; on the 2nd, 3rd, 4th, and 5th segments is a dark-brown subdorsal line, which appears on the remaining segments to the 9th as a series of oblique streaks; these oblique streaks almost meet on the back posteriorly, forming V-shaped marks; the lateral dilation is ochreous, it extends downwards on the 10th segment, on which there is a conspicuous pale spot; along the ventral area is a series of somewhat diamond-shaped marks. *Plate XXI, figs. 5 and 5a.*

Eggs laid on the 27th of June, hatched on the 6th of July.

FOOD-PLANT. Knotgrass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. South generally, and South-west, Carmarthenshire, Cheshire, Gloucester, Lake District, Pembrokeshire, Worcestershire, Scotland, Ireland.

Acidalia strigaria, Hub.

LARVA. Golden green, with reddish-brown rings, through which a single long white streak is drawn.

FOOD-PLANTS. Birch, Plum.

Time of appearance. *Imago.* June.

LOCALITY. Kent.

Acidalia immutata, Linn. THE LESSER CREAM WAVE.

LARVA. About one inch long, and tapering gradually from the 9th segment to the head; ground colour dingy pale drab, pinker at the dorsal area; dorsal line double, dark on the posterior segments, and fading towards the head; subdorsal line dusky; spiracular line pale, extending down the claspers; on the dorsal surface, at the segmental divisions from the 5th to the 10th segments, are two approximate black spots; spiracles black; ventral area greyish. *Plate XXI, figs. 6 and 6a.*

FOOD-PLANTS. Mallow. Knotgrass (in confinement).

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Carmarthenshire, Cheshire, Dorset, Devon, Glamorganshire, Isle of Wight, Lake District, Lancashire, Norfolk, Somerset, Surrey, Suffolk, Scotland, Ireland.

Acidalia remutata, Hub. THE CREAM WAVE.

LARVA. About an inch long, and slender, rather smaller towards the head; greyish brown, marked irregularly more or less with dark brown; on the 10th segment these marks form themselves almost into a cross; there is a slight indication of a pale dorsal line, perceptible on the first four and last two segments; spiracles black; ventral area rather darker than the dorsal, with a pale central ventral line; head flat, the ocelli streaked on the under edge with brown; the antennal papillæ long and conspicuous. *Plate XXI., figs. 7 and 7a.*

Eggs laid May 30th, hatched June 16th and 17th.

FOOD-PLANTS. Birch, Sallow, Woodruff, Knotgrass (in confinement).

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to May.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland, common.

Acidalia fumata, Steph. THE SMOKY WAVE.

LARVA. Slender, and transversely wrinkled; pale brown; dorsal line brown, darker at the segmental divisions, and intersected by a very fine pale line; subdorsal line pale, intersected also by a fine pale line; lateral dilation pale, below which is a brown line, darker posteriorly; spiracles black, and below them, on the 2nd, 5th, and 6th segments, is a black dot; ventral area pale; legs pale; claspers darker.

FOOD-PLANTS. Bilberry, Heath, Heather. Chickweed (in confinement).

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. South Wales, north of England; common in Scotland and Ireland.

Acidalia strigilata, W.V. THE SUBANGLED WAVE.

LARVA. Fawn colour, slender, and slightly attenuated towards the head; dorsal area marked with short black brick-shaped marks, commencing at the 5th segment, on which there are three of these marks arranged side by side transversely; on the 6th, 7th, 8th, and 9th segments are four similar marks, two thicker ones on either side the dorsal line, with a smaller one slightly in advance of each; on the 10th segment are two only, placed rather far apart; dorsal line pale, bordered with light brown; spiracular line pale, raised, and edged below with brown; ventral area pale grey, with a still paler central ventral line; head round, paler than the body; legs also paler than the body. *Plate XXI., fig. 8.*

FOOD-PLANTS. Broom, Travellers' Joy, Heather. Knotgrass (in confinement).

PUPA. Below the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to June.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Kent, Ireland.

Acidalia imitaria, *Hub.* THE SMALL BLOOD VEIN.

LARVA. Long and slender; ground colour yellowish drab; dorsal line dark, particularly on the posterior segments; there are two faint longitudinal lines in the region of the spiracles; and four dark blotches on the side, more or less distinct in different specimens; beneath these marks on each side is a series of waved longitudinal lines, almost meeting on the ventral area; spiracles dark. *Plate XXI., fig. 9.*

FOOD-PLANTS. Chickweed, Sorrel, Sallow, Knotgrass.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to June.} \\ \text{Pupa.} \quad \text{May to August.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, tolerably common.

Acidalia emutaria, *Hub.* THE ROSY WAVE.

LARVA. About an inch long, pale dingy drab; dorsal line dark brown, intersected by a very fine indistinct whitish line; subdorsal line nearly black, edged above with a pale line; along the sides are some waved or oblique streaks; spiracular line dingy brown; spiracles black; the body tapers somewhat to the head.

FOOD-PLANT. Knotgrass (in confinement).

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to May.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITY. Kent.

Acidalia aversata, *Linn.* THE RIBAND WAVE.

LARVA. About eleven lines long, and tapering from the 9th segment to the head; body dark brown, rough, transversely wrinkled, and somewhat depressed and flattened; those segments from the 9th to the 13th are reddish ochreous; on the 9th is a cream-coloured shield-shaped spot, containing a reddish brown V-shaped mark; the remaining segments, to the 13th, have a

broad, ill-defined, dark dorsal stripe, through which runs a pale narrow medio-dorsal line; on the 6th, 7th, 8th, and 9th segments the lateral dilation is marked with a short, nearly white lateral streak; head brown, marked on the crown with two reddish ochreous stripes. *Plate XXI., figs. 10 and 10a.*

Eggs laid on the 10th of June, hatched on the 23rd of July. One larva only lived through the winter, and this was full fed by the 27th of April.

FOOD-PLANTS. Common Avens, Water Avens, Forget-me-Not, Meadow-sweet.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Acidalia inornata, *Haw.* THE PLAIN WAVE.

LARVA. About nine lines long, and tapering towards the head; body rather flat, rough, and transversely wrinkled; ground colour purple-brown or dull brown; dorsal line pale and indistinct; along the dorsal surface is a series of dark X-shaped marks, in the foremost angle of each of which is a whitish spot; from the 9th segment to the 13th the dorsal area is paler, and on the 9th is a dark Y-shaped mark, the foot of the Y extending to the anal flap. *Plate XXI., fig. 11.*

Eggs hatched on the 3rd of August.

FOOD-PLANTS. Heather, Sheep's Sorrel, Willow. Knotgrass (in confinement).

PUPA. On the surface of the earth, amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England and Ireland; not common.

Acidalia degeneraria, *Hub.* THE PORTLAND RIBAND WAVE.

LARVA. About ten lines long, and tapering from the 9th segment to the head; dorsal area suffused with dark brown; the 2nd, 3rd, and 4th segments have each a dorsal rufous patch, and the segments from the 9th to the 13th are rufous; dorsal line pale and interrupted; subdorsal line the same; all those segments from the 5th to the 9th have a double dark V-shaped mark; the dorsal area is divided from the ventral by a narrow, indistinct, pale line; spiracles black; ventral area nearly black, with three ash-grey marks on each segment.

FOOD-PLANT. Knotgrass (in confinement).



Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to April.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITY. Portland.

Acidalia emarginata, Linn. THE SMALL SCALLOP.

LARVA. Long and rough, with a few hairs. Body pale buff; the dorsal area from the head to the 4th segment is free from markings; from the 5th segment, along the centre of the back, are two longitudinal brown lines, extending to the anal flap, and passing through a series of five chevron-like marks, also commencing on the 5th segment; between these lines and the lateral skinfold is an interrupted waved brown line, and several brown spots. Lateral dilation pale; spiracles brown, ordinary dots black; head darker than the body, profusely marked with brown, and notched on the crown. *Plate XXI., fig. 12.*

FOOD-PLANTS. Great Bedstraw, Heath Bedstraw, Bindweed, Mallow. Knotgrass (in confinement).

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to July.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITY. England; generally distributed, but not common.

TIMANDRA, Dup.

Timandra amataria, Linn. THE BLOOD VEIN.

LARVA. Grey; dorsal line nearly white; subdorsal line the same, but less distinct and interrupted; centre segments somewhat swollen, and each has a chevron-like mark; head small. *Plate XXI., fig. 13.*

FOOD-PLANTS. Dock, Groundsel, Knotgrass, Sorrel, Sowthistle.

PUPA. Amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

Eggs laid on the 6th of July hatched on the 15th.

LOCALITIES. Great Britain and Ireland; common.

CABERIDÆ, Gn.

CABERA, Tr.

Cabera pusaria, Linn. THE COMMON WHITE WAVE.

LARVA. *Variety 1.*—About one inch and two lines long, slender and cylindrical, head slightly broader than the 2nd segment, and flat; colour pale green, or pale yellowish green; dorsal line darker than the body, and within

it on those segments, from the 5th to the 11th, is a purplish red mark; these marks are generally edged on the outer side with white; in some specimens the 2nd, 3rd, and 4th segments, and also the 12th and 13th, have similar purplish red marks, and sometimes the three first and two last are marked with a continuous blotch of the same colour; there is an interrupted reddish stripe along the side; spiracles pale, in black rings, ordinary dots black; claspers marked with purplish red; the head has a purplish streak on each side the face. *Plate XXI., fig. 14.*

Variety 2. Green; the purplish marks only present on the 5th to 11th segments, and on the cheeks; no marks along the side; legs and claspers green. *Plate XXI., fig. 14a.*

Variety 3. Brown; dorsal area rather lighter; the purple marks appearing of a darker shade of brown; ordinary dots white. *Plate XXI., fig. 14b.*

Eggs laid on the 6th of July hatched on the 16th.

FOOD-PLANTS. Alder, Beech, Birch, Hazel, Oak, Sallow.

PUPA. In a web on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Cabera rotundaria, *Haw.* THE ROUND-WINGED WAVE.

LARVA. No description.

FOOD-PLANTS. Birch, Alder, Hazel.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. Devonshire, Gloucestershire, Hants, Kent, Scotland; not common.

Cabera exanthemaria, *Scop.* THE COMMON WAVE.

LARVA. About an inch and two lines long, slender and cylindrical.

Variety 1. Colour pale green, or pale yellowish green; dorsal line darker. On the dorsal part of those segments, from the 5th to the 12th, is a mark (differing in shape in different individuals); this mark is purplish red, and contains a black spot bordered with white; subdorsal line yellowish and indistinct; along each side is a series of purplish red or chocolate-coloured blotches, each of which has four black dots arranged round it; spiracles pale, encircled with a darker colour; ordinary dots black, segmental divisions yellowish; ventral area green, with a pale central ventral line; head flat, with a purple mark on the crown and on each side of the face; there is also a

purple mark on each of the claspers; legs tinged with the same colour. *Plate XXI., fig. 15.*

Variety 2. Pale green, without the purplish dorsal markings, but with a series of purple marks along the side, each mark surrounded with four black dots. *Plate XXI., fig. 15a.*

Variety 3. Yellowish green, the purplish markings ill-defined and diffused over the body.

Eggs laid on the 21st of May hatched on the 6th of June.

FOOD-PLANTS. Alder, Birch, Hazel, Sallow.

PUPA. In a cocoon amongst leaves and moss.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June to September.} \\ \textit{Pupa.} \quad \text{September to May.} \\ \textit{Imago.} \quad \text{May to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

CORYCIA, *Dup.*

Corycia temerata, *W.V.* THE CLOUDED SILVER.

LARVA. Green speckled with paler green, with a rather broad, pale yellow dorsal line. When full grown, the dorsal line changes to a row of deep yellow spots, bordered with brown, situated at the segmental divisions, and extending from the 3rd to the 12th segments; spiracles brown, with some black spots in the spiracular region; ventral area glaucous green; head pale green, with an orange mark surrounded with black on each side the face; claspers tipped with pink.

FOOD-PLANTS. Bird-cherry, Blackthorn, Wild Cherry, Whitethorn.

PUPA. In a slight cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June to August.} \\ \textit{Pupa.} \quad \text{August to May.} \\ \textit{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; common.

Corycia taminata, *W.V.* THE WHITE-PINION SPOTTED.

LARVA. Rather short and stumpy; dull green and velvety, with a string of club-shaped black marks along the back; spiracles green, and below them a row of black dots; segmental divisions clearly defined; segmental skinfolds yellowish; ventral area glaucous green; head green, speckled with black. *Plate XXI., fig. 16.*

FOOD-PLANTS. Blackthorn, Wild Cherry.

PUPA. In a slight cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July and August.} \\ \textit{Pupa.} \quad \text{August to April.} \\ \textit{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. England and Ireland; not common.

ALEUCIS, *Gn.**Aleuois pictaria*, *Curt.* THE SLOE CARPET.

LARVA. Rather stout and somewhat swollen on the 3rd and 4th segments. Dingy smoke-colour, with a whitish patch on each side of the 8th and 9th segments; on the dorsal surface of those segments, from the 5th to 8th, is an indistinct V-shaped dark mark, and a transverse dark line on the 12th.

FOOD-PLANT. Blackthorn.

PUPA. On the earth.

Time of appearance { *Larva.* June and July.
Pupa. July to April.
Imago. April and May.

LOCALITIES. Devon, Essex, Hants, Sussex.

MACARIIDÆ.

MACARIA, *Curt.**Macaria alternata*, *W.V.* THE SHARP-ANGLED PEACOCK.

LARVA. Light green and shining; on the sides of the middle segments are three triangular reddish marks; legs reddish brown.—The caterpillar becomes reddish brown before pupation.

FOOD-PLANTS. Fir, Larch, Sallow.

PUPA. In earth.

Time of appearance { *Larva.* September.
Pupa. September to June.
Imago. July.

LOCALITIES. Carmarthenshire, Cornwall, Devonshire, Glamorganshire, Hants, Suffolk; not common.

Macaria notata, *Linn.* THE PEACOCK.

LARVA. "Dark green, yellowish brown on the sides, and with a row of yellowish brown dorsal spots (*Treitschke*)."—*Stain. Man.*, vol. ii., p. 56.

FOOD-PLANTS. Sallow, Birch.

PUPA. In earth.

Time of appearance { *Larva.* September and October.
Pupa. September to May.
Imago. June.

LOCALITIES. South of England, South Wales, Scotland, and Ireland; rare.

Macaria liturata, *Linn.* THE TAWNY BARRED ANGLE.

LARVA. "Green with whitish dorsal and subdorsal, and white spiracular lines; head brown (*Hub.*)"—*Stain. Man.*, vol. ii., p. 56.

FOOD-PLANT. Needles of Fir.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September and October.} \\ \text{Pupa.} \quad \text{October to April.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland. Generally distributed, but not common.

HALIA, Dup.

Halia vauaria, Linn. THE V MOTH.

LARVA. Colour varying in different specimens, from greyish green to dull lead colour, with numerous black warts; body yellower on the dorsal surface; on each side of each segment is a bright yellow mark enclosing three black dots; ordinary dots black; head grey, spotted with black. *Plate XXII., fig. 1.*

FOOD-PLANTS. Currant, Gooseberry.

PUPA. Contained in a web attached to the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

FIDONIIDÆ.

STRENIA, Dup.

Strenia clathrata, Linn. THE LATTICED HEATH.

LARVA. About 9 lines long, and green; central dorsal line white and very fine, edged with a line of the ground colour of the body, which is again bordered by a white stripe; subdorsal line white; between the subdorsal and dorsal lines is a narrow white line; spiracular stripe also white; in the spiracular region the colour of the body is darker green; spiracles black; segmental divisions yellowish and clearly marked; ventral area duller green striped with darker lines; head green, slightly bifid, and marked with brown about the mouth.

FOOD-PLANTS. Black Medick, Clover, Dutch Clover, Lucerne, Trefoil, Yellow Melilot.

PUPA. Beneath the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July to May.} \\ \text{Imago.} \quad \text{May and June, sometimes August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

PANAGRA, *Gn.***Panagra petraria, Hub.** THE BROWN SILVER LINE.

LARVA. "Their length is rather more than an inch; the ground colour of the back is olive green, of the belly paler; the white body is covered with slender chocolate-brown longitudinal lines arranged in pairs; there is a double medio-dorsal stripe, and three double stripes on each side, the lowest, darkest, and broadest. The spiracles are black, and below them is a creamy-white stripe."—*Newman's Moths*, p. 90.

FOOD-PLANT. Bracken.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

NUMERIA, *Dup.***Numeria pulveraria, Linn.** THE BARRED UMBER.

LARVA. Dull reddish-brown and wrinkled, with a few scattered hairs; there is a hump on the 9th segment and two small humps on the 10th; along each side of the 5th and 6th segments is an ochreous longitudinal line; spiracles brown, encircled with ochreous, and very conspicuous; ordinary dots whitish; ventral area pinkish, with a dark wart on the 5th and 6th segments; head large, notched on the crown; pale ochreous marked with brown; legs and claspers the same colour as the body. *Plate XXII., figs. 2 and 2a.*

Eggs laid the 30th of April hatched from the 20th to 28th of May; those laid on the 20th of June hatched on the 30th, and the larvæ were full fed by the 7th of August.

FOOD-PLANTS. Birch, Blackthorn, Hazel, Hornbeam, Sallow, White-thorn.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to August.} \\ \text{Pupa.} \quad \text{July to April.} \\ \text{Imago.} \quad \text{April and May.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland; common; rare in Ireland.

SCODIONA, *Bdv.***Scodiona belgiaria, Hub.** THE GREY SCALLOPED BAR.

LARVA. Smoke-coloured, suffused with a darker shade, with two warts on the back of each segment and a conspicuous bifid-pointed hump; on the 12th there is a white streak or line on the anterior claspers, and the 13th segment is divided into two points, which are directed backwards.

Varieties. In some varieties this larva has a broad cream-coloured dorsal line. *Plate XXII., figs. 3, 3a, and 3b.*

FOOD-PLANTS. Heather, Heath.

PUPA. In a cocoon on the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June to April.} \\ \textit{Pupa.} \quad \text{May.} \\ \textit{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

SELIDOSEMA, *Led.*

Selidosema plumaria, *W.V.* THE BORDERED GREY.

LARVA. "Brown, marbled with black; dorsal line black, expanded into a spot at the end of each segment; incisions of the segments whitish (*Hub.*)"—*Stain. Man.*, vol. ii., p. 60.

FOOD-PLANT. Birds'-foot Trefoil.

PUPA. Subterranean.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May.} \\ \textit{Pupa.} \quad \text{June.} \\ \textit{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Cheshire, Hampshire, Lancashire; Kerry, Ireland.

FIDONIA, *Tr.*

Fidonia carbonaria, *Linn.* THE NETTED MOUNTAIN MOTH.

LARVA. "Head narrower than the second segment; body slightly flattened and the lateral dilation distinct; a double series of minute dorsal warts, each of which emits a bristle; there are other bristles on the side below the spiracles; colour of the head dull brown, the face variegated with whitish-brown; body with the dorsal surface dingy wainscot-brown of two shades, disposed in very obscure waved stripes; spiracles pale with black rings; minute dorsal warts black; ventral slightly paler than the dorsal surface; a rather broad medio-ventral stripe still paler, and a narrower pale stripe on each side between this and the skinfold; legs and claspers of nearly the same colour as the ventral surface."—*Newman's Moths*, p. 92.

FOOD-PLANTS. Bearberry (red), Birch, Heath. Sallow (in confinement).

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June and July.} \\ \textit{Pupa.} \quad \text{July to May.} \\ \textit{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. North of England, Scotland; rare.

Fidonia atomaria, *Linn.* THE COMMON HEATH.

LARVA. About eight lines long, rather thick, and transversely wrinkled;

the head about as large as the 2nd segment, and the anal claspers spreading. Ground colour different shades of brown; dorsal line double, and paler than the body; subdorsal lines also pale; spiracular line reddish and above it the body is striated with numerous black longitudinal lines; ventral area reddish, with several reddish brown longitudinal lines; segmental divisions reddish; legs and claspers the same as the ventral area; ordinary dots black. *Plate XXII., fig. 4.*

Eggs hatched 11th of June, larvæ full fed about the 14th of July.

FOOD-PLANTS. Birds'-foot Trefoil, Clover, Heath, Heather, Trefoil.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{June and July.} \\ \textit{Pupa.} \quad \text{July to May.} \\ \textit{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Fidonia piniaria, Linn. THE BORDERED WHITE.

LARVA. About nine lines long, sea-green in colour; head long, flat, and shining. Dorsal line somewhat broad and white; subdorsal lines bluish-white, bordered above by a bluish green line, and intersected by a line of the same colour; lateral dilation conspicuous, edged above with a pale yellow line; all these lines are continued through the head to the mouth, where the dorsal line forms a V-shaped mark; the dorsal line also extends to the anal flap, and the yellow side stripes to the anal claspers; spiracles deep yellow; ventral area paler than the dorsal, with four ventral lines. *Plate XXII., fig. 5.*

FOOD-PLANTS. Scotch Fir, Larch.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August and September.} \\ \textit{Pupa.} \quad \text{September to April.} \\ \textit{Imago.} \quad \text{April and May.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland.

Fidonia pinetaria, Hub. THE RANNOCK GEOMETER.

LARVA. About half an inch long, and cylindrical. Dorsal line dark green expanding on each segment and edged with a fine black line; subdorsal line pinkish brown, edged with darker brown; between the dorsal and subdorsal lines is a white line; spiracular stripe broad and white, with a yellowish mark on each segment; between the subdorsal and the spiracular lines is a white line and three olive-brown lines of different shades; ventral area dingy white, with some short brown lines.

FOOD-PLANTS. Bilberry, Scotch Fir.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{March to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITY. Scotland.

Fidonia conspicuata, *W.V.* THE FROSTED YELLOW.

LARVA. Body greenish smoke-colour, striped longitudinally, and with a few short, scattered hairs; dorsal line narrow; on each side of it is a pair of very narrow, waved, approximate smoke-coloured stripes on a greenish ground; next to this is a black stripe, rather broad; spiracular line yellow and conspicuous; ventral area the same colour as the dorsal, with a central ventral pale stripe and several pale waved lines; head shining, pale brown with black markings and a few stiff hairs.

FOOD-PLANT. Broom.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Devonshire, Suffolk; rare. Scotland.

MINOA, *Tr.*

Minoa euphorbiata, *W.V.* THE DRAB GEOMETER.

LARVA. "Pale green or greyish black; dorsal line darker; subdorsal and spiracular lines spotted with yellow; head pale red (*Gn.*)"—*Stain. Man.*, vol. ii., p. 62.

FOOD-PLANTS. Cypress Spurge.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to October.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITY. South of England.

SCORIA, *Steph.*

Scoria dealbata, *Linn.* THE BLACK-VEINED MOTH.

LARVA. About one inch and four lines long, and tapering towards the head. Ground colour ochreous or brownish, with numerous waved lines; dorsal line, double, darker than the body, and expanding at the segments; subdorsal lines the same; the dorsal line is darker at the extremities; lateral dilation pale, and between it and the subdorsal line is a reddish stripe and a double-waved line; below the lateral dilation is a dusky line, and beneath this a reddish line; spiracles yellowish, ordinary dots black; ventral area pale, with three darker ventral lines.

FOOD-PLANTS. *Brachypodium Sylvaticum*, and other Grasses. Knot-grass, Goldenrod, Plantain (in confinement).

PUPA. Attached to a blade of grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Hertfordshire, Kent, Ireland; rare.

STERRHA, *Hub.*

Sterrha sacraria, *Linn.* THE VESTAL.

LARVA. About an inch long, slender, and tapering towards the head, which is rather flat and wide. Ground colour green or blue green; sides and posterior segments yellowish green, the ventral area whitish green; dorsal line slender, paler than the body, bordered more or less distinctly with red or rust-coloured lines, which, at the segmental divisions after the 5th, expand into V-shaped marks, the apex of the V pointing towards the head; these V-shaped marks each enclose a three-cornered yellowish white spot; the dorsal line is more distinct after the 8th segment; the spiracular line is yellowish green on the 2nd, 3rd, 4th, 11th, 12th, and 13th segments, and extends down the anal clasper; spiracles reddish; head pale brownish red with a pale stripe on each lobe, which is bordered above with brighter red, and below with a dark brown; claspers purplish pink.

FOOD-PLANTS. Chamomile, Dock. Knotgrass (in confinement).

PUPA. In a cocoon.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva. June.} & \text{August and September.} \\ \text{Pupa. June.} & \text{September and October.} \\ \text{Imago. July, August.} & \text{October.} \end{array} \right.$

LOCALITIES. Dorsetshire, Devonshire, Glamorganshire, Hants, Isle of Wight, Surrey, Sussex, Scotland.

APLASTA, *Hub.*

Aplasta ononaria, *Fuess.* THE REST-HARROW.

LARVA. "Short, fusiform, obese, and without tubercles, and entirely covered with short stiff hairs; its colour is pale dark green, with a darker medio-dorsal stripe, and a paler but indistinct spiracular stripe."—*Newman's Moths.*

FOOD-PLANT. Rest-Harrow.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva. April.} & \text{September.} \\ \text{Pupa. June.} & \text{September to April.} \\ \text{Imago. July and August.} & \text{May.} \end{array} \right.$

LOCALITY. Kent (Folkestone).

LYTHRIA, *Hub.***Lythria purpuraria**, *Linn.* THE PURPLE-BARRED YELLOW.

LARVA. Long, slender, and tapering from the 13th segment to the head. Greenish or reddish brown and striped, with a few hairs; the ventral area is pale glaucous green, and also striped; the juncture of the dorsal and ventral areas is clearly marked; head flat; antennal papillæ conspicuous.

FOOD-PLANTS. Dock, *Persicaria*.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August.} \\ \text{Pupa. August to May.} \\ \text{Imago. May to July.} \end{array} \right.$

LOCALITIES. Essex, Yorkshire.

ASPILATES, *Tr.***Aspilates strigillaria**, *Hub.* THE GRASS WAVE.

LARVA. Cylindrical, with a few short black bristles and a number of warts. Greyish brown, mottled and lined with darker and lighter colours; there are two small warts on the 8th segment, two larger ones on the 9th, and two small excrescences on the 10th; beneath the anal flap are two points directed backwards; head flat, and slightly narrower than the 2nd segment.

FOOD-PLANTS. Broom, Heather, Knotgrass, Heath.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. South of England and Ireland.

Aspilates citraria, *Hub.* THE YELLOW BELL.

LARVA. Body rather long, uniform in thickness, and pale yellowish fawn colour dorsal line ochreous brown, bordered with cream colour, only clearly show on the anterior segments; the subdorsal lines ochreous brown and rather indistinct; lateral skinfold conspicuous; spiracles brown; ventral area paler than the dorsal; head whitish, marked with light brown; from the 13th segment are two long whitish points, or protuberances, directed backwards. *Plate XXII., fig. 6.*

FOOD-PLANTS. Birds'-foot Trefoil, Carrot Wild, Grass, Spurge. Dock (in confinement).

PUPA. Amongst the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September.} \\ \text{Pupa. August to May.} \\ \text{Imago. May and June.} \end{array} \right. \begin{array}{l} \text{June to August.} \\ \text{August.} \\ \text{August.} \end{array}$

LOCALITIES. Carmarthenshire, Devonshire, Glamorganshire, Pembroke-shire, Ireland; rare.

Aspilates gilvaria, W.V. THE STRAW BELLE.

LARVA. About three-quarters of an inch long and cylindrical, tapering from the 10th segment to the head. Colour pale greyish ochreous, with a pinkish tinge along the sides; dorsal line rather dark brown, edged with a narrow brown line; these three lines being situated in a pale dorsal stripe; subdorsal line pale greyish buff, broad and bordered above with brown; lateral dilation pale; between the subdorsal line and the lateral dilation is a broad stripe speckled with brown, with two pale longitudinal lines passing along it; spiracles orange, encircled with brown; beneath each spiracle is a dark brown lateral dash. Anal flap pale, terminating in two points, and two longer points proceeding from beneath it; ventral area greyish ochreous, with two dusky ventral lines.

FOOD-PLANTS. Creeping Cinquefoil, Black Medick, Thyme-leaved Speedwell, Wild Thyme, Yarrow.

PUPA. Amongst sticks, stones, rubbish, etc.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to July.} \\ \text{Pupa.} \quad \text{August.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. South of England, South Wales; Galway, Ireland.

ZERENIDÆ, Gn.**ABRAXAS, Leach.****Abraxas grossulariata, Linn. THE MAGPIE MOTH.**

LARVA. Cream colour, with a series of black velvety marks down the centre of the back, intersected and divided by the ground colour; along each side are two rows of small black velvety spots, the spots in the upper row being smaller, streak-like, and less numerous than those in the lower; spiracular line reddish orange, the reddish colour being more perceptible on the 2nd, 3rd, and 4th, 11th, 12th, and 13th segments; there are a number of black markings in the cream-coloured ground below it, forming an interrupted line; spiracles black; head black, with a few hairs; legs black; claspers marked with black. *Plate XXII., figs. 7 and 7a.*

Eggs laid in July hatched in a few days.

FOOD-PLANTS. Apricot, Blackthorn, Bramble, Buckthorn, Currant, Elm, Gooseberry, Hazel, Livelong, Oak, Sallow.

PUPA. Amongst the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common everywhere.

Abraxas ulmata, *Fab.* THE CLOUDED MAGPIE.

LARVA. Bluish white, with eleven longitudinal black stripes; lateral dilation conspicuous; the same colour as the body; spiracles black; head and legs black and shining, and each of the claspers has a black mark. *Plate XXII., fig. 8.*

FOOD-PLANT. Elm.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Yorkshire, and other parts of England. Scotland, and Ireland.

LIGDIA, *Gn.***Ligdia adustata**, *W.V.* THE SCORCHED CARPET.

LARVA. Bright green; on the anterior part of the 6th, 7th, 8th, 11th, and 12th segments is a bright red elongated spot, bordered on either side by a black and then a white line; there are some lateral spots on the 6th and 7th segments of a deep red, mixed with yellow; the 10th and 11th segments have also yellow patches, spotted with red; subdorsal and spiracular lines white and very slender; head and claspers red, mixed with yellow.

FOOD-PLANT. Spindle Tree.

PUPA. Spun up in a leaf.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May and June. September.} \\ \text{Pupa. June. September to April.} \\ \text{Imago. June and July. April and May.} \end{array} \right.$

LOCALITIES. England; not common. Ireland; local.

LOMASPILIS, *Hub.***Lomaspilis marginata**, *Linn.* THE CLOUDED BORDER.

LARVA. Ten lines long; dorsal area dull green, with a number of black dots, from which proceed short bristly hairs; there are six dark green longitudinal lines down the back; segmental divisions distinct and yellowish; lateral dilation bluish white, ventral area the same; anal flap purplish; head dull yellowish green, with two purplish pear-shaped marks down the face; legs and claspers dull yellowish green. *Plate XXII., figs. 9 and 9a.*

FOOD-PLANTS. Blackthorn, Hazel, Sallow, Willow.

PUPA. Amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August and September.} \\ \text{Pupa. August to May.} \\ \text{Imago. May to August.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; common.

LIGIDÆ, Gn.

PACHYCNEMIA, Steph.

Pachycnemia hippocastanaria, Hub. THE HORSE CHESNUT.

I know of no description of this larva.

FOOD-PLANTS. Heath, Heather.

PUPA. Subterranean.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. May to January.} \\ \text{Imago. February to September.} \end{array} \right.$

Probably two or three broods.

LOCALITIES. Hampshire, Surrey, Sussex.

HYBERNIIDÆ, Gn.

HYBERNIA, Lat.

Hybernia rupicapraria, W.V. THE EARLY MOTH.

LARVA. Variable; different shades of green or brown.

Variety 1. Apple-green; ventral area paler, with four whitish or yellowish lines down the back, and numerous whitish longitudinal markings between them; subdorsal lines broader and paler than the others, and continued to the end of the anal flap; there are also two interrupted white lines in the region of the spiracles; segmental divisions below the subdorsal lines yellow; head green and translucent.

Variety 2. Pale sea-green; four delicate white stripes down the back, passing through alternate squares of pale bluish white or brown, and marked at the edge with dark brown; there are two interrupted white lines on each side; spiracles black, segmental divisions beneath the subdorsal lines yellow. *Plate XXII., fig. 10.*

Variety 3. Brown; dorsal surface of the centre segments whitish with four longitudinal stripes along it; on the upper side of each segment are two black dots; segmental divisions brown and clearly marked; there are two



interrupted white lines on each side; head speckled with black. *Plate XXII., fig. 10a.*

FOOD-PLANTS. Blackthorn, Whitethorn.

PUPA. In a web amongst fallen leaves on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to June.} \\ \text{Pupa. June to January.} \\ \text{Imago. January and February.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Hybernia leucophearia, *W.V.* THE SPRING USHER.

LARVA. *Variety 1.* Pale yellowish green, with numerous pale yellowish dots; dorsal line yellowish, double, narrowing at the segmental divisions; subdorsal line paler; sometimes the subdorsal line has a series of dark-brown dashes on its outer side.

Variety 2. Pale drab; dorsal line white; subdorsal line the same, the latter streaked on the outside with dark brown; there is a brown mark on each side the 2nd segment, and a series of brown marks down the back.

There is also a dark olive-green variety.

FOOD-PLANTS. Oak, Elm.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to June.} \\ \text{Pupa. June to February.} \\ \text{Imago. February and March.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; common.

Hybernia aurantiaria, *Hub.* THE SCARCE UMBER.

LARVA. "Described by Mr. Hornby. When first hatched it is of a deep yellow colour, which grows gradually darker until it becomes nearly black, excepting a medio-dorsal yellow stripe; when full fed it is dusky greenish-black, with a light brown medio-dorsal stripe."—*Newman's Moths.*

FOOD-PLANTS. Birch, Buckthorn, Elm, Hazel, Oak, Whitethorn.

PUPA. In a cocoon on the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. March to June.} \\ \text{Pupa. May to November.} \\ \text{Imago. October and November.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; not uncommon.

Hybernia progemma, *Hub.* THE DOTTED BORDER.

LARVA. Variable.

Variety 1. Light brown and slender, with various dark markings on the back and sides, and sometimes with oblique lines on the centre seg-

ments; dorsal line broad and pale, bordered on each side with brown; spiracular line pale; there is a dark mark at the junction of the 12th and 13th segments, and two white dots in front of it; spiracles pale, encircled with black; head reddish, with a streak across the face. *Plate XXII., figs. 11b, 11c.*

Variety 2. Greenish drab; dorsal line pale drab, bordered on each side with a darker colour; various dark markings on the back and sides; spiracular line pale drab, bordered above and below with brown. Head, legs, and claspers reddish brown. *Plate XXII., fig. 11a.*

Variety 3. Greyish; markings the same as in the above (*fig. 11*).

FOOD-PLANTS. Beech, Birch, Blackthorn, Cherry, Elm, Hazel, Hornbeam, Oak, Pear, Poplar, Sallow, Sycamore, Whitethorn, Willow.

PUPA. Beneath the earth.

Time of appearance	{	<i>Larva.</i> April to July.
		<i>Pupa.</i> July to March.
		<i>Imago.</i> February and March.

LOCALITIES. Great Britain and Ireland; common.

Hybernia defoliaria, Linn. THE MOTTLED UMBER.

LARVA. Dorsal area dark grey, with numerous brown longitudinal markings; dorsal line pale, bordered with a brown line; spiracular line bright canary colour, broad, and interrupted, extending from the 4th to the 9th segments; below this are some black and grey markings; spiracles white, encircled with black, and situated in a brown blotch; ventral area dingy yellow; head and 13th segment orange brown; legs and claspers the same. *Plate XXII., figs. 12, and 12a.*

FOOD-PLANTS. Apple, Apricot, Birch, Blackthorn, Hazel, Hornbeam, Oak, Cherry, Lime, Pear, Plum, Whitethorn, Elm, Poplar, Sallow, Willow.

PUPA. On the surface of the earth.

Time of appearance	{	<i>Larva.</i> May and June.
		<i>Pupa.</i> June to October.
		<i>Imago.</i> October to December.

LOCALITIES. England, Wales, and Ireland; common.

ANISOPTERYX, *Steph.*

Anisopteryx æscularia, W.V. THE MARCH MOTH.

LARVA. About one inch long, slender and cylindrical. Bright yellowish green; dorsal line dark green, edged with grey; subdorsal line greyish white; spiracular line the same; between the subdorsal and the spiracular lines is a very fine pale grey line; segmental divisions yellow; spiracles black, ventral area bright green.—See *G. T. Porritt, E. M. M.*, vol. ix., p. 272.

FOOD-PLANTS. Apple, Ash, Blackthorn, Cherry, Elm, Horse Chesnut, Lime, Oak, Whitethorn.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April and May.} \\ \text{Pupa. June to March.} \\ \text{Imago. February to April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

LARENTIIDÆ.

CHIMATOBIÆ, Steph.

Chimatobia brumata, Linn. THE WINTER MOTH.

LARVA. Variable.

Variety 1. Body rather thick, slightly attenuated at each end; head smaller than the 2nd segment; ground colour pale green, dorsal line darker than the ground colour; subdorsal line white, spiracular line yellowish; between the dorsal and subdorsal lines is a rather narrow pale line; spiracles black, head green; legs and claspers green and shining. *Plate XXIII, fig. 1.*

Variety 2. Yellowish green; dorsal line dark-green edged with a pale line; subdorsal and spiracular lines whitish; between the dorsal and subdorsal lines is a whitish line; head marked with brown.

Variety 3. Greenish slate colour; dorsal line nearly black, the remaining lines whitish; head black. *Plate XXIII, fig. 1a.*

Variety 4. Yellowish; dorsal line dark green, remaining lines yellowish.

FOOD-PLANTS. Alder, Apple, Apricot, Ash, Beech, Birch, Blackthorn, Cherry, Chesnut, Currant, Hazel, Hornbeam, Hop, Horse Chesnut, Lime, Maple, Medlar, Mountain Ash, Oak, Plum, Pear, Peach, Poplar, Quince, Rose, Sallow, Sycamore, Whitethorn, Whortleberry, Willow, Walnut, Wych Elm.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to June.} \\ \text{Pupa. June to October.} \\ \text{Imago. October to December.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Chimatobia boreata, Hub. THE NORTHERN WINTER MOTH.

LARVA. Body rather thick, slightly attenuated at each end; head smaller than the 2nd segment. Pale yellowish green; dorsal line darker green, subdorsal lines nearly white, spiracular line the same; spiracles black and very

distinct; head grey, with four black marks; mouth black; there are also two faint black marks on the corslet; anal flap shining; legs black. *Plate XXIII., fig. 2.*

FOOD-PLANT. Birch.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June.} \\ \text{Pupa. June to October.} \\ \text{Imago. October.} \end{array} \right.$

LOCALITIES. England and Wales; not uncommon.

OPORABIA, *Steph.*

Oporabia dilutata, *W.V.* THE NOVEMBER MOTH

LARVA. Stout, cylindrical, incisions of the segments slightly compressed; body velvety.

Variety 1. Ground colour bright green; on the 2nd segment there is a purple plate; the dorsal line is formed by a purple ornamentation, but faintly indicated on the 3rd and 4th segments; anal flap tipped with purple; subdorsal line darker green than the body; lateral dilation yellow; ventral area pale bluish green; head green, rather flat and retractile; legs and claspers green, tipped with purple. *Plate XXIII., fig. 3.*

Variety 2. Bright green with numerous yellow dots; dorsal and subdorsal lines scarcely perceptible; two pale waved yellowish lines above the spiracles; segmental divisions yellowish; anal flap edged with yellowish white; ventral area pale glaucous green; head pale green. *Plate XXIII., fig. 3a.*

Variety 3. Bright green; a purple plate on the 2nd segment, and a row of purple spots down the back; lateral dilation nearly white, marked above and below with purplish brown. *Plate XXIII., fig. 3b.*

Variety 4. Green; each segment suffused with dark olive green; dorsal line dark olive green; lateral dilation nearly white; head green.

FOOD-PLANTS. Apple, Beech, Birch, Blackthorn, Elm, Hornbeam, Hazel, Oak, Poplar, Whitethorn, Willow, Sallow, Lime.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May and June.} \\ \text{Pupa. June to September.} \\ \text{Imago. September to November.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Oporabia filigrammaria, *Herr Schf.* THE AUTUMNAL MOTH.

LARVA. "Stout and smooth; the general colour rich velvety green; the belly pale whitish green; the head and 2nd segment shining, and having a

blackish tinge; on each side of the dorsal vessel is a pale yellowish green stripe, and on each side are two sulphur-yellow stripes; on the back of each segment tubercles appear as minute yellow dots; the segmental divisions are orange-yellow; the spiracles are yellow, and between them and the belly are a few speckles."—*Newman's Moths*, p. 109.

FOOD-PLANTS. Heath, Bilberry, Sallow.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ March and April.} \\ \textit{Pupa.} \text{ August to April.} \\ \textit{Imago.} \text{ August and September.} \end{array} \right.$

LOCALITIES. Devonshire, North of England, South Wales, Scotland.

LARENTIA, *Tr.*

Larentia didymata, *Linn.* THE TWINSPOOT CARPET.

LARVA. About one inch long; body rather flattened and depressed, tapering towards the head with a few hairs; ground colour dull green, paler at the sides; lateral dilation conspicuous; edged with yellowish white; dorsal line dark green, subdorsal line dark green, but less distinct; ventral area paler than the dorsal, and here the segmental divisions are yellow; head round on the crown, face flat; head, corslet, legs, and claspers brighter green than the body, and translucent. *Plate XXIII., figs. 4 and 4a.*

Eggs laid in August hatched on the 12th of March; the larvæ turned to pupæ on the 22nd of May, and the imagines appeared on the 2nd of October.

FOOD-PLANTS. Bilberry, Chervil, Primrose, Wood-Sage, Cowslip.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ March to May.} \\ \textit{Pupa.} \text{ May to August.} \\ \textit{Imago.} \text{ August to October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Larentia multistrigaria, *Haw.* THE MOTTLED GREY.

LARVA. Ochreous, tinged with pink, with seven reddish brown longitudinal stripes on the back and sides; spiracles black; ventral area paler than the dorsal, and striped with pinkish brown waved lines; head greyish brown. *Plate XXIII., fig. 5.*

The eggs hatched on the 30th of April.

FOOD-PLANTS. Heath, Bedstraw, Sallow, Woodroof.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ May and June.} \\ \textit{Pupa.} \text{ July to May (?)} \\ \textit{Imago.} \text{ March and April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Larentia cæsiata, W.V. THE GREY MOUNTAIN CARPET.

LARVA. About ten lines long and velvety; the segmental divisions clearly marked; ground colour of different shades of yellowish green or olive green; dorsal line yellow, interrupted by a series of eight pale pink V-shaped marks; these marks are bordered on the outer side with brown, which fades into the ground colour of the body; lateral dilation white and conspicuous; spiracles black; ventral area paler than the dorsal; head smaller than the 2nd segment, reddish brown; legs and claspers the same. Some specimens are much darker than others, the V-shaped marks being lilac, the brown margin nearly black, and the lateral dilation yellowish. *Plate XXIII., figs. 6, 6a, 6b.*

FOOD-PLANTS. Heath, Heather, Red Whortleberry.

PUPA. In a cocoon amongst the food-plants.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Cumberland, Durham, Lancashire, Yorkshire, Scotland, Ireland.

Larentia ruficinctata, Gn. THE YELLOW-RINGED CARPET.

LARVA. "Dull green, with a row of triangular dorsal spots; reddish, edged with white (*Freyer*)."—*Stain. Man.*, vol. ii., p. 78.

FOOD-PLANTS. Mossy Saxifrage; White Meadow Saxifrage.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Cumberland, Lancashire, Westmoreland. Perthshire, Scotland.

Larentia salicata, Hub. THE STRIPED TWINSPOUT CARPET.

LARVA. Cylindrical; dull brown, with four whitish longitudinal lines down the back; spiracular line pale pinkish; lateral dilation conspicuous; head pale brown, marked with darker brown and translucent; legs and claspers dull brown.

FOOD-PLANTS. Bedstraw and Woodroof.

PUPA. Amongst the food-plants.

Time of appearance. *Imago.* June to August.

LOCALITIES. Glamorganshire, Lake District, North Devon, Scotland, Ireland.

Larentia olivata, W.V. THE BEECH GREEN CARPET.

LARVA. Pale ochreous, mottled with darker brown; there is a dorsal,

subdorsal, and lateral dark line, all continuous to the 4th segment, and from the 10th to the 13th; but on the segments intervening, they are each formed by a series of dashes; the dorsal line is darker near the head, the subdorsal and lateral lines somewhat waved; spiracles black, ventral area darker and mottled.

FOOD-PLANT. Great Bedstraw.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Devonshire, Lake District, North of England, South Wales, Scotland, Ireland.

Larentia pectinataria, *Fuess.* THE GREEN CARPET.

LARVA. Short, thick, and stumpy, with a number of black warts, from which proceed short bristly hairs. Reddish ochreous, variously mottled, and marked with dark-grey brown; an interrupted dark dorsal line passes through five triangles and terminates at the fifth; these triangles are margined on the outside by the grey colour with which the body is suffused; the anterior segments ochreous; ordinary dots black; spiracles black, encircled with a raised ochreous ring. *Plate XXIII., figs. 7, 7a.*

When first hatched the caterpillar is red, and pale towards the hind claspers, the head dark brown.

Eggs laid on the 20th of July hatched on the 2nd of August.

FOOD-PLANTS. Great Bedstraw, Heath Bedstraw, Rough Bedstraw, Woodroof.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

EMMELESIA, *Steph.*

Emmelesia affinitata, *Steph.* THE RIVULET.

LARVA. "Dirty white; head anterior legs plate on 2nd segment, and spiracles black (*Gn.*)"—*Stain. Man.*, vol. ii., p. 80.

FOOD-PLANT. Ragged Robin.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITY. Great Britain; not uncommon.

Emmelesia alchemillata, Linn. THE SMALL RIVULET.

LARVA. About an inch long, stout, and stumpy, with a few hairs; dorsal area purple; dorsal line broad, pale yellow, commencing at the head; sub-dorsal and spiracular lines pale yellow and narrow; spiracles black, ordinary dots the same; ventral area pale yellowish green, with two darker longitudinal lines; head and corslet black and shining.

FOOD-PLANTS. Common Hemp Nettle, Red Hemp Nettle (Seeds and Flowers).

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Emmelesia albulata, W.V. THE GRASS RIVULET.

LARVA. Dingy greenish yellow; dorsal line and lateral dilation darker green,—the former broad, the latter narrow; head brown and shiny; corslet and anal flap smoke-colour and shining.

FOOD-PLANT. Yellow Rattle (seeds of).

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{October to April.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

Occasionally double-brooded in the North.

LOCALITIES. Great Britain and Ireland.

Emmelesia decolorata, Hub. THE SANDY CARPET.

LARVA. Obese, but smaller towards the extremities; head smaller than the 2nd segment. Body pale putty colour; sides and ventral area speckled with black dots; along each side are three undulating brownish grey stripes; spiracles pale putty colour encircled with brown; head brown and shining; corslet the same; the anal flap terminates with a brown and shining plate; legs brown and shining; claspers the same as the body. *Plate XXIII., fig. 8.*

FOOD-PLANTS. Red Campion (flowers of), Yellow Rattle (seeds).

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{August to —.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland; common; rare in Ireland.

Emmelesia tæniata, Steph. THE BARRED CARPET.

LARVA. Dorsal area rich dark salmon, browner at the segmental



divisions, paler posteriorly, with a black wedge-shaped mark on the back, enclosed in a lozenge-shaped pale pink spot; ventral area pale pinkish yellow; head darker than ventral area. See *J. B. Hodgkinson Entomo.*, vol. xi. p. 231.

FOOD PLANT. Nasturtium in confinement.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August and September.} \\ \textit{Imago.} \text{ June and July.} \end{array} \right.$

LOCALITIES. Lake District, Ireland.

Emmelesia unifasciata, *Haw.* HAWORTH'S CARPET.

LARVA. Pale grey or drab; dorsal and subdorsal lines nearly black, interrupted, but meeting on the 10th segment and tapering away to the end of the anal flap; between the subdorsal and spiracular lines is a brown waved line; the lateral dilation brownish above, pale below; the lateral lines disappear on the 10th segment; below the lateral dilation are two brown lines, the upper one darker and narrower than the lower; spiracles black, on a pale ground; ventral area pale yellowish, with two darker ventral lines; head pale yellowish, marked with brown; corslet the same.

FOOD-PLANT. Red *Bartsia*.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ September and October.} \\ \textit{Imago.} \text{ August.} \end{array} \right.$

Sometimes two or three years in the pupa state.

LOCALITIES. Gloucestershire, Kent, Lake District, Lancashire, Surrey, Scotland.

Emmelesia ericetata, *Curt.* THE HEATH RIVULET.

LARVA. I know nothing of this larva.

Time of appearance. *Imago.* June and July.

LOCALITIES. North of England, Scotland, Ireland; very local.

Emmelesia blandjata, *W.V.* THE PRETTY PINION.

LARVA. "Green, with a dorsal row of green triangles; spiracular line yellowish green (*Freyer*)."—*Stain. Man.*, vol. ii., p. 82.

FOOD-PLANT. Eyebright.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{ll} \textit{Larva.} & \text{September.} & \text{June and July (?)} \\ \textit{Pupa.} & \text{October to May,} & \text{July (?)} \\ \textit{Imago.} & \text{May and June.} & \text{July and August.} \end{array} \right.$

LOCALITIES. Glamorganshire, Isle of Wight, Lake District, Merionethshire, Worcestershire, Yorkshire, Scotland, Ireland.

EUPITHECIA, *Curt.**Eupithecia venosata*, *Fab.* THE NETTED PUG.

LARVA. Short, stout, and stumpy; dorsal area dark smoke colour, with a few short hairs and some white dots; ventral area slaty grey; head dark brown. *Plate XXIV., fig. 1.*

FOOD-PLANTS. Bladder Campion, Red Campion, Sea Campion, White Campion.

PUPA. In a slight cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{July to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia consignata, *Bork.* THE PINION-SPOTTED PUG.

LARVA. "Long, slender, tapering towards the head. Ground colour grass green, slightly tinged with yellow; segmental divisions yellowish; central dorsal line very slender, dark purplish red, enlarged at the base of each segment into a spear-head shaped blotch. Dorsal blotches bordered with yellow, and becoming confluent on the capital and caudal segments. Head somewhat broad, green, very slightly marked with purplish red. Spiracular line puffed, rather paler green than the rest of the body; blotched into purplish red on a few of the central segments, and more or less bordered with straw colour. Central ventral line whitish. Body somewhat wrinkled, studded with a very few short, slender, whitish hairs."—*H. Harpur Crewe, E. M. M., vol. v., p. 72.*

FOOD-PLANTS. Apple, Oak, Whitethorn.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{September to April.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Devonshire, Gloucestershire, Herefordshire, Sussex.

Eupithecia linariata, *W. V.* THE TOADFLAX PUG.

LARVA. *Variety 1.* Rather stumpy, and tapering towards the extremities; pale green, with a few hairs and a series of reddish brown markings down the back; subdorsal line dingy greenish yellow; spiracles black; ventral area dusky. *Plate XXIV., fig. 2.*

Variety 2. Uniformly green; spiracles black. *Plate XXIV., fig. 2a.*

FOOD-PLANT. Toadflax (flowers of).

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August and September.} \\ \text{Pupa. September to June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. England and Wales.

Eupithecia pulchellata, Steph. THE FOXGLOVE PUG.

LARVA. *Variety 1.* Dorsal area greenish ochreous, with a few pale hairs dorsal line broad, brownish purple; subdorsal line the same colour but narrow, and interrupted posteriorly; spiracular line also the same colour, but spotted and marked with brown; ventral area pale green; central ventral line pale. *Plate XXIV., fig. 3.*

Variety 2. Pale green; dorsal, subdorsal, and spiracular lines pinkish. *Plate XXIV., fig. 3a.*

Variety 3. Apple green, slightly suffused with darker green; dorsal line dull green; subdorsal line dull green, interrupted and indistinct; spiracular line indistinct; segmental divisions pale greenish yellow; ventral area whitish. *Plate XXIV., fig. 3b.*

FOOD-PLANT. Foxglove (flowers of).

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August to May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. England and Wales.

Eupithecia centaureata, W.V. THE LIME SPECK.

LARVA. Long and slender, tapering slightly towards the head.

Variety 1. Bright yellowish-green, with a dorsal series of five dull red trident-shaped marks; these marks are connected by a reddish dorsal line, which commences at the head; ventral area white, with a few reddish markings. *Plate XXIV., fig. 4.*

Variety 2. Bright ochreous; the trident-shaped marks and dorsal line dull orange. *Plate XXIV., fig. 4a.*

Variety 3. Pale yellowish green; the marks and dorsal line a darker shade of green. *Plate XXIV., fig. 4b.*

Variety 4. Green; the marks and dorsal line being absent.

FOOD-PLANTS. Flowers of Burnet Saxifrage, Cow Parsnip (seeds), Centaury, Devil's-bit Scabious, Earthnut, Field Scabious, Geranium, Golden-rod, Groundsel, Heath, Heather, Hemp Agrimony, Hoary Groundsel, Little Canterbury Bells, Parsnip, Ragwort, Small Scabious, Rest Harrow, Yarrow.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia succenturiata, Linn. THE BORDERED LIME SPECK.

LARVA. *Variable.*

"Variety 1. Dull dark reddish brown; the central dorsal line is dingy black, connecting a chain of dull black inverted kite-shaped blotches, which become confluent on the anterior and posterior segments; subdorsal lines dusky, slender, waved, interrupted, darker between the dorsal blotches; median dorsal blotches at some distance from each other; the border generally pale and the centre dusky; the spiracular line is dirty white, interrupted; the head is bordered by a reddish line; the belly is dusky at the edges and pinkish white in the middle; the central ventral line blackish; the back and sides sprinkled with a few reddish hairs; the central area dingy.

"Variety 2. Pale reddish brown, the central dorsal line and blotches being dingy olive; the subdorsal lines dusky, very indistinct; in other respects resembling Variety 1.

"Variety 3. Ground colour, dark, dingy olive."—*H. H. Crewe.*

FOOD-PLANTS. Mugwort (leaflets of), Yarrow.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. England and Ireland; local; Scotland, doubtful.

Eupithecia subfulvata, Haw. THE TAWNY SPECK.

LARVA. Rather long and slender; pale brownish grey, speckled with white, with a series of brown oval marks down the back; these marks are intersected by a rather broad olive dorsal line; subdorsal line brown and interrupted; spiracular line white, bordered below with brown; ventral area paler than the dorsal, with a brown central ventral line; head small, pale, speckled with brown. *Plate XXIV., figs. 5 and 5a.*

FOOD-PLANTS. White Mullein, Yarrow.

PUPA. In a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; generally distributed.

Eupithecia subumbrata, W.V. THE SHADED PUG.

LARVA. Long, slender, rough, and tapering towards the head.

Variety 1. Yellowish green; dorsal line dark green, becoming purple on the anal flap; subdorsal line green, but very indistinct; spiracular line pale green; spiracles white, encircled with brown; segmental divisions yellow; sides of the 13th segment yellow; the anal flap terminates in two purple points, directed backwards, similar to those in the Genus *Cidaria*, each point emitting a hair; head and legs ochreous, claspers green. *Plate XXIV., fig. 6.*

Variety 2. Ground colour dull green; markings the same as in Variety 1.

FOOD-PLANTS. Autumnal Gentian, Bedstraw, Black Knapweed, Field Gentian, Field Scabious, Hawk-bit, Hawk's-beard, Marjoram, Rough Dandelion, Scabious (Devil's-bit), Self-heal (flowers of).

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to April.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England, Scotland, and Ireland.

Eupithecia pernotata, Gn. GUENÉES PUG.

LARVA. No description.

One specimen of this larva was taken by Mr. W. Machin.

FOOD-PLANT. Golden Rod (flowers of).

Eupithecia plumbeolata, Harw. THE LEAD-COLOURED PUG.

LARVA. "Somewhat short and stumpy; the ground colour is pale yellowish green; the central dorsal line broad, continuous, dull purplish red, enlarged into a somewhat pear-shaped blotch on the centre of each segment; subdorsal lines narrower, sinuous, dull purplish red; dorsal and subdorsal lines sometimes merged into one, leaving the whole back and sides suffused with purplish red; a few slender yellowish hairs sprinkled over the dorsal and lateral segments; the belly is naked, pale dull greenish yellow; central ventral line wanting; subventral lines narrow, purplish red."

—*H. Harpur Creive.*

FOOD-PLANTS. Meadow Cow Wheat, Travellers' Joy, Yellow Rattle (flowers of).

PUPA. In a cocoon on a flower, or on the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{September to April.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Eupithecia isogrammata, Tr. HAWORTH'S PUG.

LARVA. Short, thick, and stumpy, smaller towards the extremities.

Variety 1. Ground colour pink, with three longitudinal darker lines down the back; ventral area pinkish grey; head, 2nd and 13th segments, pinkish grey, and shining. *Plate XXIV., fig. 7.*

Variety 2. Bluish green, with three longitudinal darker lines down the back.

Variety 3. Uniformly green.

FOOD-PLANT. Travellers' Joy (flowers of).

PUPA. In an earthen cocoon.

Time of appearance { *Larva.* July and August.
 Pupa. August to June.
 Imago. June and July.

LOCALITIES. England and Ireland.

Eupithecia pygmæata, Hub. THE MARSH PUG.

LARVA. "Long, very slender, extremely attenuated on the capital segments; ground colour pale dull yellowish-green; central dorsal line pale olive, connecting a series of very distinct and well-defined urn-shaped blotches of the same colour, which become confluent on the anal and capital segments; subdorsal and spiracular lines pale olive, sinuous, well defined, and rather broad; belly without markings, skin rough and rugose, freely studded with short whitish hairs."—*H. Harpur Crewe, Ento.* vol. vi., p. 166.

FOOD-PLANT. Greater Stitchwort.

Time of appearance { *Larva.* June.
 Imago. May and June.

LOCALITIES. England, Scotland, and Ireland; not common.

Eupithecia helveticaria, Bdv. THE EDINBURGH PUG.

LARVA. "Rather short and stumpy, altogether a most dumpy-looking caterpillar, of the same thickness from head to tail; the ground colour is grass green; the central dorsal line dark green and slender, the tip always purplish brown or purple; the subdorsal lines are broader dark green, edged anteriorly with pale straw colour, and posteriorly sometimes with purple; the spiracular line is waved, pale yellow or straw colour; the head is slightly bifid, and when at rest curved inwards; it is of a dusky purple colour, sometimes almost black; the segmental divisions are yellowish."—*H. Harpur Crewe.*

FOOD-PLANT. Juniper.

Time of appearance { *Larva.* July to September.
 Pupa. September to April.
 Imago. May and June.

LOCALITY. Near Edinburgh.



Eupithecia arceuthata, *Frey.* FREYER'S PUG.

LARVA. Short, stout, of uniform thickness. Bright green; dorsal line dark green; subdorsal lines yellowish white, dark green on the hinder segments; spiracular line white, sometimes yellowish; segmental divisions yellow; ventral area bright green, with a yellowish central ventral line; head dull green, and notched on the crown.

FOOD-PLANT. Juniper.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to November.} \\ \text{Pupa.} \quad \text{November to May.} \\ \text{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. Buckinghamshire, Ireland; rare.

Eupithecia satyrata, *Hub.* THE SATYR PUG.

LARVA. *Variety 1.* Pale yellowish green, speckled with yellow, and tapering towards the head, with a series of chocolate kite-shaped marks down the back, connected by a dorsal line of the same colour; the subdorsal lines are only perceptible on the anterior and posterior segments; segmental divisions yellow. *Plate XXIV., fig. 8.*

Variety 2. Dull green, with a series of darker kite-shaped marks down the back. *Plate XXIV., fig. 8a.*

Variety 3. Dull green, with some purple ornamentations on the back, which form themselves into a series of kite-shaped marks, connected by a greenish dorsal line; lateral dilation pale and conspicuous; spiracles black; ventral area bluish green.

Variety 4. Dull green, with a darker dorsal line, and without the kite-shaped marks.

FOOD-PLANTS. Flowers of Autumnal Gentian, Black Knapweed, Centaury, Devil's-bit Scabious, Field Gentian, Field Scabious, Great Bedstraw, Great Wild Valerian, Hawk-bit, Hawk's-beard, Heath, Marjoram, Rest Harrow, Self-heal.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Buckinghamshire, South Wales, Scotland, Ireland.

Eupithecia callunaria, *Dbl. variety.* E. SATYRATA.

LARVA. Ground colour pinkish, with a series of purplish blotches down the back, edged with purplish white. *Plate XXIV., fig. 8b.*

FOOD-PLANTS. Heath, Heather.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITY. Scotland.

Eupithecia egenaria, Herr. Sch. THE PAUPER PUG.

LARVA. Not described.

Time of appearance. *Imago*. June.

LOCALITY. Wales (?)

Eupithecia castigata, Haw. THE GREY PUG.

LARVA. Long, slender, and rough, with numerous dots and a few white hairs.

Variety 1. Fulvous, with a series of brown kite-shaped marks down the back, connected by a rather paler brown dorsal line, which passes through them, and extends from the head to the anal flap,—this line is darker at the extremities; the lateral dilation and anal flap brown, edged with pale buff; central ventral line purplish. *Plate XXV., fig. 1.*

Variety 2. Ground colour pale ochreous; dorsal line dull green, dorsal marks the same; subdorsal line red, anal flap the same; head dull green. *Plate XXV., fig. 1b.*

Variety 3. The same as *Variety 1*, but the markings much paler. *Plate XXV., fig. 1a.*

FOOD-PLANTS. Angelica, Bramble, Centaury, Cow-Parsnip, Devil's-bit Scabious, Goldenrod, Hazel, Heath, Heather, Meadow Vetchling, Nettle, Ragged Robin, Ragwort, Red Campion, Rest Harrow, St. John's Wort, White Campion, Willow Herb.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to April.} \\ \text{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia trisignaria, Herr Sch. THE TRIPLE SPOT PUG.

LARVA. Short, stout, and tapering somewhat towards the head; ground colour pale green; dorsal and subdorsal lines dark green; spiracular line yellowish white; ventral area green; central ventral line yellowish white; head black. *Plate XXV., fig. 2.*

FOOD-PLANTS. Flowers of Cow Parsnip, Wild Angelica.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September and October.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Devonshire, Surrey, Yorkshire, Ireland; local.

Eupithecia lariciata, Frey. THE LARCH PUG.

LARVA. Long, slender, and tapering towards the head.

Variety 1. Pale green; dorsal line dark green, but red on the anal flap; subdorsal line dark green, narrower than the dorsal; spiracular line yellowish. *Plate XXIV., figs. 9 and 9a.*

Variety 2. "Yellowish red, or reddish buff; the central dorsal line brownish olive; the subdorsal lines brownish olive, occasionally very faint; the spiracular line is pale greenish yellow; the anal tip of the central dorsal line reddish; the belly is whitish, with a dusky central and two broad lateral lines."—*H. Harpur Crewe.*

FOOD-PLANTS. Fir, Larch, and Spruce.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to April.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. South of England, Yorkshire, Scotland.

Eupithecia virgaureata, Dbid. THE GOLDEN-ROD PUG.

LARVA. Long, slender, and tapering towards the head; body speckled with minute white dots, each of which bears a hair.

Variety 1. Ochreous yellow, with a series of five kite-shaped marks down the back, connected by a buff dorsal line, and edged on the outside with a yellowish white oblique streak; beneath each of these whitish streaks is a dark brown blotch; ventral area pale, with a narrow but distinct central ventral reddish brown line. *Plate XXV., fig. 3.*

Variety 2. More dingy in colour. *Plate XXV., fig. 3a.*

FOOD-PLANTS. Flowers of Golden-rod, Toadflax, Great Yellow Loose-strife.

PUPA. In a slight earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to October.} \\ \text{Pupa.} \quad \text{September to April.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Carmarthenshire, Devonshire (and other southern counties), Essex, Lancashire, Pembrokeshire, Yorkshire, Ireland.

Eupithecia albipunctata, Haw. THE WHITE SPOT PUG.

LARVA. Rather long, slender, and tapering towards the head; body pale ochreous, yellower at the segmental divisions, with numerous minute white dots and a series of rich brown pear-shaped marks down the back, which become confluent, and are paler on the anterior and posterior segments; these marks are connected by a rich-brown dorsal line; subdorsal line the same colour, as are also a number of blotches along each side; these blotches meet at the subventral line, which is of a paler shade of brown; ventral area pale; central ventral line brown and narrow; head very small, dark brown, marked with ochreous. *Plate XXV., figs. 4, 4a.*

FOOD-PLANTS. Flowers of Cow Parsnip, Wild Angelica.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September and October.} \\ \text{Pupa. October to April.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Derbyshire, Devonshire, Kent, Pembrokeshire, Suffolk, Yorkshire.

Eupithecia valerianata, Hub. THE VALERIAN PUG.

LARVA. Somewhat short, and tapering towards the head; body bright green and translucent; dorsal line dark green, subdorsal line the same; spiracular line pale green; segmental divisions yellow. There are sometimes indications of subventral lines rather darker than the body.

FOOD-PLANT. Flowers and seeds of Great Wild Valerian.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. September to April.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Buckinghamshire, Derbyshire, Devonshire, Dorsetshire, Herefordshire, Yorkshire.

Eupithecia pusillata, W.V. THE DWARF PUG.

LARVA. "Long and slender, and tapering considerably towards the head; ground colour orange red, and dull ochreous green; central dorsal line darker olive, often apparent on the anterior segments; subdorsal line of the same colour; spiracular line yellow; segmental divisions orange; central ventral line yellowish."—*H. Harpur Crewe.*

FOOD-PLANTS. Fir, Juniper, Spruce.

PUPA. In a slight cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June and July.} \\ \text{Imago. May.} \end{array} \right.$

LOCALITIES. Devonshire, Surrey.

Eupithecia irriguata, Hub. THE MARBLED PUG.

LARVA. Long, and tapering towards the head; primrose yellow, with a series of bright brown somewhat trident-shaped dorsal marks on the 5th, 6th, 7th, 8th, 9th, and 10th segments, connected by an indistinct dorsal line; subdorsal line the same colour; ventral area greenish yellow; head pale yellow, marked with brown. *Plate XXV., fig. 5.*

FOOD-PLANTS. Blackthorn, Oak.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June to April.} \\ \text{Imago.} \quad \text{April.} \end{array} \right.$

LOCALITIES. Carmarthenshire, Devonshire, Hampshire; rare.

Eupithecia pimpinellata, Hub. THE PIMPERNEL PUG.

LARVA. *Variety 1.* Bright green; dorsal line dark green, expanding on the anal segment; subdorsal line the same colour, but indistinct; spiracular line yellowish; head yellowish; corslet and anal flap pink. *Plate XXV., fig. 6.*

Variety 2. Green; dorsal line purple; subdorsal line the same, but indistinct; spiracular line yellowish; legs purple.

Variety 3. Pink; dorsal and subdorsal lines deeper pink; spiracular line nearly white; head yellowish. *Plate XXV., fig. 6a.*

FOOD-PLANTS. Flowers and seeds of Burnet Saxifrage, Goldenrod, Yarrow.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May.} \quad \text{September and October.} \\ \text{Pupa.} \quad \text{July.} \quad \text{October to April.} \\ \text{Imago.} \quad \text{August.} \quad \text{April.} \end{array} \right.$

LOCALITIES. Derbyshire, Glamorganshire, also in the Eastern Counties.

Eupithecia fraxinata, Crewe. THE ASH TREE PUG.

LARVA. Long, slender, and tapering towards the head; pale yellowish green, irrorated with minute yellowish dots; dorsal line pale greenish, and indistinct, passing through a dark green dorsal region, which fades almost into white at the spiracular line; along each side is a series of small pinkish lilac blotches, and there is a purplish blotch on the anal flap. *Plate XXIV., figs. 10 and 10a.*

In some varieties the purple or brownish markings are absent, except the one on the anal flap.

FOOD-PLANTS. Ash, flowers of Laurustinus.

PUPA. In a slight cocoon under moss on Ash Trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Yorkshire. Scotland.

Eupithecia indigata, *Hub.* THE OCHREOUS PUG.

LARVA. "Long, slender, and tapering considerably towards the head; the ground colour is pale greenish yellow, or yellowish red; the central dorsal line dusky reddish brown or olive, frequently very indistinct or wholly evanescent, except on the capital segments; the subdorsal lines pale yellow; the belly is greenish yellow, the central ventral line yellow; the sub-ventral line reddish brown."—*H. Harpur Crewe.*

FOOD-PLANTS. Cyprus, Juniper, Spruce, Fir.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva.} & \text{July.} \quad \text{September.} \\ \text{Pupa.} & \text{July.} \quad \text{September to April.} \\ \text{Imago.} & \text{August.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Glamorganshire, Yorkshire.

Eupithecia constrictata, *Gn.* THE WILD THYME PUG.

LARVA. Long, slender, and tapering towards the head, wrinkled, and with numerous bristles. Dark green; dorsal line purplish red, and broad; spiracular line greenish yellow, and indistinct; the segmental divisions of the ventral area are yellow; and the central ventral line pale.

FOOD-PLANT. Flowers of Wild Thyme.

PUPA. In a slight earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Yorkshire. Scotland. Ireland.

Eupithecia nanata, *Hub.* THE NARROW-WINGED PUG.

LARVA. Long, slender, and tapering towards the head. Of three colours pretty equally divided—purple, green, and white; along the back are a series of white M-shaped marks on a purple and green ground, the centre angle formed by the M being purple at its point, and green at its base; along the outside of each of the white marks runs an interrupted purple line; the lateral dilation has an interrupted series of white lateral streaks; spiracles black encircled with buff; ventral area green, with a purple central ventral line. *Plate XXIV., figs. 11 and 11a.*

FOOD-PLANTS. Flowers of Heath, Heather.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia subnotata, *Hub.* THE PLAIN PUG.

LARVA. Rough, with numerous white dots and a few short bristly hairs; ground colour green, with a series of dull green lozenge-shaped marks down the back, becoming confluent on the anterior and posterior segments; spiracular line yellow; ventral area pale; with an interrupted central ventral line.
Plate XXV., fig. 7.

In varieties of this larva the ground colour is yellowish green, pale green, or reddish grey.

FOOD-PLANTS. Flowers of Goosefoot, Orache.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia campanulata, *H.S.* THE CAMPANULA PUG.

LARVA. Short, thick, and rough, with a few pale hairs. Body pale ochreous brown; dorsal line dark brown, passing through a series of nearly black lozenge-shaped marks, which become confluent with it on the anterior and posterior parts of the body; subdorsal line dark brown, narrow, and indistinct; spiracular line dull brown; head dark dull brown.

FOOD-PLANTS. Flowers and seeds of Canterbury Bells, Creeping Bell Flower, Hairbell, Nettle-Leaved Campanula.

PUPA. In a slight earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to September.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITY. Hertfordshire.

Eupithecia vulgata, *Haw.* THE COMMON PUG.

LARVA. Resembles *castigata*. Slender, and tapers towards the head; ground colour variable, ochreous or reddish brown, with a few short white hairs, and numerous minute white dots; there is a series of olive brown marks down the back, which merge on the anterior and posterior segments; seg-

mental divisions orange colour; spiracular line yellowish, waved, and sometimes interrupted with black. *Plate XXV., fig. 8.*

FOOD-PLANTS. Oak, Whitethorn.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July.} \\ \text{Pupa. September to May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia expallidata, *Gn.* THE BLEACHED PUG.

LARVA. Variable.

Variety 1. Ground colour delicate pale yellow, with a series of brown halbert-shaped marks down the back, connected by a dark brown dorsal line; subdorsal line dark brown, and interrupted, along the side is a row of rich brown oblique lines. *Plate XXV., fig. 9.*

Variety 2. Whole body, with the exception of the posterior segments, suffused with a deep rich chocolate brown; the posterior segments yellow, with a pale dorsal line; on the dorsal part of the other segments are two yellow spots. *Plate XXV., fig. 9a.*

Variety 3. Green, markings brown.

Variety 4. Green, markings scarcely perceptible.

FOOD-PLANTS. Flowers of Golden Rod, Michaelmas Daisy, Ragwort.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September and October.} \\ \text{Pupa. October to June.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Wales. Ireland.

Eupithecia absynthiata, *Linn.* THE WORMWOOD PUG.

LARVA. *Variable.* About 10 lines long, and rather thick and stumpy, but tapering a little to the extremities; body wrinkled, with a number of white tubercles, and a few short hairs.

Variety 1. Green, with a series of darker green V-shaped marks down the back, distinct from the 5th to the 9th segment, less so on the others; these dorsal marks are edged on the outer side with a pale oblique streak; spiracular line pale yellowish green. *Plate XXV., fig. 10.*

Variety 2. French white, with the markings brown. *Plate XXV., fig. 10a.*

Variety 3. Ochreous, with brown markings. *Plate XXV., figs. 10b. and 10c.*

FOOD-PLANTS. Flowers of Golden Rod, Hemp Agrimony, Hoary Groundsel, Mugwort, Yarrow.



PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to November.} \\ \text{Pupa. October to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Eupithecia minutata. THE LING PUG.

LARVA. Short, thick, and tapering towards the head. Pink, with a purplish tinge, and with a series of dark purplish red Y-shaped marks down the back, commencing on the 5th segment, and fading on the 9th; these marks are edged on the outside with a pale streak, and intersected by a pale dorsal line; spiracular line pale, interrupted by a series of purplish blotches; spiracles pale, in black rings, encircled again with a paler colour; ordinary dots yellowish; the body is sprinkled with numerous minute white warts, and some black tubercles, from each of which protrudes a fine hair; ventral area pale pink; head pale brown, marked with darker brown. *Plate XXV., fig. 11.*

FOOD-PLANTS. Flowers of Heath, Heather. Will eat Devil's Bit Scabious, Ragwort, Great Yellow Loosestrife, Wormwood.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September and October.} \\ \text{Pupa. September to June.} \\ \text{Imago. June to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Varieties found upon *Scabiosa succisa*.

Variety 1. About 9 lines long, thick, and tapering towards the head. Pale lavender, with all the markings the same as in the foregoing description, the colour of the Y-shaped marks being dark lavender; spiracles pale, in black rings, encircled again with a pale colour; ordinary dots yellowish; head pale brown, marked with darker brown. *Plate XXV., fig 11a.*

Variety 2. Nearly white. *Fig. 11b.*

Variety 3. Nearly black. *Fig. 11c.*

Variety 4. Greenish. *Fig. 11d.*

Variety 5. Pale ochreous.

Variety 6. Salmon colour. *Fig. 11e.* The markings in each variety being of a darker shade of the ground colour.

FOOD-PLANTS. Flowers of Devil's Bit Scabious. Will eat flowers of Borage, Great Yellow Loosestrife, Heath, Heather, Ragwort.

PUPA. In an earthen cocoon.

NOTE. Eggs laid on the 12th of August hatched on the 4th of September; others laid on the 5th of September hatched on the 19th. The imagines appeared from the beginning of June.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September and October.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{June to September.} \end{array} \right.$

LOCALITIES. Bullhead, Bolton; and near Carmarthen.

Eupithecia assimilita, *Dbf.* THE CURRANT PUG.

LARVA. *Variety 1.* Long, slender, and tapering slightly towards the head. Yellowish green, with numerous yellowish white warts, and with six reddish purple V-shaped marks down the back; dorsal line the same colour; subdorsal lines indistinct; ventral area green, and free from markings; head green. *Plate XXIV., fig. 12.*

Variety 2. [Pale yellowish green, with numerous whitish warts and yellow segmental divisions; dorsal line dark green; subdorsal lines the same, but indistinct.

FOOD-PLANTS. Black Currant, Hop.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to October..} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{May to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia tenuiata, *Hub.* THE SLENDER PUG.

LARVA. "Short and stumpy; the ground colour is dirty yellowish green. The sides and centre of back slightly tinged with rose-colour; down the centre of the back is a row of very indistinct dusky spots, becoming confluent in a black line at the anal segments, and bordered by an interrupted black line. On each side is a row of slanting tubercular flesh-coloured stripes; the head and fore-feet are black."—*Rev. H. Harpur Crewe.*

FOOD-PLANT. Catkins of Sallow.

PUPA. In a slight cocoon amongst grass, moss, etc.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{February to April.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. North and West of England, South Wales, Scotland, and Ireland.

Eupithecia subciliata, *Gn.* THE MAPLE PUG.

LARVA. "Short, of uniform bulk. Rests with the head slightly in curve. Ground colour pale yellowish-green. Central dorsal line dark green, somewhat elliptically enlarged at the centre of each segmental division. On each segment, on either side of the dorsal line, a small dark green spot. Subdorsal and spira-

cular lines yellowish white, waved, and indistinct. Belly without markings. Segmental divisions yellowish. Tip of dorsal caudal segment whitish. Whole body more or less translucent, and sparsely strewed with short whitish hairs."—
H. Harpur Crewe, Ent. Mo. Mag., vol. ix. p. 16.

FOOD-PLANT. Maple.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April and May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Kent, Yorkshire.

Eupithecia dodoneata, Gn. THE OAK TREE PUG.

LARVA. *Variety 1.* "Ochreous red; central dorsal line very dusky olive, almost black, interrupted. Down the centre of the back is a series of blackish or dusky olive arrow-shaped blotches, reduced in size on the posterior, and merged in the central line on the anterior segments; the subdorsal lines are slender, dusky, bordered with dull yellow; the spiracular lines alternating between dull yellow and dusky olive. Between the subdorsal and spiracular lines is a row of slanting bright yellow stripes, interspersed with dusky blotches; the segmental divisions are orange red. The body is thickly studded with minute black tubercles, and thinly clothed with whitish hairs."—
H. Harpur Crewe.

Mr. Crewe describes two other varieties: one, pale yellowish-green; dorsal line and blotches being similar, and paler than Variety 1, and the spiracular segmental divisions and lateral stripes greenish yellow; and another, orange red; the back tinged and suffused with dark yellowish green; the dorsal blotches wanting; dorsal line reddish-brown or olive, enlarged on the centre of each median segment; subdorsal lines same colour, and slender; spiracular line and lateral stripes greenish yellow, the latter indistinct.

FOOD-PLANTS. Oak, Whitethorn.

PUPA. In a slight cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September and October.} \\ \text{Pupa.} \quad \text{October to April.} \\ \text{Imago.} \quad \text{April to June.} \end{array} \right.$

LOCALITIES. England, South Wales.

Eupithecia abbreviata, Steph. THE BRINDLED PUG.

LARVA. Body slender, and tapering towards the head. Pale ochreous brown; dorsal line brown, intersected by a narrow pale line; this stripe passes through and bisects a series of chocolate brown V-shaped marks; on the sides are some pale undulating lines, forming a spiracular stripe. The markings are generally very indistinct. *Plate XXV., figs. 12 and 12a.*

FOOD-PLANT. Oak.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July to March.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland.

Eupithecia exiguata, Hub. THE MOTTLED PUG.

LARVA. Long, slender, and of uniform thickness. Dull green, and velvety, with a purplish red dorsal stripe extending to the end of the anal flap and terminating in two points; this stripe is intersected by a greenish ochreous medio-dorsal line, and is interrupted on the 5th, 6th, 7th, and 8th segments by a reddish horse-shoe mark, the interior portion of which is ochreous; spiracular line wavy, dark purplish red, commencing round the face and extending to the extremity of the anal clasper; spiracles black; segmental divisions yellowish; ventral area paler and of a bluer green; head flat and greyish; legs green. *Plate XXIV., fig. 13.*

FOOD-PLANTS. Ash, Alder, Barberry, Black Currant, Blackthorn, Oak, Privet, Sallow, Whitethorn, Willow.

PUPA. In a slight earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to October.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Eupithecia sobrinata, Hub. THE JUNIPER PUG.

LARVA. Body somewhat depressed.

Variety 1. Apple green; dorsal line dark purple, passing through a series of dull crimson, almost square spots; edged on the outer side with yellowish white; this bordering has the appearance of an interrupted subdorsal line; lateral dilation nearly white; anal flap pinkish, edged with white. Ventral area bluish white; central ventral line whitish. Head yellowish green; legs and claspers the same.

Variety 2. Yellowish, or apple green; dorsal line dull green; subdorsal line pale and interrupted, but very indistinct; lateral dilation white; anal flap pinkish.

FOOD-PLANT. Juniper.

PUPA. In a slight earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{February to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia togata, Hub. THE CLOAKED PUG.

LARVA. Rather stout, with some black tubercles and a few short hairs. Colour dull, dingy pinkish; dorsal line pale, subdorsal and spiracular lines the same, but less distinct; head and corslet dark brown and shining.

FOOD-PLANTS. Larch, Spruce Fir (cones of).

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August to June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Buckinghamshire. Scotland.

Eupithecia pumilata, Hub. THE DOUBLE-STRIPED PUG.

LARVA. Reddish olive, with a series of dull arrowhead-shaped marks, edged with yellow down the back; dorsal line dull smoke-colour, nearly black, merged with the dorsal spots on the front and hind segments; lateral stripe yellow, bordered with smoke colour; spiracular line yellow.

There are varieties of this larvæ in which the ground colour is lighter, others in which it is a darker reddish colour.

FOOD-PLANTS. Flowers of Broom, Clematis, Daisy, Furze, Heath, Travelers' Joy, Wild Beaked Parsley.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June.} \\ \text{Pupa. July.} \\ \text{Imago. July and August.} \end{array} \right. \begin{array}{l} \text{September.} \\ \text{September to May.} \\ \text{April and May.} \end{array}$

LOCALITIES. Great Britain and Ireland.

Eupithecia coronata, Hub. THE V-PUG.

LARVA. *Variety 1.* Pale, pinkish flesh-colour, with a series of brown triangular marks down the back, connected by a brown dorsal line; subdorsal lines reddish brown. *Plate XXV., fig. 13.*

Variety 2. Yellowish green; dorsal markings; dorsal and subdorsal lines reddish brown.

Variety 3. Yellowish green; dorsal triangular markings absent; dorsal and subdorsal lines reddish brown.

In some varieties the sides and ventral area are suffused with red.

FOOD-PLANTS. Flowers of Angelica (Wild), Bramble, Goldenrod, Great Wild Valerian, Hemp Agrimony, Travellers' Joy.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. September to April.} \\ \text{Imago. April to June.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland.

Eupithecia rectangulata, *Linn.* THE GREEN PUG.

LARVA. Short and stumpy, with a few hairs. Colour pale yellowish green, and transparent; dorsal line either rusty red, or dark green, sometimes very indistinct, or altogether wanting; segmental divisions reddish; spiracular lines darker than the ground colour.

FOOD-PLANTS. Flowers of Apple, Pear.

PUPA. In a slight earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April and May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eupithecia debiliata, *Hub.* THE BILBERRY PUG.

LARVA. Short and stumpy; colour dull yellowish green, transparent, and suffused with yellow; dorsal line darker than the body; spiracular line dull yellow; head dull brown.

FOOD-PLANTS. Whortleberry, Bilberry.

PUPA. In a slight earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April and May.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Devonshire, rare; Ireland, local.

COLLIX, *Gn.***Collix sparsata**, *Hub.* THE DENTATED PUG.

LARVA. Pale yellowish green, with seven longitudinal lines; dorsal line dark green; subdorsal line nearly white; spiracular stripe broad, and white; between the subdorsal and spiracular line there is a nearly white line, less distinct than the others. Ventral area bluish green. Head pale green, and shining; mandibles black; legs and claspers green and shining.

FOOD-PLANT. Great Yellow Loosestrife.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{August.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITY. Yorkshire.

LOBOPHORA, *Curt.***Lobophora sexilata**, *Hub.* THE SMALL SERAPHIM.

LARVA. Cylindrical and wrinkled; ground colour apple green; dorsal

and subdorsal lines whitish, and indistinct; the 13th segment terminates in two points tipped with pink; head opaque yellowish green.

FOOD-PLANTS. Sallow, Willow.

PUPA. In a cocoon amongst fallen leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September to May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITY. England.

Lobophora hexapterata, *W.V.* THE SERAPHIM.

LARVA. Pale pea green; subdorsal lines canary yellow; spiracles the same; the 13th segment terminates in two short pinkish points; ventral area pale glaucous green; head green.

FOOD-PLANTS. Sallow, Aspen.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to July.} \\ \text{Pupa. August to April.} \\ \text{Imago. May.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland.

Lobophora viretata, *Hub.* THE YELLOW BARRED BRINDLE.

LARVA. Pale green or pale sage green; more or less suffused and marked on the back with purplish pink; dorsal line pink; subdorsal line the same; there is also an indistinct pale pink lateral line; the 13th segment terminates in two short blunt points; head purplish brown, and partially retractile.

FOOD-PLANTS. Privet, Sycamore.

PUPA. In a cocoon attached to a leaf or stone.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to July.} \\ \text{Pupa. July and August.} \\ \text{Imago. September.} \end{array} \right. \begin{array}{l} \text{September.} \\ \text{September to May.} \\ \text{May and June.} \end{array}$

LOCALITIES. England, Wales, and Ireland.

Lobophora lobulata, *Hub.* THE EARLY TOOTHSTRIPED.

LARVA. Body depressed and flattened; dull green and velvety; dorsal line dark green; subdorsal line the same; all rather indistinct; lateral dilation bright canary yellow, much raised, and extending from the 2nd segment to the end of the anal flap; spiracles reddish brown, encircled with yellow. Ventral area pale glaucous green; the 13th segment terminates in two points; head smaller than the 2nd segment, opaque green; legs and claspers the same. *Plate XXVI., fig. 1.*

FOOD-PLANTS. Honeysuckle, Sallow, Oak, Willow.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June.} \\ \text{Pupa. July to April.} \\ \text{Imago. April.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland.

Lobophora polycommata, W.V. THE BARRED TOOTHSTRIPED.

LARVA. Rather stout, slightly wrinkled, flat, and rough looking; delicate yellowish green; dorsal line darker; the lateral dilation is yellowish white, and extends to the end of the anal flap; segmental divisions yellowish; ventral area very pale green, with a pale central ventral line, bordered with a darker shade; head yellowish; smaller than the 2nd segment; the 13th segment terminates in two points.

FOOD-PLANTS. Ash, Honeysuckle, Sallow, Willow.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May and June.} \\ \text{Pupa. July to April.} \\ \text{Imago. April, May.} \end{array} \right.$

LOCALITIES. North and South of England.

Thera, Steph.

Thera juniperata, Linn. THE JUNIPER CARPET.

LARVA. Dorsal area glaucous green; subdorsal line broad, canary yellow; spiracular line purplish red above, white below; spiracles yellow; ventral area apple green; the 13th segment terminates in two points; head green; legs reddish.

FOOD-PLANT. Juniper.

PUPA. On the surface of the earth amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September and October.} \\ \text{Imago. October.} \end{array} \right.$

LOCALITIES. Devonshire, Surrey, South Wales, Scotland.

Thera simulata, Hub. THE CHESNUT-COLOURED CARPET.

LARVA. About five-eighths of an inch long, and stout; dorsal area pale greenish blue; dorsal line dull grass green; subdorsal line the same colour; spiracular line dark green, edged below with brown; between it and the subdorsal line is a white stripe; beneath the spiracular line is a pale yellowish stripe; legs greenish.

FOOD-PLANT. Juniper.

PUPA. Under moss on the tree.

Time of appearance	{	<i>Larva.</i>	March to June.	August.
		<i>Pupa.</i>	June and July.	
		<i>Imago.</i>	April and May.	

LOCALITIES. Great Britain and Ireland.

Thera variata, *W.V.* THE SHADED BROAD BAR.

LARVA. About five-eighths of an inch long; dorsal area dull bluish green; dorsal line darker, edged with paler green; subdorsal line yellowish white, becoming yellow after the 9th segment; below the spiracles is a yellowish white line; ventral area green, with a central ventral yellow line, and two indistinct white lines; the 13th segment terminates in two short points; head green.

FOOD-PLANTS. Scotch Fir, Larch, Fir.

PUPA. Amongst leaves.

Time of appearance	{	<i>Larva.</i>	March to May.	July.
		<i>Pupa.</i>	May.	July.
		<i>Imago.</i>	May and June.	July and August.

LOCALITIES. England, Wales, and Scotland.

Thera firmata, *Hub.* THE PINE CARPET.

LARVA. About $\frac{5}{8}$ of an inch long; dorsal area dark bluish green; dorsal line darker; subdorsal line dingy white and narrow, white on the 2nd segment; below the spiracles is a whitish line tinged with yellow on the posterior segments; ventral area pale green, with three pale ventral lines; head rust red, with a brown streak on each side the crown; the 13th segment terminates in two points.

FOOD-PLANT. Scotch Fir.

PUPA. Amongst leaves.

Time of appearance	{	<i>Larva.</i>	April and May.	July.
		<i>Pupa.</i>	May and June.	August.
		<i>Imago.</i>	June and July.	September and October.

LOCALITIES. England, Wales, and Scotland; not uncommon.

YPSIPETES, *Steph.*

Ypsipetes ruberata, *Frey.* THE RUDDY HIGHFLYER.

LARVA. Somewhat obese, with a few hairs. Dorsal area dull or pale pinkish green, tinged immediately above the spiracular line with brown. There are four pale interrupted lines down the back, the two centre ones forming a border to a rather dark pulsating vessel; spiracular stripe greenish white, widening at each segment, and edged above and below with a narrow

white stripe; spiracles buff in black rings. Ventral area pale whitish green; head smaller than the 2nd segment, brownish ochreous and shining; legs the same, marked with brown.

FOOD-PLANTS. Poplar, White Willow.

PUPA. Under bark.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September.} \\ \text{Pupa.} \quad \text{December to April.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Cheshire, Devonshire, Sussex, Scotland.

Ypsipetes impluviata, W.V. THE MAY HIGHFLYER.

LARVA. Pinkish grey, rather obese, with a few hairs; body marked irregularly with chocolate colour; dorsal line dark chocolate colour, widening somewhat on each segment; subdorsal line pinkish white; spiracular line the same, with dark chocolate markings beneath; spiracles black; ventral area pale grey; corslet brown and shining, bisected by a pale line; head smaller than the 2nd segment, brown, shining, and marked with black; legs shining, marked with brown; anal flap and hind claspers brown and shining. *Plate XXVI., fig. 2.*

FOOD-PLANT. Alder (within the leaves).

PUPA. Between two leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to December.} \\ \text{Pupa.} \quad \text{December to May.} \\ \text{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not common.

Ypsipetes elutata, W.V. THE JULY HIGHFLYER.

LARVA. Dorsal area various shades of brown, sometimes approaching almost to black, with six interrupted longitudinal white stripes, the two centre ones broader than the others; segmental divisions whitish; ventral area pale reddish brown; head brown and shining, narrower than the 2nd segment; corslet brown and shining; legs and claspers concolorous with the ventral area. *Plate XXVI., fig. 3.*

Eggs laid August 23rd, hatched April 4th.

FOOD-PLANTS. Alder, Apple, Bilberry, Cherry, Elm, Hazel, Hornbeam, Maple, Pear, Plum, Poplar, Rose, Sycamore, Sallow, Whitethorn, Willow.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

MELANTHIA, Dup.

Melanthia rubiginata, W.V. THE BLUE-BORDERED CARPET.

LARVA. Long and slender; ground colour bright green; dorsal line darker green than the body; spiracular line greenish yellow; the anal flap terminates in two longish points; the head the same colour as the body.

FOOD-PLANTS. Alder, Apple, Blackthorn, Damson, Plum.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Melanthia ocellata, Linn. THE PURPLE BAR.

LARVA. Tapers slightly towards the head. Fawn colour, with a number of warts, from which proceed short hairs; body marked with reddish ochreous; dorsal line reddish ochreous, passing through five white Y-shaped marks situated on the 5th, 6th, 7th, 8th, and 9th segments; these marks are bordered with reddish ochreous, and the base of the Y points backwards; spiracular line white, bordered above with reddish ochreous, and extending down the anal clasper; spiracles black, situated at the upper edge of the white spiracular line; ventral area paler than the dorsal, with five indistinct pale brown V-shaped marks; legs brownish. *Plate XXVI., figs. 4 and 4a.*

Eggs hatched on the 24th of August, and the larvæ were full-fed and pupated at the end of September.

FOOD-PLANTS. Great Bedstraw, Heath Bedstraw.

PUPA. Amongst the food-plant on the surface of the ground.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{July.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{July.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Melanthia albicillata, Linn. THE BEAUTIFUL CARPET.

LARVA. Rich dark green and velvety, with a few hairs, and a dorsal series of bright reddish triangular marks, bordered with brown; and intersected by a dark brown streak; spiracular line white, edged below on the anterior and posterior segments with brown; segmental divisions yellowish; ventral area green, dotted and lined with whitish; head greenish brown, with three pale lines down the face.

Eggs laid on the 18th of July hatched on the 27th. When first hatched the larva is whitish green.

FOOD-PLANTS. Alder, Bramble, Raspberry, Strawberry (Wild), Traveller's Joy.

PUPA. In a cocoon on the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

MELANIPPE, *Dup.*

Melanippe hastata, *Linn.* THE ARGENT AND SABLE.

LARVA. Black or rich brown, with a series of small black warts along each side forming a lateral stripe; along each side there is also a series of half-moon-shaped marks varying in colour from yellowish white to dull reddish; subdorsal line, when present, whitish or dull reddish; spiracles black in a white spot; head black.

FOOD-PLANTS. Birch, Sweet Gale.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England, Scotland, Ireland.

Melanippe tristata, *Linn.* THE SMALL ARGENT AND SABLE.

LARVA. Body cylindrical, but tapering slightly towards the head. Ground colour brown; dorsal line black and narrow; on each side are two narrow waved lateral white lines, edged with black; ordinary dots white; head brown, speckled with black.

FOOD-PLANT. Great Bedstraw.

PUPA. In a cocoon on the surface of the ground.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{August to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. North of England, Devonshire, Gloucestershire, South Wales, Suffolk, Scotland, Ireland.

Melanippe procellata, *W.V.* THE BORDERED CHALK CARPET.

LARVA. Ground colour light brown, darker on those four segments from the 6th to the 9th, and paler thence to the 13th; the dorsal line commences on the 3rd segment, and forms a blotch on the segments from the 6th to the 9th; this line is composed of two colours, black and red, and on each

side of it is a pale narrow line; below this are three rather indistinct dark stripes; spiracles black; head brown, speckled with black, and with a black stripe on each side meeting on the crown.

FOOD-PLANT. Traveller's Joy.

PUPA. In a web.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITY. South of England.

Melanippe unangulata, *Haw.* THE SHARP ANGLED CARPET.

LARVA. Dorsal area pale putty colour, lined and marked with smoke colour; some specimens darker than others; dorsal line distinct on the 3rd and 4th segments, but on the remaining segments faint and indistinct; at the segmental divisions, from the 4th to the 8th segment, is a conspicuous black spot; above the spiracles is a pale longitudinal line, edged with dark smoke colour; ordinary dots pale; ventral area paler than the dorsal, and at the segmental divisions, from the 4th to the 8th segment, is a black spot; head pale putty colour, speckled and marked with black. *Plate XXVI., fig. 5.*

Eggs laid on the 11th of July, hatched on the 23rd.

FOOD-PLANT. Chickweed.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{August to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England and Wales, Ireland; local.

Melanippe rivata, *Hub.* THE WOOD CARPET.

LARVA. Ground colour dull brown, or reddish brown, variously mottled; dorsal line nearly black, with a white stripe on each side of it; it extends only to the 4th segment; reappears on those segments, from the 10th to the 13th, and terminates in a black spot containing a white dot; on the 5th, 6th, 7th, and 8th segments there is a white horseshoe-shaped mark open behind; head dull brown, with a dark stripe on each side, meeting on the crown.

FOOD-PLANTS. Great Bedstraw, Heath Bedstraw.

PUPA. In a cocoon on the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland, South of England and South Wales; common.

Melanippe subtristata, Haw. THE COMMON CARPET.

LARVA. Long and tapering towards both extremities. Fawn colour; on the 2nd, 3rd, and 4th segments is the commencement of a dark brown dorsal line, which is continued on the 10th, 11th, 12th, and 13th segments, but between the 4th and the 11th it is displaced by six of the most delicate V-shaped marks, composed of brown and white lines; at the apex of each of these V's, all of which point forwards, is a white spot; there are also several other pale dots on the body, and several cream-coloured lines on the sides; spiracles black, encircled with pale cream colour; head pale brown, marked with black. Rests with the head tucked in. *Plate XXVI., fig. 6.*

FOOD-PLANTS. Bedstraw, Great, Rough, and Heath.

PUPA. In a cocoon on the earth.

Time of appearance	{	<i>Larva.</i>	August and September.	June.
		<i>Pupa.</i>	September to May.	June and July.
		<i>Imago.</i>	May.	July.

LOCALITIES. Great Britain and Ireland; common.

Melanippe montanata, W.V. THE SILVER-GROUND CARPET.

LARVA. Cream colour, with a few short scattered hairs; dorsal area towards the centre segments dark brown; dorsal line the same colour; sub-dorsal line interrupted; the dorsal line is conspicuous where passing along the cream-coloured portion of the body, and on the anterior segments has five black spots on each side of it; but on those segments where the ground colour is brown, viz., 7th, 8th, and 9th, it merely assumes the form of a nearly black spot, contained in a cream-coloured V-shaped mark pointing forwards; lateral dilation pale; ventral area pale cream colour; central ventral line ochreous; subventral lines darker; head pale brown, with darker markings. *Plate XXVI., figs. 7 and 7a.*

Eggs laid on the 5th of July hatched on the 27th.

FOOD-PLANTS. Cowslip, Primrose, Field Bindweed, Grass, Plantain (narrow).

PUPA. In a cocoon on the earth.

Time of appearance	{	<i>Larva.</i>	July to April.
		<i>Pupa.</i>	March to May.
		<i>Imago.</i>	May to August.

LOCALITIES. Great Britain and Ireland; common.

Melanippe galiata, W.V. THE GALIUM CARPET.

LARVA. About one inch long, and cylindrical; ground colour pale reddish ochreous; the dorsal line commences on the 2nd segment, and from that to the 4th is dark brown; it is then continued as a pale reddish brown

interrupted stripe to the 9th segment, and from thence to the 13th is nearly black; subdorsal line white, edged with pale reddish brown; spiracular region pale, with a series of lateral brown streaks edged with white above it, and a similar but less distinct series below it; spiracles pale in dark rings; ventral area striped with pale and dark rivulet markings; head ochreous, with two dark lines down the face, meeting on the crown. *Plate XXVI., fig. 8.*

Eggs laid in July hatched on the 6th of August, and the larvæ pupated in September.

FOOD-PLANTS. Great Bedstraw, Heath Bedstraw, Yellow Bedstraw.

PUPA. In a cocoon on the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Melanippe fluctuata, Linn. THE GARDEN CARPET.

LARVA. Dull reddish ochreous, marked with dark smoke colour; on the medio-dorsal surface these markings give place to a series of elongate blotches or areas of the ground colour of the body; at the interstices of those segments, from the 3rd to the 9th, is a black spot, the first and last being less distinct than the others; there are also two pale, somewhat interrupted, stripes down each side the back; spiracles pale in black rings; ordinary dots pale; below the spiracles is a row of five black spots. The dorsal and ventral areas are abruptly divided, the latter being dull reddish ochreous, with a few smoke-coloured stripes; head putty colour marked with brown, and with two brown stripes down the face. *Plate XXVI., fig. 9.*

FOOD-PLANTS. Cabbage, Horseradish, Nasturtium.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva.} \quad \text{June.} & \text{September to October.} \\ \text{Pupa.} \quad \text{July.} & \text{September to April.} \\ \text{Imago.} \quad \text{July and August.} & \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

ANTICLEA, Steph.

Anticlea sinuata, W.V. THE ROYAL MANTLE.

LARVA. About ten lines long, slender, cylindrical, transversely wrinkled, and rather shiny; body primrose colour with a tinge of green, and a rather broad longitudinal black stripe down each side the back; spiracles black, encircled with pale yellow; ventral area greenish; legs and claspers also greenish; head large, greenish, marked with black. *Plate XXVI., fig. 10.*

FOOD-PLANT. Yellow Bedstraw.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Berks, Cambridgeshire, Cornwall, Devonshire, Hampshire, Kent, Norfolk, Suffolk, Surrey, Scotland.

Anticlea rubidata, W.V. THE FLAME.

LARVA. Long and attenuated, and tapering towards the head; of a delicate cream colour, or pale brown, or red, variegated with lighter and darker lines and markings; there is a dark V-shaped mark behind the head, extending into a dorsal line, which continues to the 4th segment, but is interrupted on the 5th, 6th, 7th, 8th, and 9th segments by five arrowhead-shaped marks of a light colour, the centre of each being reddish; from the 9th to the 13th segments the dark dorsal line is continued; spiracles black; central ventral line brown bordered with cream colour, edged again with light brown; head pale grey or brown, with a few hairs, and two brown lines down the face. *Plate XXVI., fig. 11.*

Eggs hatched on the 19th of June.

FOOD-PLANT. Bedstraw.

PUPA. In a cocoon in earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITY. England.

Anticlea badiata, W.V. THE SHOULDER STRIPE.

LARVA. In an early stage very long and thin; green, with four whitish spots arranged in a square on the centre segments; spiracles black, and very conspicuous; segmental divisions yellow; head bright orange; afterwards variable.

Variety 1. Dorsal area bright green; ventral area buffish; lateral dilation edged with purplish; spiracles black, and very conspicuous; ordinary dots white, and also very conspicuous; segmental divisions yellow; head bright orange, with a dark spot on each side of the forehead. *Plate XXVI., fig. 12.*

Variety 2. Dorsal area dark olive green, becoming darker where it meets the ventral area; ventral area pale lemon yellow; spiracles black; head, etc., as in *Variety 1.*

Variety 3. Dorsal area pale brown, ventral area shades of pale brown and cream colour; dots, spiracles, etc., as before; head pale brown, with the two black spots. *Plate XXVI., fig. 12a.*

Variety 4. Dorsal area dull plum colour; ventral area buffish. *Plate XXVI., fig. 12b.*



FOOD-PLANTS. Dog-rose, Scotch-rose.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to July.} \\ \text{Pupa. July to March.} \\ \text{Imago. March and April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Anticlea derivata, W.V. THE STREAMER.

LARVA. Smooth, slender, and pale delicate green; head green, surrounded with reddish purple; behind the head is a long triangular purple-red mark, the base of which is immediately behind the head; meeting the apex of this triangle is a long diamond-shaped mark of the same colour; meeting this in succession are four smaller diamond-shaped marks, and on the 10th segment is a transverse line, met at right angles by a short dorsal line, composed of spots, and reaching to a large spot on the posterior portion of the 13th segment; all these markings are of the same purple-red colour; legs purple-red; claspers with a mark of this colour on them. *Plate XXVI., fig. 13.*

When young, the marks behind the head and on the 13th segment are green, and those on the dorsal area absent.

FOOD-PLANT. Dog-rose.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to July.} \\ \text{Pupa. June to April.} \\ \text{Imago. April and May.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Anticlea berberata, W.V. THE BARBERRY CARPET.

LARVA. Short, stout, rough, and wrinkled, with a few hairs. Ground colour pale drab, variously mottled, and marked with brown; dorsal line brown and narrow. The dorsal surface of those segments from the 10th to the 13th is nearly white, and is bordered on each side by a rather broad dark brown line; the 6th and 7th segments are slightly raised, and each has a pair of small black warts; head the same as the body, speckled with brown; legs and claspers pale smoke-colour, the former ringed with black. In some specimens there are several white marks along the sides.

Eggs hatched in the beginning of September, and the larvæ were full fed by the 20th of October.

FOOD-PLANT. Barberry.

PUPA. Between two leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May and June.} \\ \text{Pupa. July.} \\ \text{Imago. August.} \end{array} \right. \begin{array}{l} \text{September and October.} \\ \text{September to May.} \\ \text{May.} \end{array}$

LOCALITIES. Cambridgeshire, Essex, Suffolk.

COREMIA, *Gn.**Coremia munitata*, *Hub.* THE RED CARPET.

LARVA. "An inch in length; the ground colour dull green, or brown, but very variable; the segments pink or flesh-coloured; the body is slightly sprinkled with black dots, with two very distinct blotches on the 6th and 7th segments, the latter being the largest."—*Newman's British Moths*, p. 168.

FOOD-PLANT. Groundsel.

PUPA. In a slight web amongst moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to March.} \\ \text{Pupa.} \quad \text{March to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. The Lake District, Scotland, Orkney, Ireland.

Coremia propugnata, *W.V.* THE FLAME CARPET.

LARVA. Rather more than an inch long, and slender. Dorsal area dull ochreous brown, suffused more or less with darker brown and with several pale longitudinal lines; there is on each segment a pale triangular mark, with a dark mark at its base; these pale marks are much larger and more distinct on 7th, 8th, 9th, and 10th segments; spiracles black in buff marks; ordinary dots pale buff; the juncture of the dorsal and ventral areas is most distinct, the lateral dilation conspicuous; ventral area pinkish buff; central ventral line reddish, bordered with a lighter colour; there are also a few darker linear marks, and some indistinct spots; head pale brown, legs and claspers pale. Rests with its head tucked in, and feigns death when touched. *Plate XXVI, fig. 14.*

Eggs laid on the 27th of May hatched on the 8th of June, and the imagines appeared in August.

FOOD-PLANTS. Cabbage (preferring the red variety), Horseradish.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva.} & \text{June and July} & \text{September.} \\ \text{Pupa.} & \text{July and August.} \\ \text{Imago.} & \text{August.} & \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Coremia ferrugata, *Linn.* THE RED TWIN-SPOT CARPET.

LARVA. About nine lines long, and cylindrical; body pale putty colour, marked with reddish brown; dorsal line dark brown, interrupted after the 5th to the 10th segments; from the 5th to the 10th segments there is a series of nine black spots, surrounded with a pale colour, one on each segment, and a smaller one at each segmental division; there are three brown rivulet lines along each side of the back, the lower line being much darker and more conspicuous on the 2nd, 3rd, and 4th segments; spiracles black, encircled with

a paler colour; ordinary dots pale, with short bristles; along each side of the ventral area, at the segmental divisions, are five conspicuous black spots, placed upon a brown, interrupted, rivulet-like line; the ventral area is lined with five reddish brown stripes; the head about the same width as the body, pale putty colour, speckled with black, and with two dark lines down the face; each of the legs and claspers is marked with a black line. *Plate XXVI., fig. 15.*

Eggs hatched on the 23rd of June, and the larvæ were full fed by the 18th of July.

FOOD-PLANTS. Ground Ivy, Great Bedstraw, Shepherd's Purse.

PUPA. In earth.

Time of appearance	{	<i>Larva.</i> June and July.	September.
		<i>Pupa.</i> August.	
		<i>Imago.</i> August.	May and June.

LOCALITIES. Great Britain and Ireland.

Coremia unidentaria, *Haw.* THE DARK BARRED TWIN-SPOT CARPET.

LARVA. Exactly the same as *C. ferrugata*.

Eggs laid on the 26th of June hatched on the 2nd of July. Pupa, August 5th; Imago, August 10th.

FOOD-PLANTS. Great Bedstraw, Rough Bedstraw, Ground Ivy. Woodruff (in confinement).

PUPA. In earth.

Time of appearance	{	<i>Larva.</i> July and August.	September.
		<i>Pupa.</i> August.	
		<i>Imago.</i> August.	May and June.

LOCALITIES. Great Britain and Ireland.

Coremia quadrifasciaria, *Linn.* THE LARGE TWIN-SPOT CARPET.

LARVA. About 9 lines long and rather stout, but tapering somewhat towards the head, which is smaller than the 2nd segment. Dorsal area dull reddish-brown, marked over the whole surface with numerous short brown longitudinal streaks, and several light reddish blotches, there are also a number of warts, from each of which protrudes a short hair; spiracles black; ventral area, which is abruptly divided from the dorsal, pale reddish-buff; head brown, marked with a darker shade of the same colour; legs and claspers rather darker than the dorsal area. *Plate XXVI., fig. 16.*

FOOD-PLANTS. Great Bedstraw. Woodruff in confinement.

PUPA. In an earthen cocoon.

Time of appearance	{	<i>Larva.</i> July to April.
		<i>Pupa.</i> May.
		<i>Imago.</i> June and July.

LOCALITIES. Cambridgeshire, Suffolk, Surrey, South of England, South Wales, Ireland; rare.

CAMPTOGRAMMA, *St.**Camptogramma bilineata*, *Linn.* THE YELLOW SHELL.

LARVA. Dorsal area glaucous green; dorsal line darker, bordered with pale green; subdorsal line white and very fine; spiracular line white; spiracles yellow in brown rings; ventral area pale green; central ventral line yellow; sometimes there are some pinkish or lilac spots on the ventral surface; head pale green, legs and claspers the same as the ventral area.

FOOD-PLANTS. Dock, Grass, Narrow Plantain.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April.} \\ \text{Pupa. May.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Camptogramma fluviata, *Hub.* THE GEM.

LARVA. About 9 lines long, stout, and tapering somewhat to the head. Dull greenish or pinkish with a rather narrow pale dorsal and subdorsal line, bordered on both sides with a darker colour; these lines extend only to the 5th segment. There are five pale diamond-shaped marks on the back, each mark outlined with brown, and containing a black mark; the spiracular line is black and interrupted; spiracles pale encircled with black; ordinary dots pale; ventral area pinker than the dorsal, with three pale ventral lines.

FOOD-PLANTS. Agrimony, Groundsel, Spotted Persecaria.

PUPA. In moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May and June. August. Sept. and Oct.} \\ \text{Pupa. July. August. Oct. to May.} \\ \text{Imago. July and August. August. May and June.} \end{array} \right.$

LOCALITIES. Derbyshire, Devonshire, Kent, Lancashire, Somersetshire, Sussex, South Wales; scarce. Ireland; local.

PHIBALOPTERYX, *St.**Phibaloptyryx tersata*, *W.V.* THE FERN.

LARVA. Pale brown; dorsal line darker brown, commencing at the head and tapering from thence to the 4th segment, where it terminates. There is invariably a black spot on the 10th segment, and frequently indications of similar spots on the 7th, 8th, and 9th segments. There is also a series of grey spots at the interstices of the segments after the 4th. Spiracular line pale, bordered above and below with a darker colour; spiracles black in pale rings; ordinary dots the same. There is a pale central ventral line edged with brown, and some other longitudinal lines.

FOOD-PLANT. Traveller's Joy.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. South eastern counties of England.

Phibalopteryx lapidata, *Hub.* THE SLENDER STRIPED RUFOUS.

LARVA. About 11 lines long, and cylindrical. Colour pale yellowish-white; dorsal line composed of greyish dots; subdorsal line the same, darker near the head; there are two lateral stripes along each side, the lower one darker and broader than the other; sides pale buff; spiracles black; ordinary dots black; ventral area pale buff, with seven greyish lines; head grey, speckled with dark grey.

FOOD-PLANTS. Coarse Grasses (?), Clematis (in confinement).

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. Scotland, Ireland.

Phibalopteryx lignata, *Hub.* THE OBLIQUE CARPET.

LARVA. Dorsal area pale reddish-brown; the anterior segments greenish. Dorsal line darker than the body; subdorsal line whitish; spiracular line of two shades of brown, with a series of dark streaks in its lower edge; spiracles pinkish. Ventral area paler than the dorsal; head green, speckled with grey. *Plate XXVI., fig. 17.*

FOOD-PLANTS. Yellow Bedstraw, Water Bedstraw.

PUPA. Amongst the food-plant, or just beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \quad \text{September.} \\ \text{Pupa.} \quad \text{August.} \\ \text{Imago.} \quad \text{August.} \quad \quad \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Phibalopteryx polygrammata, *Bork.* THE MANY LINED.

LARVA. I believe undescribed.

FOOD-PLANT. Yellow Bedstraw.

PUPA. Amongst moss.

Time of appearance. *Imago.* September. April.

LOCALITIES. Bristol, Cambridge.

Phibalopteryx vitalbata, W.V. THE SMALL-WAVED UMBER.

LARVA. Long and slender; ground colour delicate pinkish drab, slightly pinker at the segmental divisions and paler at the sides; dorsal line dark brown; broad at the head, and more conspicuous on the 2nd, 3rd, 4th, 11th, 12th, and 13th segments; on the intervening segments the line is narrow; lateral dilation paler than the body; spiracles black; ordinary dots black and conspicuous; central ventral line pale stone-colour, bordered with brown; head pale stone-colour marked with black; legs and claspers translucent, and there is a white stripe down the anal clasper. *Plate XXVI., figs. 18, 18a.*

Eggs hatched on the 19th of June.

FOOD-PLANTS. Traveller's Joy. Clematis (in confinement).

PUPA. In earth in a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June, July.} \quad \text{September and October.} \\ \text{Pupa.} \quad \text{July.} \quad \text{October to June.} \\ \text{Imago.} \quad \text{August.} \quad \text{June.} \end{array} \right.$

LOCALITIES. South of England and South Wales.

SCOTOSIA, Steph.**Scotosia dubitata, Linn. THE TISSUE.**

LARVA. Yellowish-green with a few scattered hairs; dorsal line darker than the body, bordered on each side by a pale yellow line; subdorsal line pale yellow and interrupted; spiracular line bright yellow and conspicuous; the skinfolds yellowish and overlapping the segmental divisions; spiracles buff encircled with brown; ventral area paler than the dorsal; head yellowish green, marked about the mouth with brown. *Plate XXVII., fig. 1.*

FOOD-PLANTS. Buckthorn, Blackthorn.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June to August.} \\ \text{Imago.} \quad \text{August to March.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not common.

Scotosia vetulata, W.V. THE BROWN SCALLOP.

LARVA. Short, stumpy, and stout; dorsal area black with two white stripes; below the dorsal area the body is yellowish ochreous, with a line of disconnected black spots in the region of the spiracles; spiracles black; head black; corslet yellowish, with a series of black spots placed across it. *Plate XXVII., fig. 2.*

FOOD-PLANT. Buckthorn.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. South of England and South Wales.

Scotosia rhamnata, W.V. THE DARK UMBER.

LARVA. Nearly an inch long; bright yellowish green and velvety; dorsal line darker than the body; subdorsal paler but indistinct; segmental divisions clearly marked and yellow; lateral dilation pale yellowish green; spiracles red; there is a purple line on each side of the last three segments; the 13th segment and anal claspers are also purple; head and legs green. *Plate XXVII., fig. 3.*

FOOD-PLANT. Buckthorn.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. South and Eastern Counties of England.

Scotosia certata, Hub. THE SCARCE TISSUE.

LARVA. Rather stout, with a few hairs; dorsal area delicate pinkish slate colour; its outer edges dark chocolate, with a number of small white streaks forming four slender interrupted longitudinal lines; sides white, with an orange-coloured blotch on each segment, from the 3rd to the 12th; spiracles black; placed in these blotches, and beneath them, is a series of smoke-coloured blotches and streaks. Ventral area almost white; corslet chocolate colour, the interrupted white lines passing through it; anal flap chocolate colour, edged with white; head smaller than the 2nd segment, ochreous brown, speckled with dark brown; legs black; claspers the same as the ventral area.

The dorsal area varies considerably, being sometimes lavender and occasionally nearly buff. *Plate XXVII., fig. 4.*

FOOD-PLANT. Barberry.

PUPA. In a slight cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July to April.} \\ \text{Imago.} \quad \text{April to June.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Essex, Gloucestershire, Kent, Somersetshire, Ireland.

Scotosia undulata, Linn. THE SCALLOPED SHELL.

LARVA. Stout and of uniform thickness, with a few scattered hairs; dorsal area reddish brown, bordered with a pale stripe; ventral area putty

colour, divided from the dorsal area by a dark brown line; spiracles black head pale brown; legs dark brown; claspers dingy grey.

FOOD-PLANTS. Aspen, Sallow.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

CIDARIA, Tr.

Cidaria psittacata, W.C. THE RED GREEN CARPET.

LARVA. "Almost uniformly cylindrical, and the anal segment terminates in two acute points, directed backwards; in colour they are very variable, some of them being yellowish green as regards the dorsal, olive green as regards the ventral area; others have the green dorsal area relieved by a medio-dorsal series of bright red blotches, and the anal points are also red; others, again, have a pink medio-ventral stripe and pink legs."—*Newman's Moths*, p. 181.

FOOD-PLANTS. Alder, Ash, Birch, Lime, Oak, Rose, Willow.

PUPA. In earth or amongst bark, in a slight web.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{August to October.} \\ \text{Imago.} \quad \text{October to April.} \end{array} \right.$

LOCALITIES. South of England, Lake District, Durham, Yorkshire, Scotland, Ireland.

Cidaria miata, Linn. THE AUTUMN GREEN CARPET.

LARVA. Long, cylindrical, slender, and slightly wrinkled; pale yellowish green, dorsal line dark green; lateral dilation conspicuous, and rather darker than the ground colour; segmental divisions yellowish; spiracles white. Ventral area much the same colour as the dorsal, with a central ventral pinkish line; the anal segment terminates in two pink protuberances, directed backwards; head the same size as the second segment; legs and claspers pinkish. In some specimens the anal projections, legs, and claspers are green, without the pink tinge. *Plate XXVII, fig. 5.*

FOOD-PLANTS. Alder, Birch, Oak, Sallow, Willow.

PUPA. In a slight cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to August.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August to April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Cidaria picata, *Hub.* THE SHORT-CLOAKED CARPET.

LARVA. Uniformly cylindrical, and rough. Dorsal area pinkish, or greenish putty colour, with numerous reddish lateral lines and streaks, and a series of dark dorsal blotches, more conspicuous on the 7th, 8th, and 9th segments; the lateral dilation is speckled with grey dots; spiracles black. Ventral area paler than the dorsal, streaked in the same manner, but with paler shades, and on each of those segments, after the 4th, are a few black dots; head ochreous brown, marked with darker brown. *Plate XXVII., fig. 6.*

FOOD-PLANT. Chickweed.

PUPA. In a slight cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August and September.} \\ \text{Pupa. September to May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Southern Counties of England.

Cidaria corylata, *Thunb.* THE HAZEL CARPET.

LARVA. Reddish drab tinged with green, with numerous brown warts. Down the centre of the back, commencing at the head, and extending to the end of the 4th segment, is a reddish brown dorsal stripe, composed of four indistinct lines, and from the 5th to the 10th there is a series of six dark, almost diamond-shaped marks; from the 10th segment the dark dorsal line is continued to the anal flap, which terminates in a point. Ventral area darker than the dorsal, and spotted with black dots, arranged in rows. *Plate XXVII., fig. 7.*

FOOD-PLANTS. Blackthorn, Lime, Alder, Birch, Whitethorn.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June to October.} \\ \text{Pupa. October to June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Cidaria sagittata, *Flab.* THE MARSH CARPET.

LARVA. Green of different shades, varying from pale blue green to the most brilliant yellow-green. Body stout; segmental divisions very deeply cut; those segments from the 5th to the 10th much more raised than the others, each ornamented with a dark green velvety transverse band, which terminates on either side in an oblique blotch. The dorsal parts of the 2nd, 3rd, and 4th segments have each two blotches, which, when the caterpillar draws itself together, unite and appear as one mark. Above the legs and claspers the caterpillar is tinged with pink, and the oblique blotches are also sometimes pink.

Ventral area the same colour as the dorsal; legs and claspers the same; head smaller than the 2nd segment; retractile, and very slightly notched on the crown; green, shining, and slightly speckled with black. *Plate XXVII., figs. 8 and 8a.*

FOOD-PLANT. Meadow Rue.

PUPA. On the surface of the earth, or amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{August to July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITY. Cambridgeshire.

Cidaria russata, W.V. THE COMMON MARBLED CARPET.

LARVA. Long, slender, and wrinkled. Yellowish green, with a number of white or yellowish warts, each of which has a short hair; segmental divisions or skinfolds yellower than the body; dorsal line narrow, rather dark green, and clearly defined in some specimens; subdorsal line pale green; there is a rather broad interrupted pink or purplish stripe along each side; the 13th segment is divided into two small pinkish points; head greener than the body; legs and claspers green, but sometimes tipped with purplish red. *Plate XXVII., fig. 9.*

In some specimens there is an absence of any of the purplish red markings, except on the claspers and anal points. *Plate XXVII., fig. 9a.*

Eggs laid on the 19th, 24th, and 27th of May began hatching on the 3rd of June.

FOOD-PLANTS. Birch, Bramble, Cowslip, Dock, Field Bindweed, Knot-grass, Primrose, Spotted Persicaria, Sallow, Strawberry, Willow.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva.} & \text{June.} & \text{August to February.} \\ \text{Pupa.} & \text{July.} & \text{September to May.} \\ \text{Imago.} & \text{August.} & \text{April and May.} \end{array} \right.$

In confinement imagines appeared in January and February.

LOCALITIES. Great Britain and Ireland.

Cidaria immanata, Haw. THE DARK MARBLED CARPET.

LARVA. Long, slender, and wrinkled. Pale bluish green, with a number of pale yellowish or white warts, each of which has a short hair; skinfolds slightly yellower than the body; dorsal line dark green; subdorsal line nearly white, but indistinct; lateral dilation conspicuous. From the 13th segment protrude two anal points directed backwards, and tipped with dull pink; head round, rather duller green than the body; legs and claspers green, slightly tinged with dull pink. *Plate XXVII., fig. 10.*

FOOD-PLANTS. Alder, Sallow, Strawberry.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{March to July.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Cidaria suffumata, W.V. THE WATER CARPET.

LARVA. Flat and rather rough, with a few scattered hairs. Pinkish grey, greenish grey, or ochreous brown. From the head to the 4th segment is a pale dorsal line; those segments from the 5th to the 9th have each a dark-grey V-shaped mark, the point of each V ending in a pink triangle containing a white dot; from the 10th to the 13th segment there is a dark dorsal line, and this portion of the larva as well as the spiracular region is paler than the rest of the body; spiracles black. Ventral area paler than the dorsal, with an indistinct pale central ventral line; head flat and brown, with a darker mark on each side the face. *Plate XXVII., fig. 11.*

Eggs laid on the 7th of May hatched on the 20th; those laid on the 7th of June hatched on the 16th of the same month; the former pupated from the 24th of June; the first imago appeared on the 18th of February.

FOOD-PLANTS. Great Bedstraw, Rough Bedstraw.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June} \\ \text{Pupa.} \quad \text{June to April.} \\ \text{Imago.} \quad \text{March to June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Cidaria reticulata, W.V. THE NETTED CARPET.

LARVA. Something more than three-quarters of an inch long, and slender. Greenish yellow tinged with pinkish, or slate colour; alimentary canal brown and obscure; subdorsal line white; spiracular line narrow and nearly white; spiracles pinkish; ordinary dots small and brown; head pinkish green and translucent; anal claspers marked with yellow.

FOOD-PLANT. Common Yellow Balsam.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to October.} \\ \text{Pupa.} \quad \text{October to July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITY. Lake District.

Cidaria silaceata, W.V. THE SMALL PHŒNIX.

LARVA. Long, slender, and cylindrical; pale green, with a series of reddish-brown dots down the centre of the back; ventral area the same colour as the dorsal; central ventral line white; head whitish green, marked more or less with brown; legs and claspers tinged with brown; the anal claspers streaked with white.

FOOD-PLANTS. Enchanter's Nightshade, Willow-herb.

PUPA. In a web amongst the food-plant.

Time of appearance { *Larva.* June and July
 { *Pupa.* September to May.
 { *Imago.* May and June.

LOCALITIES. Great Britain and Ireland; common

Cidaria prunata, Linn. THE PHŒNIX.

LARVA. About one inch and four lines long, the 3rd segment somewhat swollen.

Var. 1. Ground colour pale apple-green; on the 3rd segment is a conspicuous transverse raised purplish stripe; this band contains a series of pale yellowish dots; on the dorsal part of each of the remaining segments to the 11th is a purplish mark, containing a white obtuse triangle, the apex of which points forward, and which again contains at the segmental divisions a brown spot; these marks increase in size to the 11th segment, on the remaining segments they are smaller; spiracles pale, in brown rings; ordinary dots pale; head pale pinkish brown, and speckled. *Plate XXVII., fig. 12.*

Var. 2. Ground colour dull brown; the purplish marking of the last variety being of a darker shade of brown. *Plate XXVII., fig. 12a.*

FOOD-PLANTS. Currant, Gooseberry.

PUPA. In a web between two leaves.

Time of appearance { *Larva.* May and June.
 { *Pupa.* June and July.
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland; common.

Cidaria testata, Linn. THE CHEVRON.

LARVA. About an inch and a quarter long, and cylindrical. Delicate pale fawn colour, paler towards the extremities; dorsal line brown, subdorsal line white, bordered above with an interrupted brown edging; above the spiracles is a white waved line, bordered above and below with reddish brown; spiracles black and very conspicuous; segmental divisions pinkish; central ventral line pale brown and very distinct, bordered with white; ordinary dots white. Head very pale, speckled with brown; legs and claspers pale. *Plate XXVII., fig. 13.*

Eggs laid on the 26th of July hatched from the 18th to the 30th of April. The larvæ began to spin upon the 18th of June, and the first imago appeared on the 10th of July.

FOOD-PLANTS. Aspen, Birch, Poplar, Sallow, Heather.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Cidaria populata, *Bork.* THE NORTHERN SPINACH MOTH.

LARVA. Long and slender, the 3rd segment raised and larger than the others. Colour variable, either green or different shades of brown, with dark and almost white markings; these marks along the back are short interrupted longitudinal lines, some of them almost forming subdorsal lines; ordinary dots white, encircled with brown. The upper parts of the 8th, 9th, and 10th segments are each ornamented with a white V-shaped mark, the apex pointing forward, and these are continued, though much smaller and less distinct, towards the head. Ventral area paler than the dorsal, with a dark interrupted central ventral line. There are two rather indistinct whitish marks down the face. *Plate XXVII., fig. 14.*

Eggs commenced hatching on the 25th of March, and the larvæ continued to appear throughout April and a part of May.

FOOD-PLANTS. Whortleberry, Aspen, Sallow.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{March to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Cidaria fulvata, *Forst.* THE BARRED YELLOW.

LARVA. Pale green; dorsal line greenish grey and double; subdorsal line greenish grey; lateral dilation yellow; segmental divisions yellow. Head rather darker green than the body; legs and claspers the same as the body. *Plate XXVII., fig. 15.*

FOOD-PLANT. Dog-rose.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Cidaria pyraliata, Bork. THE BARRED STRAW.

LARVA. Long and slender. Bright green; dorsal line dark green bordered on each side by a pale yellow line; spiracular line yellow; spiracles and segmental divisions yellow. Head pale yellowish green; legs and claspers yellow. *Plate XXVII., fig. 16.*

Eggs laid on the 14th and 23rd of July, hatched on the 15th and 27th of March; larvæ full fed from June 6th.

FOOD-PLANTS. Bedstraw, Traveller's Joy.

PUPA. In a cocoon amongst the food-plant

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{March to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Cidaria dotata, Linn. THE SPINACH.

LARVA. Long and slender. Pale yellowish green; dorsal line darker green; spiracular line pale yellow.

FOOD-PLANTS. Black and Red Currant, Spinach.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July to August.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland.

PELURGA, Hub.**Pelurga comitata, Linn. THE DARK SPINACH.**

LARVA. Head slightly narrower than the second segment, and partly retractile; dorsal area dull greenish brown, streaked and striped with indistinct darker lines; on the 5th, 6th, and 7th segments is a yellowish ochreous spot, from which proceed two oblique dark streaks, forming a V-shaped mark on those segments; on each side of these marks are some yellowish dots; segmental divisions deeply cut at the sides; ordinary dots white and conspicuous; lateral dilation very pale flesh colour. Ventral area paler than the dorsal, with some blackish warts. Head smoke colour, marked on each side the mouth with whitish; legs brownish; claspers the same colour as the ventral area, marked on the outside with brown. *Plate XXVII., fig. 17.*

FOOD-PLANTS. Goosefoot, Orache.

PUPA. In a web on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to October.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.



EUBOLIIDÆ, *Gn.*EUBOLIA, *Dup.***Eubolia cervinaria, W.V. THE MALLOW.**

LARVA. About an inch and a half long, cylindrical, and slightly wrinkled. Colour pale yellowish green, with an interrupted darker dorsal line; segmental divisions bright yellow; ordinary dots white and conspicuous; spiracles black surrounded with white, and very conspicuous. Head pale whitish green; legs and claspers pale. *Plate XXVII., fig. 18.*

FOOD-PLANTS. Hollyhock, Mallow, Marsh Mallow.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ March to July.} \\ \textit{Pupa.} \text{ July to February.} \\ \textit{Imago.} \text{ September to February.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eubolia mensuraria, W.V. THE SMALL MALLOW.

LARVA. About one inch long, rather stout, and tapering towards the extremities. Pale slate colour tinged with pink; dorsal line pale slate colour; subdorsal lines pale yellowish ochreous, bordered above and below with a fine pale brown line; spiracles black; ordinary dots black; lateral dilation conspicuous and pinkish; ventral area pale slate colour; central ventral line narrow and pinkish, bordered on each side with a pale ochreous stripe; subventral lines pale ochreous, edged on each side with black; head pinkish grey, speckled with black; legs and claspers pinkish grey.

FOOD-PLANT. Tufted vetch.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ June.} \\ \textit{Pupa.} \text{ June and July.} \\ \textit{Imago} \text{ June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Eubolia palumbaria, W.V. THE BELLE.

LARVA. Pale grey; dorsal line dark and interrupted; subdorsal line the same; along each side are some irregular lines; dorsal area sometimes dark grey

FOOD-PLANTS. Broom, Furze, Heath, Heather, Needle Green-weed.

PUPA. Beneath the earth.

Time of appearance. $\left\{ \begin{array}{l} \textit{Larva.} \text{ June.} \quad \text{August to May.} \\ \textit{Pupa.} \text{ July.} \quad \text{May.} \\ \textit{Imago.} \text{ August.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Eubolia bipunctaria, W.V. THE CHALK CARPET.

LARVA. Dorsal area greyish, tinged with yellowish green; along the back are three dark-green lines, the dorsal broader than the others; super-spiracular lines double and indistinct; spiracles reddish; in the spiracular region is a row of black dots; ordinary dots black. Ventral area darker than the dorsal, with brown and yellow longitudinal lines, and a number of black marks. Head pale brown, speckled with a darker shade; legs marked with brown.

FOOD-PLANTS. Birdsfoot Trefoil, Clover, Dutch Clover.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to June.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. England and Wales.

Eubolia lineolata, W.V. THE OBLIQUE STRIPED.

LARVA. About eleven lines long and slender. Dorsal and ventral areas distinctly divided into two colours, the dorsal region being pinkish or purplish pink, the ventral delicate canary yellow. Dorsal line dark bluish or greenish grey; subdorsal line reddish or yellowish; spiracular line rather broad, brown or smoke colour, intersected by a pale line and darker as it approaches the spiracles; spiracles black in pale rings; ordinary dots black with short black hairs. Central ventral line pale. Head yellowish, speckled with brown. *Plate XXVII., figs. 19, 19a.*

FOOD-PLANTS. Bedstraw. Woodroof (in confinement).

PUPA. In a cocoon beneath the sand.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to September.} \\ \text{Pupa.} \quad \text{August to April.} \\ \text{Imago.} \quad \text{April to June.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Cheshire, Glamorganshire, Yorkshire, Scotland, and Ireland; not common.

CARSIA, Hub.**Carsia imbutata, Hub. THE MANCHESTER TREBLE BAR.**

LARVA. About seven lines long and stoutish; dorsal area reddish brown, dorsal line darker and narrow; subdorsal line the same; spiracular line bright yellow, containing a series of red blotches; it is edged above, on the 2nd and 3rd segments, with black; below the spiracular stripe is a blackish line, tinged on the posterior segments with red; spiracles black on a yellow ground;

ordinary dots yellow; ventral area greenish yellow; central ventral line pale edged with a darker colour; head dull pink.

FOOD-PLANT. Cranberry.

PUPA. In a cocoon amongst moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to June.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Manchester, Lancashire, Scotland, Ireland; not common.

ANAÏTIS, Dup.

Anaitis plagiata. Linn. THE TREBLE BAR.

LARVA. The body tapers towards the extremities; segmental divisions rather deeply cut; dorsal area reddish ochreous, with a yellowish space at the segmental divisions, and a number of reddish-brown longitudinal lines darkening at the segmental divisions and converging at the anal flap. Along each side is a pale yellow stripe; ventral area dark reddish brown; head pale brown; legs and claspers reddish brown. *Plate XXVII., figs. 20, 20a.*

Eggs laid on the 1st of June hatched on the 16th; the larvæ died when nearly full grown.

FOOD PLANT. St. John's wort.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June and July.} \\ \text{Pupa. July.} \\ \text{Imago. August and September.} \end{array} \right. \text{October to April. May and June.}$

LOCALITIES. Great Britain and Ireland.

LITHOSTEGE, Hub.

Lithostege griseata, W.V. THE PALE GREY CARPET.

LARVA. Variable.

Var. 1. Whitish green, with some purplish blotches and three brown stripes down the back; subdorsal line pale green, darker below; spiracular line pale yellowish; spiracles black.

Var. 2. Dull olive green, with some purplish blotches; dorsal line darker olive green; subdorsal line greenish grey, bordered with a darker shade of the same colour; spiracular line pale yellow; spiracles black.

Var. 3. Yellowish green, blotches darker purple.

FOOD-PLANTS. Flixweed, Treacle Mustard.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August to May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Norfolk.

CHESIAS, *Tr.*

Chesias spartiata, *Fab.* THE STREAK.

LARVA. Dull green; dorsal line darker, edged with a paler colour; subdorsal line very dark green, edged above with pale yellowish green; spiracular line white, slightly interrupted at the segmental divisions, which are yellowish; spiracles buff, encircled with pink placed in a yellow mark; ventral area dark green, with three white ventral lines. Head the same colour as the body, bifid and speckled; legs and claspers slightly paler. *Plate XXVII., fig. 21.*

FOOD-PLANT. Broom, flowers and leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{September.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Devonshire, South Wales, Scotland, Ireland; rare.

Chesias obliquaria, *W.V.* THE BROOM TIP.

LARVA. Body somewhat tapering towards the head, and wrinkled. Colour dull olive green; dorsal line darker, edged with pale green; subdorsal line dark green, edged below with pale green; lateral dilation distinct, white, and extends from the head to the anal flap; between the subdorsal line and the lateral dilation is a pale waved interrupted line; spiracles pale, encircled with a dark ring, and situated in a pale greenish spot; ventral area pale yellowish green; with three whitish ventral lines; head paler green than the body; legs and claspers also paler than the body. *Plate XXVII., fig. 22.*

FOOD-PLANT. Broom.

PUPA. Amongst the food plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{August to April.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Kent, Suffolk, Surrey, Scotland.

SIONIDÆ, *Gn.*

TANAGRA, *Dup.*

Tanagra chærophyllata, *Linn.* THE CHIMNEY SWEEPER.

LARVA. About nine lines long. Green or bluish green. Dorsal line dark green; subdorsal line the same, edged with pale green; spiracular line

whitish, bordered below with dark green ; spiracles red. There is a dark red mark on the 13th segment. Ventral area green, with three whitish ventral lines.

FOOD-PLANT. Earth-nut.

PUPA. In earth.

Time of appearance { *Larva.* May and June.
 { *Pupa.* June.
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland.

DREPANULÆ, Gn.

DREPANULIDÆ, Gn.

PLATYPTERYX, *Lasp.*Platypteryx lacertula, *Hub.* THE SCALLOPED HOOK TIP.

LARVA. Reddish brown or ochreous brown, marked with a darker shade; the dorsal surface of the 4th and 5th segments paler than the other part of the body; this pale area is made more conspicuous by two black velvety marks on the back of the 6th segment; dorsal line as far as the 4th segment pale, edged with brown; after which it becomes dark and interrupted. There are two bifid humps on the back of the 3rd and 4th segments, two smaller humps on the 12th, and a pointed hump on the 13th. Head light brown, mottled with darker brown, and indented on the crown. The larvæ rests with the head and anal extremity elevated, anal claspers absent. *Plate XXVIII, figs. 1, 1a.*

FOOD-PLANT. Birch.

PUPA. Between two leaves.

Time of appearance	{	<i>Larva</i>	June and July.	August and September
		<i>Pupa</i> .	July.	September to May.
		<i>Imago</i> .	July and August.	May and June.

LOCALITIES. Great Britain and Ireland; not uncommon.

Platypteryx sicula, *W.V.* THE SCARCE HOOK TIP.

LARVA. Shuttle shaped, tapering to the 13th segment. Dorsal area ochreous. On the 3rd, 4th, 5th, and 6th segments are two pointed warts or humps, tipped with white; along the back is a series of black streaks, and there are two oblique black streaks on the side of each segment; there is a white lateral stripe intersected by a fine pink line; ventral area glaucous; head reddish, with two white stripes across the face; legs greenish; claspers the same as the ventral area; anal claspers absent.

FOOD-PLANTS. Birch, Blackthorn, Lime, Oak.

PUPA. Amongst leaves.

Time of appearance	{	<i>Larva</i> .	May to July.
		<i>Imago</i> .	May, June, and August.

LOCALITY. Bristol.

Platypteryx falcula, W.V. THE PEBBLE HOOK TIP.

LARVA. Tapering towards the 13th segment, the anal claspers absent. Colour bright green; from the 6th segment the whole of the dorsal surface is pinkish, mottled with pale claret colour, the 3rd, 4th, 5th, and 6th segments have each two pointed protuberances, or warts of a yellowish colour, from each of which proceed a few hairs, the warts on the 5th segment are smaller than the others; the remaining segments to the 11th have each a pair of similar but much smaller warts; the 12th and 13th have each two pale and closely approximate warts; spiracles white encircled with black; legs and claspers a whiter green than the body; head greenish white, marked across the forehead with pink.—*Plate XXVIII, fig. 2.*

FOOD-PLANTS. Alder, Aspen, Birch, Oak, Poplar, Sallow, Willow.

PUPA. Between the leaves.

Time of appearance	{ Larva. May and June.	September.
	{ Pupa. June.	September to May.
	{ Imago. August.	May.

LOCALITIES. England and Wales; common. Scotland and Ireland; not uncommon.

Platypteryx hamula, W.V. THE OAK HOOK TIP.

LARVA. "Greyish brown; a broad dorsal stripe, greenish brown on the 2nd, 3rd, 4th, 12th, and 13th segments; yellowish brown on the others, edged with yellow on each side 4th segment, with two tubercles on the back (*Dup.*)"—*Stain. Man.*, vol. i., p. 164.

FOOD-PLANTS. Birch, Oak.

PUPA. Amongst leaves.

Time of appearance	{ Larva. June.	September.
	{ Pupa. July.	October to May.
	{ Imago. August.	May and June.

LOCALITY. England.

Platypteryx unguicula, Hub. THE BARRED HOOK TIP.

LARVA. Reddish brown reticulated with darker brown; dorsal line brown; on each side of the head a whitish longitudinal line commences, and begins to ascend on the 4th segment, rising to the 6th, where they meet forming a nearly white V, from thence they are continued downwards to the 9th segment, and rising again, meet on the 10th, enclosing a pale brown shuttle-shaped mark. There are two small reddish humps on the 4th segment, and the anal point is also reddish. The body tapers from the 11th segment, on which there is a short lateral white streak. Ventral area pale and dimly

tinged with green; legs and claspers the same; anal claspers absent; head large, pale brown, bifid, and speckled with darker brown. *Plate XXVIII., fig. 3.*

FOOD-PLANT. Beech.

PUPA. Amongst leaves.

Time of appearance	{	<i>Larva.</i> June.	August and September.
		<i>Pupa.</i> June and July.	September to May.
		<i>Imago.</i> August.	May.

LOCALITY. South of England.

CILIX, *Leach.*

Cilix spinula, W.V. THE CHINESE CHARACTER.

LARVA. Dark brown; dorsal area paler and redder than the ventral; dorsal line dark brown and indistinct; there is a slight indication of a spiracular line on the 2nd, 3rd, and 4th segments, and on the 12th it is white and conspicuous; on the 3rd segment are two pointed protuberances, and on the 4th two warts placed transversely. Head brown; the 13th segment terminates in a point which is at all times elevated. Anal claspers absent. *Plate XXVIII., fig. 4.*

Larvæ hatched on the 10th of July were full fed 6th August.

FOOD-PLANTS. Blackthorn, Whitethorn, Apple.

PUPA. Amongst the leaves of the food-plant.

Time of appearance	{	<i>Larva.</i> May to August.	September and October.
		<i>Pupa.</i> June to August.	September to May.
		<i>Imago.</i> August.	May and June.

LOCALITIES. England and Ireland; common. Scotland; local.



PSEUDO BOMBYCES, GN.

DICRANURIDÆ, GN.

DICRANURA, *Lat.**Dicranura bicuspis*, *Bork.* THE ALDER KITTEN.

LARVA. Body raised on the 6th segment. Ground colour whitish green; on the dorsal surface there is a white oblique streak on each side of each segment. A double stripe, pink above, white below, commences on each side the head, rises obliquely to the 6th segment, from this it descends, and then takes a lateral direction to the 13th; spiracles yellow. From the anal segment protrude two long black processes, tipped with red. Head brown; claspers pale green. Rests with the anal extremity elevated.

FOOD-PLANTS. Alder, Birch.

PUPA. In the bark of the tree.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to October.} \\ \text{Pupa. October to April.} \\ \text{Imago. April and May.} \end{array} \right.$

LOCALITIES. Derbyshire, Lancashire, Staffordshire, Sussex, Yorkshire.

Dicranura furcula, *Linn.* THE SALLOW KITTEN.

LARVA. Face flat and retractile; 2nd segment dorsally flattened, and square in front, forming an angle on each side. Ground colour pale green; on each side of the 2nd segment commences a white stripe; these stripes rise obliquely, and almost meet on the 3rd segment, they then descend to the 7th, are lost on the 8th, reappear on the 9th, ascending obliquely until they meet in a blunt point at the 13th; these white lines are bordered above with purple, and the whole of the dorsal area contained within them is mottled with purple and orange; ventral area slightly spotted with purple marks, and also with smaller purplish marks centred with white; the 13th segment terminates in two long anal tubes, each of which contains a hair-like process, which can be projected at will; they nearly always closely approximate; spiracles yellowish encircled with brown; the claspers have each a purplish red V-shaped

mark; head purplish grey. The larva rests with its anal extremity elevated. *Plate XXXVIII., fig. 5.*

FOOD-PLANTS. Osier, Poplar, Sallow, said to prefer *S. Caprea* and *S. Cinerea*.

PUPA. Under the bark of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ July to September.} \\ \textit{Pupa.} \text{ September to May.} \\ \textit{Imago.} \text{ May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Dicranura bifida, *Hub.* THE POPLAR KITTEN.

LARVA. Face flat and retractile; 2nd segment dorsally flattened, and square in front, forming an angle on each side. Ground colour bright yellowish green; a yellow line commences on each side the head; these lines are directed obliquely until they meet in an obtuse point at the posterior edge of the 3rd segment; they commence again on the 5th, descending to the spiracle on the 8th; from thence they ascend again, and nearly converge on the 12th, expand on the 13th, and meet again at the anal extremity. These lines have altogether a scalloped appearance; the space they enclose, as well as the dorsal part of the 2nd and 3rd segments, is purplish red; there is a pale greenish dorsal line, passing through these purplish areas; on the sides of the larva are a few purplish spots centred with white, and the ventral part of the 11th and 12th segments is marked with purple; spiracles reddish; the anal segment terminates in two long anal tubes, rough and ringed at the tip alternately with purplish red and green; these tubes each contain a slender process capable of being protruded at will; legs yellowish, marked with reddish purple; claspers the same, each having a reddish ring and a mark behind of the same colour. The larva rests with the anal extremity elevated. *Plate XXVIII., fig. 6.*

FOOD-PLANTS. Aspen, Poplar.

PUPA.—In a cocoon in the bark of a tree.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ July, August.} \\ \textit{Pupa.} \text{ September to May.} \\ \textit{Imago.} \text{ June and July.} \end{array} \right.$

LOCALITIES. England and Ireland.

Dicranura vinula, *Linn.* THE PUSS MOTH.

LARVA. Face flattened and retractile; 2nd segment dorsally flattened and square, forming an angle on each side. Ground colour green; a white line commences on each side the head; these lines are directed obliquely upwards to the 4th segment, where the body forms a hump; they then descend

to the 8th segment, from thence ascend again to the 12th, expand on the 13th, and meet at the anal extremity; the space enclosed by these lines is chocolate colour, streaked with lighter longitudinal lines; spiracles white encircled with brown. From the 13th segment protrude two long anal tubes, furnished with pink processes, which can be protruded at will. Head pale brown, marked at the sides with black; front edge of the 2nd segment pink, with a black spot on each side the forehead; corslet green and horny; legs yellowish green, ringed and tipped with black. The larva rests with the anal extremity elevated. *Plate XXVIII., fig. 7.* In some varieties the chocolate-brown colour of the dorsal region partakes of the same green colour as the other part of the body. *Plate XXVIII., fig. 7a.* When young, *Plate XXVIII., figs. 7b and 7c.*

FOOD-PLANTS. Aspen, Poplar, Willow, Osier, Sallow.

PUPA. In a cocoon amongst the bark.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

STAUROPUS, *Germ.*

Stauropus fagi, *Linn.* THE LOBSTER.

LARVA. The larva rests with its head thrown back, so as almost to meet the 3rd segment; the three posterior segments are also elevated; the 12th and 13th large, swollen, rounded above and flattened beneath, and the latter terminates in two long anal appendages. Colour pale brown, freckled with darker brown. Head much larger than the 2nd, 3rd, or 4th segments, round, but somewhat flattened, with two dark-brown lines down the face; dorsal line the colour of the body, indicated by a darker bordering; segmental divisions deeply cut; the 4th segment is somewhat swollen above; the 5th, 6th, and 7th have each two dorsal humps rather pointed and directed backwards; these humps have each a brown streak in front, and there are some other brown streaks, both oblique and longitudinal on the sides of the body; on the side of both the 5th and 6th segments is a rather large conspicuous dark-brown oval spot; the 8th, 9th, and 10th segments have each two obtuse dorsal humps. Legs pale brown; the second and third pair remarkably long; claspers long and somewhat pointed. *Plate XXVIII., figs. 8 and 8a.*

FOOD-PLANTS. Beech, Birch, Oak, Sallow.

PUPA. In a cocoon amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Buckinghamshire, Devonshire, Essex, Hants, Kent, Nottinghamshire, Surrey, Sussex.

PETASIA, *Steph.*

Petasia cassinea, *Fab.* THE SPRAWLER.

LARVA. Pale green, velvety, and somewhat raised on the 12th segment. Dorsal and subdorsal lines white; the subdorsal line commences on the 5th segment, curves upwards from the 10th to a point on the 12th, descends again in a waved form, and ceases on the 13th; spiracular stripe white tinged with yellow, extending round the anal flap, it is edged above with a narrow brown line; spiracles white, encircled with black, situated on this line; head pale green and translucent; corslet nearly white; legs yellowish green; claspers concolorous with the ventral area, which is darker than the dorsal. *Plate XXIX., fig. 1.*

FOOD-PLANTS. Birch, Blackthorn, Elm, Hazel, Hornbeam, Lime, Oak Poplar, Sallow, Whitethorn.

PUPA. Amongst the roots of trees.

Time of appearance { *Larva.* May and June.
Pupa. June to October.
Imago. October and November.

LOCALITIES. England and Ireland; not common.

Petasia nubeculosa, *Esp.* THE RANNOCH SPRAWLER.

LARVA. Delicate yellowish green, clouded along the back, and to some extent along the sides with white. The body has a number of dots, ten on each segment, arranged thus: the two upper ones yellow; the three below them white, placed in a line; a single one below these yellow; in front of the spiracle there are two white dots, behind it one yellow and one white. On the side of the 4th segment is an oblique yellow streak; on the 12th a transverse, fine, pale line, tipped with yellow at the ends; spiracles white, encircled with black; on the anal flap is a white line and two yellow dots. Head blue green, and shining; legs green, tinged with reddish brown; claspers green marked with black.

FOOD-PLANT. Birch.

PUPA. In earth.

Time of appearance { *Larva.* May and June.
Pupa. June to the following March twelvemonth.
Imago. March and April.

LOCALITY. Rannoch, Scotland.

PYGÆRIDÆ, Gn.

PYGÆRA, Och.

Pygæra bucephala, Linn. THE BUFF TIP.

LARVA. Buff mottled with dark brown, with a number of short grey hairs. There are eight longitudinal bright yellow stripes variegated with orange, and a transverse orange band on each segment from the 3rd to 12th; spiracles black encircled with yellow; the 2nd segment has a brown plate and the 13th is brown with a yellow transverse line. Head dark brown, with a yellow Λ -like mark on the face; legs and claspers brown. *Plate XXIX.*, figs. 2, 2a, 2b.

FOOD-PLANTS. Birch, Elm, Evergreen Oak, Hazel, Hornbeam, Horse-chestnut, Lime, Maple, Oak, Poplar, Rose, Sallow, Sycamore, Willow.

PUPA. In earth.

Time of appearance { *Larva.* July to October.
Pupa. October to June.
Imago. June and July.

LOCALITIES. Great Britain and Ireland; common.

CLOSTERA, Hoff.

Clostera curtula, Linn. THE CHOCOLATE TIP.

LARVA. Pinkish grey speckled with black; dorsal line black and interrupted; on the 5th segment is a small round black velvety hump, and on the 12th a similar hump; the 2nd segment has an orange-coloured wart on each side of it, and the remaining segments have, besides this, a series of orange-coloured warts, some of which are placed transversely; the body is covered with short pale hairs, more numerous on the dorsal surface; the spiracles are black, the head nearly black, with two yellowish ochreous lines down the face. When young, the body is black, and the warts are less brilliant in colour. *Plate XXIX.*, fig. 3.

FOOD-PLANTS. Aspen, Poplar, Sallow.

PUPA. Between the leaves of the tree; the chrysalids of the autumn larvæ fall to the ground between the leaves.

Time of appearance { *Larva.* April and May. August to October.
Pupa. June. October to April.
Imago. July. April and May.

LOCALITIES. England and Ireland.

Clostera anachoreta, W.V. THE SCARCE CHOCOLATE TIP.

LARVA. Long and somewhat slender; segmental divisions distinctly marked; head black, shining, and bifid; 2nd segment large and swollen,

Very dark brown, with four ochreous lines down the back, commencing at the 3rd segment; on each side of this series of lines, on each segment, is an orange-coloured wart, from which proceed a number of long light hairs; there is also a row of these warts along each side above the spiracles, and below them a number of markings of the same colour; on the 5th segment is a black and shining hump *with a bright white mark on either side of it*; on the 12th segment is a smaller hump of a similar character, with a transverse orange line behind it; spiracles brown encircled with pale buff; legs and claspers behind. *Plate XXIX., fig. 4.*

FOOD-PLANTS. Poplar, Sallow.

PUPA. Amongst the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to October.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{August to May.} \end{array} \right.$

LOCALITY. Folkestone.

Clostera reclusa, W.V. THE SMALL CHOCOLATE TIP.

LARVA. Pinkish grey, slightly speckled with darker grey, with a few short pale hairs; dorsal area paler, with a row of small orange-red warts along each side; the upper portion of the 3rd, 4th, and 6th segments is buff, and on the 5th is a raised oval spot, containing two black warts; there are two black warts on the 12th segment; spiracular line broad, reddish buff, bordered above its anterior portion with black; spiracles black; head black, divided down the centre of the face by two stripes, which converge on the forehead; legs black; claspers grey. *Plate XXIX., fig. 5.*

FOOD-PLANTS. Poplar, Sallow, Willow. Dwarf Sallows preferred.

PUPA. In a web between two leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

NOTODONTIDÆ, Gn.

GLYPHISIA, Bdv.

Glyphisia crenata, Esp. THE DUSKY MARBLED BROWN.

LARVA. "Pale green; dorsal line spotted with ferruginous, bordered on each side by a yellow line (*Dup.*)"—*Stain. Man.*, vol. i., p. 122.

FOOD-PLANT. Poplar.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Epping, Essex; Halton, Bucks; very rare.



Vincent Brooks Day & Son, Lith.

PTILOPHORA, *Steph.**Ptilophora plumigera*, *W.V.* THE PLUMED PROMINENT.

LARVA. *When young*, delicate yellowish green, with two bright white subdorsal lines, between which the ground colour of the body is much darker than on the other parts; spiracular line rather darker green, bordered on each side with two pale green stripes; segmental divisions yellow; head shining and remarkably large.

When full fed, milky green, and velvety; dorsal area to the spiracles of one uniform colour; the stripes still conspicuous, but to a great extent merged in the ground colour, as is also the colour of the segmental divisions; ventral area apple green; head, legs, and claspers the same colour.

Plate XXIX., figs. 6 and 6a. Not full grown.

Eggs hatched on the 18th of April.

FOOD-PLANTS. Maple, Sycamore.

PUPA. In an earthen cocoon.

(*Larva.* April to July.

Time of appearance { *Pupa.* July to October.

(*Imago.* October and November.

LOCALITIES. Buckingham, Devonshire, Hampshire

PTILODONTIS, *Steph.**Ptilodontis palpina*, *Linn.* THE PALE PROMINENT.

LARVA. Pale green, tinged with white and wrinkled, with numerous white warts which form themselves into four longitudinal lines down the back, the two centre ones extending through the corslet; spiracular line bright yellow, bordered above with a very narrow conspicuously black line, and tinged below on the 2nd, 3rd, and 4th segments with pink; this line extends round the face and round the anal flap; ventral area darker than the dorsal, claspers the same; legs yellow, spotted with black; head small, pale green; corslet the same. *Plate XXIX., fig. 7.*

FOOD-PLANTS. Birch, Poplar, Sallow, Willow.

PUPA. In earth.

Time of appearance { *Larva.* July to October.
 { *Pupa.* September to May.
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland; not uncommon.

NOTODONTA, *Och**Notodonta camelina*, *Linn.* THE COXCOMB PROMINENT.

LARVA. Bright green, much lighter on the dorsal area, with some scattered white warts; dorsal line blue-green, passing between two red humps

on the 12th segment, these red humps have each a tuft of black hairs; spiracular line yellow; spiracles black, encircled with white; and beside each is a pink blotch; segmental divisions yellow; there are a few black dots and some black hairs on the body; ventral area green; head yellow-green and shining, yellower towards the mouth; legs and claspers pink. In some varieties the ground colour is yellowish buff. The larva rests with the 13th segment raised, and its head curved back over the body. *Plate XXX., figs. 1, 1a.*

Eggs laid on the 16th of July, hatched on the 24th of the same month. When first hatched, the larva is whitish, the head black, large, and shining.

FOOD-PLANTS. Apple, Alder, Birch, Beech, Elm, Hazel, Lime, Maple, Oak, Sallow, Whitethorn, Willow.

PUPA. In a slight cocoon under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to October.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{May to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Notodonta cucullina, W.V. THE MAPLE PROMINENT.

LARVA. "According to Hübner, the caterpillar rests with the anal extremity raised, and the anal claspers not touching the food-plant; the head is rather flat, and about equal in width to the second segment; the body gradually increases in size to the 5th or 6th segment, and then as gradually decreases to the 12th, which again increases, rising into a medio-dorsal pyramidal hump; the colour of the head is brown, the body dingy white, with a medio-dorsal brown stripe, which commencing immediately behind the head, expands on the 3rd, 4th, and 5th segments, and then again contracts and terminates in the pyramidal hump; the spiracles are white, each surrounded by a black ring, and there is a black dot immediately above and below each; the ventral area, legs, and claspers are brown."—*Newman's Moths*, p. 226.

FOOD-PLANT. Maple.

PUPA. Mr. Green found one under moss on a Beech-tree at Halton, Bucks.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. Bucks, Herts.

Notodonta carmelita, Esp. THE SCARCE PROMINENT.

LARVA. The body rises somewhat to the posterior extremity; ventral area flat; dorsal surface rounded, shining, wrinkled, and bright yellowish green; ventral area dull glaucous green; these two areas are abruptly separated by a conspicuous lateral dilation; spiracular line pale yellow, and

extending round the anal flap within it are a series of salmon-coloured blotches, which fade into white on the anterior segments; spiracles black; head small, green, with two yellowish white curved lines down the face; legs and claspers slightly paler than the ventral area. *Plate XXX., fig. 2.*

FOOD-PLANT. Birch.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July to April.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. Cumberland, Essex, Kent, Surrey, Sussex.

Notodonta bicolor, *Fab.* THE WHITE PROMINENT.

LARVA. Hübner's figure represents this larva as nearly cylindrical; segmental divisions clearly marked. Dull yellowish green, with four darker green stripes down the back; spiracular stripe yellow; spiracles black; head the same colour as the body; legs nearly black; claspers green.

FOOD-PLANT. Birch.

PUPA. Amongst leaves on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{August to June.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITY. Staffordshire; very rare.

Notodonta dictæa, *Linn.* THE SWALLOW PROMINENT.

LARVA. Pale whitish green and thick skinned; segmental divisions rather clearly marked; the 12th segment rises to a hump, tipped with a transverse black streak; spiracular line bright yellow, extending round the anal flap, where it is orange; spiracles black surrounded with white, that on the 12th segment is placed above the spiracular line, the remainder touch its upper edge; ventral area pale dull green; claspers the same, tipped with white; head pale bluish green and shining; legs dull red. *Plate XXX., fig. 3.*

There is also a brown variety of this larva.

FOOD-PLANTS. Alder, Oak, Osier, Poplar, Sallow, Willow.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not common.

Notodonta dictæoides, *Esp.* THE LESSER SWALLOW PROMINENT.

LARVA. Rather more than two inches long and slender, with a conspicuous pointed hump on the 12th segment. Purplish brown, and shining

like earthenware; spiracular stripe broad, bright yellow, commencing at the head; spiracles black encircled with white, situated in the upper part of the spiracular line, with the exception of that on the 12th segment, which is above it; ventral area paler than the dorsal; central ventral line greenish; head pale lilac-grey, mottled with black, with two crescentic marks on the forehead; legs and claspers the same colour as the body. *Plate XXX., fig. 4.*

FOOD-PLANT. Birch.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September and October.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not common.

Notodonta dromedarius, Linn. THE IRON PROMINENT.

LARVA. Bright yellowish green, with a large hump on the back of the 5th, 6th, 7th, and 12th segments; the first three of these are directed backwards, that on the 12th segment is pyramidal, there is also a slight rising on the 8th segment. A broad dorsal line of a purplish red colour extends from the head to the end of the third hump, it is broad and continuous to the end of the 4th segment, narrow and interrupted as it passes over the humps; the rising on the 8th segment, the hump on the 12th, the ventral area, legs, and claspers are marked with the same colour; spiracles yellowish, marked with brown. Head small and bifid, brown speckled with darker brown. The larva rests with its anal claspers raised. *Plate XXX., fig. 5.*

Variety. There is also a variety of this larva of a uniformly reddish brown colour, mottled with a lighter shade of the same. *Plate XXX., fig. 5a.*

FOOD-PLANTS. Alder, Birch, Hazel

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Notodonta trilophus, W.V. THE THREE-HUMPED.

LARVA. "Dark green, with humps on the 5th, 6th, 7th, and 12th segments; a reddish dorsal streak from the head to the 5th segment; along the spiracles is an interrupted reddish streak (*Ochs.*)"—*Stain. Man.*, vol. i., p. 119.

FOOD-PLANTS. Aspen, Birch, Poplar.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May to August.} \end{array} \right.$

LOCALITIES. Devonshire, Essex, Scotland, Ireland; very rare.

Notodonta ziczac, *Linn.* THE PEBBLE PROMINENT.

LARVA. Pale ochreous, inclining to pink above, with a hump on the 6th, 7th, and 12th segments; dorsal line dark bordered with white, extending from the head to the top of the first and second humps; from the 7th to the 12th segments the white bordering is continued, though the brown dorsal line is absent; there are some white oblique lines on the sides; the 11th and 12th segments yellow, the 13th pink; spiracular line whitish; spiracles brown. Rests with the anal claspers raised. *Plate XXX., fig. 6.*

Before changing to the chrysalis state the larva becomes either dark green or pale or dark slate colour. *Plate XXX., fig. 6a.*

Eggs hatched in September, and the larvæ pupated at the end of the same month.

FOOD-PLANTS. Aspen, Osier, Poplar, Sallow, Willow.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to October.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{May to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Notodonta trepida, *Fab.* THE GREAT PROMINENT.

LARVA. Yellowish green and velvety, paler on the dorsal area; along the back, in close proximity, are two longitudinal yellow lines; subdorsal line rather less distinct, but the same colour; along the side are seven bright oblique streaks, yellow below, bright orange-red above, with a yellow dot at the upper end of each; spiracles white, encircled with brown; head large, a yellow and black streak on each side of it, and an orange and yellow mark on the lower part of the face; there is a somewhat similar mark on the 2nd and 3rd segments; legs yellowish; claspers yellowish green, pink at the tip. *Plate XXX., fig. 7.*

The eggs hatched on the 17th of May.

FOOD-PLANT. Oak.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; rare.

Notodonta chaonia, W.V. THE LUNAR MARBLED BROWN.

LARVA. Nearly two inches in length and cylindrical; segmental divisions clearly marked; subdorsal lines bright yellow, between these the dorsal space from the head to the end of the anal flap is delicate milky green; the sides and ventral area blue-green; spiracular line bright yellow, narrow, but expanding at the spiracles, and extending round the anal flap; spiracles black, in white blotches; head pale green; legs and claspers the same colour as the ventral area. *Plate XXX., fig. 8.*

When about to change, the dorsal area loses its whitish appearance, and becomes of the same uniform colour as the other parts of the body.

FOOD-PLANT. Oak.

PUPA. In a cocoon amongst the roots or trunk of a tree.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; rare.

Notodonta dodonea, W.V. THE MARBLED BROWN.

LARVA. Pale green and wrinkled, with two pale yellow longitudinal lines down the back, composed of minute yellow dots; between these lines and the spiracular stripe is another similar longitudinal line. Spiracular line bright yellow, bordered above by a red interrupted line, and intercepted by a series of red blotches; it extends round the face. Ventral area bluer green than the dorsal; head large, blue-green, and shining; anal flap the same colour. *Plate XXX., fig. 9.*

FOOD-PLANT. Oak.

PUPA. Amongst the roots of the tree.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. Cumberland, Levenshire, Essex, Gloucester, Hants, Kent, Lancashire, Surrey, Sussex, Westmoreland, Yorkshire; Scotland, Ireland; very rare.

DILOBA, Bdv.**Diloba cæruleocephala, Linn. THE FIGURE OF EIGHT MOTH.**

LARVA. Blue-grey, with a conspicuous series of bright yellow ornamentations down the back; on the 3rd segment the mark is transverse and raised, on the 4th club-shaped, on the 12th square, on the intervening segments somewhat *fleur-de-lis* shaped; the ordinary dots are black, velvety, and wart-



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like; those on the back are situated in these yellow marks; the 2nd segment is yellow, with black warts; spiracular line yellow, spiracles black, with two black warts above them and one below; from all the black warts or tubercles proceed short black hairs. Head pale grey, with two black spots on the forehead; legs blue-grey speckled with black; claspers blue-grey, each with a black spot. *Plate XXX., fig. 10.*

When first hatched, the larvæ are very dark, with a series of yellow spots down the back.

The eggs began hatching on the 20th of February.

FOOD-PLANTS. Almond, Apple, Blackthorn, Peach, Pear, Whitethorn.

PUPA. In a cocoon of white silk attached to a tree, under the bark.

Time of appearance	{	<i>Larva.</i>	February to June.
		<i>Pupa.</i>	July and August.
		<i>Imago.</i>	September.

LOCALITIES. Great Britain and Ireland; not common.

NOCTUÆ, LINN.

TRIFIDÆ, Gn.

THYATIRA, Och.

Thyatira derasa, Linn. THE BUFF ARCHES.

LARVA. Dorsal area greenish brown; dorsal line paler. Along each side is a series of indistinct dark oblique streaks; on the side of the 4th segment is a white spot, and occasionally a similar but smaller spot on the side of the 5th; spiracles black; ventral area greyish; head greenish brown legs reddish; claspers grey.

FOOD-PLANT. Bramble.

PUPA. Amongst the leaves of the plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August and September.} \\ \text{Pupa. September to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland.

Thyatira batis, Linn. THE PEACH BLOSSOM.

LARVA. Pinkish brown and velvety, marked with darker brown, and irrorated with white dots. On the 2nd segment are two small humps, and on the 3rd a bifid hump directed forwards; the 6th, 7th, 8th, 9th, and 10th segments are each conspicuously raised into a pointed hump; the apex of each hump marked on each side with a pale pinkish streak; on the 5th segment there are three black spots placed transversely. The juncture of the dorsal and ventral areas is clearly defined, and where they meet the dorsal area is pale pinkish, the ventral dark brown. Legs and claspers yellow and horn-like; above the claspers the body of the larva is pale primrose yellow, mottled with brown. Head flat, notched on the crown, ochreous yellow, marked with brown.

FOOD-PLANTS. Bramble, Raspberry.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. August to June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

CYMATOPHORA, *Tr.**Cymatophora duplaris*, *Linn.* THE LESSER SATIN MOTH.

LARVA. Whitish grey, mottled with darker grey. Dorsal stripe bluish and very wide, containing in its outer edge a row of white marks. Ventral area whitish, tinged with dull green; head pale brown and shining, with a black mark on the forehead and a black spot on each side the mouth; legs and claspers the same as ventral area.

FOOD-PLANTS. Alder, Birch, Oak.

Time of appearance { *Larva.* August and September.
Pupa. October to May.
Imago. June and July.

LOCALITIES. Great Britain and Ireland.

Cymatophora fluctuosa, *Hub.*

LARVA. Yellowish white, greyer on the back, with a series of dark marks along the sides, and a dorsal pulsating vessel rather darker than the body. Head pale brown, with a black mark on the forehead and a black spot on each side the mouth.

FOOD-PLANTS. Birch, Oak.

PUPA. In a cocoon amongst the leaves.

Time of appearance { *Larva.* September and October.
Pupa. October to May.
Imago. June and July.

LOCALITIES. West of England, Norfolk, Yorkshire, Ireland.

Cymatophora diluta, *W.V.* THE LESSER LUTESTRING.

LARVA. "The body is obese and maggot-like; it bears numerous fine scattered hairs. The colour of the head is dark brown, almost black; of the body, pale grey, with a narrow medio-dorsal stripe rather darker, and a narrow lateral stripe rather lighter; the spiracles and a series of dots beneath them are nearly black."—*Newman's Moths*, p. 240.

FOOD-PLANTS. Birch, Oak.

PUPA. In a slight cocoon amongst the leaves.

Time of appearance { *Larva.* June and July.
Pupa. July and August.
Imago. August and September.

LOCALITIES. England, Scotland, and Ireland; not common.

Cymatophora or, *W.V.* THE POPLAR LUTESTRING.

LARVA. Pale glaucous green and translucent, with numerous small

warts; pulsating vessel darker; spiracular line yellowish and indistinct; ventral area paler than the dorsal; head reddish.

FOOD-PLANTS. Aspen, Poplar.

PUPA. Under Moss on Poplars.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITY. England; scarce.

Cymatophora ocularis, Linn. THE FIGURE OF EIGHTY.

LARVA. About an inch and a half long; yellowish grey, yellower on the sides; pulsating vessel darker; on the sides of the 2nd segment are three black spots, on the 3rd two, on the 4th one, and on the 12th one; spiracles pinkish; head bright ochreous, with a black mark on the forehead and on each side the mouth; corslet and anal flap pale and shining.

FOOD-PLANT. Poplar.

PUPA. Under Moss, or amongst leaves on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{October to June.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Berks, Essex, Norfolk, Suffolk, Worcestershire, Ireland.

Cymatophora flavicornis, Linn. THE YELLOW HORNED.

LARVA. Cylindrical, the skin much wrinkled at the sides. Pale greenish primrose colour, lighter towards the 13th segment, and shaded on the dorsal area with olive green. The second segment has some black and white spots on each side of it; along each side of the back is a row of black velvety marks, one on each segment, with three white spots above and one below each; these black marks are smaller on the 3rd and 4th segments, and on these segments also the white dots are more numerous; just above the spiracles is another row of black marks with a white spot on the upper edge of each; spiracles pale yellow encircled with reddish brown; head flesh colour, dotted with reddish brown, divided down the centre, and having a black mark on each side of the mouth; corslet brown; legs and claspers milky white, tipped with pale brown. *Plate XXXI., fig. 1.*

FOOD-PLANT. Birch.

PUPA. Amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{August to March.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; not uncommon.

Cymatophora ridens, Fab. THE FROSTED GREEN.

LARVA. About an inch and a half long and cylindrical. Bright canary yellow, with numerous scattered white warts, a few black spots, and some smoke-coloured markings. On each side of the dorsal area is a row of greenish smoke-coloured oblique streaks, above the spiracles a row of lateral streaks, and beneath them a connected lateral stripe of the same colour; spiracles white encircled with reddish brown; head large, pinkish, marked on the upper part with reddish brown, and with a black spot on each side the mouth; corslet pale yellow, with two black spots on each side of it; legs and claspers colourless. The smoke-coloured markings are said not always to be present. *Plate XXXI., fig. 2.*

FOOD-PLANT. Oak.

PUPA. In a slight cocoon amongst leaves.

Time of appearance { *Larva.* June and July.
Pupa. August to March.
Imago. February to April.

LOCALITY. England; scarce.

BRYOPHILIDÆ, Gn.**BRYOPHILA, Tr.****Bryophila glandifera, W.V. THE MARBLED GREEN.**

LARVA. Flat; dorsal area slate colour, with a bright white dorsal line forming on the 10th, 11th, and 12th segments a series of *fleur-de-lis* markings; on each side of this dorsal line, on each segment, are several white warts, from each of which proceeds one white hair; spiracles white encircled with black; ventral area dull yellow, and its juncture with the dorsal area most abrupt and well defined; legs and claspers brighter yellow. Head and corslet black and shining. *Plate XXXI., fig. 3.*

FOOD-PLANT. Lichens on walls.

PUPA. In the mortar upon walls.

Time of appearance { *Larva.* October to May.
Pupa. June to August.
Imago. July to September.

LOCALITIES. South of England, Devonshire, Pembrokeshire, Sussex.

Bryophila perla, W.V. THE MARBLED BEAUTY.

LARVA. Pale bluish grey, with a number of black and shining warts, and a broad connected stripe of an ochreous yellow colour down the back, forming a series of blunt imperfectly shaped diamond-like marks on each seg-

ment. Along each side are two rather indistinct and interrupted whitish lines. Ventral area paler than the dorsal; claspers the same; legs black and shining; head smaller than the 2nd segment, black and shining. *Plate XXXI., fig. 4.*

FOOD-PLANT. Lichens on walls.

PUPA. Amongst the mortar on walls.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \\ \text{Pupa.} \quad \text{June to August.} \\ \text{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Bryophila algæ, *Fab.* THE TREE LICHEN BEAUTY.

LARVA. "Grey green, marbled, with a white medio-dorsal stripe, and a series of white lateral spots; a stripe near the spiracle, and a horseshoe-shaped marking, are black; the head also is black."—*Newman, quoting Guennée.*

FOOD-PLANT. Lichens on trees.

Time of appearance. *Imago.* July.

LOCALITY. North of England; two specimens only taken.

BOMBYCOIDÆ, Bdv.

DIPHTHERA, *Och.*

Diphthera Orion, *Esp.* THE SCARCE MARVEIL-DU-JOUR.

LARVA. Dorsal area black, with a large oval white spot placed transversely on the back of the 5th, 7th, and 10th segments; each of these spots contains four whitish warts, which emit reddish ochreous hairs; the 4th segment has a smaller white mark, and there are four smaller ones on the 12th; the other segments have a few white dots; each of the remaining segments, except the 2nd, has four large reddish ochreous warts placed transversely across it, and a row of such warts along each side; all these warts emit reddish ochreous hairs; the sides are canary colour, with several brown interrupted lateral lines; spiracles black encircled with ochreous. Ventral area dingy whitish grey; head black, shining, and mottled with pale buff; legs ochreous, shining, marked with black; claspers ochreous. *Plate XXXI., fig. 5.*

FOOD-PLANTS. Alder, Beech, Birch, Oak.

PUPA. In a cocoon at the roots of trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{August to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Devonshire, Hampshire, Kent, Suffolk, Sussex.



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ACRONYCTA, *Och.**Acronycta tridens*, *W.V.* THE DARK DAGGER.

LARVA. Black and hairy, with a hump on the 5th and 12th segments; that on the 5th has a conspicuous though blunt tuft of black hairs; on the 2nd, 3rd, and 4th segments is an orange spot, with a smaller one on each side of it; from the 5th to the 11th is a narrow black medio-dorsal line passing between two white lines, and interrupted at each segment by a brilliant orange mark; on each side of these segments is an orange mark, and also two white dots placed one above the other, thus (:); the 12th segment has a conspicuous white mark upon its summit, and is margined behind with orange; in the region of the spiracles the body is pink. Spiracles black; head black and hairy. *Plate XXXII., fig. 6. 1.*

FOOD-PLANTS. Birch, Blackthorn, Cherry, Hazel, Mountain Ash, Oak, Pear, Rose, Sallow, Whitethorn, Willow.

PUPA. In a cocoon on the bark of the tree, or amongst moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to October.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England and Ireland.

Acronycta psi, *Linn.* THE GREY DAGGER.

LARVA. Hairy. Along each side is a broad black stripe; the dorsal surface between these stripes, commencing at the 3rd segment, being pale greenish white; on the 5th segment these stripes meet, and rise into a long erect pointed hump; on the 12th segment they also meet, forming a smaller cone-shaped hump; these black stripes have upon each segment from the 5th two orange-coloured blotches or spots, and two warts, the warts emitting rather long hairs; beneath the black stripes on each side is a rather broad cream-coloured spiracular line; spiracles black; ventral area dingy cream colour; legs and claspers pinker; head black, shining, and hairy. *Plate XXXII., fig. 2.*

FOOD-PLANTS. Alder, Apple, Beech, Birch, Blackthorn, Cherry, Elm, Lime, Mountain Ash, Oak, Pear, Plum, Poplar, Rose, Sallow, Whitethorn, Willow.

PUPA. In the bark of a tree.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Acronycta leporina, Linn. THE MILLER.

LARVA. Pale delicate green or yellowish green, enveloped in a mass of long pale silky hairs; these hairs have the appearance of being brushed forwards on the right side, and backwards on the left; there are several short tufts of black bristles on the back, and a row of such along each side; spiracles pale buff, encircled with black; head pale whitish green. *Plate XXXII., fig. 3.*

FOOD-PLANTS. Alder, Birch, Elm, Sallow, Willow.

PUPA. Beneath the bark on trees.

Time of appearance { *Larva.* July to September.
 { *Pupa.* September to June.
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland; not uncommon.

Acronycta aceris, Linn. THE SYCAMORE.

LARVA. Pale pinkish grey, with numerous rather long brush-like yellowish hairs. Along the back is a series of eleven white, somewhat kite-shaped marks, bordered with black; those on the three first segments are longer than the others, and nearly meet; spiracles black; head rather wider than the 2nd segment, black and shining, with a yellowish line down each side the face; legs black, claspers dark brown. *Plate XXXII., fig. 4.*

FOOD-PLANTS. Beech, Elm, Horse-chestnut, Lime, Maple, Oak, Spanish Chestnut, Sycamore.

PUPA. On the ground.

Time of appearance { *Pupa.* July to September.
 { *Larva.* October to June.
 { *Imago.* June and July.

LOCALITIES. Devonshire, Southern and Eastern Counties, Yorkshire, Ireland.

Acronycta megacephala, W.V. THE POPLAR GRAY.

LARVA. Hairy, grey, marked with yellow, more so on the dorsal surface and posterior segments; on the 11th segment these markings are displaced by a large cream-coloured spade-shaped mark; ordinary dots conspicuous, orange, or orange-red; along each side is a row of pale tubercles, emitting long grey hairs; spiracles grey, encircled with black; head large, pale grey, with dark curved streaks down the face, and a black mark on each cheek. *Plate XXXII., fig. 5.*

FOOD-PLANTS. Aspen, Poplar, Willow.

PUPA. In the bark of trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Acronycta strigosa, *Fab.* THE GRISETTE.

LARVA. Yellowish green, the segmental divisions clearly marked; along the dorsal surface is a series of reddish claret-coloured blotches, of unequal size, forming a continuous dorsal line dilated at the head, and on the 5th, 8th, and 9th segments, on the two latter they form squares; from the 10th segment the line becomes narrow, and converges on the 13th; all along the back within this line are a number of yellow warts from which proceed hairs; spiracles yellowish, encircled with claret colour; hairs rather long, mixed, black and golden; ventral area pale green; legs and claspers the same; head brown, marked with darker brown down the face. *Plate XXXII., fig. 6.*

FOOD-PLANTS. Blackthorn, Whitethorn.

PUPA. Amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to October.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITY Cambridgeshire

Acronycta alni, *Linn.* THE ALDER.

LARVA. Ground colour black, with a bright yellow slightly raised transverse band on the back of each segment after the head; these bands extend half-way down the sides, and are tinged at the edge with white; along each side there is a series of long black hairs, clubbed at the tip; on the side of the 2nd segment are two of these hairs, the 3rd and 4th segments are without them; the remaining segments to the 10th have each one on each side; they are absent from the 11th segment, and present on the 12th and 13th. The hairs on the 2nd segment are directed forwards, the remainder are curved, being directed outwards and backwards. Head black and shining. *Plate XXXI., fig. 6.*

When young, the larva is cream colour, variously suffused and marked with slaty grey, and with a number of warts; there are two of these warts on the 2nd segment, from each of which proceed two long brown hairs, clubbed at the tip; the remaining warts have each a rather short pale brown hair. Head reddish brown, marked with darker brown shining and slightly notched on the crown; face flat; corslet yellowish and hornlike; the other part of the 2nd segment cream colour; the 3rd and 4th, and the 11th, 12th and 13th segments are cream colour, slightly marked with slaty grey; the intervening

segments shiny, and very much suffused with the same slaty grey; the warts on the 4th segment are yellowish, placed transversely; the warts on the other segments are brown; spiracles black, in a white spiracular line; dorsal line yellowish, passing through the corslet. *Plate XXXI., fig. 6a.*

FOOD-PLANTS. Alder, Beech, Birch, Blackthorn, Elm, Hazel, Lime, Oak, Poplar, Sallow, Whitethorn, Willow.

PUPA. Amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August to May.} \\ \text{Imago. May to July.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; very rare.

Acronycta ligustri, W.V. THE CORONET.

LARVA. Dorsal area pale glaucous green; yellower green below, these two areas being divided by a yellowish green stripe, which extends from the head to the end of the anal flap; dorsal line narrow, white, and generally extends from the 3rd segment to the 13th; each segment has eight, ten, or twelve small black dots, from each of which protrudes a long black silky hair; spiracles red; head delicate green, translucent, and shining; mouth nearly black; corslet also shining; legs and claspers pale green, the latter tipped with pale flesh colour. *Plate XXXI., fig. 7.*

FOOD-PLANTS. Alder, Apple, Ash, Privet, Lilac.

PUPA. Beneath the moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. October to June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England and Ireland.

Acronycta rumicis, Linn. THE KNOTGRASS.

LARVA. Hairy; the segmental divisions clearly marked. Colour grey, marked with chocolate brown. Each segment has a series of reddish warts, from which proceed tufts of red hairs; along the centre of the back is a row of orange-red spade-shaped marks nearly surrounded with black, behind each of which is a transverse mark of the same colour; on each side of the back is a row of brilliant white blotches, in each of which is a white wart; spiracles white, surrounded with black, and behind them are two reddish warts; immediately below each spiracle is an orange-red coral-like wart, which is joined by two yellowish oblique blotches, meeting each other at the segmental divisions, and forming an angular longitudinal line. Head much smaller than the second segment, black and shining, with a reddish brown Λ -shaped mark down the face. *Plate XXXII., fig. 7.*



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FOOD-PLANTS. Birch, Bramble, Buttercup, Dock, Eyebright, Field Scorpion-grass, Forget-me-not, Germander Speedwell, Knotgrass, London Pride, Oak, Persicaria, Plantain, Sallow, Silverweed, Sowthistle, Strawberry, Trailing Tormentil, Whitethorn, Willow, Yellow Flag.

PUPA. In a cocoon amongst the food-plants.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to October.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Acronycta auricoma, W.V. THE SCARCE DAGGER.

LARVA. About an inch and a half long; body dull slate grey; the segmental divisions deeply cut, and divided by black rings; there is a black band placed across each segment transversely, and each segment has four yellowish ochreous warts, from each of which proceed tufts of bright yellow hairs; spiracles white, encircled with black; head black and shining; legs also black; claspers dull slate grey. *Plate XXXII., fig. 8.*

When young, the larva is nearly black, and the hairs from the warts quite black.

At the end of October the larva in my possession, being then not half full grown, spun up in a leaf to undergo the winter; but unfortunately died before the spring. *Plate XXXII., fig. 8a.*

FOOD-PLANTS. Bilberry, Birch, Bramble.

PUPA. Amongst leaves.

Time of appearance $\left\{ \begin{array}{lll} \text{Larva.} & \text{June and July.} & \text{October to May.} \\ \text{Pupa.} & \text{July.} & \text{May.} \\ \text{Imago.} & \text{July and August.} & \text{May.} \end{array} \right.$

LOCALITIES. Kent, Sussex.

Acronycta menyantides, Esp. THE LIGHT KNOTGRASS.

LARVA. Hairy, with deeply indented segmental divisions. Colour dark brown, with a darker band encircling the upper half of each segment, in which are contained a series of warts emitting a number of long hairs; in some specimens the hairs are nearly black, in others golden brown; spiracular line in some specimens crimson, in others scarlet; it is somewhat waved and interrupted; spiracles in some specimens yellow, in others white. Ventral area paler than the dorsal; head, corslet, and legs black and shining. *Plate XXXII., figs. 9 and 9a.*

FOOD-PLANTS. Bilberry, Birch, Heath, Plum, Sweetgale. Whitethorn (in confinement).

PUPA. Amongst the food-plant on the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September to —} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Acronycta myricæ, Gn. THE SWEETGALE.

LARVA. Black, with a double row of pale closely approximate tubercles down each side of the back, from which proceed numerous rather long pale and brown hairs, mixed; spiracular line red, spiracles orange; head black, shining, and hairy; legs and claspers nearly black. *Plate XXXI., fig. 8.*

FOOD-PLANTS. Sweetgale, Heath, Sallow.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August and September.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITY. Scotland.

SIMYRA, Och.

Simyra venosa, Bork. THE POWDERED WAINSCOT.

LARVA. Short, thick, and stumpy. Colour dark grey; down each side the back there is a broad primrose-colour subdorsal stripe, interrupted on the 2nd, 3rd, and 4th segments by an orange-coloured wart, and on the remaining segments by two such warts; spiracular line broad, primrose colour, interrupted on each segment by one orange-coloured wart; each of these warts emits a number of hairs, both pale and dark; spiracles white, and above each is placed a smaller grey wart. Head large, black, and shining, with an ochreous Λ -shaped mark on the face, two lines on the forehead, and a large ochreous blotch on each cheek; legs black and shining. *Plate XXXIII., fig. 1.*

FOOD-PLANT. Common Reed, Reed Mace, Sedge, Yellow Flag.

PUPA. In a cocoon on reeds.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITY. Cambridgeshire.

LEUCANIIDÆ, Gn.

SYNIA, Dup.

Synia musculosa, Hub. THE BRIGHTON WAINSCOT.

LARVA. I know nothing of this larva.

Time of appearance. *Imago.* May to August,

LOCALITY. Brighton; rare.

LEUCANIA, *Och.***Leucania conigera, W.V. THE BROWN-LINE BRIGHT-EYE.**

LARVA. Ochreous, darker on the dorsal surface; dorsal line primrose yellow, bordered with a narrow black line; subdorsal line black; spiracular stripe broad, dull ochreous, edged above and below with black; between the subdorsal line and the spiracular stripe are two pale yellow lines, the upper one edged below and the lower one edged above with black; spiracles black; sub-spiracular line pale ochreous; head brown, marked with black.

Some varieties of this larva are grey, the yellow lines being more or less grey.

Eggs laid on the 20th of July, hatched on the 3rd of August.

FOOD-PLANT. Couch Grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Leucania vitellina, Hub. THE DELICATE.

LARVA. Newman, describing Boisduval's figure, says: "The body is pale reddish brown, with two narrow interrupted stripes on each side, bordered on both sides with pale brown; spiracles black, with a broad pale stripe below them, and below this another pale line, which touches the legs and claspers; ventral area paler than the dorsal; legs and claspers the same; head ferruginous brown reticulated with black." Boisduval also says that "the corslet and anal flap are reddish."

FOOD-PLANTS. Grasses.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to April.} \\ \text{Pupa.} \quad \text{March to July.} \\ \text{Imago.} \quad \text{July to October.} \end{array} \right.$

LOCALITY. Brighton. Two specimens only have been taken in England.

Leucania turca, Linn. THE DOUBLE LINE.

LARVA. "Yellowish grey, marbled; dorsal line whitish; a series of very obscure dorsal lozenges, paler on each side (*Gn.*)"—*Stain. Man.*, vol. i., p. 187.

FOOD-PLANTS. Grasses.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{— to March.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Essex, Hampshire, Kent, Middlesex, Sussex; rare.

Leucania lithargyria, *Esp.* THE CLAY.

LARVA. Pinkish ochreous, smooth and cylindrical; dorsal line white and narrow, bordered on each side with a narrow dark-brown line; subdorsal line whitish, edged above with a broad interrupted dark-brown line; below this stripe are several pale-brown lines, and above the spiracles a whitish stripe; spiracles black, ordinary dots black; head whitish and translucent. *Plate XXXIII., fig. 2.*

FOOD-PLANTS. Chickweed, Grasses, Plantain; feeding by night.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to July.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Leucania albipuncta, *W.V.* THE WHITE POINT.

LARVA. About one inch eight lines long; putty colour, freckled with pale brown; dorsal line pale, bordered on each side with an indistinct narrow brown line; subdorsal line pale, bordered above with an interrupted black line (or series of streaks which are darker on the anterior part of each segment and indistinct at the segmental divisions), and beneath with a narrow brown line; spiracles black on a nearly white line; between the spiracles and the subdorsal line is a pale line, below the spiracles a broad space of the ground colour of the caterpillar; head ochreous, netted with brown, and with two curved brown lines down the face. *Plate XXXIII., fig. 3.*

FOOD-PLANTS. Chickweed, Couch Grass.

Time of appearance. *Imago.* August and September.

LOCALITY. Folkestone.

Leucania extranea, *Gn.* THE AMERICAN WAINSCOT.

LARVA. No description.

Time of appearance. *Imago.* September.

LOCALITY. Isle of Wight. One specimen only has been taken in England.

Leucania obsoleta, *Hub.* THE OBSCURE WAINSCOT.

LARVA. About one inch eight lines long, segmental divisions rather clearly marked. Ground colour pale greenish grey, the markings very indistinct; dorsal line paler than the ground colour, with an indistinct darker edging; subdorsal line pale and indistinct; spiracles pale, in black rings; head two shades of brown, and hairy; legs two shades of brown, claspers tipped with black. *Plate XXXIII., fig. 4.*

FOOD-PLANT. Common Reed.

PUPA. In the stubble of the Reed.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to September.} \\ \text{Pupa. October to May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. The neighbourhood of London. Ireland.

Leucania lorei, Dup. THE COSMOPOLITAN.

LARVA. No description.

Time of appearance. *Imago*. July.

LOCALITY. Sussex. Only two imagines have been taken in England.

Leucania putrescens, Hub. THE DEVONSHIRE WAINSCOT.

LARVA. Smooth and velvety, rather stumpy, tapering towards the 13th segment. The dorsal area varies from reddish brown to pale ochreous grey, (the reddish specimens irrorated with burnt sienna brown, the ochreous ones with grey; dorsal line pale, almost white on the 2nd, 3rd, and 4th segments, and from thence less distinct; it is bordered on each side by a darker shade than the ground colour; subdorsal line cream coloured, bordered on each side with brown or ochreous grey; spiracular line white; spiracles black; ordinary dots black; the space between the subdorsal and spiracular lines rich brown, mottled with a darker colour; below the spiracular line is a broad pale cream-coloured stripe speckled with pink; corslet dark and velvety, the dorsal line passing through it; ventral area paler than the dorsal, with two ventral lines; head greenish grey, translucent, shining, and hairy; speckled in the form of two stripes on each side of the upper part of the head; legs and claspers the same colour as the head, with a black spot on each clasper. *Plate XXXIII., figs. 5, 5a.*

FOOD-PLANTS. Grasses.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. October to February.} \\ \text{Pupa. February to August.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITY. Devonshire.

Leucania littoralis, Curt. THE SHORE WAINSCOT.

LARVA. Pale pinkish cream colour; dorsal line white, bordered with pale pink; subdorsal line white below, pale pinkish above; spiracular line pale; head pale brown and shining; corslet the same. Other varieties of this larva are pale greenish. *Plate XXXIII., fig. 6.*

FOOD-PLANTS. Marram Grass by the sea, Sea Reed Grass, Common Sedge.

PUPA. In a sandy cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to June.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Cheshire, Devonshire, Isle of Wight, Lancashire, Somersetshire, South Wales, Scotland, Ireland; not common.

Leucania pudorina, W.V. THE STRIPED WAINSCOT.

LARVA. Pale ochreous brown, reticulated with ochreous; dorsal line double and black; subdorsal line double, nearly black, bordered below with a pale line; below the subdorsal line are four irregular longitudinal stripes; subspiracular line broad and pale; spiracles black; ordinary dots black; ventral area pale ochreous brown; legs and claspers the same; head pale ochreous brown, marked with darker brown, and with two lines down the face.

FOOD-PLANTS. Grasses, Reeds.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{March and April.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; not common.

Leucania comma, Linn. THE SHOULDER STRIPED WAINSCOT.

LARVA. Different shades of reddish or dull ochreous brown; dorsal line dingy brown intersected by a very narrow pale line; subdorsal line brown; bordered on the outside by a series of dark streaks, one on each segment; between the dorsal and subdorsal lines is a narrow stripe of dark irrorations; spiracular line brown and broad; between the subdorsal and the spiracular line is a narrow ochreous stripe bordered with reddish brown, and below this a reddish brown line; subspiracular stripe broad, pale ochreous; spiracles black; ordinary dots black; head brown, marked with dark smoke colour.

FOOD-PLANTS. Grasses, Cocks-foot Grass, Sorrel.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to April.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Leucania straminea, Tr. THE SOUTHERN WAINSCOT.

LARVA. Long; slender, smooth, cylindrical, and tapering towards both extremities. Ground colour ochreous brown, irrorated with dark grey; dorsal line very narrow, pale, bordered on each side with blackish grey; subdorsal line the same; spiracular line ochreous, edged with a paler colour; between it

and the subdorsal line is a line similar to the dorsal and subdorsal lines; spiracles pale, encircled with black; ventral area pale ochreous; head smaller than the 2nd segment, ochreous brown and shining; corslet the same.

FOOD-PLANTS. Common Reed, Sedge.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. February to April.} \\ \text{Pupa. June and July.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Hammersmith, Middlesex; formerly.

Leucania impura, Hub. THE SMOKY WAINSCOT.

LARVA. Pale reddish grey; dorsal line white, very narrow, bordered with brown; above the spiracles is a pale yellowish stripe, tinged along the centre with red, and below them a similar line; spiracles reddish, encircled with black; ordinary dots black; ventral area paler than the dorsal; head reddish brown marked and striped with darker brown.

FOOD-PLANTS. Grass, Sedge.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Leucania pallens, Linn. THE COMMON WAINSCOT.

LARVA. Greyish ochreous; dorsal line white, bordered with smoke colour, intersecting a series of oval brown marks, one on each segment; subdorsal line white, bordered above with grey, and below with brown; between the subdorsal line and the spiracles is a narrow ochreous line, bordered above with brown; and below this is a grey line; spiracles black; ordinary dots black and minute; subspiracular line pale ochreous; head brownish grey and mottled.

FOOD-PLANTS. Grasses, Tufted Aira Grass.

PUPA. Between the blades of grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Leucania phragmitidis, Hub. THE FEN WAINSCOT.

LARVA. Dull dirty white, with a series of large purplish blotches along the side, one on each segment. Ventral area dull whitish, with a purple mark

on the 5th and 6th segments; head black; corslet and anal tip brown and shining; legs the same; claspers paler and translucent.

FOOD-PLANT. Reed.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to June.} \\ \text{Pupa. June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITY. Cambridgeshire.

TAPINOSTOLA, *Led.*

Tapinostola Bondi, *Knaggs.* BOND'S WAINSCOT.

LARVA. No description.

Time of appearance. *Imago.* June and July.

LOCALITIES. Folkestone, Lyme Regis, Woolwich.

Tapinostola elymi, *Tr.* THE LYME GRASS.

LARVA. Rather more than an inch long. Pale pinkish white; dorsal line darker; spiracles black; head brownish red; mouth brown; corslet yellowish; anal flap the same, with four yellowish spots in front of it, and some hairs behind; legs and claspers pale brown, the latter tipped with dark brown.

FOOD-PLANTS. Grass, Lyme Grass.

PUPA. At the roots of the Grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. England; one or two imagines only taken.

MELIANA, *Curt.*

Meliana flammea, *Curt.* THE FLAME WAINSCOT.

LARVA. No description.

FOOD-PLANT. Common Reed.

PUPA. In the stubble of the Reed.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Huntingdonshire, Norfolk.

SENTA, *Steph.*

Senta ulvæ, *Hub.* THE SILKY WAINSCOT.

LARVA. "Yellowish ochreous, with several fine lines (*Treits.*)"—*Stain. Man.*, vol. i., p. 191.

FOOD-PLANT. Common Reed.

Time of appearance { *Larva.* September to April.
 { *Pupa.* May.
 { *Imago.* June and July.
 LOCALITIES. Cambridgeshire, Hammersmith.

NONAGRIA. *Och.**Nonagria despecta*, *Tr.*

LARVA. No description.
 Time of appearance. *Imago.* July.
 LOCALITIES. Cambridgeshire, Epping.

Nonagria fulva, *Hub.* THE SMALL WAINSCOT.

LARVA. "Short and thick, dirty white, with reddish dorsal stripe; a black line above the spiracles (*Treitschke*)."—*Stain. Man.*, vol. i., p. 192.

FOOD-PLANTS. Common Reed, Reed Meadow Grass, other Grasses, Sedge.

Time of appearance { *Larva.* May and June.
 { *Imago.* August and September.

Nonagria concolor, *Gn.* THE CONCOLOROUS.

LARVA. No description.
 Time of appearance. *Imago.* June.
 LOCALITY. Cambridgeshire.

Nonagria Hellmanni, *Evers.* THE MERE WAINSCOT.

LARVA. No description.
 FOOD-PLANT. Common Reed.
 Time of appearance { *Larva.* June?
 { *Imago.* June.
 LOCALITY. Cambridgeshire.

Nonagria neurica, *Hub.* THE BROWN-VEINED WAINSCOT.

LARVA. Pinkish white; dorsal area rather darker; pulsating vessel pale; spiracular line pale, slender, and indistinct; spiracles pinkish, encircled with black; ordinary dots darker than the body; head brownish red and shining; corslet shining; anal flap brownish; claspers tipped with brown.

FOOD-PLANT. Common Reed.
 PUPA. In the stem of the reed.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to June.} \\ \text{Pupa. July.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Cambridgeshire and Norfolk fens.

Nonagria brevilinea, *Knaggs*. FENN'S NONAGRIA.

LARVA. No description.

Time of appearance. *Imago*. August.

LOCALITY. Norfolk.

Nonagria geminipuncta, *Hatch*. THE TWIN SPOTTED WAINSCOT.

LARVA. Pinkish flesh colour; pulsating vessel rather darker; above the spiracles are two parallel lines of a paler flesh colour than the body; spiracles smoke colour, encircled with black; ordinary dots pale brown; head shining; face brown, with a pale mark on the forehead; corslet and anal flap shining, the former darker than the body, the latter pale brown.

FOOD-PLANT. Common Reed.

PUPA. Within the stem of the reed.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May and June.} \\ \text{Pupa. June and July.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Essex, Middlesex.

Nonagria cannæ, *Och*. THE REED WAINSCOT.

LARVA. "Greenish or yellowish, with the dots black; head brownish; plate on 2nd segment and anal segment greenish white; spiracles black (*Treits.*)"—*Stain. Man.*, vol. i., p. 193.

FOOD-PLANT. Reed Mace.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May and June.} \\ \text{Pupa. July.} \\ \text{Imago. August.} \end{array} \right.$

LOCALITY. Cambridgeshire.

Nonagria typhæ, *Esp*. THE BULL RUSH.

LARVA. About two and a half inches long, very slender, cylindrical and tapering towards the extremities; body pinkish flesh colour and shining; pulsating vessel visible; above the spiracles are two parallel lines of a paler flesh colour than the body; spiracles black; ventral area paler than the

dorsal; head brownish ochreous and shining; corslet the same; anal plate very dark brown. *Plate XXXIII., fig. 7.*

FOOD-PLANT. Reed Mace.

PUPA. In the stem.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August.} \\ \text{Imago. September.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland.

Nonagria lutosa, *Hub.* THE LARGE WAINSCOT.

LARVA. Long, slender, and somewhat wrinkled. Body pale flesh colour; ventral area paler; head bright red brown; mouth black; legs and claspers the same as the ventral area.

Eggs in my possession continued hatching from the 14th of February to the 1st of April.

FOOD-PLANT. Common Reed.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. February to June.} \\ \text{Pupa. July.} \\ \text{Imago. August to October.} \end{array} \right.$

LOCALITY. England.

APAMEIDÆ, Gn.

GORTYNA. *Och.*

Gortyna flavago, *W.V.* THE FROSTED ORANGE.

LARVA. Pale flesh colour; the ordinary dots represented by black and shining warts. Head yellowish brown, shining and retractile; corslet and anal flap dark brown and shining; legs black; claspers the same as the body, each with a black wart above it. *Plate XXXIII., fig. 8.*

FOOD-PLANTS. Agrimony, Burdock, Dock, Elder, Figwort, Foxglove, Hemp Agrimony, Marsh Thistle, Meadow Plume Thistle, Mullein, Potato, Yellow Flag.

PUPA. Within the stems.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to September.} \\ \text{Pupa. August and September.} \\ \text{Imago. August and September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

HYDRÆCIA. *Gn.*

Hydræcia nictitans, *Linn.* THE EAR MOTH.

LARVA. "Dull brown; plate on 2nd segment darker and shining; a row

of brown dots on each side of the dorsal line (*Treitschke*).”—*Stain. Man.*, vol i., p. 197.

FOOD-PLANTS. Grasses, roots.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ May and June.} \\ \textit{Pupa.} \text{ June.} \\ \textit{Imago.} \text{ July to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Hydrœcia petasitis, *Dbl.* THE BUTTER BUR.

LARVA. “Dull whitish, with black dots; head, plate on 2nd segment, and anal segment, reddish brown (*Freyer*).”—*Stain. Man.*, vol. i., p. 198.

FOOD-PLANT. Butter Bur, roots and stems.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ June and July.} \\ \textit{Pupa.} \text{ July and August.} \\ \textit{Imago.} \text{ August to October.} \end{array} \right.$

LOCALITIES. Lancashire, Yorkshire, South Wales, Scotland, Ireland.

Hydrœcia micacea, *Esp.* THE ROSY RUSTIC.

LARVA. Dorsal area brownish flesh colour, pulsating vessel darker; spiracles black; ordinary dots and bristles nearly black; ventral area paler than the dorsal, dull pale flesh colour; head ochreous brown, marked at the mouth with dark brown; corslet ochreous brown and shining, bordered in front with black; anal tip ochreous; legs and claspers the same as the ventral area, the latter tipped with brown.

FOOD-PLANTS. Horse-tail, Sedge.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ May to July.} \\ \textit{Pupa.} \text{ July and August.} \\ \textit{Imago.} \text{ August and September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

AXYLIA. *Hub.*

Axylia putris, *Linn.* THE FLAME.

LARVA. About one inch seven lines long, smaller towards the head, the 12th raised when at rest. Colour pale brown, irrorated with dull dark brown; dorsal line pale, more clearly perceptible on the anterior segments, and appearing as a yellowish spot on the others; in the region of the spiracles is a broad pale pinkish stripe, broader and yellower towards the posterior seg-

ments. Along each side of the back is a series of dark greenish brown oblique streaks, one on each segment, those on the 5th, 6th, and 11th segments darker and more distinct; these marks are edged on the outer side with pale ochreous, and on the 12th segment are joined by a transverse band of the same colour; there is also a series of dark marks along the side; spiracles pale, in dark-brown rings; ventral area darker than the dorsal; head of two shades of brown and shining; legs shining, pale drab tipped with dark brown; claspers the same colour as the ventral area. *Plate XXXIII., figs. 9, 9a.*

Eggs laid 26th of June, hatched 7th of July; larva pupated 12th of August, and the first imago appeared 18th of April.

FOOD-PLANTS. Chickweed, Dock, Lettuce, Orache, Plaintain, Sallow, Sow Thistle.

PUPA. In or on the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{August to April.} \\ \text{Imago.} \quad \text{April to June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Xylophasia, *Steph.*

Xylophasia rurea, *Fab.* THE CLOUDED BORDERED BRINDLE.

LARVA. About one inch four lines long when extended, cylindrical and rather shining; body dull pinkish smoke colour; dorsal line cream colour, with a deeper shade of the ground colour on each side of it; subdorsal line paler than the dorsal; these lines are very distinct on the corslet and anal flap; spiracular line broad, pale buff, bordered above with a darker shade of the ground colour; spiracles white, encircled with black; ordinary dots black, with a light hair protruding from each; corslet dark brown and shining; anal flap shining and paler; head round, dark brown and shining; legs the same; claspers concolorous with the body, with a black spot on each.

FOOD-PLANTS. Chickweed, Cowslip, Dock, Grasses, Primrose.

PUPA. Under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to April.} \\ \text{Pupa.} \quad \text{April to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Xylophasia lithoxylea, *W.V.* THE LIGHT ARCHES.

LARVA. About one inch and a half long, shining and slightly wrinkled; dingy pinkish or purplish grey; pulsating vessel clearly discernible, darker than the body. On each side of both the 3rd and 4th segments are two oblong

black streaks, placed transversely, and almost meeting on the back; and between them are six oval spots. also placed transversely; on each side of these segments are several black tubercles; the remainder of the ordinary dots are black and large, and each has a light hair; spiracles black; ventral area paler than the dorsal; legs and claspers the same, the legs tipped with brown, and each clasper has a black wart; head reddish brown and shining; corslet dark brown and shining.

FOOD-PLANTS. Grasses, the roots of.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to June.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Xylophasia sublustris, *Esp.* THE REDDISH LIGHT ARCHES.

LARVA. No description.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to April.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; scarce.

Xylophasia polyodon, *Linn.* THE DARK ARCHES.

LARVA. About one inch seven lines long, shining and slightly wrinkled, of a dingy pinkish or purplish grey colour; the segmental divisions clearly marked, pulsating vessel rather darker than the body. On each side of both the 3rd and 4th segments are two oblong black streaks, placed transversely, and almost meeting on the back; and between them are six oval spots, also placed transversely; on each side of these segments are three black tubercles arranged in the form of a triangle; the remaining segments to the 12th have each four large black warts on the back, and several on each side, placed round the spiracles; the tubercles have each a light hair; spiracles black; ventral area paler than the dorsal; legs and claspers the same, the legs are tipped with brown, and each clasper has a black wart; head reddish brown and shining; corslet dark brown and shining. *Plate XXXIII., figs. 10, 10a.*

Forty-two eggs laid on the 7th of July, hatched on the 23rd, and one imago appeared in June, but the day was not registered.

FOOD-PLANTS. Grasses, Daisy, roots and leaves.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to April.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.



Xylophasia hepatica, Linn. THE CLOUDED BRINDLE.

LARVA. "Back dark brown; medio-dorsal stripe whitish, bordered on either side of each segment by two black spots; subdorsal stripes slender, indistinct, whitish; the head and second segment are dark brown, the head rather the paler of the two, and traversed by two black lines; the sides are pinkish drab, marked on each side with a black spot; the ventral surface is pale drab; the back and sides are thinly clothed with slender hairs."—*The Rev. H. H. Crewe.*

FOOD-PLANTS. Chickweed, Grasses.

PUPA. In earth or moss. The Rev. J. Green says, "generally under damp moss on Poplars."

Time of appearance { *Larva.* October to April.
 { *Pupa.* April and May.
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland; not common.

Xylophasia scolopacina, Esp. THE SLENDER CLOUDED BRINDLE.

LARVA. Smooth and shining, with a few scattered hairs: pale olive green; dorsal area slightly suffused with smoke colour; dorsal line pale yellow or whitish, with an indistinct smoke-coloured edge. A greenish smoke coloured band abruptly divides the dorsal from the ventral area; this band is darker where it meets the ventral area, and within it is a row of black warts; spiracles pale yellow, encircled with black, placed immediately below it, the first and ninth being situated in its lower edge. Ventral area pale bright yellow, rather greener between the legs and claspers; the head very shiny, brownish yellow; the corslet the same, with an almost triangular dark mark on each side of it; legs and claspers shining and yellow. Rolls in a lax ring. *Plate XXXIII., figs. 11, 11a.*

FOOD-PLANTS. Club Rush, Quaking Grass, Wood Rush, Grasses.

PUPA. In earth.

Time of appearance { *Larva.* May and June.
 { *Pupa.* June.
 { *Imago.* July and August.

LOCALITIES. Bucks, Cornwall, Cambridge, Devonshire, Glamorganshire, Lancashire, Lincolnshire, Middlesex, Suffolk, Yorkshire, Ireland.

DIPTERYGIA, Steph.

Dipterygia pinastri, Linn. THE BIRD'S WING.

LARVA. Chocolate brown; dorsal line narrow and pale, bordered on each side by a dark-brown stripe; subdorsal line paler brown; spiracular stripe dull

white and broad; ordinary dots black, and in addition to these are some white dots on the back; head small, with four stripes down the face.

FOOD-PLANTS. Dock, Sorrel.

PUPA. In a cocoon on the ground.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Devonshire, Essex, Kent, Suffolk, Surrey, Sussex.

XYLOMIGES, *Gn.*

Xylomiges conspicillaris, *W.V.* THE SILVER CLOUD.

LARVA. Greenish, tinged with ochreous brown, darker at the sides, and with a chain of dark-grey oval markings down the back; spiracular stripe broad and reddish ochreous, strongly shaded above with grey; spiracles pale, encircled with black; ordinary dots white, each with a black dot; ventral area dingy green; head pale reddish brown, reticulated with brown, with a dark line down each side of the face.

FOOD-PLANTS. Birdsfoot-Trefoil, preferring the flowers; Knotgrass in confinement.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{September to April.} \\ \text{Imago.} \quad \text{April to June.} \end{array} \right.$

LOCALITIES. Essex, Gloucestershire, Kent, Surrey, Worcestershire.

APOROPHYLA, *Gn.*

Aporophyla australis, *Bdv.* THE FEATHERED BRINDLE.

LARVA. About one inch seven lines long, smooth, velvety, and cylindrical; segmental divisions clearly defined, yellowish. Bright yellowish green, dorsal area suffused with red; dorsal line pale pinkish, edged with red, passing through a series of black V-shaped marks, the apices of the V's directed forwards; there is a subdorsal series of black longitudinal streaks at the beginning of each segment; spiracular line pale yellowish tinged with green, above it the body is speckled with red; spiracles white, encircled with pink. Ventral area pale green; head greenish, speckled with reddish brown, translucent; corslet reddish; legs and claspers pale green, the latter tipped with pink. *Plate XXXIV. fig. 1.*

FOOD-PLANTS. Endive, Grasses.

PUPA. In earth,

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to April.} \\ \text{Pupa.} \quad \text{February to August.} \\ \text{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITIES. Devonshire, Dorsetshire, Isle of Wight, Kent, Norfolk, Sussex.

LAPHYGMA, *Gn.*

Laphygma exigua, *Hub.* THE SMALL MOTTLED WILLOW.

LARVA. "Pinkish brown on the back, pinkish yellow beneath; a row of black dots down the back; two rows on each side, between which are the white spiracles on rather a darker ground than that outside the rows of black spots; head and tail greenish; length when full grown about an inch."—*Newman's Moths*, p. 289.

FOOD-PLANT. Plantain.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September and October.} \\ \text{Imago.} \quad \text{October.} \end{array} \right.$

LOCALITIES. Isle of Wight, Kent, Sussex.

NEURIA, *Gn.*

Neuria saponariæ, *Esp.* THE BORDERED GOTHIC.

LARVA. Stout and cylindrical; pinkish brown or brownish green, irrorated with minute pale dots; dorsal line pale, but indistinct; spiracular line pale grey; along each side are some pale-grey streaks; ventral area pinkish grey; head dull brown, corslet and anal flap the same. *Plate XXXIV., fig. 2.*

FOOD-PLANTS. Catchfly, Cowslip, Dock, Honeysuckle, Lettuce, Plantain, Primrose, Ragged Robin, Red Campion, Rose.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to April.} \\ \text{Pupa.} \quad \text{April to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England and Ireland; rare.

HELIOPHOBUS, *Bdv.*

Heliophobus popularis, *Fab.* THE FEATHERED GOTHIC.

LARVA. Rather more than an inch and a half long, stout and cylindrical. Dorsal area metallic brown; dorsal line pale cream colour, edged with black; subdorsal line the same; these three lines commence immediately

behind the head and meet on the anal flap. Spiracular line pale pinkish and slightly freckled, edged above and below with a whitish line; immediately below the subdorsal line is a dull pale line; spiracles black, situated above the spiracular line; ventral area pale and translucent; head ochreous and shining; corslet brown; legs and claspers dull ochreous, marked with black.

FOOD-PLANTS. Grasses.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \\ \text{Pupa.} \quad \text{May to August} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Heliophobus hispidus, Hub. THE BEAUTIFUL GOTHIC.

LARVA. Cylindrical and velvety; dorsal area yellow-green; dorsal line pale green, bordered on each side by a darker line; subdorsal line pale yellowish green, with a slightly darker and narrower bordering on either side; spiracular line broad, yellowish white; spiracles black; ordinary dots black; ventral area paler than the dorsal, and without markings; segmental divisions distinct and yellow; head green, large, bifid, and shining; legs and claspers green and shining. *Plate XXXIV., fig. 3.* In some specimens the ground colour is olive-green or brownish.

FOOD-PLANTS. Chickweed, Grass.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to April.} \\ \text{Pupa.} \quad \text{April to August.} \\ \text{Imago.} \quad \text{September.} \end{array} \right.$

LOCALITIES. Devonshire, Isle of Wight.

CHARÆAS, Steph.

Charæas graminis, Linn. THE ANTLER.

LARVA. Greenish drab, pinkish grey, or dark brown, and cylindrical; segmental divisions clearly shown; dorsal line pale, bordered on each side with brown; subdorsal line white, edged above on each segment with a black crescentic streak; spiracular line dingy white; narrow, edged above with a narrow black line; between the subdorsal and spiracular lines are a few black markings; corslet and anal flap dark; ventral area paler than the dorsal, without markings; head pale, shining, with two dark-brown lines down the face. *Plate XXXIV., figs. 4, 4a.*

FOOD-PLANTS. Barley, Grass.

PUPA. Beneath the earth.

Time of appearance { *Larva.* October to May.
 { *Pupa.* June and July.
 { *Imago.* August and September.

LOCALITIES. Great Britain and Ireland.

PACHETRA, *Gn.*

Pachetra leucophæa, *W.V.* THE FEATHERED EAR.

LARVA. "Guenée describes it as obese, velvety, and swollen posteriorly, and having small and short claspers and a large and glabrous head of a light-brown colour; the body is yellowish grey and striated, with a very conspicuous medio-dorsal stripe of a nankeen-yellow colour; the subdorsal stripe is less distinct, the spiracular stripe melts gradually into a paler area beneath; the usual dots are extremely small, and scarcely perceptible; the spiracles are strongly outlined with black; there is a shining brown plate on the 2nd segment."—*Newman's Moths*, p. 294.

FOOD-PLANT. Grass.

PUPA. Amongst moss on the ground.

Time of appearance { *Larva.* October to April.
 { *Pupa.* April to June.
 { *Imago.* June and July.

LOCALITY. Mickelham Down, Surrey.

CERIGO, *Steph.*

Cerigo Cytherea, *Fab.* THE STRAW UNDERWING.

LARVA. Pale yellowish brown, the 2nd, 3rd, and 4th segments darker; dorsal line double, formed of a series of dark streaks placed on the front of each segment, commencing on the 5th; subdorsal line somewhat similar; ordinary dots black; there is a dark mark on the 13th segment. Head pale, with two lines down the face.

FOOD-PLANTS. Grasses.

PUPA. In earth.

Time of appearance { *Larva.* September to April.
 { *Pupa.* May and June.
 { *Imago.* July.

LOCALITIES. Great Britain and Ireland; not uncommon.

LUPERINA, *Bdv.*

Luperina testacea, *W.V.* THE FLOUNCED RUSTIC.

LARVA. "Dull flesh colour; head and plate on the 2nd segment pale yellowish brown (*Treitschke*)."—*Stain. Man.*, vol. i., p. 206.

FOOD-PLANT. Grass.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Luperina Dumerili. DUMERIL'S LUPERINA.

LARVA. Undescribed.

Imago. August.

LOCALITIES. Portland, Isle of Arran.

Luperina Gueneei, *Dbl.*

LARVA. Unknown.

LOCALITY. Wales.

Luperina cespitis, *W.V.* THE HEDGE RUSTIC.

LARVA. About one inch six lines long, stout and cylindrical. Pale pinkish, or reddish brown, or metallic bronzy brown; dorsal line pale, edged with dark brown; subdorsal line the same; these three lines meet at the anal flap. Spiracular line pale, edged with brown; all the stripes speckled with grey; between the subdorsal and the spiracular stripes are three irregular indistinct lines edged with a series of dark longitudinal dashes. Ventral area pale and greenish; head brown; corslet and anal plates dark brown.

FOOD-PLANT. Grass.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. Carmarthenshire, Devonshire, Essex, Glamorganshire, Hants, Kent, Lancashire, Pembrokeshire, Suffolk, Sussex, Surrey, Worcestershire, York, Scotland, Ireland; not common.

MAMESTRA, *Och.*

Mamestra abjecta. *Hub.* THE CRESCENT STRIPED.

LARVA. No description.

PUPA. Amongst stones in an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Gravesend. Irish coast near Waterford.

Mamestra Anceps, Hub. THE LARGE NUTMEG.

LARVA. "Pale brown, with three faintly darker streaks; the spots black; 2nd and anal segment black (*Bork*)."—*Stain Man.*, vol. i., p. 208.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. December to February.} \\ \text{Pupa. March to May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not common.

Mamestra albicolon, Hub. THE WHITE COLON.

LARVA. Bright green; dorsal stripe darker, intersected by a fine pale medio-dorsal line; spiracular line pale, intersected by a dark-green line; head and corslet pale green and transparent; legs and claspers the same colour as the body.

FOOD PLANTS. Goosefoot, Lettuce, Orache.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. September to May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Carmarthenshire, Cheshire, Devonshire, Durham, Glamorganshire, Lake District, Northumberland, Lancashire, Pembrokeshire, Somersetshire, Scotland, Ireland.

Mamestra furva, W.V. THE CONFUSED.

LARVA. "Shining, transparent, of a pale violet brown, with all the spots, the head and the plates on the 2nd and anal segments shiny black (*Freyer*)."—*Stain. Man.*, vol. i., p. 208.

FOOD-PLANTS. Grasses.

PUPA. In an earthen cocoon beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to June.} \\ \text{Pupa. June.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Berks, Derbyshire, Devonshire, Glamorganshire, Kent, Lake District, Somersetshire, Shropshire, Suffolk, Worcestershire, Yorkshire, Ireland, Scotland.

Mamestra brassicæ, Linn. THE CABBAGE MOTH.

LARVA. Smooth, cylindrical, and obese; the 12th segment slightly raised. Dorsal surface various shades of greenish or pinkish drab, irrorated with dark smoke colour; dorsal line dark, but not very clearly defined; sub-

dorsal line composed of a series of nearly black interrupted streaks which meet a transverse bar on the 12th segment, forming three sides of a square. Ventral area abruptly divided from the dorsal, pale greyish green speckled with white cots; on the 2nd, 3rd, and 4th segments is a pale-yellow spiracular line; spiracles white, encircled with black, situated just within the dark dorsal area; head yellowish brown and shining, marked with brown, and with two brown marks down the face; legs yellowish brown; claspers the same as the ventral area, tipped with yellow. *Plate XXXIV., fig. 5.*

Eggs hatched July 25th.

FOOD-PLANTS. Bindweed, Bracken, Cabbage, Chickweed, Dahlia, Dock, Fern, Fleabane, Forget-me-not, Geranium, Goosefoot, Hop, Hemp Agrimony, Horse-radish, Knotgrass, Lettuce, Marigold, Mignonette, Mustard, Pea, Persicaria, Poppy, Plantain, Rape, Sow Thistle, Traveller's Joy, Turnip, Vetch.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to October.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Mamestra persicariæ, Linn. THE DOT.

LARVA. Green, pinkish brown, or brown; dorsal stripe white, passing from the head through a series of oblique black marks on those segments from the 5th to the 12th; these marks meet on each segment at the dorsal line, they commence and are very conspicuous on the 5th and 6th segments; on the remaining segments to the 11th they are less distinct, on the 12th broader and darker, and the body is here raised in the form of a hump; there are three white streaks passing down the 13th segment, and some smaller oblique white marks on the sides; spiracular line white; spiracles white in a dark mark; head smaller than the 2nd segment; corslet black and velvety, with three white longitudinal stripes. *Plate XXXIV., figs. 6 and 6a.*

FOOD-PLANTS. Ash, Beet, Bramble, Bracken, Chickweed, Chrysanthemum, Dock, Elder, Fern, Geranium, Goosefoot, Guelder Rose, Heartsease, Honey-suckle, Hop, Leek, Lilac, Lettuce, Mint, Nasturtium, Nettle, Peach, Persicaria, Potato, Rose, Spinach, Violet, Willow, Wormwood, Water-Pepper.

PUPA. In earth or under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to October.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England and Wales; common. Scotland and Ireland; rare.

APAMEA, *Och.**Apamea basilinea*, *W.V.* THE RUSTIC SHOULDERKNOT.

LARVA. Brownish; dorsal line dull yellow; subdorsal line the same; spiracular line dull white; spiracles black; ordinary dots black. Ventral area paler than the dorsal; head pale brown, marked with darker brown, and translucent.

FOOD-PLANTS. Wheat, in autumn; Bitter-sweet, Dandelion, Grass, Potato, in spring.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August to March.} \\ \textit{Pupa.} \text{ March to May.} \\ \textit{Imago.} \text{ May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Apamea Connexa, *Bork.* THE UNION RUSTIC.

LARVA. No description.

Time of appearance. *Imago.* June and July.

LOCALITIES. Yorkshire. Scotland.

Apamea gemina, *Hub.* THE DUSKY BROCADE.

LARVA. Pale brown, with longitudinal dark streaks. Dorsal line yellowish white, bordered with smoke colour, commencing at the head; subdorsal line dull ochreous, also commencing at the head; spiracular stripe broad, light buff, bordered with a paler colour; spiracles black encircled with buff; ordinary dots black; head the same colour as the body, speckled with black and shining; corslet and anal flap black and shining.

FOOD-PLANTS. Annual Meadow Grass, Couch Grass, *Phalaris arundinacea*.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August to May.} \\ \textit{Pupa.} \text{ May and June.} \\ \textit{Imago.} \text{ June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Apamea unanimitis, *Hub.?* THE SMALL CLOUDED BRINDLE.

LARVA. About an inch and a quarter long. Brownish ochreous or reddish ochreous, with a series of dark oval marks along the back. Dorsal line nearly white, bordered with brown; subdorsal line pale ochreous, edged with brown; spiracular line pale ochreous, broad, bordered above and below

with a still paler colour; spiracles brown, encircled with black; ordinary dots brown. Head brown and shining; mouth darker brown; corslet brown and shining; legs speckled with brown; claspers tipped with the same colour.

FOOD-PLANTS. Grasses.

PUPA. In a silken cocoon under moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to April.} \\ \text{Pupa. May and June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Devonshire, Essex, Somersetshire, Suffolk, Surrey, Sussex, Yorkshire, Scotland, Ireland.

Apamea ophiogramma, *Esp.* THE DOUBLE LOBED.

LARVA. No description.

FOOD-PLANTS. Common Reed, Yellow Flag.

PUPA. In earth.

Time of appearance. *Imago.* June.

LOCALITIES. Essex, Kent, Middlesex, Surrey; rare. Has been taken in Ireland and Scotland.

Apamea fibrosa, *Esp.* THE CRESCENT.

LARVA. "Whitish, dull reddish brown along the back; 2nd segment black (*Treitschke*)."—*Stain. Man.*, vol. i., p. 211.

FOOD-PLANT. Yellow Flag.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITY. Cambridgeshire.

Apamea oculea, *Linn.* THE COMMON RUSTIC.

LARVA. About one inch long, and tapering towards the 13th segment. Dull green, slightly translucent and transversely wrinkled; along the back, commencing on the 4th segment, is a broad dull-red stripe, throughout which the green colour of the alimentary canal can be easily seen; spiracles ochreous, encircled with black. Head shining, smaller than the 2nd segment, dingy yellowish; mouth black; corslet, anal flap, legs, and claspers, dull yellowish green, the latter tipped with brown. *Plate XXXIV., fig. 7.*

FOOD-PLANTS. Grass, Cocksfoot Grass, Yellow Flag.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. June.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

MIANA, *Steph.*

Miana strigilis, *Linn.* THE MARBLED MINOR.

LARVA. About three-quarters of an inch long, and tapering towards both extremities. Dull red, with five dull, pale longitudinal stripes; spiracles black. Head, corslet, posterior plate, legs, and claspers, pale brown and shining.

FOOD-PLANTS. Grasses, Sedge.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Miana fasciuncula, *Haw.* THE MIDDLE BARRED MINOR.

LARVA. About three-quarters of an inch long, tapering slightly towards the head and more gradually to the 13th segment. Body translucent; dorsal area dull pinkish drab; dorsal line darker than the ground colour; subdorsal line pale; between the subdorsal line and the spiracles is a still paler and less distinct line; there are brown and shining spots on the sides of the 2nd, 3rd, and 4th segments; spiracles black; ordinary dots black. Ventral area paler than the dorsal; head smaller than the 2nd segment, pale yellowish brown and shining; corslet and anal flap the same; legs yellowish and horny; claspers colourless, transparent, and tipped with brown.

FOOD-PLANT. Grasses.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April and May.} \\ \text{Pupa. May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not common.

Miana literosa, *Haw.* THE ROSY MINOR.

LARVA. Nearly eleven lines long, tapering towards both extremities. Pinkish ochreous, and translucent, segmental divisions clearly showing. Dorsal line slightly paler than the body, with a broad pinkish red stripe on each side of it; spiracles black. Ventral area dingy yellowish grey; head

smaller than the 2nd segment, round, yellowish brown, and shining, marked about the face with darker brown; corslet and anal plate also shining, but paler than the head; legs and claspers the same as the ventral area. *Plate XXXIV., fig. 8.*

FOOD-PLANTS. Grasses.

PUPA. Spun up amongst the food-plant.

Time of appearance { *Larva.* May and June.
 { *Pupa.* June.
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland; common.

Miana furuncula, *W.V.* THE CLOAKED MINOR.

LARVA. About three-quarters of an inch long, slightly tapering towards the extremities. Yellowish flesh colour, with three transverse dull pinkish bands on each segment, through which the dorsal and subdorsal lines are seen, of yellowish flesh colour; spiracles black. Head and corslet reddish brown; legs brown; claspers tipped with brown.

FOOD-PLANTS. Grasses, *Festuca arundinacea*.

PUPA. In earth.

Time of appearance { *Larva.* April to June.
 { *Pupa.* June.
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland; abundant.

Miana expolita, *Stainton.* THE LEAST MINOR.

LARVA. Unknown.

Time of appearance. *Imago.* July.

LOCALITIES. Has been taken near Darlington, and in Ireland.

Miana arcuosa, *W.V.* *Haw.* THE SMALL DOTTED BUFF.

LARVA. Nearly three quarters of an inch long, rather slender, tapering slightly from the 10th to the 13th segments. Pale flesh colour; dorsal line commencing on the corslet, paler than the body; subdorsal line also paler and less perceptible; on each segment are three dull reddish transverse bands, through which the dorsal line passes; spiracles black. Head smaller than the 2nd segment, brown and shining corslet the same; anal plate paler brown, legs the same; claspers the same as the body.

FOOD-PLANT. Tufted Aira Grass.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May.} \\ \text{Pupa. June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland.

CELÆNA, Steph.

Celæna Haworthi, Curt. HAWORTH'S MINOR.

LARVA. Nearly an inch long, cylindrical, rather slender, and tapering slightly towards the extremities; head smaller than the 2nd segment. Ground colour pinkish drab and transiucent, with a few short hairs; there is a faint indication of a pale dorsal and subdorsal line; ordinary dots and other spots very dark brown and shining. Along each side, on each segment, commencing on the 3rd, is a black spot, those on the 3rd, 4th, 5th, and 12th segments larger than the others; along each side also, on each segment, are some smaller nearly black spots; spiracles black; ventral area slightly paler than the dorsal, and without markings; corslet yellowish brown and shining, with two dots on each side of it; anal plate yellowish brown and shining, head the same; mandibles dark brown. *Plate XXXIV., fig. 9.*

FOOD-PLANT. Cotton Grass.

PUPA. Amongst the grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June and July.} \\ \text{Pupa. July.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Cheshire, Durham, Glamorganshire, Hampshire, Lancashire, Susséx, Yorkshire, Ireland, Scotland.

CARADRANIDÆ, Gn.

GRAMMESIA, Steph.

Grammesia trilinea, W.V. THE TREBLE LINES.

LARVA. Dark grey; dorsal line pale, edged with a series of black streaks. In the subdorsal region is a row of pale wedge-shaped marks, with some short oblique black streaks above them; at the larger end of each wedge is a black dot. Along each side are two lateral stripes, the upper one dark brown, the lower one grey; spiracles black; ventral area pale grey.

The ground colour is sometimes reddish brown or flesh colour.

Eggs laid on the 24th of June hatched on the 5th of July.

FOOD-PLANT. Plantain.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to April.} \\ \text{Pupa. May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common,

HYDRILLA, *Bdv.**Hydrilla palustris*, *Hub.* THE MARSH MOTH.

LARVA. "Brownish; head black; dorsal line whitish, with two rows of white dots on each side; spiracles black (*Treitsch.*)"—*Stain. Man.*, vol. i., p. 216.

FOOD-PLANT. Plaintain.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ --- to August.} \\ \textit{Imago.} \text{ May to July.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Norfolk, Yorkshire.

ACOSMETIA, *Steph.**Acosmetia caliginosa*, *Hub.* THE REDDISH BUFF.

LARVA. No description.

FOOD-PLANT. Common Burnet.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August.} \\ \textit{Imago.} \text{ June.} \end{array} \right.$

LOCALITY. Hampshire.

CARADRINA, *Och.**Caradrina Morpheus*, *Naturf.* THE MOTTLED RUSTIC.

LARVA. About an inch long. Brown speckled with darker brown, rather paler on the dorsal area; dorsal line pale, passing from the 5th segment through a series of darker diamond-shaped markings; subdorsal line pale and narrow, bordered with a brown line, and having on those segments from the 5th to the 12th a darker lateral streak; spiracles brown in indistinct black rings. Ventral area paler than the dorsal; head smaller than the 2nd segment, brown speckled with darker brown, with a line of the same colour down each side the face; legs the same colour as the ventral area.

FOOD-PLANTS. Bramble, Dock, Great Bedstraw, Livelong, Sallow, Scabious.

PUPA. Amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ August to October.} \\ \textit{Pupa.} \text{ October to June.} \\ \textit{Imago.} \text{ June to May.} \end{array} \right.$

LOCALITIES. England and Scotland; generally distributed.

Caradrina alsines, *Bork.* THE UNCERTAIN.

LARVA. About an inch long, tapering towards each extremity, and slightly wrinkled. Dorsal area pale reddish drab, with darker irrorations and

markings ; dorsal line pale, narrow, only perceptible on the anterior segments, and bordered with dark brown at the intervals of the segments ; subdorsal line yellowish white, bordered above with a narrow brown stripe, and below with a broad brown area ; along each side, in close proximity to the spiracles, is a series of dark-brown lateral streaks, slanting a little posteriorly ; and below them is a pale spiracular line ; spiracles small and black ; ordinary dots pale, centred with black, and each bearing a light hair ; in the upper row the hairs are directed forwards, and in the next row (which is placed in the upper dark margin of the subdorsal line) they point backwards ; the hairs on the sides are arranged in the same manner. Ventral area pale and without markings ; legs marked with brown ; claspers the same as the ventral area ; head small, dark brown, and shining.

FOOD-PLANT. Chickweed.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{May to July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. England and Wales ; generally distributed. Scotland, not common.

Caradrina blanda, W.V. THE RUSTIC.

LARVA. About one inch two lines long. Yellowish buff, slightly mottled with black ; dorsal line pale yellowish, edged with black, and passing through a series of black marks ; subdorsal line pale, edged below with a conspicuous dark-brown line, and above by a less distinct one ; spiracular line dark and interrupted ; the space between the subdorsal and the spiracular lines is much more deeply speckled with brown than the other part of the body ; spiracles black, encircled with white ; ordinary dots pale ; head ochreous, marked with pale brown. *Plate XXXIV., fig. 10.*

FOOD-PLANT. Chickweed.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to March.} \\ \text{Pupa.} \quad \text{March to June.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland ; not uncommon.

Caradrina cubicularis, W.V. THE PALE MOTTLED WILLOW.

LARVA. "The colour of the head is black ; there is a broad dorsal area of an obscure greenish grey colour, with a broad lateral area, smoky grey ; the ventral area is paler, and the claspers are concolorous with the ventral area. —*Newman's Moths*, p. 314.

FOOD-PLANTS. Chickweed, Peas, Wheat.

PUPA. Amongst the food-plant on the surface of the earth.

Time of appearance. $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

NOCTUIDÆ, *Gn.*

RUSINA, *Steph.*

Rusina tenebrosa, *Hub.* THE BROWN RUSTIC.

LARVA. Umber brown and velvety; dorsal stripe dark and indistinct, intersected as far as the 5th segment by a fine white line; subdorsal line represented by a row of pale brown marks, bordered below by a series of dark oblique streaks; lateral dilation pale brown. Ventral area reddish brown; legs and claspers the same.

FOOD-PLANTS. Heartsease, Knotgrass, Violet.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to March.} \\ \text{Pupa.} \quad \text{April and May.} \\ \text{Imago.} \quad \text{May, June, July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

AGROTIS, *Och.*

Agrotis velligera, *W.V.* THE ARCHER'S DART.

LARVA. "Dull greenish grey, with paler dorsal and darker subdorsal line; two rows of black dots between them; a row of short white streaks on each side of the spiracles (*Freyer*)."—*Stainton Manual*, vol. i., p. 223.

FOOD-PLANTS. Alkanet common, Borage, Field Wormwood, Grasses, Vipers' Buglos.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Cardiganshire, Carmarthenshire, Cheshire, Cornwall, Devonshire, Dorsetshire, Essex, Flintshire, Glamorganshire, Hants, Isle of Wight, Norfolk, Pembrokeshire, Sussex, Suffolk, Yorkshire.

Agrotis puta, *Hub.* THE SHUTTLE-SHAPED DART.

LARVA. Dorsal area dull brownish ochreous; dorsal line brown, bordered with darker brown, expanding on each segment, and passing through a series of

brown pear-shaped marks ; subdorsal line dark brown, with a pale-grey line below it ; there are also three indistinct, fine, pale-grey lateral lines ; spiracles black ; ordinary dots nearly black ; sides and ventral area greenish grey. Head brown : corslet the same, with three pale lines passing through it.

FOOD-PLANTS. Dandelion, Grass, Knotgrass, Lettuce.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to December.} \\ \text{Pupa.} \quad \text{November to May.} \\ \text{Imago.} \quad \text{May to August.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Devonshire, Gloucestershire, Kent, Middlesex, Somersetshire, Surrey, Sussex.

Agrotis suffusa, W.V. THE DARK SWORD-GRASS.

LARVA. Dull grey and metallic, with a very narrow pale dorsal line, bordered with darker grey, and two rather dark lateral stripes, all of which are scarcely perceptible. Head pale brown, marked with darker brown, and translucent.

FOOD-PLANTS. Cabbage, Endive, Lettuce, Radish, Spinach.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to July.} \\ \text{Pupa.} \quad \text{August.} \\ \text{Imago.} \quad \text{September to April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland ; not uncommon.

Agrotis saucia, Hub. THE PEARLY UNDERWING.

LARVA. Smooth, cylindrical, and obese. Ground colour reddish brown, irrorated with dark brown ; down the centre of the back is a series of small bright yellow marks forming an interrupted dorsal line, which is bordered with a dark edging ; spiracular line ochreous, interrupted and bordered above with a fine black line. On the 12th segment is an almost trident-shaped black mark, and on each side of both the 11th and 12th segments is a black blotch ; spiracles black. Ventral area paler than the dorsal, speckled with nearly white dots ; head reddish brown, shining, and marked with a black H. *Plate XXXIV., fig. 11.*

FOOD-PLANTS. Black Currant, Chickweed, Clover, Dock, Grass, Plantain.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{ll} \text{Larva.} & \text{July and August.} & \text{Sept. and Oct.} \\ \text{Pupa.} & \text{August and September.} & \text{October to April.} \\ \text{Imago.} & \text{August to October.} & \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland ; not uncommon.

Agrotis segetum, W.V. THE TURNIP MOTH.

LARVA. Cylindrical and slightly wrinkled, head smaller than the 2nd segment. Pale smoke colour tinged with pink or brown; dorsal line pale, very indistinct, bordered with smoke colour; subdorsal line dull smoke colour; spiracles small and black; ordinary dots brown, shining, wart-like, and conspicuous. Ventral area paler than the dorsal; head flat, shining, pale putty colour, with a large pear-like brown blotch on each side the forehead; corslet dark and shining; legs and claspers the same as the ventral area, the former very short. *Plate XXXIV., fig. 12.*

FOOD-PLANTS. Barley, Beet, Cabbage, Cherlock, Carrot, Corn Marigold, Daffodil, Dock, Endive, Lettuce, Mangel-wurzel, Onion, Ox-eye Daisy, Parsnip, Radish, Rape, Turnip.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Agrotis lunigera, Steph. THE CRESCENT DART.

LARVA. Dorsal area dark pinkish ochreous, with a series of blunt diamond-shaped marks down the back and a pale mark on the 13th segment. Dorsal line bright yellow on the 2nd segment, pale brown and inconspicuous on the others; subdorsal line rather dark brown, edged below with dingy white; above the spiracles is a narrow interrupted dull greenish white waved line, and below them a narrow dull whitish line; spiracles black; ordinary dots black; the sides dull greenish; ventral area greenish grey. Head brown and mottled, with a black mark on each side the forehead; corslet black and shining.

FOOD-PLANT. Knotgrass, in confinement.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to October.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Cornwall, Devon, Flint, Isle of Wight, Pembrokeshire.

Agrotis exclamationis, Linn. THE HEART AND DART.

LARVA. Cylindrical, slightly wrinkled, and shiny; ground colour dingy pinkish drab or pale greyish brown; dorsal line dark smoke colour, double, expanding on each segment, and showing a pale colour between; on each side of this dorsal line the upper part of the body is pale, then follows a subdorsal region of a greyer colour which reaches a little below the spiracles, from thence the ventral area is a paler greenish grey; spiracles black; ordinary

dots black; head smaller than the 2nd segment, retractile, ochreous, with two brown lines down the face; legs and claspers the same colour as the 2nd segment. *Plate XXXIV., fig. 13.*

FOOD-PLANTS. Cabbage, Carrot, Daffodil, Dandelion, Lettuce, Mangewurzel, Onion, Parsnip, Radish, Rape, Turnip, Vetch.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{July to October.} \\ \textit{Pupa.} \quad \text{October to June.} \\ \textit{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Agrotis corticea, *W.V.* THE HEART AND CLUB.

LARVA. About one inch eight lines long, stout, cylindrical, leathery, and transversely wrinkled; head smaller than the 2nd segment; colour dull greenish drab, speckled with brown; pulsating vessel pale, edged with darker lines; subdorsal line dark brown, edged below with a narrow pale line; spiracular line paler brown centred with a pale line; ordinary dots brown; spiracles black; legs and claspers very short. *Plate XXXIV., fig. 14.*

FOOD-PLANTS. Dandelion, Good King Henry, Goosefoot White, Knotgrass, Persicaria.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{August to April.} \\ \textit{Pupa.} \quad \text{April to July.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Agrotis cinerea, *W.V.* THE LIGHT FEATHERED RUSTIC.

LARVA. "Shining greenish brown; dorsal and subdorsal lines darker, between them are small oblique dark streaks (*Treitschke*)."—*Stain. Man.*, vol. i., p. 225.

FOOD-PLANT. Dock.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{September to May.} \\ \textit{Pupa.} \quad \text{May and June.} \\ \textit{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Carnarvonshire, Gloucestershire, Hants, Herefordshire, Kent, Pembrokeshire, Sussex, Isle of Wight.

Agrotis ripæ, *Hub.* THE SAND DART.

LARVA. About one inch and three-quarters long, rather stout, but tapering slightly to both extremities. Colour pinkish white, dorsal line dark, intersected by a narrow white pulsating vessel; subdorsal lines very indistinct; along the side are three lateral skinfolds and an indistinct dark spiracular line; spiracles black; ordinary dots black, emitting short bristly hairs; seg-

mental divisions clearly marked; head and corslet yellowish brown and shining; claspers small. *Plate XXXIV., fig. 15.*

FOOD-PLANTS. Houndstongue, Prickly Saltwort. Carrot and Lettuce in confinement.

In confinement these larvæ must be kept in an ordinary garden flower-pot, and allowed sufficient sand to enable them to burrow seven or eight inches deep; they will do well on slices of carrot given them fresh every evening; they will feed on it in the night, carrying pieces deep down with them into the sand.

PUPA. In the sand.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to April.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Cornwall, Devon, Glamorganshire, Somersetshire.

Agrotis cursoria, *Bork.* THE COAST DART.

LARVA. Ochreous; dorsal line grey, bordered with dull green; subdorsal line whitish, edged above with dull grey; spiracular line broad, nearly white, intersected by a smoke-coloured line; between the subdorsal line and the spiracular stripe is a pale grey waved line; spiracles black; ordinary dots brown; head and corslet pale brown and shining.

When young, the larva is of a greenish colour.

FOOD-PLANTS. Heartsease, Rushy Sea Wheat Grass, (see Couch Grass,) Sea Purslane, Sea Wormwood.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to July.} \\ \text{Pupa. July.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Cheshire, Cornwall, Denbigh, Devon, Dorset, Glamorganshire, Kent, Lancashire, Norfolk, Suffolk. Scotland. Ireland.

Agrotis nigricans, *Linn.* THE GARDEN DART.

LARVA. Ochreous brown or ochreous; dorsal line grey, bordered with dark smoke colour, passing through a series of dark somewhat diamond-shaped marks, more or less distinct; subdorsal line dull green, or black, bordered below with a greenish line; spiracular line broad, blackish green; between the subdorsal and spiracular line is a broad blackish green stripe and a narrow whitish interrupted line; below the spiracular line are two dull whitish lines; spiracles black; ordinary dots black and shining. Head dull brown, marked with black; corslet black and shining, with three pale longitudinal lines.

FOOD-PLANTS. Clover, Plantain, Vine.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Agrotis tritici, Linn. THE WHITE LINE DART.

LARVA. Stout, cylindrical, and shiny. Dorsal area greyish brown, the sides tinged with greenish; dorsal line pale, subdorsal line also pale, all commencing at the head; there is a side stripe of pale grey; spiracles black. Ventral area paler than the dorsal; head small; corslet dark brown, striped with the dorsal and subdorsal lines; legs and claspers the same as the ventral area.

FOOD-PLANTS. Cabbage, Grass, Vine.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Agrotis aquilina, W.V. THE STREAKED DART.

LARVA. About an inch and a half long. Dorsal area dingy brown; dorsal line pale brown; subdorsal line black, bordered below with a narrow pale line; spiracular stripe broad, dull greenish black; between the subdorsal and spiracular lines is a broad dull greenish black line, and a narrow pale line; spiracles black; ordinary dots dark brown. Ventral area greyish brown; head greyish brown; corslet black, with three pale longitudinal lines.

FOOD-PLANTS. Bedstraw, Cabbage, Chickweed, Onion, Plantain, Poppy, Vine.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; rare.

Agrotis obelisca, W.V. THE SQUARE SPOT DART.

LARVA. "The head has a rather flat face, and is considerably narrower than the 2nd segment, into which it is partially received; the body is very stout, smooth, and almost uniformly cylindrical; its colour is pale testaceous brown, with a slender white-medio-dorsal stripe, which is bordered on each side by a still more slender and thread-like black stripe; there is a similar white stripe, delicately black bordered, on each side of the caterpillar, and

connecting the medio-dorsal with the lateral stripes; there is also a short oblique stripe on each side of each segment, each pair of oblique stripes forming the letter V, the apex of which is directed towards the anal extremity; below these, and in the region of the spiracles, is a series of round dots, ten on each segment, and also a short oblique line; the ventral is concolorous with the dorsal area, and the claspers are also of the same colour, and just above each is a black dot."—*Newman's Moths*, p. 332.

FOOD-PLANTS. Yellow Bedstraw, Vine.

PUPA. In an earthen cocoon.

Time of appearance { *Larva*. — to May.
 { *Imago*. August.

LOCALITIES. Derbyshire, Devonshire, Lancashire, Isle of Wight, Sussex. Ireland.

Agrotis agathina, Dup. THE HEATH RUSTIC.

LARVA. Cylindrical and velvety.

Var. 1. Pinkish brown, irrorated with darker brown; dorsal line nearly white, *continuous*, bordered rather broadly with brown, and terminating on the 12th segment; subdorsal line nearly white, edged above with a fine brown line; spiracular stripe rather broad, whitish, interrupted by cream-coloured blotches; spiracles black; ventral area pinkish; head pale yellowish brown, marked with darker brown, small and shining. *Plate XXXIV., fig. 16.*

Var. 2. Yellowish green, irrorated with a darker colour; dorsal line pale yellowish white, edged with very dark green; subdorsal line nearly white, edged above with a fine darker line; spiracular stripe rather broad, whitish, interrupted by cream-coloured blotches; ventral area paler than the dorsal; head as in *var.* 1. *Plate XXXIV., fig. 16a.*

FOOD-PLANT. Cross-leaved Heath.

PUPA. In the earth.

Time of appearance { *Larva*. September to May.
 { *Pupa*. June and July.
 { *Imago*. August and September.

LOCALITIES. Devonshire, Hants, Lancashire, Surrey, Yorkshire; scarce. Ireland; scarce.

Agrotis porphyrea, W.V. THE TRUE LOVER'S KNOT.

LARVA. Cylindrical and velvety. Ground colour pinkish brown, irrorated with darker brown; dorsal line interrupted, composed of a number of yellowish white longitudinal streaks, edged with almost wedge-shaped dark-brown mark; these lines and marks increase in intensity and in size towards the posterior part of the body, and terminate at the 12th segment; subdorsal



line much the same, but less distinct; spiracular line broad, of two shades of pinkish white, edged above with a fine brown line; spiracles black; ventral area paler than the dorsal; claspers the same colour; head small, yellowish brown, marked with darker brown, and shining. *Plate XXXIV., figs. 17, 17a.*

FOOD-PLANTS. Heath, Heather; by night.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{September to May.} \\ \textit{Pupa.} \quad \text{May to July.} \\ \textit{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England and Wales; not uncommon. Scotland and Ireland; common.

Agrotis præcox, Linn. THE PORTLAND MOTH.

LARVA. Rather more than an inch long, cylindrical, and obese. Pale putty colour, variously but sparingly marked with smoke colour; down the centre of the back is a series of pale kite-shaped marks, becoming larger posteriorly, all of which are edged with smoke-colour markings; spiracular line broad, nearly white, containing all the spiracles except those on the 2nd and 12th segments, which are placed just above its upper edge; between the subdorsal and spiracular lines are a number of smoke-colour streaks and markings. Ventral area pale; head very small and shining, yellowish putty colour, marked with brown; corslet yellowish putty colour; claspers small. *Plate XXXIV., fig. 18.*

FOOD-PLANTS. Borage, Chickweed, Milkwort, Viper's Bugloss, Wormwood.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May and June.} \\ \textit{Pupa.} \quad \text{July.} \\ \textit{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. Cheshire, Devon, Dorset, Kent, Lancashire, Norfolk, Suffolk. South Wales. Scotland and Ireland; always on the coast.

Agrotis ravidæ, W.V. THE STOUT DART.

LARVA. Yellowish brown, with a very fine pale dorsal line. Along the back, commencing on the 5th segment, is a series of dull V-like marks, and along each side of the back from the 4th segment is a series of ochreous yellow spots, those on the 5th to the 12th have a yellow curved streak almost touching them; these streaks are bordered above with smoke-coloured streaks, which become darker to the 12th. Ventral area greyish brown; subventral line pale grey, speckled with dull brown; head grey, marked with dull brown; corslet dull brown, with three indistinct longitudinal pale lines; legs and claspers the same as the ventral area.

FOOD-PLANTS. Bog Stitchwort, Chickweed, Dandelion, Dock, Thistle.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Devonshire, Dorsetshire, Essex, Kent, Norfolk, Suffolk; rare. Scotland; rare. Ireland; rare.

Agrotis pyrophila, W.V. THE DOTTED RUSTIC.

LARVA. "Dull grey-brown (*Treitschke*)."—*Stain. Man.*, vol. i., p. 228.

FOOD-PLANT. Grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Berkshire, Cumberland, Derbyshire, Dorsetshire, Glamorganshire, Gloucestershire, Hants, Lancashire, Staffordshire, Worcestershire, Yorkshire; rare.

Agrotis lucernea, Linn. THE NORTHERN RUSTIC.

LARVA. "Almost uniformly cylindrical; the surface is smooth and velvety; the head is shining, its triangular plate intensely black, its hemispheres mottled with black and grey-brown; the colour of the body is a mottled mixture of grey-brown and black-brown, the darker colour assuming somewhat the form of a double medio-dorsal series of V-shaped markings, the tips of the V's directed towards the head; the space within each V is only a shade paler than the V itself, but terminates at its tip in a very decided pale spot, which has a black dot in the middle, the dot emitting a black bristle; the legs are black and shining; the claspers pale; the spiracles almost white, but surrounded by a black space."—*Newman's Moths*, p. 336.

FOOD-PLANTS. Dandelion, Grass, Hairbell, Yellow Stonecrop.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{March to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Cornwall, Devonshire, Isle of Wight, Kent, Yorkshire, South Wales. Scotland. Ireland; scarce.

Agrotis Ashworthi, Dbl. ASHWORTH'S RUSTIC.

LARVA. Smooth and velvety. Dark olive-green or smoke colour, with two black longitudinal marks on the back of each segment, each having the form of a parallelogram; those on the 12th segment are narrow, and placed obliquely. Head red and shining; legs reddish brown and shining.

FOOD-PLANTS. Beaked Parsley, common and wild, Devils-bit Scabious, Fescue Grass, Forget-me-not, Golden-rod, Great Bedstraw, Hairbell, Hawkweed, Rock Rose, Salad Burnet, Scorpion Grass, Small Scabious, Tufted Aira Grass, Wild Thyme, Yellow Bedstraw. Sallow in confinement.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to April.} \\ \text{Pupa.} \quad \text{May to July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Llangollen, Penmaeumawr, in North Wales.

TRIPHÆNA, *Och.*

Triphæna janthina, *W.V.* THE LESSER BROAD BORDER.

LARVA. About one inch two lines long, slightly smaller towards the head. Body pale ochreous, slightly tinged with pink, and profusely covered with small black dots and markings; on the upper part of the 12th segment are two square black marks, and on the 9th, 10th, and 11th two smaller marks of a similar character; dorsal line pale, spiracles ochreous in a black mark. Ventral area pale, with a few black dots, which on the 5th, 6th, 11th, and 12th segments are arranged transversely; head pale, shining, marked with dark brown; legs and claspers the same as the ventral area. Feigns death when touched. *Plate XXXV., fig. 1.*

FOOD-PLANTS. Bramble, Chickweed, Corn Marigold, Cowslip, Deadnettle, Fleabane, Geranium, Hornbeam, Ivy, Mountain Ash, Ox-eye Daisy, Periwinkle, Polyanthus, Primrose, Spinach, Stinging Nettle, Traveller's Joy.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Triphæna fimbria, *Linn.* THE BROAD BORDERED YELLOW UNDERWING.

LARVA. The body increases in size from the head to the 10th segment, where it has a swollen appearance. Reddish clay colour, irrorated with numerous minute brown dots, through which may be seen an indistinct dorsal line of the ground colour; the dorsal and subdorsal lines are clearly visible on the corslet. Along each side the back there is a series of indistinct oblique dark marks, and on the 12th segment a dark transverse stripe bordered behind with a pale line; spiracles white, situated in a conspicuous dark-brown blotch. Ventral area paler than the dorsal, legs and claspers the same; head reddish, mottled with brown, and shining. *Plate XXXV., fig. 2.*

FOOD-PLANTS. Bilberry, Birch, Bird Cherry, Blackthorn, Bramble, Cowslip, Cranberry, Dock, Hazel, Hornbeam, Mountain Ash, Oak, Orache, Periwinkle, Primrose, Rose, Sallow, Whitethorn, Willow.

PUPA. On the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Triphæna interjecta, Hub. THE LEAST YELLOW UNDERWING.

LARVA. Pale ochreous; dorsal line narrow, white, edged with brown; subdorsal line the same, but less distinct; spiracular stripe pale, redder towards the middle, and bordered above and below with brown, there are also some indistinct stripes along the body; ordinary dots black, some of them larger than usual. Ventral area darker than the dorsal, with a double series of black dots along the sides; head pale ochreous, with two dark stripes on the face, and also two light marks; legs pale and translucent; claspers the same, marked with black.

FOOD-PLANTS. Cowslip, Deadnettle, Dock, Grass, Mallow, Stinging Nettle, Plantain, Primrose, Traveller's Joy.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to April.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; scarce.

Triphæna subsequa, W.V. THE LUNAR YELLOW UNDERWING.

LARVA. About an inch and a half long, stout, smooth, velvety, cylindrical, and tapering slightly towards the extremities. Dull grey-brown; dorsal line rather broad, ochreous yellow, bordered with black, slightly contracted at each extremity, and passing through a series of blunt diamond-shaped marks, of a dull yellowish green colour, one on each segment; subdorsal line pale greyish yellow, bordered on each side by a narrow dark line, and having a series of nearly square black marks on the upper edge; spiracular line pale ochreous, bordered above by a narrow brown line, and speckled very slightly with brown; between the subdorsal and spiracular lines is a dark line; spiracles white in the upper edge of the spiracular line; ordinary dots black; head greyish brown, speckled with darker brown and marked on the face with black.

FOOD-PLANTS. Buttercup (creeping), Cowslip, Crowfoot (meadow), Grass, Primrose, Trailing Tormentil.

PUPA. Beneath the earth.

Time of appearance { *Larva.* September to April.
 { *Pupa.* May and June.
 { *Imago.* July.

LOCALITIES. Dorsetshire, Derbyshire, Glamorganshire, Hants, Notts, Suffolk, Surrey, Yorkshire; rare. Scotland; rare. Ireland; two specimens.

Triphæna orbona, *Fab.* THE LESSER YELLOW UNDERWING.

LARVA. About two inches two lines long, and tapering towards the head. Body stone colour, tinged with pink, and irrorated with brown; dorsal line faint and interrupted, only perceptible on the anterior part of the body; upon the dorsal part of the 11th and 12th segments are two dark-brown longitudinal wedge-shaped marks, those on the 12th almost meeting posteriorly across the body; these marks are edged on the outside with buff; in the region of the spiracles is a series of dark-brown oblique smudges composed of minute brown dots, these markings are much darker near the spiracles, becoming almost black on the 5th and 6th segments; spiracular line pale pinkish; spiracles buff, encircled with black. Ventral area pale bluish grey; head pale stone colour speckled with brown, with two wedge-shaped brown marks down the face; legs and claspers pale bluish grey, the latter having each a black spot. *Plate XXXV., fig. 3.*

FOOD-PLANTS. Birch, Bramble, Blackthorn, Burdock, Chickweed, Cowslip, Daisy, Dandelion, Dock, Hornbeam, Ivy, Lettuce, Plantain, Primrose, Sallow, Stonecrop, Whitethorn.

PUPA. On the surface of the earth.

Time of appearance { *Larva.* August to May.
 { *Pupa.* June.
 { *Imago.* July.

LOCALITIES. Great Britain and Ireland; common.

Triphæna pronuba, *Linn.* THE LARGE YELLOW UNDERWING.

LARVA. About two inches and a quarter long, stout and velvety. Ochreous brown; dorsal area irrorated with dark brown; dorsal line pale, only clearly defined on the posterior part of the body; along each side of the back is a series of longitudinal black streaks, bordered on the outside with pale ochreous, these streaks are very indistinct on the 2nd, 3rd, and 4th segments, but from the 5th increase in intensity to the 12th, where they terminate. The brown irrorations cease abruptly at the spiracles. Ventral area pale pinkish ochreous; spiracles ochreous in black rings, each situated in a dark smudge, with a pale oblique mark behind it. Head ochreous, shining, with two brown curved lines down the face. When young, the larva is pale green, smooth, and free from irrorations; dorsal line pale, bordered with

smoke colour, with a series of subdorsal longitudinal black streaks, edged below with yellowish green; spiracles conspicuous, ochreous, encircled with black. *Plate XXXV., figs. 4 and 4a.*

FOOD-PLANTS. Burdock, Cabbage, Dandelion, Dock, Heartsease, Ivy, Lettuce, Primrose, Violet, Wallflower.

PUPA. Below the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. May and June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

NOCTUA, *Gn.*

Noctua glareosa, *Esp.* THE AUTUMNAL RUSTIC.

LARVA. Pale brown and smooth; dorsal line paler, bordered on each side by a fine brown line; subdorsal line the same; spiracular line pale ochreous and broad; the area between the subdorsal and spiracular lines is marked and freckled with darker brown than the ground colour; spiracles buff encircled with black; ordinary dots black. Ventral area paler than the dorsal; head pale and shining, with two dark-brown lines down the face; legs and claspers the same as the ventral area

Eggs laid on the 23rd of July hatched on the 30th of the same month.

FOOD-PLANTS. Broom, Dock, Sorrel.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to June.} \\ \text{Pupa. June.} \\ \text{Imago. July to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Noctua depuncta, *Linn.* THE PLAIN CLAY.

LARVA. "Greyish brown; subdorsal line whitish, with a row of black dots; spiracles white in black rings (*Hub.*)."—*Stain. Man.*, vol. i., p. 254.

FOOD-PLANT. Sorrel.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April and May.} \\ \text{Pupa. June.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Devonshire, Worcestershire, Yorkshire; rare. Scotland; rare.

Noctua augur, *Fab.* THE DOUBLE DART.

LARVA. Long and tapering towards the head. Dingy pinkish grey, darker towards the anterior segments, with a number of indistinct oblique dark marks along each side the back; the spiracular line expands on each

segment, is purplish brown, with a pale line above and below it; on the 12th segment is a transverse black line bordered behind with yellow; and on the 13th a series of small square spots, each surrounded and connected together with the same yellowish colour; spiracles deep yellow encircled with brown; ordinary dots pale yellow. Ventral area reddish brown; head pale brown and shining; claspers the same as the ventral area, with a black spot encircled with yellow above each. *Plate XXXV., fig. 5.*

FOOD-PLANTS. Blackthorn, Dock, Rose, Sallow, Sorrel, Whitethorn, Willow.

PUPA. On the surface of the earth or under moss on trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Noctua plecta, Linn. THE FLAME SHOULDER.

LARVA. Smooth and tapering towards the head, which is smaller than the 2nd segment. Colour variable, red brown, pale brown or buff, mottled and marked with lighter and darker shades and with numerous black spots; dorsal and subdorsal lines white, very narrow, interrupted, and bordered on each side with dark brown; spiracular line very broad, cream colour speckled profusely with red brown; spiracles white encircled with black, situated in the upper edge of the spiracular line, except those on the 11th and 12th segments, which are above it. Ventral area paler brown; head brown and shining, marked on the sides with dark brown; legs and claspers the same colour as the ventral area; above each clasper is a dark spot. Rolls in a tight ring when touched. When full fed, the broad spiracular line becomes merged with the ventral area, retaining its white upper edge only, the dorsal and subdorsal lines become more interrupted and less distinct. In some specimens the difference of colour between the dorsal and subdorsal areas is very great, in others it is scarcely to be noticed. *Plate XXXV., figs. 6 and 6a.*

Eggs laid on the 30th of May hatched early in June, and the larvæ were full fed in July. The first imago appeared on the 26th of May in the following year.

FOOD-PLANTS. Bedstraw, Beet, Celery, Endive, Knotgrass, Lettuce, Mangel-wurzel, Orache, Sweet Woodruff.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June and July.} \\ \text{Pupa. July to May.} \\ \text{Imago. May to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Noctua flammatra, W.V. THE BLACK COLLAR.

LARVA. No description.

Time of appearance. *Imago.* July.

LOCALITIES. Isle of Wight, Norfolk.

Noctua C-nigrum, Linn. THE SETACEOUS HEBREW CHARACTER.

LARVA. "Greenish grey with yellowish dorsal line; pale green sub-dorsal line, and white spiracular line; the space between the last two lines being dark green (*Hub.*)"—*Stain. Man.*, vol. i., p. 234.

FOOD-PLANTS. Birch, Cowslip, Dock, Plantain, Primrose.

Time of appearance.	{	<i>Larva.</i> May and June.	September and October.
		<i>Pupa.</i> July.	October to May.
		<i>Imago.</i> August and September.	May and June.

LOCALITIES. Great Britain and Ireland; not uncommon.

Noctua ditrapezium, Hub. THE TRIPLE SPOTTED CLAY.

LARVA. About 1 inch 9 lines long, cylindrical, smooth, and tapering gradually but slightly from the 12th segment. Dull pinkish drab, speckled with minute black dots; dorsal line pale, indistinct, and interrupted; along the back of the 9th, 10th, 11th, and 12th segments is a subdorsal series of dark streaks increasing in distinctness to the 12th segment, where they are nearly black, and are connected by a narrow black transverse line; this line is bordered behind, and the marks are bordered on the outside with pinkish ochreous; spiracles white, encircled with black. Ventral area paler than the dorsal; head ochreous, shining, speckled on the cheeks with brown, and with two brown curved lines down the face. *Plate XXXV., fig. 7.*

FOOD-PLANTS. Birch, Dandelion.

PUPA. In the earth.

Time of appearance	{	<i>Larva.</i> May.
		<i>Pupa.</i> June.
		<i>Imago.</i> July.

LOCALITIES. Cornwall, Devon, Dorset, Hants, Isle of Wight, Kent, Sussex; rare. Scotland; local. Ireland; rare.

Noctua triangulum, Och. THE DOUBLE SPOTTED SQUARE SPOT.

LARVA. Rather obese, and tapering towards the head, which is smaller than the 2nd segment. Dorsal area ochreous, speckled profusely with black; segmental divisions clearly defined. Along each side of the back, from the 5th to the 12th segment, is a series of dark wedge-shaped marks, those on

the 12th being met and joined by a transverse dark line, bordered behind with ochreous; dorsal line pale ochreous, very narrow, interrupted, and bordered with black; subdorsal line pale ochreous and indistinct; ventral area paler than the dorsal. *Plate XXXV., fig. 8.*

FOOD-PLANTS. Birch, Bird Cherry, Bramble, Dock, Oak.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April and May.} \\ \text{Pupa. May and June.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. England and Scotland; not very common. Ireland; common.

Noctua rhomboidea, *Tr.* THE SQUARE SPOTTED CLAY.

LARVA. Smooth and velvety, tapering slightly towards the head; dorsal area brown, with dark markings; dorsal and subdorsal lines pale green and narrow, joined on the 12th segment by a transverse pale greenish line; ventral area dull yellowish green; head brown and shining.

FOOD-PLANTS. Burdock, Chickweed, Common Avens, Dock, Primrose, Water Avens, Yellow Deadnettle.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to June.} \\ \text{Pupa. June.} \\ \text{Imago. July.} \end{array} \right.$

LOCALITIES. Berks, Essex, Glamorganshire, Herts, Isle of Wight, Oxfordshire, Surrey.

Noctua brunnea, *W.V.* THE PURPLE CLAY.

LARVA. Smooth and velvety; segmental divisions clearly marked; the 12th segment somewhat raised, the 13th depressed, and the head small. Dark, rich, reddish chocolate colour; in some specimens dull brown, speckled with brown. Dorsal line pale cream colour, bordered on each side with an interrupted brown line; along each side of the dorsal area, commencing on the 6th segment, are seven oblique yellowish streaks, bordered below with dark brown, and within the space between each pair is a dark mark; on the 12th segment is a conspicuous transverse ochreous line; spiracles orange encircled with black; ventral area pale pink; head brown and shining, with a dark and a pale line down each side the face; legs and claspers pink. *Plate XXXV., fig. 9.*

FOOD-PLANTS. Bilberry, Birch, Bird Cherry, Bramble, Dock, Hornbeam, Mountain Ash, Red Whortleberry, Sorrel.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to April.} \\ \text{Pupa.} \quad \text{April and May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Noctua festiva, *W.V.* THE ENGRAILED.

LARVA. About an inch and a half long; obese, cylindrical, and tapering towards the head, which is small and retractile. Pinkish ochreous, irrorated with brown; dorsal line pale, bordered with brown, interrupted and very indistinct; subdorsal line pale pinkish ochreous, bordered with brown; spiracular line pale, bordered above with brown; along each side the back is a series of somewhat triangular-shaped black marks; these marks increase in size and become more distinct to the 12th segment, where they cease; spiracles black, encircled with ochreous. Ventral area dull smoke colour, legs and claspers the same; head brown, marked down the face with two darker brown lines; corslet pale. *Plate XXXV., fig. 10.*

Eggs laid on the 2nd of July, hatched on the 14th; the larva pupated in March, and the first imago emerged on the 3rd of April.

FOOD-PLANTS. Bilberry, Bramble, Dock, Foxglove, Honeysuckle, Hornbeam, Sallow, Violet.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to May.} \\ \text{Pupa.} \quad \text{March to July.} \\ \text{Imago.} \quad \text{April to July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Noctua conflua, *Tr.* THE LESSER ENGRAILED.

LARVA. Somewhat obese, and raised on the 12th segment; dorsal area yellowish green, streaked with brown; dorsal line white, bordered on each side with a fine brown line; along each side the back, extending from the 4th segment, is a series of dark-brown wedge-shaped streaks, bordered below with a pale colour; the spiracular line appears as a series of brown marks; spiracles black, encircled with white. Ventral area paler than the dorsal; legs brown, tipped with black; claspers the same as the ventral area, tipped with brown; head pale brown, with two curved black marks down the face.

FOOD-PLANTS. Moss Campion, Plantain, Snakeweed.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Durham, Glamorganshire; rare. Scotland; rare. Ireland; rare.

Noctua Dahli, Hub. THE BARRED CHESNUT.

LARVA. "Reddish, mixed with grey, with paler dorsal and subdorsal lines; above the latter is a row of black dots in white rings (*Hub.*)"—*Stain. Man.*, vol. i., p. 236.

FOOD-PLANTS. Cowslip, Plantain, Primrose.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to May.} \\ \text{Pupa. June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Derbyshire, Devonshire, Hampshire, Isle of Wight, Kent, Lancashire, Surrey, Sussex, Yorkshire; rare. Ireland; rare.

Noctua subrosea, Steph. THE ROSY MARSH.

LARVA. Ground colour violet, tinged with greenish or brownish grey. Down the back are three longitudinal lines, paler violet than the ground colour; subdorsal line the same colour; spiracular line bright yellow; spiracles bright reddish brown. Head bright reddish brown; corslet and legs the same; claspers paler.

FOOD-PLANTS. Marsh Andromeda, Sweetgale, Sallow.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May.} \\ \text{Pupa. June.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Hants.

Noctua rubi, Vieweg. THE SMALL SQUARE SPOT.

LARVA. Smooth, velvety, and tapering from the 4th segment to the head. Greyish ochreous or pale brown and mottled; dorsal line paler, bordered on each side by a narrow brown line; subdorsal line also pale, bordered above with brown; below the subdorsal line is a broad rich umber-brown stripe, dappled throughout; spiracular line reddish brown, edged above and below with pale buff; spiracles buff, encircled with black. Ventral area paler than the dorsal, and without markings; head brown, shining, and slightly hairy; legs and claspers the same colour as the body. Feigns death when touched. *Plate XXXV., fig. 11.*

One hundred and twenty eggs laid on the 27th of May, hatched on the 9th of June, and the imagines appeared from the 16th of August. Eggs of the second brood were laid on the 25th of August.

FOOD-PLANTS. Beech, Chickweed, Dandelion, Dock, Field Bindweed, Hawkweed, Knotgrass, Meadowsweet, Sorrel, Spotted Persicaria.

PUPA. In a slight cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August. May.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Noctua umbrosa, *Hub.* THE SIX STRIPED RUSTIC.

LARVA. Brownish, or ochreous, striated with dark brown; dorsal line yellowish white, bordered with dark brown, widening and contracting on each segment; subdorsal line the same colour, edged above and below with brown, and having above it a series of dark-brown wedge-shaped marks; spiracular line dark brown; spiracles dingy white, encircled with black; ordinary dots black. Head pale brown and shining, speckled and streaked with darker brown.

FOOD-PLANTS. Bramble and Dock, in confinement.

PUPA. In moss and under earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August to May.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Noctua baja, *W.V.* THE DOTTED CLAY.

LARVA. Reddish, mottled with numerous dark and some light markings; dorsal line pale; subdorsal line also pale; along each side the back, from the 5th to the 12th segment, is a series of dark oblique streaks, bordered below with pale yellowish, and reaching from the subdorsal to the dorsal line; spiracular line pale yellowish; spiracles pale, encircled with dark brown; head small, pale ochreous brown, with two curved brown lines down the face. *Plate XXXV, fig. 12.*

FOOD-PLANTS. Bilberry, Birch, Cranberry, Deadly Nightshade, Primrose, Strawberry, Whortleberry.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Noctua sobrina, *Bdv.* THE COUSIN GERMAN.

LARVA. "Violet grey, marbled with yellowish white, with the dorsal and subdorsal lines ochreous yellow, interrupted; spiracular line pale greyish (*Gn.*)."—*Stain. Man.*, vol. i., p. 237.

Time of appearance. *Imago.* July.

LOCALITIES. Rannoch, Perthshire, only.



Noctua neglecta, *Hub.* THE GRAY RUSTIC.

LARVA. Body cylindrical, smooth, and velvety; dull brown (or green or pale green), irrorated with a darker colour; dorsal and subdorsal lines paler than the body; spiracular line broad and whitish; between the subdorsal and the spiracular lines the body is more profusely irrorated than on the other parts; all these lines commence at the head; spiracles pale, encircled with black; ordinary dots black. Ventral area paler than the dorsal; head smaller than the 2nd segment, dull brown (or green); legs and claspers the same as the ventral area; a black spot on each of the latter. *Plate XXXV., fig. 13*, brown variety.

FOOD-PLANT. Heather.

PUPA. In earth.

Time of appearance { *Larva.* October to May.
 Pupa. June and July.
 Imago. August

LOCALITIES. Cornwall, Devon, Dorset, Glamorganshire, Hants, Kent, Lancashire, Somersetshire, Surrey, Yorkshire. Scotland. Ireland.

Noctua xanthographa, *W.V.* THE SQUARE SPOT RUSTIC.

LARVA. Cylindrical, smooth, velvety, and slightly smaller towards the head. Pale ochreous, tinged with reddish brown; dorsal line pale ochreous, bordered with reddish brown; subdorsal line pale ochreous, and above it on each segment is a dark-brown longitudinal streak; these streaks are scarcely perceptible on the 2nd, 3rd, and 4th segments; immediately above the spiracles is a rather broad stripe, composed of three shades of brown, the upper part being the darkest; below this is a pale stripe. Ventral area pale ochreous; spiracles pale, in black rings; head ochreous, shining, marked on the cheeks with brown, and with two brown curved lines down the face. *Plate XXXV., fig. 14.*

Eggs laid on the 26th of August hatched on the 15th of September.

FOOD-PLANTS. Chickweed, Dock, Grass, Plantain, Primrose, Violet.

PUPA. In earth.

Time of appearance { *Larva.* September to May.
 Pupa. May to August.
 Imago. July to September.

LOCALITIES. Great Britain and Ireland; common.

ORTHOSIIDÆ.

TRACHEA, *Gn.**Trachea piniperda*, *Esp.* THE PINE BEAUTY.

LARVA. Colour variable; pale brown or dull olive green, with a number of scattered black dots; dorsal line white; subdorsal line white, bordered on each side by a black line; spiracular line double, white and orange; ventral area paler than the dorsal; claspers the same, head yellowish brown; legs the same.

FOOD-PLANTS. Larch, Scotch Fir.

PUPA. On the bark of trees.

Time of appearance { *Larva.* June and July.
 { *Pupa.* July to March.
 { *Imago.* March and April.

LOCALITY. Great Britain.

PACHNOBIA, *Gn.**Pachnobia alpina*, *Westwood.* THE MOUNTAIN RUSTIC.

LARVA. No description.

Time of appearance. *Imago.* July and August.

LOCALITIES. Rannock, Braemar, Breadalbane, Scotland.

TÆNIOCAMPA, *Gn.**Tæniocampa gothica*, *Linn.* THE HEBREW CHARACTER.

LARVA. Smooth and cylindrical; pale green, with numerous minute yellowish dots; dorsal line yellowish white, bordered with rather dark green; subdorsal line whitish and slightly interrupted; spiracular line *very* broad, nearly white, including all the spiracles except those on the 2nd and 12th segments, which are above it; spiracles white, encircled with brown; segmental division yellow. Ventral area pale green and transparent; legs and claspers the same, the latter tipped with brown. *Plate XXXVI., fig. 1.*

FOOD-PLANTS. Ash, Broom, Clover, Dock, Dyer's Greenweed, Laurel, Lilac, Oak, Portugal Laurel, Sallow, Whitethorn, Willow.

PUPA. In earth.

Time of appearance { *Larva.* May to July.
 { *Pupa.* July to April.
 { *Imago.* March and April.

LOCALITIES. Great Britain and Ireland; common.

Tæniocampa leucographa, W.V. THE WHITE MARKED.

LARVA. Smooth, cylindrical, and tapering towards the head. Ground colour pale delicate green, or yellowish green, irrorated with a darker shade of the same colour; dorsal line pale, bordered on each side with green; spiracular line green, the upper part of it, on the first five segments and the last, nearly white; the whole line bordered above with dark green; between the dorsal and the spiracular lines is a series of rather dark oblique streaks; segmental divisions yellow overlapping, especially between the 12th and 13th segments; spiracles white, encircled with brown; corslet marked with two yellow curved streaks; head round, green, and shining; legs and claspers green and shining. *Plate XXXVI., fig. 2.*

Eggs hatched on the 8th of May.

FOOD-PLANTS. Dock, Plantain.

PUPA. In earth.

Time of appearance { *Larva.* May to July.
 { *Pupa.* June to March.
 { *Imago.* March and April

LOCALITIES. Devonshire, Isle of Wight, Lake District, Suffolk, Sussex, Yorkshire.

Tæniocampa rubricosa, W.V. THE RED CHESTNUT.

LARVA. Rich pinkish brown and velvety, paler between the segments, with five longitudinal stripes; dorsal line very narrow, ochreous, edged with brown; subdorsal line pale chrome yellow, and broader; spiracular stripe also pale chrome yellow and broader still; the dorsal and subdorsal stripes meet at the extremity of the anal flap; the spiracular stripe extends down the anal clasper; ordinary dots chrome yellow; spiracles black. Ventral area paler than the dorsal; head pinkish brown and shining, speckled with brown, and with two brown curved lines down the face; legs and claspers pinkish. After the last moult the larva changes considerably in appearance, all the lines become indistinct; the dorsal line is not clearly seen, except on the 2nd segment; the subdorsal line becomes narrow and interrupted, and the spiracular line only retains its yellow colour on the 2nd, 3rd, and 4th segments; on the remaining segments it is pale brown, speckled with brown. *Plate XXXVI., figs. 3 and 3a.*

FOOD-PLANTS. Chickweed, Dock, Plantain.

PUPA. Beneath the earth.

Time of appearance { *Larva.* April to June.
 { *Pupa.* June to March.
 { *Imago.* March and April.

LOCALITIES. Great Britain and Ireland; not common.

Tæniocampa instabilis, W.V. THE CLOUDED DRAB.

LARVA. Bright green; dorsal line pale yellow and very distinct, dorsal area covered with numerous pale-yellow dots, some of which form themselves into a subdorsal line; spiracular line pale yellow; behind the head and on the ventral area are some black dots; head green and translucent. Rolls in a ring when touched. *Plate XXXVI., fig. 4.*

FOOD-PLANTS. Ash, Blackthorn, Currant, Dock, Elm, Laburnum, Mountain Ash, Oak, Poplar, Sallow, Whitethorn, Willow.

PUPA. In earth in a cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{July to March.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Tæniocampa opima, Haw. THE NORTHERN DRAB.

LARVA. Varying much in different specimens. Dorsal area red brown, or chocolate brown, shading into a darker tint above the spiracles, with numerous minute ripple-like markings; dorsal and subdorsal lines pale; spiracular line yellowish or green; spiracles yellowish, encircled with reddish brown; ordinary dots pale. Ventral area bright lemon yellow or greenish yellow, with a few reddish marks above the claspers, and in the same situation upon the other segments; head brown, and smaller than the 2nd segment. *Plate XXXVI., figs. 5, 5a, 5b.*

When young, the larva is of a dingy bluish green, specked with dirty white; dorsal and subdorsal lines dirty white, with a row of dots of the same colour between them; spiracular line pale green, bordered above with very dark green; ventral area pale green; head small, brown, and shining.

Eggs hatched the 24th and 25th of April, the imagines appeared the following March.

FOOD-PLANTS. Dog Rose, Sallow, Scotch Rose.

Mr. Povell informs me that the moth lays the eggs from four to five o'clock in the afternoon, on the dead stems of the Ragwort; if she has not finished depositing her eggs by five o'clock, she leaves the plant, but returns after dark and lays the remainder

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to July.} \\ \text{Pupa.} \quad \text{July to March.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. Carmarthenshire, Cheshire, Glamorganshire, Herefordshire, Lake District, Lancashire, Radnorshire, Sussex, Yorkshire.

Tæniocampa populeti, *Fab.* THE LEAD-COLOURED DRAB.

LARVA. "Head almost buff; the ground colour of the dorsal area of the body is dingy white; . . . there is a broad and very distinct medio-dorsal stripe, almost white, and a narrower one on each side of it, less distinct; the whole surface of the body is sparingly clothed with whitish hairs; the spiracles are encircled by slender waved whitish lines."—*Newman's Moths*, p. 360.

FOOD-PLANTS. Aspen, Poplar.

PUPA. In earth.

Time of appearance { *Larva.* April to July.
Pupa. July to March.
Imago. March and April.

LOCALITY. Great Britain and Ireland; not uncommon.

Tæniocampa stabilis, *W.V.* THE COMMON QUAKER.

LARVA. Bright green; dorsal line yellowish white and interrupted; sub-dorsal and spiracular lines the same, but less distinct; body entirely covered with yellowish white dots. On the front margin of the 2nd segment is a yellowish white transverse line, and there is a similar transverse line on the posterior part of the 12th segment; the spiracles pale, encircled with brown. Head and corslet darker green than the body. Before the last change of skin, the body, head, and corslet are spotted with black. *Plate XXXVI., fig. 6.*

FOOD-PLANTS. Barberry, Elm, Oak, Sallow, Willow, Whitethorn, Yew.

PUPA. In a cocoon in the earth.

Time of appearance { *Larva.* May to July.
Pupa. July to March.
Imago. March and April.

LOCALITIES. Great Britain and Ireland; common.

Tæniocampa gracilis, *W.V.* THE POWDERED QUAKER.

LARVA. Dorsal area dull green; dorsal and subdorsal lines pale green; spiracular line also pale green, edged above and below with whitish; between the subdorsal and spiracular lines is a smoke-coloured stripe; dots on the back pale green; ventral area transparent, legs and claspers the same.

FOOD-PLANTS. Great Yellow Loosestrife, Sallow, Willow, Wormwood.

PUPA. In a fragile earthen cocoon.

Time of appearance { *Larva.* May to July.
Pupa. July to March.
Imago. March to May.

LOCALITIES. Great Britain and Ireland; not uncommon.

Tæniocampa miniosa, W.V. THE BLOSSOM UNDERWING.

LARVA. Smooth and rather attenuated towards the head, which is smaller than the 2nd segment. Blue-grey, reticulated, and marked with blue-black; dorsal line brilliant yellow, composed of a succession of fancifully shaped marks; along each side of this are two rows of velvety button-like spots, those nearer the dorsal line larger than the others; there is a narrow irregular yellow subdorsal line, and below it a dark space, with a large black velvety button on each segment; next to this is the broad yellow spiracular line, including the black spiracles, above each of which is a white blotch; the lower part of the spiracular line is ornamented at its edge with one black velvety spot on each segment. Ventral area pale and pinkish; head pale, marked with black; legs and claspers tinged with pink and speckled with black. *Plate XXXVI., figs. 7, 7a.*

The eggs are laid in March and April, on the bare twigs of the tree, and the caterpillars, as soon as they emerge, which is in about a month, construct for themselves a nest of fine silk and portions of dead leaves not yet fallen; this nest they place over a few surrounding buds, and remain huddled together until such time as the buds unfold; as the leaves expand, the caterpillars desert their nest and live separately afterwards. *Plate XXXVI., fig. 7b.*

FOOD-PLANTS. Birch, Oak, Rose, Sallow.

PUPA. Amongst leaves and rubbish on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June to March.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. Berkshire, Carmarthenshire, Cornwall, Devon, Dorset, Essex, Gloucester, Hereford, Isle of Wight, Kent, Surrey, Sussex, Wilts, Yorkshire.

Tæniocampa munda, W.V. THE TWIN SPOTTED QUAKER.

LARVA. Cylindrical and velvety. Pale ochreous, irrorated so much with brown as to appear of that colour; dorsal line white edged with brown; spiracular line pale, narrow, waved, and commencing on the 4th segment; within it, on the 4th, 5th, 6th, and 7th segments, is a white spot or blotch; above the spiracular line is a broad velvety dark stripe, and below it a pale brown line; ordinary dots white and conspicuous; across the hind margin of the 12th segment is a pale-brown transverse line. Ventral area dingy grey; head large, ochreous, speckled with brown; legs and claspers the same as the ventral area, but speckled. *Plate XXXVI., fig. 8.*

FOOD-PLANTS. Aspen, Birch, Elm, Oak, Poplar.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{July to March.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Tæniocampa cruda, W.V. THE SMALL QUAKER.

LARVA. Variable in colour, either green or brown, and cylindrical, with a thick leathery skin and a few hairs.

Green variety. Pale green, bright green, or olive green, irrorated with pale yellowish dots; dorsal line pale yellowish, crossed on the 12th segment by a transverse line of the same colour; subdorsal line pale yellowish, but narrower; spiracular line pale yellow, expanding on each segment, and ornamented with a series of dull-red blotches; these three lines all extend through the corslet, which is green, shining, and speckled with black; segmental divisions yellow; spiracles pale, encircled with brown; ordinary dots brown; head green, shining, and speckled. *Plate XXXVI., figs. 9a, 9b.*

Brown variety. Ground colour pale brown; dorsal, subdorsal, and spiracular line pale yellowish, the latter not so perceptibly blotched with dull red as in the green variety; head and corslet grey and shining, and streaked with white; the transverse streak on the 12th segment is also nearly white. *Plate XXXVI., fig. 9.*

FOOD-PLANTS. Bramble, Oak, Rose, Sallow, Whitethorn.

PUPA. In earth, at the roots of trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{July to March.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

ORTHOSIA, *Och.*

Orthosia suspecta, Hub. THE SUSPECTED.

LARVA. No description.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Lake District, Lancashire, Yorkshire. Scotland.

Orthosia ypsilon, W.V. THE DISMAL.

LARVA. Pale reddish brown, with numerous black markings; dorsal line composed of a series of almost diamond-shaped marks; subdorsal line pale and interrupted; above it the black markings form themselves into an

elongated blotch or streak on each segment; spiracular stripe pale, edged above with a dark line; spiracles flesh-colour encircled with brown. Ventral area without markings; head brown, slightly bifid, and smaller than the 2nd segment. In some specimens the colours are much brighter than in others. *Plate XXXVI., fig. 10.*

FOOD-PLANTS. Poplar, Sallow, Willow.

PUPA. At the roots or on the bark of trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; rare.

Orthosia lota, Linn. THE RED LINE QUAKER.

LARVA. About an inch long and cylindrical. Dorsal area reddish brown maculated with dark brown, darker where it meets the spiracular line; dorsal line white, interrupted, bordered with brown; subdorsal line the same; these three lines pass through the corslet, which is brown, and are continued through the anal flap; spiracular line nearly white and rather broad; spiracles black; ordinary dots white. Ventral area pale greenish grey; legs and claspers the same; head red-brown and shining. *Plate XXXVI., fig. 11.*

When half grown, dorsal area dull greenish smoke colour; spiracular line pure white; ventral area greenish grey.

When young, larva nearly white; head black.

FOOD-PLANTS. Sallow, Willow.

PUPA. Amongst leaves, either on the tree or at its root.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June to September.} \\ \text{Imago.} \quad \text{September and October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Orthosia macilenta, Hub. THE YELLOW LINE QUAKER.

LARVA. "Testaceous; brown colour, powdered with minute dots, and having five very distinct white stripes, one being medio-dorsal, one on each side lateral or subdorsal, and another in the region of the spiracles."—*Newman's Moths*, p. 385.

FOOD-PLANTS. Beech, Birch, Hornbeam, Oak.

PUPA. In a weak cocoon in earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to July.} \\ \text{Pupa.} \quad \text{August and September.} \\ \text{Imago.} \quad \text{September and October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

ANCHOCELIS, *Gn.**Anchocelis rufina*, *Linn.* THE FLOUNCED CHESTNUT.

LARVA. Brickdust red; dorsal line narrow, white, and indistinct; spiracular stripe white, broad, and conspicuous, bordered above with reddish brown, which fades into the ground colour; spiracles pale buff, encircled with brown; ordinary dots nearly white. Ventral area, legs, and claspers paler than the dorsal surface; head bright reddish ochreous, mottled and marked with brown. *Plate XXXVI., fig. 12.*

Eggs laid on the 7th of October hatched on the 3rd of March.

FOOD-PLANTS. Hazel, Oak, Rose, Whitethorn.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ March to June.} \\ \textit{Pupa.} \text{ June to August.} \\ \textit{Imago.} \text{ September and October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Anchocelis pistacina, *W.V.* THE BEADED CHESTNUT.

LARVA. Pale apple green, speckled with a slightly darker shade; dorsal line narrow, nearly white; spiracular line broad and white; spiracles white in black rings, with a black spot behind them; ordinary dots white; segmental skinfolds yellow. Head dingy green.

FOOD-PLANTS. Buttercup, Dock, Grass.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ April to June} \\ \textit{Pupa.} \text{ June to August.} \\ \textit{Imago.} \text{ September and October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Anchocelis lunosa, *Haw.* THE LUNAR UNDERWING.

LARVA. Cylindrical and shining. Yellowish brown, dorsal area darker; subdorsal line pale ochreous; spiracular line darker than the body; ordinary dots large and conspicuous. Ventral area purplish; head pale brown; corslet and anal flap pale yellow, bordered behind with black.

FOOD-PLANT. Grass.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ October to April.} \\ \textit{Pupa.} \text{ May to August.} \\ \textit{Imago.} \text{ September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; not uncommon.

Anchocelis litura, *Linn.* THE BROWN SPOT PINION.

LARVA. Dorsal area dull yellowish green, irrorated slightly with darker green; dorsal line pale and indistinct, with a dark speckled bordering; sub-dorsal line the same; spiracular line narrow and black; spiracles white in black rings; ordinary dots pale, encircled with dark green. Ventral area paler than the dorsal; head brownish; second segment with three longitudinal pale lines; legs tipped with brown.

FOOD-PLANTS. Alder, Dock, Meadowsweet, Willow.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to June.} \\ \text{Pupa. June to September.} \\ \text{Imago. September and October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

CERASTIS, *Och.***Cerastis vaccinii**, *Linn.* THE CHESTNUT.

LARVA. About an inch long, smooth, cylindrical, and tapering slightly towards the head; segmental divisions clearly indicated. Dorsal area pinkish brown, slightly irrorated with a pale colour; dorsal line pale, but indistinct; subdorsal line also indistinct; spiracles black and conspicuous; ventral area pale greenish grey, ordinary dots yellowish, corslet brown and velvety, the dorsal and sub-dorsal lines passing through it are very distinct. Head brown and shining, speckled with darker brown, and with a dark H-like mark on the face. *Plate XXXVI., fig. 13.*

Eggs hatched on the 4th of May, and the larvæ pupated at the end of June.

FOOD-PLANTS. Bilberry, Birch, Blackthorn, Elm, Wych Elm, Oak, Red Whortleberry, Sallow.

PUPA. In earth, at the roots of trees.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to July.} \\ \text{Pupa. July to September.} \\ \text{Imago. October to March.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Cerastis spadicea, *W.V.* THE DARK CHESTNUT.

LARVA. About an inch long and cylindrical; dorsal area olive brown, darker where it meets the spiracular line; dorsal line pale and indistinct; spiracular line pinkish; ventral area paler than the dorsal; head reddish.

FOOD-PLANTS. Blackthorn, Holly, Honeysuckle, Whitethorn.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May and June.} \\ \textit{Pupa.} \quad \text{May to October.} \\ \textit{Imago.} \quad \text{October to March.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Cerastis erythrocephala, *W.V.* THE RED HEADED.

LARVA. No description.

FOOD-PLANTS. Bedstraw, Plantain.

PUPA. In a cocoon under the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May.} \\ \textit{Pupa.} \quad \text{June to August.} \\ \textit{Imago.} \quad \text{September to March.} \end{array} \right.$

LOCALITIES. Devon, Somerset, Sussex.

SCOPELOSOMA, *Curt.*

Scopelosoma satellitia, *Linn.* THE SATELLITE.

LARVA. Cylindrical and velvety, tapering slightly to the 13th segment. Dark brown, nearly black, with a pure white elongated oval spot on the side of the 2nd, 3rd, 6th and 12th segments; these spots are placed longitudinally; the 2nd segment is marked with three longitudinal pale lines, the dorsal less distinct than the others. Ventral area and claspers redder brown; head bright brown, darker about the mouth; legs marked with dark brown. *Plate XXXVI, fig. 14.*

FOOD-PLANTS. Beech, Elm, Oak. This larva eats other caterpillars.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May and June.} \\ \textit{Pupa.} \quad \text{July to September.} \\ \textit{Imago.} \quad \text{October to March.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

DASYCAMPA, *Gn.*

Dasycampa rubiginea, *W.V.* THE DOTTED CHESTNUT.

LARVA. Ochreous brown, with a number of golden hairs, and with a purplish tint when full grown. Down the centre of the back is a series of dark marks; dorsal, subdorsal, and spiracular lines pale; spiracles black; ordinary dots black; head and corslet black and shining.

FOOD-PLANTS. Apple, Dandelion, Oak.

PUPA. In an earthen cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July.} \\ \text{Pupa. August and September.} \\ \text{Imago. September to May.} \end{array} \right.$

LOCALITIES. Cornwall, Devonshire, Hampshire, Monmouthshire, Somersetshire, Surrey, Sussex, Worcestershire. Ireland.

OPORINA, *Bdv.*

Oporina croceago, *W.V.* THE ORANGE UPPER WING.

LARVA. Bright pale ochreous and cylindrical, with the segmental divisions clearly defined. Body covered with pale round spots, nearly of the ground colour, encircled with reddish brown; on the back of each of those segments from the 5th to the 12th is a somewhat V-shaped mark, composed of reddish brown dots, on the 12th segment are two yellow warts; dorsal line rather paler than the ground colour, bordered with reddish brown; subdorsal line the same: spiracles buff, encircled with black. Ventral area paler than the dorsal; legs and claspers the same; corslet velvety, redder than the body, and speckled with bright ochreous; head pinkish, mottled with reddish brown. *Plate XXXVI., fig. 15.*

FOOD-PLANT. Oak.

PUPA. In a cocoon in earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to July.} \\ \text{Pupa. June to August.} \\ \text{Imago. September to April.} \end{array} \right.$

LOCALITIES. Devon, Glamorganshire, Hants, Isle of Wight, Somerset, Wilts, Worcester. Ireland.

XANTHIA, *Och.*

Xanthia citrigo, *Linn.* THE ORANGE SALLOW.

LARVA. Smooth and slightly tapering towards the head. Pinkish brown, sparingly marked with chocolate brown, with a subdorsal series of lateral black streaks, one on each segment, each terminating in a light dot; subdorsal line pale and indistinct; spiracles buff, each in a black mark. Ventral area pale greenish buff. The juncture of the dorsal and ventral areas is very abrupt. Head two shades of brown; corslet chocolate brown, bisected by the pale dorsal line; legs dark brown; claspers greenish buff. *Plate XXXVI., fig. 16.*

FOOD-PLANT. Lime.

PUPA. Between leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; not uncommon.

Xanthia cerago, W.V. THE SALLOW.

LARVA. Rather more than an inch long, velvety, and tapering towards the head, which is smaller than the 2nd segment. Dorsal area pinkish brown, mottled with darker brown; along the back is a broad stripe, paler than the ground colour, through which passes an indistinct darker dorsal line; spiracles black; corslet dark brown, with three white lines passing through it, the centre one being very indistinct. Ventral area pale, dingy, greenish grey; legs and claspers the same; head two shades of brown and shining. *Plate XXXVI., fig. 17.*

FOOD-PLANTS. Catkins of Sallow, afterwards Plantain.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Xanthia silago, Hub. THE PINK BARRED SALLOW.

LARVA. Rather more than an inch long, velvety, slightly wrinkled. Dorsal area dull pinkish, maculated with dull reddish brown; a pale, indistinct, interrupted dorsal line, is indicated by its darker bordering; spiracular line pinkish, pale, and rather broad; spiracles black; corslet dark brown, with three pale lines, the central one being the commencement of the dorsal line. Ventral area pale greenish grey; claspers the same, each having a black dot; legs speckled with brown; head brown, shining, and marked with dark brown. *Plate XXXVI., fig. 18.*

FOOD-PLANTS. Catkins of Sallow, afterwards Bramble.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{August to October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Xanthia aurago, W.V., THE BARRED SALLOW.

LARVA. "Grey with oblique darker streaks (*Treitschke.*)"—*Stain. Man.*, vol. i., p. 253.

FOOD-PLANTS. Beech, Birch.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{August.} \\ \text{Imago.} \quad \text{August to October.} \end{array} \right.$

LOCALITIES. Denbigh, Devonshire, Essex, Flintshire, Gloucestershire, Isle of Wight, Kent, Norfolk, Sussex, Suffolk, Somersetshire, Worcestershire.

Xanthia gilvago, *Esp.* THE DUSKY LEMON SALLOW.

LARVA. Cylindrical and slightly tapering towards the head, which is smaller than the 2nd segment. Dorsal area pinkish brown; dorsal line rather paler than the body, passing through a series of brown V-shaped marks; subdorsal line pale pinkish, with a dark-brown blotch just above it on each segment; lateral dilation pale pink. Ventral area paler than the dorsal; spiracles black; corslet rich brown, the dorsal and subdorsal lines passing through it to the head; head pale brown and shining. *Plate XXXVI., fig. 19.*

FOOD-PLANTS. Elm, Wych Elm, seeds of.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. Derbyshire, Flint, Isle of Wight, Staffordshire, Worcester, Yorkshire.

Xanthia ferruginea, *W.V* THE BRICK.

LARVA. "Though a trifle larger, yet in form and structure this larva closely resembles that of *Gilvago*, but with the following exceptions: The general colouring is of a browner tint, sometimes of an ochreous brown. The series of dark central marks on the back, with their dark wedges, assume together more compact forms of an urn-shape, being attenuated behind, so that a constant character appears in the hinder pair of tubercular dots, being outside the dark urn shapes."—(*Ent. Mo. Mag.*, vol. iv., p. 180.)

FOOD-PLANTS. Aspen, Elm, Wych Elm, Sallow, Poplar, seeds of.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to July.} \\ \text{Pupa.} \quad \text{July to September.} \\ \text{Imago.} \quad \text{September and October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

CIRRHOIDIA, *Gn.*

Cirrholdia xerampelina, *Hub.* THE CENTRE BARRED SALLOW.

LARVA. Rough and slightly smaller towards the head, with the segmental divisions clearly marked. Body ash grey, freckled with brown, with an inter-



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rupted pale dorsal line, marked on each side with brown; subdorsal and spiracular lines of the same character, but narrow and marked above with brown; between the dorsal and subdorsal lines are a few cream-coloured warts centred with black; spiracles immediately below the spiracular line cream colour encircled with black, and below them on each segment is a black wart; each of these warts emits a short hair; the upper part of the 12th segment is pale, and the anal flap dark brown. Ventral area darker than the dorsal, without markings; claspers the same; legs browner; head shining, brown, mottled, and marked with darker brown; corslet dark brown, divided by a fine cream-colour dorsal line, with a large blotch of the same colour on each side of it. *Plate XXXVI., figs. 20, 20a.*

The larvæ spin up about the middle of May, but do not change till the middle of July. They commence feeding after hybernating about the 25th of April.

FOOD-PLANTS. Ash, buds of flower or leaf.

Time of appearance { *Larva.* October to July.
 { *Pupa.* July and August.
 { *Imago.* August and September.

LOCALITIES. Berks, Cambridge, Derby, Devon, Dorset, Essex, Flint Lake District, Somerset, Suffolk, Yorkshire. Scotland.

COSMIIDÆ, *Gn.*

TETHEA, *Och.*

Tethea subtusa, *W.V.* THE OLIVE.

LARVA. About one inch long, and tapering towards the 13th segment; pale yellowish green, transversely wrinkled, the skinfolds being yellower than the body; segmental divisions clearly defined; dorsal line rather broad, nearly white; subdorsal line narrow, also nearly white; spiracles pale green, encircled with brown. Ventral area a bluer darker green than the dorsal; legs and claspers translucent, almost colourless, the former tinged with black. Head pale primrose yellow, with two black curved lines reaching from the crown to the mandibles; mandibles black. *Plate XXXVII., fig. 1.*

FOOD-PLANTS. Poplar, Aspen.

PUPA. Under the bark on trees.

Time of appearance { *Larva.* April and May.
 { *Pupa.* June and July.
 { *Imago.* July.

LOCALITIES. England, Wales, and Scotland.

Tethea retusa, Linn. THE DOUBLE KIDNEY.

LARVA. About one inch long, tapering slightly towards the extremities; bright pale green and translucent, paler towards the extremities; transversely wrinkled, the skinfolds being so thin as to appear almost white at the segmental divisions; segmental divisions clearly defined; dorsal line pale green; subdorsal line scarcely perceptible; spiracular line whitish green and slightly waved; spiracles pale green, encircled with brown; legs and claspers the same as the dorsal area. Head small and yellow. *Plate XXXVII., fig. 2.*

FOOD-PLANTS. Birch, Osier, Poplar, Sallow, Willow.

PUPA. Amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Carmarthenshire, Devon, Dorset, Essex, Glamorganshire, Herefordshire, Isle of Wight, Kent, Sussex, Worcester, Yorkshire.

EUPERIA, Gn.

Euperia fulvago, W.V. THE ANGLE STRIPED SALLOW.

LARVA. "Pale green or greyish; dorsal and subdorsal lines white; spiracular line whitish, edged above with black, the spots whitish."—Gn.

FOOD-PLANTS. Birch and Oak.

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{— to June.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. Derbyshire, Lancashire, Nottinghamshire, Westmoreland, Yorkshire. Scotland.

DICYCLA, Gn.

Dicycla oo, Linn. THE HEART MOTH.

LARVA. "Blackish brown or reddish brown; dorsal and subdorsal lines brilliant white; spiracular line white, tinged with bright yellow, and with a black streak near each spiracle."—Guénee.

FOOD-PLANT. Oak.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Essex, Hampshire, Kent, Wilts.

COSMIA, *Och.**Cosmia trapezina*, *Linn.* THE DUN-BAR.

LARVA. Delicate green, with numerous white spots, each of which is centred with a black wart, from which proceeds a light-coloured hair; dorsal and subdorsal lines yellowish white and narrow; spiracular line yellowish white broad, and generally bordered above with black; the spiracular line contains all the spiracles but those on the 2nd and 12th segments, which are above it; they are pale, in brown rings. Ventral area green, translucent, and free from markings; the dorsal and subdorsal lines extend through the corslet, which is green, with a few black spots; the head, legs, and claspers green and translucent. *Plate XXXVII., fig. 3.*

When young, the caterpillar is pale green and translucent; dorsal and subdorsal lines whitish; spiracular line greenish; head whitish.

FOOD-PLANTS. Beech, Birch, Elm, Hazel, Hornbeam, Lime, Maple, Oak, Poplar, Sallow, Sycamore. Also other caterpillars.

PUPA. In earth.

Time of appearance { *Larva.* May and June.
 { *Pupa.* June and July.
 { *Imago.* July.

LOCALITIES. Great Britain and Ireland; common.

Cosmia pyralina, *W.V.* THE LUNAR SPOTTED PINION.

LARVA. About one inch and three-quarters long, rather slender, and slightly but gradually tapering towards the head, which is smaller than the 2nd segment; bright yellowish green, slightly speckled with yellowish white dots; dorsal line yellowish white, pinker towards the extremities; subdorsal line interrupted and formed of yellowish white dots; spiracular line greenish white, and extending to the end of the anal clasper, where it is quite white; spiracles pale, in brown rings, the first and last situated above the spiracular line. Ventral area yellower than the dorsal, that part on the 2nd and 3rd segments being pinkish; legs ochreous and horny; claspers tipped with brown; head ochreous, shining, speckled with reddish brown, and with a few hairs. *Plate XXXVII., fig. 4.*

FOOD-PLANTS. Pear, Plum.

PUPA. In earth.

Time of appearance { *Larva.* April and May.
 { *Pupa.* June and July.
 { *Imago.* August.

LOCALITIES. Derbyshire, Devonshire, Dorsetshire, Kent, Suffolk, Essex, Wilts, Worcester.

Cosmia diffinis, Linn. THE WHITE SPOTTED PINION.

LARVA. "Pale green; dorsal and subdorsal lines whitish; spiracular line pale yellow; spots black encircled with white; head black (*Freyer*)."—*Stain. Man.*, vol. i., p. 258.

FOOD-PLANTS. Ash, Elm, Oak.

PUPA. At the root of the tree.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ May and June.} \\ \textit{Pupa.} \text{ July.} \\ \textit{Imago.} \text{ July and August.} \end{array} \right.$

LOCALITIES. Bucks, Derbyshire, Devonshire, Wilts, Worcestershire, Yorkshire, South of England.

Cosmia affinis, Linn. THE LESSER SPOTTED PINION.

LARVA. "Bluish green; dorsal line broad, white; subdorsal and spiracular lines narrow, white; head pale green (*Gn.*)."—*Stain. Man.*, vol. i., p. 259.

FOOD-PLANTS. Elm, Lime,

PUPA. At the root of the tree.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ May and June.} \\ \textit{Pupa.} \text{ July.} \\ \textit{Imago.} \text{ July and August.} \end{array} \right.$

LOCALITIES. Berks, Devonshire, Dorsetshire, Derbyshire, Essex, Herefordshire, Isle of Wight, Kent, Norfolk, Shropshire, Somersetshire, Suffolk, Worcestershire, Yorkshire. Ireland.

HADENIDÆ, Gn.

EREMOBIA.

Eremobia ochroleuca, W.V. THE DUSKY SALLOW.

LARVA. "Yellowish green; spiracular line pale yellow; spots black (*Gn.*)."—*Stain. Man.*, vol. i., p. 261.

FOOD-PLANTS. Grass, Oats, Wheat.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \text{ May and June.} \\ \textit{Pupa.} \text{ June.} \\ \textit{Imago.} \text{ July to September.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Essex, Gloucestershire, Hants, Kent, Pembrokeshire, Sussex, Surrey, Suffolk, Yorkshire.

DIANTHÆCIA, *Bdv.**Dianthæcia irregularis*. THE VIPER'S BUGLOSS.

LARVA. No description.

FOOD-PLANT. Viper's Bugloss, Spanish Catchfly, Ragged Robin.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August.} \\ \text{Imago. June and July.} \end{array} \right.$

One specimen only has been taken,

Dianthæcia carpophaga, *Bork.* THE TAWNY SHEERS.

LARVA. Pale ochreous drab, smooth, cylindrical, tapering slightly towards both extremities, but more so posteriorly; the body is profusely irrorated with brown; dorsal line pale and indistinct; subdorsal line the same, all edged with brown irrorations; on the back is a series of V-shaped marks, commencing on the 3rd segment, but being more distinct from the 5th; the apices of these V's point backwards; spiracles pale stone colour, in black rings. Ventral area free from markings; head smaller than the 2nd segment, pale ochreous brown, shining, and with two brown lines down the face.

FOOD-PLANTS. Bladder Campion, seeds of Nottingham Catchfly, Sea Campion.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. August to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland; not common.

Dianthæcia capsophila, *Bdv.* THE POD LOVER.

LARVA. "The head is small, porrected in crawling, glabrous, and beset with scattered hairs; the body is obese, smooth, and cylindrical. It is slightly attenuated towards each extremity. The head is pale, semi-transparent brown, and has a few hairs. The ocelli are black, and there is a black dot at the base of each hair, pale wainscot brown, with five paler longitudinal stripes; the most conspicuous of these is medio-dorsal, the widest is lateral, and includes the spiracles, which are pale in the centre, but bordered with black; exactly intermediate between the medio-dorsal and the spiracular lateral stripe is one less conspicuous and rather narrower than either; the dorsal surface of the 2nd segment is glabrous, sub-corneous, and darker brown; but the medio-dorsal stripe passes distinctly through this darker portion. The belly, legs, and claspers are very pale."—*Newman's Moths*, p. 386.

FOOD-PLANTS. Bladder Champion, Night-flowering Catchfly, Sea Champion.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. South Wales. Isle of Man. Ireland.

Dianthæcia capsincola, W.V. THE LYCHNIS.

LARVA. Smooth, cylindrical, and tapering towards both extremities; pale ochreous drab, irrorated with brown dots; along the back is a series of V-shaped marks, the apices of the V's pointing backwards; dorsal line pale and indistinct; segmental divisions clearly marked; spiracles pale stone colour, in black rings. Ventral area pale stone colour; head smaller than the 2nd segment, pale ochreous brown, marked with darker brown, and shining; legs and claspers shining, the former marked, the latter tipped with brown. *Plate XXXVII., fig. 5.*

FOOD-PLANTS. Bladder Champion, Champion, Red and White, Sea Champion.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{October to May.} \\ \text{Imago.} \quad \text{May, June, and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Dianthæcia cucubali, W.V. THE CHAMPION.

LARVA. Pale delicate yellowish green, tinged anteriorly with pink. The markings of the body are pinkish brown, and form one series of oblique streaks down the back, and another along each side. Dorsal line pinkish brown intersected on the anterior segments with a fine pale line; spiracles black in pale rings; ordinary dots white; there are also a number of white blotches scattered over the body. Ventral area tinged with smoke colour. Head greenish and shining, with four stripes down the face.

FOOD-PLANTS. Flowers and seeds of Bladder Champion, Night-flowering Catchfly, Ragged Robin, Red Champion, Sea Champion, White Champion.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Dianthæcia albimacula, Bork. THE WHITE SPOT.

LARVA. About an inch and three lines long, smooth and cylindrical. Pale ochreous drab; from the 2nd segment to the 4th is a smoke-colour

dorsal line, bisected by a narrow line of the ground colour of the body; from the 5th is a connected chain of V-shaped marks, the apices of the V's directed backwards, and terminating in an almost round and nearly black mark, the arms of the V's also end in a small dark spot. Above the spiracles is an undulating smoke-colour line, which rises on the spiracular segments in oblique streaks; ordinary dots dark smoke colour. Head smaller than the 2nd segment, rather shiny, pale brown speckled with darker brown, and two dark lines down the face; legs and claspers tipped with dark brown. *Plate XXXVII., figs. 6, 6a.*

FOOD-PLANT. Nottingham Catchfly.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July.} \\ \text{Pupa. August to May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Hants, Kent.

Dianthæcia conspersa, W.V. THE MARBLED CORONET.

LARVA. Pale ochreous brown; dorsal line grey, with ten dark V-shaped marks down the back, the apices of the V's directed backwards; spiracular line nearly white, with two pale-brown stripes above it; spiracles pink in black rings. Ventral area pale yellowish pink, legs and claspers the same. Head rather paler than the body, with four dark lines down the face.

FOOD-PLANTS. Bladder Campion, Nottingham Catchfly, Ragged Robin, Red Campion, White Campion.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. October to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; rare.

Dianthæcia cæsia, W.V. THE GREY.

LARVA. Smooth, cylindrical, and velvety, tapering slightly posteriorly. Pale ochreous drab, profusely irrorated with brown; there is an indistinct indication of a pale dorsal line, bordered with dark irrorations; on the back these dots merge and form themselves into a series of V-shaped marks, commencing with any distinctness on the 5th segment; these dots form also a subdorsal line; segmental divisions clearly marked; spiracles pale stone colour in black rings. Ventral area pale and free from markings; head reddish brown, spotted with black; corslet the same; each clasper has a black dot. *Plate XXXVII. fig. 7.*

FOOD-PLANTS. Bladder Campion, Sea Campion.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITY. Isle of Man.

Dianthæcia Barretti, *Dbl.* BARRETT'S MARBLED CORONET.

LARVA. Not described.

Time of appearance. *Imago.* June and July.

LOCALITY. Ireland; rare.

HECATERA, Gn.

Hecatera dysodea, *W.V.* THE SMALL RANUNCULUS.

LARVA. About an inch and three-quarters long and cylindrical, the head smaller than the 2nd segment.

Var. 1. Dorsal area yellowish, freckled with reddish brown; ventral area pale delicate green; these two areas are abruptly divided at the spiracles, which are black; dorsal line very narrow, pale, margined with a darker colour; between the spiracles and the dorsal line is a dark and indistinct longitudinal line; legs and claspers the same as the ventral area; head bright ochreous, speckled with ochreous brown. *Plate XXXVII., fig. 8.*

Var. 2. Ground colour of the whole body pale delicate green; dorsal line pale, bordered with smoke colour; the line above the spiracles smoke colour, but indistinct; the region immediately below the spiracles very pale. *Plate XXXVII., fig. 8a.*

FOOD-PLANTS. Celery, Columbine, Lettuce, Sowthistle, seeds and flowers.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Dorsetshire, Essex, Kent, Norfolk, Somersetshire, Suffolk, Sussex. Ireland.

Hecatera serena, *W.V.* THE BROAD BARRED WHITE.

LARVA. Dull yellowish green, mottled and marked on the back with dark smoke colour; spiracular stripe bright yellowish green; spiracles brown encircled with black. Ventral area greener than the body; legs and claspers the same; corslet dark smoke colour, with three pale lines; head pale greenish brown.

FOOD-PLANTS. Corn Sowthistle, Dandelion, Hawkbit, Hawksbeard, Hawkweed, Lettuce, Sowthistle.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. September to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. South of England, South Wales. Ireland; not uncommon.

Polia chi, Linn. THE GREY CHI.

LARVA. Pale green, with a number of yellowish dots; dorsal line pale, almost white, bordered on each side with a bluish edge; subdorsal line white; spiracular line white, broad, and bordered above by a narrow dark-green line which fades into the ground colour; spiracles yellowish encircled with black; segmental divisions yellow. Ventral area darker green than the dorsal; head green and shining, smaller than the second segment; legs yellowish green, tipped with brown; claspers green. *Plate XXXVII., fig. 9.*

Eggs hatched on the 15th of April.

FOOD-PLANTS. Burdock, Columbine, Cowslip, Dock, Germander Speedwell, Honeysuckle, Lettuce, Pea, Primrose, Sallow, Sowthistle, Whitethorn.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. March to June.} \\ \text{Pupa. June and July.} \\ \text{Imago. July to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Polia nigrocincta, Hub. THE BLACK BANDED.

LARVA. Reddish drab, suffused throughout the posterior dorsal area with orange colour, and with several yellow spots on those segments from the 4th to the 13th; the 2nd segment rather more dingy than the others; dorsal line pale and indistinct; spiracular line pale; spiracles flesh-coloured encircled with brown; head pale brown. *Plate XXXVII., fig. 10.*

FOOD-PLANTS. Bladder Campion, Hairbell, Moss Campion, Sea Campion, all *silene*, Sea Plaintain, Thrift, Violet.

PUPA. In a cocoon beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June and July.} \\ \text{Pupa. July.} \\ \text{Imago. August and September.} \end{array} \right.$

LOCALITIES. Isle of Man, Cornwall.

Polia flavicineta, *Linn.* THE LARGE RANUNCULUS.

LARVA. Yellowish green; dorsal line dark, with a pale interrupted medio-dorsal hair-like line running through it; there are a number of pale marks on the dorsal area, some of which form an interrupted subdorsal line; spiracular line almost white; above it the segmental divisions are yellow; spiracles pale buff encircled with brown; head yellowish; legs the same; claspers green tipped with violet. *Plate XXXVII., fig. 11.*

FOOD-PLANTS. Apple, Birch, Burdock, Buttercup, Chickweed, Corn Marigold, Dock, Endive, Field Bindweed, Geranium, Groundsel, Lettuce, Mint, Ox-eye Daisy, Pea, Plantain, Plum, Sorrel, Wallflower, Walnut, Wormwood.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{May to July.} \\ \textit{Pupa.} \quad \text{July and August.} \\ \textit{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. England and Ireland.

DASYPOLIA, *Gn.***Dasypolia templi**, *Thunb.* THE BRINDLED OCHRE.

LARVA. Flesh colour, pinker towards the dorsal area; pulsating vessel pinkish, changing with the respiration of the larva; spiracles white; ordinary dots black; in addition to the ordinary dots are some other black warts, and there is one on each clasper. Head small, yellowish brown, and shining; corslet brown, shining, edged with black; on the 12th segment are three small plates edged with black, and on the 13th one. *Plate XXXVII., fig. 12.*

FOOD-PLANTS. Cow Parsnip, Parsnip (in the root).

PUPA. In the earth.

Time of appearance $\left\{ \begin{array}{l} \textit{Larva.} \quad \text{April to August.} \\ \textit{Pupa.} \quad \text{August to October.} \\ \textit{Imago.} \quad \text{October to March.} \end{array} \right.$

LOCALITIES. North and South of England, South Wales, Ireland; not common.

EPUNDA, *Dup.***Epunda lutulenta**, *W.V.* THE DEEP BROWN DART.

LARVA. Pale delicate green, smooth and cylindrical; about one inch eight lines long; segmental divisions clearly marked; the dorsal part of the 2nd, 3rd, and 4th segments tinged with pink; on the 5th segment is the commencement of a dark interrupted dorsal line, composed of a series of longitu-

dinal streaks; the subdorsal line also commences on the 5th segment, and is of a similar character; spiracular line white, bordered above by a narrow crimson line; all the spiracles but the first and last are placed in this red bordering; the first and last are above it; spiracles white in black rings; head pale ochreous, mottled with darker ochreous; legs ochreous, horny, and hairy. *Plate XXXVII., fig. 13.*

FOOD-PLANTS. Chickweed, Forget-me-not, Field Scorpion Grass, Gromwell, Yarrow.

PUPA. In a cocoon in the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to April.} \\ \text{Pupa.} \quad \text{April to September.} \\ \text{Imago.} \quad \text{September and October.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Cheshire, Devonshire, Gloucestershire, Hants, Isle of Wight, Worcestershire; not common. Ireland; not common.

Epunda nigra, Haw. THE BLACK RUSTIC.

LARVA. *Variable.* About one inch nine lines long, cylindrical, smooth, and velvety.

Var. 1. Bright yellowish green, irrorated with pale-yellow dots; dorsal line darker green than the body; subdorsal line the same, but less distinct; spiracular line yellowish white, extending from the head to the end of the anal clasper; spiracles white, surrounded with black, and on the 5th, 6th, and 7th segments situated in a black semicircular mark; all the spiracles but the first and last touch the upper edge of the spiracular line, the first and last are placed just above it. When crawling, the segmental divisions are very clearly marked, and the skinfolds bright yellow. Ventral area bluer green than the dorsal; claspers the same, tipped with red; head and corslet bluish green. *Plate XXXVII., fig. 14a.*

Var. 2. Dull green, irrorated with very pale yellow; dorsal line darker, subdorsal line indistinct; spiracular line white, tinged below with yellow; ventral area pale green; claspers the same, tipped with dull brown; head pale green; corslet and anal flap pale green and velvety.

Var. 3. Crimson; spiracular line pale yellow, the crimson colour extends below the spiracular line, where it is slightly freckled with pale yellow; ventral area dull greenish yellow; legs and claspers the same, the latter tipped with pink. Head greenish, mottled with purple; corslet and anal flap tinged with yellow. *Plate XXXVII., fig. 14.*

FOOD-PLANTS. Chickweed, Dock, Great Bedstraw, Plantain, Sorrel.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June to August.} \\ \text{Imago.} \quad \text{September and October.} \end{array} \right.$

LOCALITIES. Carmarthenshire, Cornwall, Devonshire, Glamorganshire, Hants, Isle of Wight, Kent, Lake District, Pembrokeshire, Somersetshire, Sussex. Scotland.

***Epunda viminalis*, Fab. THE MINOR SHOULDER KNOT.**

LARVA. Pale delicate green and velvety, suffused with a milky hue, with some indistinct white dots on the dorsal surface; dorsal line white, extending to the end of the anal flap; subdorsal and spiracular lines white, but very indistinct; lateral dilation yellowish white; spiracles white, encircled with black; ordinary dots white. Head pale greenish white and shining, speckled on each side and bordered behind with black and with a black mark across the lower part of the face; the mandibles are also black; legs and claspers pale yellowish. The black mark behind the head is not seen when the caterpillar is at rest. *Plate XXXVII., fig. 15.*

FOOD-PLANTS. Sallow and Willow.

PUPA. Amongst leaves on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

***Epunda lichenea*, Hub. THE FEATHERED RANUNCULUS.**

LARVA. Pale dingy green, dirty olive green, or brownish, the whole of the dorsal area reticulated with darker markings, interspersed with light-coloured patches; those on each segment from the 5th to the 12th take the form of triangles; spiracular line pale green; spiracles the same, encircled with brown. Ventral area yellowish green, without markings; legs and claspers yellowish or green; head yellowish; in the darker specimens brownish yellow, shining, and speckled with black. *Plate XXXVII., figs. 16, 16a.*

FOOD-PLANTS. Burnet, Chickweed, Crow Garlic, Dandelion, Devil's-bit Scabious, Dock, Field Scabious, Groundsel, Lettuce, Plantain, Ragwort, Red Spur Valerian, Small Scabious, Stonecrop (Biting).

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{November to May.} \\ \text{Pupa.} \quad \text{May to August.} \\ \text{Imago.} \quad \text{August to October.} \end{array} \right.$

LOCALITIES. Cheshire, Devonshire, Dorsetshire, Hampshire, Isle of Wight, Pembrokeshire, Yorkshire. Ireland.



Vincent Brooks Day & Son Lith.

VALERIA, *Germ.**Valeria oleagina*, *W.V.* THE GREEN BRINDLED DOT.

LARVA. About one inch and ten lines long. Ground colour ochreous, but so much marked with rich brown as to appear of that colour; the 2nd, 3rd, and 4th segments are large and swollen, the remaining segments pale; spiracles ochreous, encircled with black; ordinary dots large and wart-like; lateral dilation ochreous, and conspicuous after the 4th segment; the front part of the 2nd segment is ochreous, and is ornamented with a transverse series of six brown spots. Head brown, rather flat, and hairy; legs and claspers pale ochreous, speckled with brown. *Plate XXXVII., fig. 17.*

FOOD-PLANT. Blackthorn.

PUPA. In earth.

Time of appearance { *Larva.* May and June.
 { *Pupa.* June to March.
 { *Imago.* March and April.

LOCALITY. Pembrokeshire; one specimen.

MISELIA, *Och.**Miselia oxyacanthæ*, *Linn.* THE GREEN BRINDLED CRESCENT.

LARVA. About an inch and three quarters long; the 12th segment raised, with four warts, arranged in a square, the posterior pair larger than the others. Dorsal area greyish brown, mottled with smoke colour, with a few short bristles; dorsal and subdorsal lines pale and indistinct, except on the 2nd segment; there are two obscure wavy lines along the side; spiracles brown, in black rings; ordinary dots yellowish. Ventral area grey, with a central ventral dark line, forming dark spots on the 5th and 6th segments; legs and claspers spreading; head large, brown, slightly divided on the crown; face flat, pinkish, with a black somewhat M-like mark. *Plate XXXVII., fig. 18.*

FOOD-PLANTS. Blackthorn, Whitethorn.

PUPA. In a cocoon on the surface of the earth.

Time of appearance { *Larva.* April to July.
 { *Pupa.* June to August.
 { *Imago.* September and October.

LOCALITIES. Great Britain and Ireland; common.

AGRIOPIS, *Bdv.**Agriopis aprilina*, *Linn.* THE MERVEILLE-DU-JOUR.

LARVA. Rather more than an inch and a half long, cylindrical and velvety; pale ochreous tinged with green, marked and irrorated with black, the

dorsal region more free from these marks than the sides; dorsal line pale and interrupted, bordered with black; there is a subdorsal series of black marks along each side the back, those on the 12th segment larger and more conspicuous; this segment is bordered posteriorly by a transverse ochreous line; spiracular line black, wavy, and within it on the 5th segment is a white spot; ordinary dots white; above each clasper is a black spot encircled with ochreous; corslet black and velvety, with two white dots on its front edge; head reddish brown, shining, marked with darker brown, with a somewhat cross-shaped mark on the face. *Plate XXXVII., figs. 19, 19a.*

Eggs were hatched on the 6th of March, and before the leaves of the tree expanded the young larvæ fed on the lichens on oaks.

FOOD-PLANTS. Oak, Rose.

PUPA. In an earthen cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{March to June.} \\ \text{Pupa.} \quad \text{June to September.} \\ \text{Imago.} \quad \text{September and October.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

PHLOGOPHORA, *Och.*

Phlogophora meticulosa, *Linn.* THE ANGLE SHADES.

LARVA. Yellowish green, with a few short pale hairs and numerous indistinct dark markings, generally forming oblique streaks on the upper portion of each segment, and with several indistinct white spots, some of which form themselves into an interrupted dorsal line; spiracular line pale green, speckled with minute dots; spiracles whitish encircled with dark brown. Ventral area pale green; head yellowish, speckled with brown. When at rest, it turns its head on one side. There is a brown variety of this larva. *Plate XXXVIII., figs. 1, 1a, 1b.*

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{April and May.} \quad \text{September and October.} \\ \text{Imago.} \quad \text{May and June.} \quad \text{September and October.} \end{array} \right.$

FOOD-PLANTS. Beet, Bramble, Burdock, Cabbage, Chickweed, Christmas Rose, Corn Marigold, Cowslip, Dock, Dog's Mercury, Foxglove, Groundsel, Heartsease, Hemlock, Honeysuckle, Hop, Mangel-wurzel, Ox-eye Daisy, Orache, Pear, Pimpernel, Plantain, Primrose, Privet, Rose, Stinging Nettle, Strawberry, Violet, Willow-herb, Wallflower.

PUPA. In a slight web on the earth.

LOCALITIES. Great Britain and Ireland; common.

Phlogophora empyrea, *Hub.* THE FLAME BROCADE.

LARVA. Colour variable ; yellowish grey, green, or pale slate colour ; dorsal line narrow and pale, passing through a series of dark lozenges ; sub-dorsal line also pale ; lateral stripe broad ; spiracles yellow, encircled with black ; ordinary dots white. Head smooth, yellowish, mottled with brown ; with two brown stripes down the face ; legs and claspers dull flesh colour tipped with brown.

FOOD-PLANT. Lesser Celandine.

PUPA. In a silken cocoon.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \\ \text{Pupa.} \quad \text{June to September.} \\ \text{Imago.} \quad \text{September and October.} \end{array} \right.$

LOCALITY. Sussex ; rare.

EUPLEXIA, *Steph.**Euplexia lucipara*, *Linn.* THE SMALL ANGLE SHADES.

LARVA. About one inch and a half long, cylindrical, but somewhat raised on the 12th segment. Bright green or reddish brown, velvety, irrorated with a darker shade, some of the irrorations forming themselves into a series of W-shaped markings on the back ; dorsal line greenish (or pinkish) white ; subdorsal line the same, both somewhat interrupted ; spiracular line nearly white ; spiracles white encircled with black, situated above the spiracular line ; above them is a very narrow dark waved line ; on the 12th segment are two conspicuous white dots. Ventral area pale green or brown ; legs and claspers the same, tipped with brown ; head small, yellowish, slightly speckled and shining ; corslet pale and free from markings. *Plate XXXVIII., figs. 2, 2a.*

Eggs hatched on the 16th of June, the young larvæ were nearly white, with large heads.

FOOD-PLANTS. Birch, Borage, Bracken, Chickweed, Fern, Foxglove, Knotgrass, Lettuce, Melilot, Plantain, Viper's Bugloss.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to September.} \\ \text{Pupa.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{May to July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland ; common.

APLECTA, *Gn.**Aplecta herbida*, *W.V.* THE GREEN ARCHES.

LARVA. About an inch and a half long, tapering towards the head, slightly raised at the 12th segment ; dorsal area rich brown ; dorsal line pale

and slender ; spiracular line pale, with a dark line above it; along the back is a series of dark-brown spots, separated by the dorsal line; these spots are rounded behind and flat in front. Ventral area paler than the dorsal, claspers the same, legs redder; head pale reddish brown, with two conspicuous dark lines down the face. *Plate XXXVIII., fig. 3.*

FOOD-PLANTS. Birch, Dock, Raspberry, Wild Beaked Parsley.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to April.} \\ \text{Pupa. February to June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Aplecta occulta, Linn. THE GREAT BROCADE.

LARVA. About two inches long, cylindrical and stout, tapering a little towards the head, which is smaller than the 2nd segment. Colour pale or dark brown, irrorated with black; dorsal line pale yellow; subdorsal line the same, but wavy, and within it on each segment is a short black mark; these lines are continued through the corslet and anal flap; spiracular line broad, yellowish white, marked on the segments with pinkish; spiracles black; ordinary dots yellow. Ventral area paler than the dorsal, with some black irrorations towards the sides; legs and claspers pale; head greyish brown, marked on the face with dark smoke colour; corslet reddish brown, with a black border next the head.

FOOD-PLANTS. Cowslip, Dandelion, Primrose.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to May.} \\ \text{Pupa. May and June.} \\ \text{Imago. July to September.} \end{array} \right.$

LOCALITIES. Cheshire, Glamorganshire, Hants, Isle of Wight, Kent, Lancashire, Middlesex, Surrey, Sussex, Yorkshire. Scotland.

Aplecta nebulosa, Tr. THE GREY ARCHES.

LARVA. Pale brown; dorsal line pale and narrow, passing through a series of dark-brown lozenge-shaped marks, of which the anterior half is the paler; the sides are a darker brown than the other parts of the body, the brown appearance terminating somewhat abruptly above the spiracles; there is one dot on the side of the 5th segment, two on the 6th, and some oblique lines on the others; ordinary dots black. Ventral area pale and translucent; head the same colour as the body, with a brown mark; corslet shining.

FOOD-PLANTS. Birch, Birdcherry, Bramble, Burdock, Dock, Elm, Mullein, Sallow, Whitethorn.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{October to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June and July} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Aplecta Tincta, *Bork* THE SILVER ARCHES.

LARVA. Dull brown, minutely freckled with black and white marks; dorsal line very narrow and nearly white, bordered on each side by a stripe composed of black dots; spiracles black. Head brown and shining.

FOOD-PLANTS. Birch, Grass, Rest-harrow.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITY. Berks, Devon, Essex, Glamorganshire, Gloucestershire, Hants, Kent, Salop, Surrey, Sussex. Scotland.

Aplecta advena, *W.V.* THE PALE SHINING BROWN.

LARVA. Stout and cylindrical, smaller towards the 13th segment; dorsal area pale brown, with a few darker markings somewhat in the shape of imperfect crosses; the sides are suffused with dull, dingy brown; dorsal line pale, bordered with brown; spiracles bright reddish brown, encircled with black. Ventral area rather darker than the dorsal, and translucent; legs and claspers the same; head smaller than the 2nd segment, partially retractile; reddish brown and translucent. *Plate XXXVIII., fig. 4.*

FOOD-PLANTS. Knotgrass, Lettuce, Marsh-hog's Fennel, Sowthistle, Yarrow.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to April.} \\ \text{Pupa.} \quad \text{March to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland.

HADENA, *Och.*

Hadena satura, *W.V.* THE SCARCE BROCADE.

LARVA. "Reddish brown, with numerous short grey streaks; the dorsal and subdorsal streaks pale greyish; the spiracular line and belly yellowish; the incisions of the segments flesh-coloured (*Freyer*)."—*Stain. Man.*, p. 274.

FOOD-PLANT. Honeysuckle.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. April to June.} \\ \text{Pupa. July.} \\ \text{Imago. August.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Oxfordshire. Wicklow, Ireland.

Hadena assimilis, *Dbl.* THE NORTHERN ARCHES.

LARVA. No description.

Time of appearance. *Imago.* June.

LOCALITY. Scotland.

Hadena adusta, *Esp.* THE DARK BROCADE.

LARVA. Smooth, waxlike, cylindrical, and about one inch and five lines long.

Var. 1. Bright green; dorsal line whitish, very narrow, bordered with a dark green line; subdorsal line the same; spiracular line white, narrow, reaching from the second segment to the end of the anal clasper, and containing all the spiracles but those on the 2nd, 11th, and 12th segments; spiracles whitish, encircled with black. Ventral area paler green than the dorsal; head yellowish, reticulated with brown; legs and claspers the same colour as the ventral area. *Plate XXXVIII., fig. 5a.*

Var. 2. Dorsal area purple, tinged with green to the spiracular line. Ventral area yellow green; the division of the two areas being very distinct; head greenish. *Plate XXXVIII., fig. 5.*

Var. 3. Pale yellowish green, mottled with purple, the purple marks forming an edge to the dorsal and subdorsal lines. Ventral area bright yellow green; head dingy greenish grey.

Eggs laid on the 20th of June hatched on the 5th of July; others laid on the 22nd of June hatched on the 4th of July.

FOOD-PLANTS. Bedstraw, Bittersweet, Golden-rod, Marjoram, Potato, Sallow, Yarrow.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to April.} \\ \text{Pupa. April and May.} \\ \text{Imago. May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Hadena protea, *W.V.* THE BRINDLED GREEN.

LARVA. Pale putty colour; dorsal stripe black, intersected by a pale medio-dorsal line; the black lines project into the middle of all the segments;

lateral stripe dull brownish. Ventral area greenish; head brownish grey, with three brown lines down the face.

FOOD-PLANT. Oak.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Hadena glauca, *Kleem.* THE GLAUCOUS SHEARS.

LARVA. "The head is narrower than the 2nd segment, and very shining; its colour is pale testaceous brown, reticulated with darker brown; the body is smooth and cylindrical, its colour is umber brown, and reticulated, like the head, with a darker tint; there is a narrow and somewhat interrupted medio-dorsal stripe and a double series of oblique markings on each side of this stripe; each mark has a portion darker and a portion lighter than the general ground colour; there is a rather broad and very distinctly defined side stripe of a dingy white colour, extending from the head to the extremity of the anal clasps; the spiracles are white, the belly is dingy brown, and the clasps concolorous."—*Newman's Moths*, p. 414.

FOOD-PLANTS. Coltsfoot, Horubeam, Poplar, Sallow, Willow. Lettuce in confinement.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Cheshire, Lancashire, Shropshire, Worcestershire, Yorkshire; not common. Scotland and Ireland; common.

Hadena dentina, *W.V.* THE SHEARS.

LARVA. - Dull olive grey, with a series of black somewhat oval-shaped marks down the back, touching each other, and bordered on the outside with white; spiracular line darker than the body, with a pale line above and below it.

FOOD-PLANT. Dandelion, roots of.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June} \\ \text{Pupa.} \quad \text{June} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Hadena peregrina, Tr. THE STRANGFR.

LARVA. As figured by *Boisduval*, the larva is reddish brown or violet brown, with numerous white dots below the spiracles. There are two dark stripes down the back, and along the side an orange stripe, bordered above and below with white; spiracles white in black spot. ordinary dots black. Head greenish.

FOOD-PLANTS. Goosefoot Prickly Saltwort

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva} \quad \text{May to July} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITY. Isle of Wight; very rare

Hadena chenopodii, W.V. THE NUTMEG.

LARVA. About an inch and a half long, cylindrical, smooth, and velvety. Rich green, slightly irrorated with black; dorsal line pale and slender; sub dorsal line pale pinkish white, or yellowish white; on its upper edge is a series of black streak-like patches, one on each segment after the 2nd, this stripe extends round the anal flap; spiracular line white, with a broad longitudinal pink band passing through it; this line extends down the anal clasper; it has also on its upper edge a series of small black patches, in which are placed the white spiracles. Head greenish. *Plate XXXVIII., fig. 6.*

FOOD-PLANTS. Asparagus. Burdock, Cabbage Goosefoot Orache, Knotgrass

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September} \\ \text{Pupa.} \quad \text{September to May} \\ \text{Imago.} \quad \text{June to August} \end{array} \right.$

LOCALITIES. Southern Counties and near London.

Hadena atriplicis, Linn. THE ORACHE MOTH.

LARVA. About an inch and a half long, cylindrical and velvety, the 12th segment somewhat raised. Yellowish green, or dull reddish, sprinkled with pale dots; dorsal line dark and interrupted; subdorsal line the same, but less distinct; each of these lines contains a longitudinal row of white dots, three or four on each segment; spiracular line pinkish, darker above; spiracles white in black rings; trapezoidal dots white. Ventral area paler than the dorsal; claspers dull pinkish, legs yellowish. head yellowish and shining. *Plate XXXVIII., fig. 7.*

FOOD-PLANTS. Dock, Goosefoot, Persicaria, Orache.

PUPA. Beneath the earth.

Time of appearance { *Larva.* August and September.
 { *Pupa.* September to May.
 { *Imago.* June.

LOCALITIES. Buckinghamshire, Cambridgeshire, Essex, Hants, Middlesex, Norfolk, Suffolk; rare.

Hadena suasa, W.V. THE DOG'S TOOTH.

LARVA. Variable.

Var. 1. Dorsal area olive brown, spotted with white, and reticulated with smoke colour; dorsal line darker than the ground colour, narrow and obscure; subdorsal line the same, but interrupted; spiracular line bright yellowish ochreous, bordered above by a narrow brown line, and below by a pale reddish one. Ventral area paler than the dorsal; head the same colour as the body.

Var. 2. Bright green, the markings less distinct than *Var.* 1; spiracular line yellowish ochreous, bordered above with black, and below with a brownish line.

FOOD-PLANTS. Beet, Dock, Good King Henry, Knotgrass, Lettuce, Mange-wurzel, Plantain, White Goosefoot.

PUPA. In earth.

Time of appearance { *Larva.* July to October.
 { *Pupa.* October to June.
 { *Imago.* June.

LOCALITIES. England and Ireland; rare.

Hadena oleracea, Linn. THE BRIGHT-LINE BROWN EYE.

LARVA. Olive green or yellowish brown, irrorated with numerous white dots; spiracular line bright yellow, with a dark stripe immediately above it, which merges into the ground colour; ordinary dots black. Head bluish green. *Plate XXXVIII. fig. 8.*

Eggs laid in June, hatched July 13th. Pupa, August 18th; imago June 1st.

FOOD-PLANTS. Asparagus, Beet, Bracken, Burdock, Cabbage, Cherlock Dock, Elm, Fern, Field Bindweed, Goosefoot, Great Bindweed, Hemlock, Knotgrass, Lettuce, Mangel-wurzel, Marigold, Orache, Pea, Persicaria, Plantain, Sage, Self-heal, Stinging Nettle, Traveller's Joy.

PUPA. In earth.

Time of appearance { *Larva.* July and August. (*Larva in June*
 { *Pupa.* August to June. *R.S.M.*
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland; common;

Hadena pisi, *Linn.* THE BROOM MOTH

LARVA. Smooth and velvety. Rich dark green, speckled with black, with two bright yellow longitudinal stripes down the back, each of which is bordered with black; spiracular line pale sea-green, edged above with black spiracles pale, encircled with black. Ventral area pale green; head pinkish yellow; legs and claspers pink. *Plate XXXVIII., fig. 9a.*

After the last change of skin, when full fed, these larvæ are frequently brown.

Dark pinkish brown, with four bright yellow longitudinal stripes; spiracles pale, encircled with pinkish brown, situated in the lower or side stripe. Ventral area pink; head, legs, and claspers the same. *Plate XXXVIII., fig. 9.*

FOOD-PLANTS. Asparagus, Bracken, Broom, Buttercup, Cabbage, Devil's-bit Scabious, Field Scabious, French Bean, Furze (flowers), Flax, Golden-rod, Gooseberry, Knotgrass, Laburnum, Pea Thistle, Toadflax.

PUPA. In earth.

Time of appearance { *Larva.* August to October.
Pupa. October to June.
Imago. June and July.

LOCALITIES Great Britain and Ireland.

Hadena thalassina, *Naturf.* THE PALE SHOULDERED BROCADE.

LARVA. About one inch and a half long, stout and cylindrical. Pale pinkish brown, irrorated with rich dark brown; some of the irrorations form themselves into oblique streaks on the back, some of them meeting, form indistinct V-shaped marks, which are more apparent on the posterior segments; dorsal line indistinct, except on the anterior segments; spiracular line pale pinkish, irrorated with brown, and bordered above by a nearly white line, in which are situated the spiracles; these are white, encircled with black; head pale brown, reticulated with darker brown, shining, and smaller than the 2nd segment.

These larvæ vary considerably; in some cases the spiracular line is black, in others it is bordered above with black. *Plate XXXVIII., fig. 10.*

FOOD-PLANTS. Barberry, Beech, Birch, Broom, Dyer's Greenweed, Honey-suckle, Knotgrass.

PUPA. Just above the earth, under moss, stones, etc.

Time of appearance { *Larva.* July and August.
Pupa. September to May.
Imago. May to July.

LOCALITIES. Great Britain and Ireland; common.

Hadena contigua, W.V. THE BEAUTIFUL BROCADE.

LARVA. Dorsal area orange ochreous, irrorated with bright reddish brown, some of the irrorations taking the form of a series of V-shaped marks down the back; spiracular line rufous and interrupted. Ventral area dull yellowish green; head dull green, marked with reddish brown, and shining.

FOOD-PLANTS. Birch, Golden-rod, Hazel, Oak, Yarrow.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Hadena genistæ, Bork. THE LIGHT BROCADE.

LARVA. Dorsal area dull brown, brownish green, dirty olive green, or purplish brown and mottled, with a series of dark-brown diamond and wedge-shaped marks down the back; dorsal line dark brown, double, sometimes only seen at the segmental divisions or anteriorly; subdorsal line the same; dorsal area divided from the ventral at the spiracles, its lower edge very dark brown; spiracles whitish, encircled with black; ordinary dots dark smoke colour, except in the purplish brown variety, when they are pale. Ventral area dirty whitish, corslet dark brown; legs the same as the ventral area, tipped with brown.

FOOD-PLANTS. Broom, Chickweed, Dyer's Greenweed, Persicaria.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. South of England. South Wales. Ireland.

Hadena rectilinea, Esp. THE SAXON.

LARVA. Rather stout, and tapering gradually towards the head, the 12th segment raised. Rich brown, mottled with darker markings, the sides with a purplish bloom; along each side of the back is a series of ochreous markings, bordered on the outside with dark brown, larger and more conspicuous on the posterior segments; dorsal line pale and interrupted, bordered with dark brown; spiracular line pale, shown only on the 2nd, 3rd, 12th, and 13th segments; on the 12th are two ochreous dots; spiracles ochreous, in brown rings, ordinary dots white; dorsal area divided from the ventral at the spiracles, its lower edge very dark brown. Ventral area bluish grey; head

dark brown and shining; claspers pinkish, speckled with whitish dots; legs reddish brown and shining. *Plate XXXVIII., fig. 11.*

FOOD-PLANTS. Bramble, Sallow.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to March.} \\ \text{Pupa. March to June.} \\ \text{Imago. May to July.} \end{array} \right.$

LOCALITIES. Yorkshire. Scotland. Ireland.

XYLINIDÆ, Gn.

XYLOCAMPA, Gn.

Xylocampa lithoriza, Bork. THE EARLY GREY.

LARVA. Pale ochreous, long, and tapering towards both extremities. The 8th and 9th segments swollen, the 12th raised into a small, bifid, brown hump; along the centre of the back is a pale stripe of unequal width, intersected by a dark medio-dorsal interrupted line: on the 8th segment the pale line is interrupted by a dark blotch, and on the 9th it passes through a similar blotch; along each side are several delicate darker and paler lines; spiracles pale ochreous, encircled with brown; ordinary dots pale, encircled with brown. Ventral area flattened; head small, pale ochreous and speckled, with two darker lines down the face. *Plate XXXVIII., fig. 12.*

FOOD-PLANT. Honeysuckle.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to August.} \\ \text{Pupa. June to March.} \\ \text{Imago. March and April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

CLOANTHA, Bdv.

Cloantha perspicillaris, Linn. THE PURPLE CLOUD.

LARVA. "Reddish brown, dotted with dark brown; dorsal line narrow, yellow; a row of oblique brownish streaks on the back, rather indistinct; spiracular line pale yellow, edged with dark brown (Gn)."—*Stann. Man.*, vol. i., p. 281.

FOOD-PLANT. St. John's Wort.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Imago. May.} \end{array} \right.$

LOCALITIES. One Imago at Ashford, Kent; one at Yarmouth.

Cloantha solidaginis, Hub. THE GOLDEN-ROD BRINDLE.

LARVA. "Length about $1\frac{1}{2}$ inch, and of average bulk in proportion; head globular, the same width as the second segment; body cylindrical, and of nearly uniform width throughout, being attenuated very slightly towards the head; skin smooth and soft; the ground colour dark olive brown strongly tinged with purple. Head smooth and shining, pale brown, the front of each lobe dark sienna brown; dorsal line dull slaty blue, edged with smoke colour; no perceptible subdorsal lines, but a broad, clear, pale-yellow stripe along the region of the spiracles, edged on the upper side with a very fine black line, on which the reddish brown spiracles are placed; on the front of the 2nd segment a conspicuous black mark, and a transverse black mark on the hinder part of the 12th segment; trapezoidal dots very distinct, pale yellow; ventral surface purplish-brown, tinged in the centre with green, gradually becoming darker towards the pale spiracular band; legs brown and shining. G. T. Porritt."—*Ent. Mo. Mag.*, vol. ix., p. 92.

FOOD-PLANT. Bilberry.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. Cheshire, Devonshire, Lancashire, Yorkshire.

CALOCAMPA, Steph.*Calocampa vetusta*, Hub. THE RED SWORD GRASS.

LARVA. Dull green; dorsal line yellow; subdorsal line the same; spiracular line yellow, bordered above with black; spiracles yellow, encircled with black; ordinary dots white, also encircled with black. Head dull apple green; corslet the same; legs reddish; claspers green.

FOOD-PLANTS. Birch, Dock, Oak, Scabious, Sedge, Trefoil.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July} \\ \text{Pupa.} \quad \text{August.} \\ \text{Imago.} \quad \text{September to April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Calocampa exoleta, Linn. THE SWORD GRASS.

LARVA. Delicate velvety green, two and a half inches long, and slightly tapering towards the head; subdorsal line bright yellow, commencing immediately behind the head; and above it, on each segment after the 2nd to the 12th, are two white spots surrounded with black, and connected together by

a short black line; spiracular line white, with a short lateral streak of vermilion above it on each segment, forming an interrupted line; immediately above the scarlet streaks, on the segments from the 5th to the 12th, are three white dots and a buff spiracle, all surrounded with black; on the 3rd and 4th segments are two such white dots; on the back of the 2nd segment are four black dots arranged in a square, and on this segment the subdorsal lines are bordered below with a black streak; on the face are two black dots; and the anal flap is bordered on each side with black. *Plate XXXVIII., fig. 13.*

When young, the spots and streaks are absent; the subdorsal and spiracular lines yellow. *Plate XXXVIII., fig. 13a.*

FOOD-PLANTS. Asparagus, Beet, Bladder Campion, Cabbage, Creeping Plume Thistle, Dandelion, Devil's-bit Scabious, Dock, Dyer's Greenweed, Flax, Foxglove, French Bean, Goatsbeard, Hemlock, Lettuce, Mangel-wurzel, Oak, Oats, Orache, Pea, Persicaria, Rest-harrow, Thistle.

PUPA. In earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{April to July.} \\ \text{Pupa.} \quad \text{July and August.} \\ \text{Imago.} \quad \text{August to April.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

XYLINA, Och.

Xylina furcifera, Hufn. THE CONFORMIST.

LARVA. Greenish olive brown freckled with darker brown, some of the freckles forming themselves into a series of diamond-shaped marks down the back; dorsal line pale yellow, interrupted at the segmental divisions by the diamond-shaped marks; subdorsal line pale yellow; between the dorsal and subdorsal lines is a series of oblique black streaks; below the subdorsal line is a fine slightly waved yellow line; spiracular line the same; spiracles pale; ordinary dots pale yellow. Ventral area paler than the dorsal; legs and claspers the same, the latter tipped with pinkish brown.

FOOD-PLANT. Alder.

PUPA. Under moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{August to April.} \end{array} \right.$

LOCALITY. Glamorganshire.

Xylina Zinckeni, Tr. THE NONCONFORMIST.

LARVA. Not described.

FOOD-PLANT. Sweet Gale.



Vincent Brooks Day & Son, Lith

Time of appearance. *Imago.* August and September.

LOCALITY. Surrey.

Xylina rhizolitha, *W.V.* THE GREY SHOULDER-KNOT.

LARVA. Pale glaucous green, with numerous white warts, from each of which proceeds a white bristly hair; dorsal line white, interrupted, and bordered with dark green; subdorsal line the same, but less distinct; spiracular line yellowish white and very indistinct; spiracles white, bordered with black. Ventral area pale green; head large, yellowish green, and translucent; legs and claspers pale green. *Plate XXXVIII., fig. 14.*

FOOD-PLANT. Oak.

PUPA. In earth.

Time of appearance { *Larva.* May and June.
 { *Pupa.* July to October.
 { *Imago.* October to April.

LOCALITIES. England, Wales, and Ireland.

Xylina semibrunnea, *Haw.* THE TAWNY PINION.

LARVA. No description.

FOOD-PLANT. Oak.

Time of appearance { *Larva.* July.
 { *Pupa.* July to October.
 { *Imago.* October to April.

LOCALITIES. Midland Counties, South of England. South Wales.

Xylina petrificata, *W.V.* THE PALE PINION.

LARVA. "Pale green, with white dorsal and lateral lines; head and legs black; prolegs green (*Parfitt in litt.*)"—*Stain. Man.*, vol. i., p. 283.

FOOD-PLANTS. Ash, Lime, Oak.

PUPA. In earth.

Time of appearance { *Larva:* May to July.
 { *Pupa.* August.
 { *Imago.* September to April.

LOCALITIES. South-western Counties. South Wales. Ireland.

CUCULLIA, *Och.*

Cucullia verbasci, *Linn.* THE MULLEIN.

LARVA. Cylindrical and wrinkled, with a few short black hairs. Pale bluish white, with a transverse yellow streak and two yellow spots on each

segment, so closely approximate as to appear like yellow bands; these yellow streaks along the back have four black marks, two round on the front, and two almost semicircular on the hinder margin; the yellow marks along the sides have three black marks and one black spiracle on each; there are also some smaller black marks in close proximity, varying in size and number; head smaller than the 2nd segment, pale yellow, spotted with black; legs yellow; claspers yellowish and spotted. *Plate XXXIX., fig. 1.*

FOOD-PLANTS. Black Mullein, Great Mullein, Knotted Figwort, Water Figwort, Yellow Hoary Mullein.

PUPA. In a cocoon in earth

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{August to April.} \\ \text{Imago.} \quad \text{April and May.} \end{array} \right.$

LOCALITIES. South-western Counties, South Wales. Ireland.

Cucullia scrophulariæ, W.V. THE WATER BETONY.

LARVA. Cylindrical and wrinkled; pale bluish white, with a yellow band across each segment, and yellow spots on the sides; these bands are marked with black, thus—the 2nd segment has two transverse rows of rather small spots, on the 3rd the spots are larger and less in number, on the 4th the hinder row nearly approximate; the remaining segments to the 11th have several black spots and a transverse bent and curved band, and the 12th and 13th have several black spots and no transverse band; spiracles black; face yellow, with a row of black spots above the mouth, and two on each side the forehead. *Plate XXXIX., fig. 2.*

FOOD-PLANTS. Black Mullein, Great Mullein, Knotted Figwort, Moth Mullein, Water Figwort, White Mullein, Yellow Hoary Mullein.

PUPA. In a cocoon in earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{May.} \end{array} \right.$

LOCALITIES. South-western Counties.

Cucullia lychnitis, Rambur. THE STRIPED LYCHNIS.

LARVA. About one inch and seven-eighths long, cylindrical and slightly wrinkled. Whitish, tinged with green: the face yellower than the other part of the body; with five black spots on each cheek; on the 2nd segment there is a double transverse series of round black spots; on the 3rd a double series of black marks of varied shape; and on the remainder, to the 12th, there is a transverse black band, the extremities of which are directed forwards, with four black spots in front of it; on the 13th the marks are similar, but less

distinct; along each side on those segments from the 4th to the 12th there are also three black spots. *Plate XXXIX., fig. 3.*

FOOD-PLANTS. Black Mullein, White Mullein, Yellow Hoary Mullein, seeds and flowers.

PUPA In a cocoon in earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. September to June} \\ \text{Imago. June and July} \end{array} \right.$

LOCALITY South of England

Cucullia asteris, W.V. THE STAR WORT.

LARVA Nearly two inches long, and rather slender.

Variety 1. Pale yellowish green; dorsal stripe bright yellow, edged with a narrow black line; subdorsal line pale green, edged on each side with a narrow black line; between the dorsal and the subdorsal stripes is a yellow stripe speckled with black; spiracular stripe broad, yellow, edged above and below with a narrow black line; spiracles yellow, encircled with black, situated in the upper edge of the spiracular line: in addition to the black lines mentioned, there are two on each side, above the spiracles; head pale yellow, speckled with black, much paler about the mouth. *Plate XXXIX., fig. 4.*

Variety 2. Purplish pink, the dorsal, subdorsal, and spiracular lines yellow, the markings same as *Variety 1*; head pink. *Plate XXXIX., fig. 4a.*

FOOD-PLANTS. Golden Rod, Sea Starwort.

PUPA. In the stem of the plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. September to May.} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Darent Wood and West Wickham, Kent; Glamorgan-shire; Tilgate Forest, Sussex.

Cucullia gnaphalii, Hub. THE CUDWEED.

LARVA. Bright yellowish green, with a few pale hairs and a broad purplish brown stripe down the back, the edges of which are somewhat scalloped, and upon which there is a mosaic pattern of a darker shade. Spiracles, yellow encircled with black, each situated in a purplish red shuttle-shaped mark. Ventral area bluish green, legs and claspers the same, the latter tipped with pink; head bluish green, slightly speckled with brown. Rests with its head downwards.

FOOD-PLANT. Golden Rod.

PUPA. On the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITY. Darenth Wood, Kent.

Cucullia absynthii, Linn. THE WORMWOOD.

LARVA. Stout and cylindrical, with a few short bristles. Ground colour (more distinctly seen at the segmental divisions and on the ventral area) pale delicate yellowish green, similar to the lower leaves and stalks of *Artemisia absinthium*; dorsal area suffused and speckled with purplish grey, dorsal and subdorsal lines of the greenish ground colour passing through it; head somewhat triangular, ochreous grey; corslet and anal plate the same; legs yellowish; claspers tipped with red. *Plate XXXIX., fig. 5.*

FOOD-PLANT. Wormwood.

PUPA. In a cocoon in earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to October.} \\ \text{Pupa.} \quad \text{October to June.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Berks, Cornwall, Devon, Dorset, Glamorganshire, Somersetshire.

Cucullia chamomillæ, W.V. THE CHAMOMILE SHARK.

LARVA. About two inches long and cylindrical. Pale yellowish green, each segment adorned with a transverse band of purplish or reddish pink; down the centre of the back is a double row of olive green oblique streaks forming a series of V-shaped marks; along the side is an interrupted waved line, formed of a series of olive green semicircular marks, each of the spiracles except the first being situated at the posterior extremity of these marks; between the oblique streaks on the back and the semicircular marks on the sides there is an interrupted line of olive green irregular markings; the region below the spiracles is almost white, and the white appearance extends to the end of the anal clasper. Ventral area greenish, with a row of white dots above the legs and claspers; head yellowish green, marked down the face with light brown. *Plate XXXIX., fig. 6.*

FOOD-PLANTS. Corn Feverfew, Sea Feverfew, Chamomile.

PUPA. In a cocoon in earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July.} \\ \text{Pupa.} \quad \text{August to April.} \\ \text{Imago.} \quad \text{April and May.} \end{array} \right.$

LOCALITIES. England and Ireland.

Cucullia umbratica, Linn. THE SHARK.

LARVA. "Ground colour bright ochreous yellow, with an elaborate blackish brown, raised and granulated arabesque pattern of curves and angles on the back; the sides equally intricate, but linear and wavy in character; the dorsal stripe is represented by bare double triangular spaces of the ground colour; at the segmental divisions, and on the last segment, is a central stripe. The subdorsal is indicated by a very thin undulating line of the ground colour, and on the anal segment, abruptly widening into a very broad stripe tapering to a point at the extremity; the head dull black, a dull blackish brown plate on the 2nd segment, with three small spots of the ground colour on its front edge. Tubercular dots and spiracles black, also the anterior legs and prolegs, the latter with a ring of white above their extremities."—*Ent. Mo. Mag.*, vol. iii., p. 208.

FOOD-PLANTS. Common Sowthistle, Corn Sowthistle, Lettuce, Marsh Sowthistle, Plantain.

PUPA. In earth.

Time of appearance { *Larva.* July to September.
 { *Pupa.* September to May.
 { *Imago.* June and July.

LOCALITIES. Great Britain and Ireland.

HELIOTHIDÆ, Gn.

Heliothis marginatus, Fab. THE BORDERED SALLOW.

LARVA. Long and cylindrical, the 12th and 13th segments somewhat depressed.

Variety 1. Dull yellowish green, speckled with white; dorsal line rather broad, composed of black irrorations, and edged with an interrupted whitish line; subdorsal line whitish and interrupted; spiracular line bright yellowish green, edged above with a white line; spiracles ochreous, encircled with black, situated in this white line; the lower edge of the dorsal area is irrorated profusely with black; besides the ordinary dots, which are black, are several black and shining warts, three of which are arranged round each spiracle in almost regular order, the lower one placed beneath the spiracular line. Ventral area free from markings; head pale green and shining, anal flap the same; corslet yellowish green, shining, and marked with four black dots; legs shining, yellowish green, marked with black; claspers dull yellowish green.

Variety 2. Dark grey, irrorated, and speckled with black and white, some of the white irrorations form themselves into two longitudinal lines down the back; subdorsal line pale ochreous yellow; spiracular line pale ochreous,

marked with reddish brown, and bordered above with white; spiracles ochreous in black rings, tubercles the same as in *Variety 1*. Ventral area slightly paler than the dorsal; head pale reddish ochreous and shining; corslet black and shining, traversed by the pale subdorsal lines; anal flap black and shining; legs the same; claspers black.

FOOD-PLANTS. Rest-harrow. Knotgrass in confinement.

Time of appearance { *Larva.* July to beginning of September.
Pupa. September to May.
Imago. May and June.

LOCALITIES. Great Britain. Cornwall and Devon, common.

Heliothis peltiger, W.V. THE BORDERED STRAW.

LARVA. Variable.

Variety 1. Ground colour pale dull green, speckled with white dots, with three indistinct dark dorsal stripes; spiracles white, encircled with black, and bordered again with white; head green. When full fed, there is a transverse brownish patch on each segment.

Variety 2. Ground colour pinkish yellow; markings the same as *Variety 1*.

FOOD-PLANTS. Corn Feverfew, Henbane, Marigold, Purple Sandwort, Rest-harrow, Sea Feverfew

PUPA. In a slight web on the ground.—Sometimes two or three years in the pupa state.

Time of appearance { *Larva.* May to August.
Pupa. September to May.
Imago. May to September.

LOCALITIES. Cambridgeshire, Cheshire, Cornwall, Devonshire, Dorsetshire, Gloucestershire, Hants, Kent, Somersetshire, Surrey, Sussex. Wales.

Heliothis armiger, Hub. THE SCARCE BORDERED STRAW.

LARVA. Dorsal area greenish brown, with several darker and lighter streaks; dorsal line dark brown; spiracular line yellow; spiracles black, encircled with yellow, and bordered again with black; ordinary dots black. Ventral area dull brown; head dingy brown; corslet the same colour. (*See Newman's Moths*, p. 439.)

FOOD-PLANTS. Calamint, Weld.

PUPA. In earth.

Time of appearance { *Larva.* June and July.
Pupa. July and August.
Imago. August to October.

LOCALITIES. Cambridgeshire, Devonshire, Dorsetshire, Essex, Hants, Kent, Somersetshire, Surrey, Sussex, Yorkshire. Scotland

Heliothis dipsaceus, Linn. THE MARBLED CLOVER.

LARVA. About an inch and four lines long, stout, and rough. Colour, various shades of yellowish green, or pink, or purplish brown. Dorsal line the colour of the body, bordered on each side with a darker line; subdorsal line nearly white, edged below with a dark line; it rises slightly on the 12th segment, and descends again to the anal flap; between the dorsal and subdorsal lines are two rather dark, wavy, longitudinal lines; spiracular line green or yellowish, edged below with a white line, which is continued down the anal clasper; between the subdorsal and spiracular lines, the body is indistinctly marked with a darker colour; spiracles pale yellowish, in black rings; head green, or pink, or yellowish, speckled on each side with brown.

FOOD-PLANTS. Black Knapweed, Endive, Hawksbeard, Purple Clover, Rest-harrow, Spanish Catchfly, Viper's Bugloss, Yellow Toadflax, flowers and seeds.

PUPA. In earth.

Time of appearance { *Larva.* August and September.
 { *Pupa.* September to July.
 { *Imago.* June and July.

LOCALITIES. Devonshire, Dorset, Essex, Gloucestershire, Hants, Kent, Norfolk, Somersetshire, Suffolk, Sussex, Yorkshire.

Heliothis scutosa, Fab. THE SCARCE FOUR SPOTTED.

LARVA. "Yellowish green, with the spots and several lines yellowish black (*Freyer*)."—*Stain. Man.*, vol. i., p. 292.

FOOD-PLANTS. Field Wormwood, Mugwort.

Time of appearance { *Larva.* July.
 { *Imago.* "August to June."—*Stain. Man.*

LOCALITIES. Cumberland, Norfolk.

ANARTA, Osh.

Anarta melanopa, Thunb. THE BROAD-BORDERED WHITE UNDERWING.

LARVA. Dark purplish pink; dorsal line ochreous brown, bordered with smoke colour, interrupted on each segment by a reddish triangle; subdorsal line yellowish, edged with black, expanding on each segment; between the dorsal and subdorsal lines is a series of black wedge-shaped marks, and below the subdorsal line a series of oblique black streaks; spiracular line pale yellow, mottled and speckled with red; spiracles smoke colour; head the same as the body, marked with a darker colour.

FOOD-PLANTS. Red Bearberry (?) Will eat Strawberry Tree, Sallow, Whortleberry.

PUPA. On, or under the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July to May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Rannoch, Perthshire; Shetland Isles.

Anarta cordigera, *Thunb.* THE SMALL DARK-YELLOW UNDERWING.

LARVA. Described in the *Ent. Mo. Mag.* as being, at the end of the 3rd week, deep purplish brown; dorsal line white; subdorsal line faintly indicated on the 2nd and 13th segments; subspiracular stripe pale primrose yellow; skin soft and velvety; head horny. After the final moult, nearly an inch long, the purple brown obscured by black, and the sides freckled with black and paler brown; the dorsal line thinner, and sometimes interrupted; the subdorsal line showing faintly all its course; the subspiracular stripe brownish ochreous, and freckled with crimson brown; head dark purplish brown, with a blackish blotch on each lobe. (*See Ent. Mo. Mag.*, vol. xiii., p. 12.)

FOOD-PLANTS. Red Bearberry. Strawberry Tree in confinement.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{July to May.} \\ \text{Imago.} \quad \text{May and June} \end{array} \right.$

LOCALITY. Rannoch, Perthshire.

Anarta myrtilli, *Linn.* THE BEAUTIFUL YELLOW UNDERWING.

LARVA. About one inch long and cylindrical. Bright olive green, with a number of pale markings: these markings are primrose colour or white, or of both colours; some of them form a conspicuous row down the centre of the back, others a subdorsal row on each side of it; the remaining marks are scattered irregularly over the body; spiracles white, encircled with black, situated above a zigzag series of pale markings: ordinary dots black. The ventral area has two interrupted pale ventral lines; the 2nd segment three pale stripes, dorsal and subdorsal, interrupted by a green plate, in which there are ten black dots; head green, speckled with black; legs the same; the anal flap has a line down the centre, and is bordered with white or yellow. *Plate XXXIX.*, *fig. 7.*

FOOD-PLANTS. Heath, Heather.

PUPA. On the surface of the earth.



Vincent Brooks Day & Son Lith

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to September.} \\ \text{Pupa.} \quad \text{September to June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

HELIODES, Gn.

Heliodes arbuti, Fab. THE SMALL YELLOW UNDERWING.

LARVA. "Pale green or greyish green; dorsal line darker, bordered with white; subdorsal line pale; spiracular line white (Gn)."—*Stain. Man.*, vol. i., p. 294.

FOOD-PLANTS. Broad-leaved and Field Mouse-ear Chickweed.

PUPA. On the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June and July.} \\ \text{Pupa.} \quad \text{August to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. England, Wales, and Scotland.

ACONTIIDÆ, Gn.

AGROPHILA, Bdv.

Agrophila sulphuralis, W.V. THE SPOTTED SULPHUR.

LARVA. "When full grown, the larva is about an inch long, the legs twelve, the body cylindrical, thickest at the 4th segment, the segmental divisions deeply indented; when at rest, the middle segments are generally arched, and the head bent down. The colour, a rich chocolate brown; dorsal line rather darker, and edged with very fine paler lines; subdorsal line also darker, but scarcely visible; spiracular stripe broad, of a pale yellow, and with a fine brown thread running throughout its length; immediately after its last moult there were some rich orange and yellow spots also in it, but these disappeared, and the whole stripe grew paler."—*Ent. Mo. Mag.*, vol. iv., p. 115.

FOOD-PLANT. Field Bindweed.

PUPA. In a slight web on the stems of grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{June to August.} \\ \text{Imago.} \quad \text{June to August.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Norfolk, Suffolk.

ACONTIA, *Och.**Acontia luctuosa*, *W.V.* THE FOUR SPOT.

According to Guenée, the larvæ of this genus are long, slender, and geometri-form, and have only two pairs of claspers. In the following species the two front pairs of ventral claspers are present, but are not so fully developed as the hinder ones.

LARVA. Reddish grey or ochreous grey on the back, darker on the sides; dorsal line, narrowing to the extremities, pale, bordered indistinctly by short dark lines or dots; subdorsal line paler than the ground colour, with a dark broken edging at the segmental divisions; spiracular line dark brown; between the subdorsal and spiracular lines are two dark lines; below the spiracular line is a broad greyish brown stripe, edged above with a narrow pale line, and below with a reddish brown line; above the legs is a pale line; spiracles black; two of the ordinary dots on the back are pale, the others black. Ventral area darker than the dorsal, with a central ventral brown line, containing a row of black spots; head pale greyish, with four stripes of black dots down the face; corslet half-moon shaped, dark brown, the dorsal and subdorsal stripes passing through it; legs and claspers pale brownish, with a brown dot on each clasper, of these the anterior pair are much less developed than the others.

FOOD-PLANT. Field Bindweed.

PUPA. Beneath the earth.

Time of appearance { *Larva.* May to July.
 Pupa. July.
 Imago. August and September, May and June.

LOCALITIES. Devonshire, Hants, Isle of Wight, Kent, Sussex.

Acontia solaris, *W.V.* THE PALE SHOULDER.

LARVA. Not described.

FOOD-PLANTS. Dandelion, Field Bindweed.

PUPA. In an earthen cocoon.

Time of appearance. *Imago.* July.

ERASTRIDÆ, *Gn.*ERASTRIA, *Och.**Erastria venustula*, *Hub.* THE ROSY MARBLED.

LARVA. "The head is narrower than the 2nd segment, prone and shining; the body is smooth and velvety, the 4th and 5th segments considerably increas-

sated, the segments exhibit a decided continuity, the interstices between them being difficult to perceive; the colour of both head and body is purplish brown, with a paler medio-dorsal stripe, which is indistinct throughout, and nearly obliterated on the 3rd and 4th segments, and there is a rounded spot of the same pale colour on each side of the 5th segment."—*Newman's Moths*, p. 445.

FOOD-PLANT. Trailing Tormentil.

PUPA. In a slight cocoon amongst grass.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July and August.} \\ \text{Pupa. September to June.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Essex, Sussex.

Erastria fuscula, W. V. THE MARBLED-WHITE SPOT.

LARVA. Smooth, velvety, slightly attenuated, with eight claspers only; the segmental divisions clearly marked. Melon colour, with a few black spots, and a dorsal line reddish, narrowing towards the extremities; on each side the dorsal line are three very narrow, dark, waved lines; spiracles black. Ventral area paler than the dorsal; legs and claspers the same; head the same, but slightly speckled with reddish dots, and with two indistinct lines down the face.

Plate XL., figs. 1, 1a.

FOOD-PLANTS. Bramble, Grass (*Molinia cœrulea*).

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August to October.} \\ \text{Pupa. October to May.} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Cornwall, Devon, Essex. Scotland? Ireland.

BANKSIA, Gn.

Banksia argentula, Esp. THE SILVER BARRED.

LARVA. "Green, darker on the back and between the segments, sub-dorsal and spiracular lines white (*Hub.*)"—*Stain. Man.*, vol. i., p. 299.

FOOD-PLANTS. Grasses.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August.} \\ \text{Pupa. September to May?} \\ \text{Imago. June.} \end{array} \right.$

LOCALITIES. Cambridgeshire, Norfolk. Scotland? Ireland.

ANTHOPHILIDÆ, Gn.

HYDRELIA, Gn.

Hydrelia unca, W.V. THE SILVER HOOK.

LARVA. "When it is full grown, the length is quite an inch, the figure slender, cylindrical, uniform throughout in bulk, save that the 3rd segment seems a trifle swollen, and the last three segments taper slightly to the anal flap, which is bluntly rounded off, or almost squared off; the head is hard and globular, about as wide as the 2nd segment; there are two pairs of ventral legs, fully developed and usable, and the rudiments of another pair, useless. The colour is a full velvety green, with a pulsating dorsal vessel of a darker tint; there is a fine whitish green subdorsal line, and a rather broader spiracular line of very pale yellow; the spiracles are indistinctly brownish, and the hinder segments paler than the rest of the back; the belly is also paler, but still of a soft rich green; the head somewhat yellowish green."—*Ent. Mo. Mag.*, vol. vi., p. 232.

FOOD-PLANT. Sedge.

PUPA. Beneath the earth.

Time of appearance { *Larva*. September.
 Pupa. September to May?
 Imago. June.

LOCALITIES. Cambridge, Cornwall, Devonshire, Lake District, Norfolk, Somersetshire, Suffolk, Yorkshire. South Wales. Ireland.

MICRA, Gn.

Larvæ with six claspers.

Micra ostrina, Hub. THE PURPLE MARBLED.

LARVA. Not described.

Time of appearance. *Imago*. June and July.

LOCALITIES. Pembrey, Carmarthenshire; Bideford and Torquay, Devonshire

Micra parva, Hub. THE SMALL MARBLED.

LARVA. Not described.

FOOD-PLANT. Thistle?

Time of appearance. *Imago*. June.

LOCALITIES. Teignmouth, Torquay, Devonshire.

PHALÆNOIDÆ, Gn.

BREPHOS, Och.

Brephos Parthenias. *Linn.* THE ORANGE UNDERWING.

LARVA. The two front pairs of ventral claspers much less developed than the others.

“The colour of the head is apple green, of the body green, with a double white or whitish yellow medio-dorsal stripe and a lateral stripe of the same colour; there is also a more conspicuous yellowish stripe below the spiracles, which are black: between the stripes there are two white dots on each segment.”

—*Newman's Moths*, p. 448.

FOOD-PLANTS. Beech, Birch.

PUPA. In crevices of the bark.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July and August.} \\ \text{Pupa.} \quad \text{August to March.} \\ \text{Imago} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. Derbyshire, Essex, Glamorganshire, Gloucestershire, Herefordshire, Kent, Lake District, Shropshire, Suffolk, Surrey, Sussex. Scotland.

Brephos notha, *Hub.* THE LIGHT ORANGE UNDERWING.

LARVA. The two front pairs of ventral claspers much less developed than the others. Pale green or bright yellowish green; pulsating vessel darker, bordered with pale greenish yellow; subdorsal line yellow and very narrow, commencing on the 3rd segment; there is a lateral stripe of the same character and colour above the spiracles, bordered above and below with a broad black stripe; spiracles white, encircled with black; spiracular stripe yellowish white. Ventral area paler than the dorsal; head dull brownish, with a darker forked patch on each cheek, and a spot between them; there are four or more black dots on the 2nd segment, and the legs are usually dotted with black; beneath the anal flap is a small point.

There is also a dull olive-brown variety of this larva, with the pale lines pinkish.

FOOD-PLANT. Aspen.

PUPA. In crevices of the bark.

Time of appearance $\left\{ \begin{array}{l} \text{Larva} \quad \text{June.} \\ \text{Pupa.} \quad \text{July to March.} \\ \text{Imago.} \quad \text{March and April.} \end{array} \right.$

LOCALITIES. Berks, Essex, Gloucestershire, Kent, Shropshire, Suffolk, Surrey, Sussex, Worcestershire, Yorkshire.

PLUSIIDÆ, Bdv.

ABROSTOLA, Och.

Abrostola urticæ, Hub. THE LIGHT SPECTACLE.

LARVA. The 12th segment larger than the others, and raised in the form of a hump, with a point on each side of it; the 5th and 6th segments are also raised; the 13th convex, but with these exceptions the larva tapers towards the head.

"The prevailing colour is clear pale green mixed with white green on the back, and not varied with brown; the clear green forms an interrupted median stripe of shuttle-shaped markings down the back, one on each segment; also, two oblique marks of the same green on each segment, distant in front, but approximate behind, and forming something like V-shaped markings pointing backwards; there is a narrow white stripe along the middle of each side, on the 5th, 6th, and 7th segments; this is connected by a very distinct white line, with the white on the back."—*Newman's Moths*, p. 449.

FOOD-PLANTS. Stinging Nettle, Willow-herb.

PUPA. Spun up amongst the leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. August and September.} \\ \text{Pupa. October to May.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Abrostola triplasia, Linn. THE DARK SPECTACLE.

LARVA. Purplish brown or dull olive green, with a few scattered hairs; the 12th segment larger than the others and raised, the 5th and 6th segments are also raised, but with this exception the larva tapers towards the head, the anterior segments being much smaller than the others, the 13th segment is flattened; a pale dorsal line commences at the head, and is to be traced along the back, interrupted on the 5th, 6th, and 12th segments by a dark velvety plate or patch; the plate on the 5th segment is triangular, and is edged with yellowish cream colour; the patch on the 6th segment is rounded before and behind, the rounded portions being edged with cream colour; the patch on the 12th segment is oblong, placed across the body, is edged with pale cream colour, and has two small raised brown protuberances or warts; ordinary dots cream colour, spiracular line pale cream colour; spiracles the same, encircled with black; along each side are some pale oblique streaks; head pale stone colour, reticulated with brown. The larva rests with its back humped, the first pair of claspers generally raised; the hind claspers are also sometimes raised. *Plate XL., figs. 2, 3a, 3b.*

FOOD-PLANTS. Hop, Stinging Nettle, Dead Nettle.

PUPA. Spun up amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. July to September.} \\ \text{Pupa. July to May.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

PLUSIA. *Och.*

Plusia orichalcea, *Fab.* THE SCARCE BURNISHED BRASS.

LARVA. With six claspers only. "Green, dorsal line white, edged with a wavy streak; spiracular line broad and white, edged above with dark green; spots white (*Treitschke*)."—*Stain. Man.*, vol. i., p. 306.

FOOD-PLANT. Hemp Agrimony.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June and July.} \\ \text{Imago. July and August.} \end{array} \right.$

LOCALITIES. Dorsetshire, Devonshire, Glamorganshire, Gloucestershire, Kent, Monmouthshire.

Plusia chrysitis, *Linn.* THE BURNISHED BRASS.

LARVA. Body attenuated at the head, somewhat humped at the 12th segment. Pale green, with six white lateral streaks on each segment, on those after the 3rd to the 12th the two central streaks form a somewhat V-shaped mark; spiracular line white and narrow; spiracles the colour of the body, encircled with black; below the spiracles there are some white dots. Head the same as the body, and shining; the claspers six in number.

FOOD-PLANTS. Burdock, Comfrey, Dead Nettle, Hemp Nettle, Stinging Nettle, Thistle.

PUPA. In a cocoon amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. June and July. September to April.} \\ \text{Pupa. July. May.} \\ \text{Imago. August. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Plusia bractea, *W.V.* THE GOLD SPANGLE.

LARVA. Body attenuated to the head, somewhat humped at the 12th segment. Pale apple green, with a number of fine scattered hairs; dorsal line white and narrow; spiracular line the same. Head pale green, with a brown line on each side the face; claspers six in number.

FOOD-PLANTS. Hemp Agrimony, Stinging Nettle.

PUPA. Amongst the roots of the plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Cheshire, Shropshire, Worcestershire, Yorkshire. South Wales. Scotland. Ireland.

Plusia festucæ, Linn. THE GOLD SPOT.

LARVA With six claspers. "Green, dorsal vessel dark green, with three slender pale-green lines on each side; spiracular line pale green (*Dup.*)"—*Stain. Man.*, vol. i., p. 307.

FOOD-PLANTS. Grasses, Sedge, Reed, Reed Mace.

PUPA. Amongst the blades of grasses.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May to July} \\ \text{Pupa.} \quad \text{July.} \\ \text{Imago.} \quad \text{August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Plusia iota, Linn. THE PLAIN GOLDEN Y.

LARVA. The posterior segments are large, and the body decreases in size to the head; pale green, somewhat translucent, with a number of raised shining warts, from which proceed short pale hairs; pulsating vessel rather darker than the body, and on each side of it are three white lines; spiracular line yellowish, and continued down the anal clasper; spiracles white, encircled with black; ordinary dots nearly white; legs rather paler than the body; claspers, which are six in number, the same; head pale green, with a black line round the lower part of the face. *Plate XL., figs. 4, 4a.*

NOTE.—Eggs laid on the 30th of June hatched on the 9th of July.

FOOD-PLANTS. Burdock, Honeysuckle, Groundsel, Stinging Nettle, Dead Nettle, Hemp Nettle, Self-heal, Woundwort.

PUPA. Amongst the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to May} \\ \text{Pupa.} \quad \text{June.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Plusia V-aureum, Gn. THE BEAUTIFUL GOLDEN Y.

LARVA. Only described as green, with a yellow spiracular line.

FOOD-PLANTS. Honeysuckle, Stinging Nettle, Dead Nettle.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May.} \\ \text{Pupa. June?} \\ \text{Imago. June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Plusia gamma, Linn. THE SILVER Y.

LARVA. Body attenuated to the head, and somewhat humped at the 12th segment. Delicate green, with short pale hairs, and six whitish waved lines down the back; spiracular stripe yellowish, with an interrupted and indistinct pale line beneath it; spiracles yellow, encircled with brown; ordinary dots whitish and translucent, each with a pale hair. Ventral area paler than the dorsal; head yellowish green; mandibles pinkish; legs slightly tipped with claret colour; claspers six in number, the same colour as the ventral area. *Plate XL., figs. 5, 5a.*

FOOD-PLANTS. Burdock, Cabbage, Cranesbill, Dead Nettle, Dock, Flax, Geranium, Hemlock, Hemlock Stork's-bill, Hop, Indian Corn, Lettuce, Marigold, Marjoram, Pea, Periwinkle, Sowthistle, Stinging Nettle, Thistle.

PUPA. Amongst the leaves of the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to September.} \\ \text{Pupa. September to April.} \\ \text{Imago. May to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Plusia ni, Hub. THE NI MOTH.

LARVA. Not described.

Time of appearance. *Imago.* August.

LOCALITY. Devonshire?

Plusia interrogationis, Hub. THE SCARCE SILVER Y.

LARVA. Tapering towards the head. Body green, paler on the back; dorsal line rather dark green, of irregular width, and bordered with whitish green; subdorsal line whitish green, bordered with a darker shade of green; between the dorsal and subdorsal lines is a waved or zigzag whitish green line; spiracular line yellow; ordinary dots whitish green, each with a brown hair. Ventral area paler than the sides; head green, with a black line round the lower part of the face.

FOOD-PLANTS. Heath, Heather, Stinging Nettle?

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. September to June.} \\ \text{Pupa. June.} \\ \text{Imago. June to August.} \end{array} \right.$

LOCALITIES. Cheshire, Denbighshire, Derbyshire, Devonshire, Lancashire, Lincolnshire, Salop, Westmoreland, Yorkshire, Scotland.

GONOPTERIDÆ, Gn.

GONOPTERA, Lat.

Gonoptera libatrix, Linn. THE HERALD.

LARVA. Long, slender, and somewhat tapering towards the extremities. Yellowish green and velvety; dorsal line darker and indistinct; above the spiracles is a dark longitudinal line, which commences on the 2nd segment and fades into the ground colour on the 13th; segmental divisions yellowish; spiracles pale yellow, encircled, with pinkish brown; head smaller than the 2nd segment, pale green, and divided on the crown by a fine black line. Ventral area pale whitish green; legs and claspers the same; anal claspers spreading. *Plate XL., fig. 6.*

FOOD-PLANTS. Osier, Sallow, Whitethorn, Willow.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva. May to September.} \\ \text{Pupa. July to September.} \\ \text{Imago. August to May.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

AMPHIPYRIDÆ, Gn.

AMPHIPYRA, Och.

Amphipyra pyramidea, Linn. THE COPPER UNDERWING.

LARVA. Pale green, smooth and cylindrical, with a pyramidal hump on the 12th segment, directed backwards, the point reddish brown and cornicous; dorsal line pure white; the subdorsal consists of a series of yellowish white lateral streaks, that on the 12th segment passing up the side of the hump; spiracular line greenish white; spiracles white, encircled with black; ordinary dots yellowish white. Ventral area darker than the dorsal; claspers the same; legs yellowish green, speckled with black; head paler than the body, shining, and smaller than the 2nd segment; corslet glaucous green, with three yellowish lines passing through it. *Plate XL., fig. 7.*

FOOD-PLANTS. Apple, Birch, Elm, Oak, Pear, Walnut, Willow.

PUPA. In a cocoon on the surface of the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{August and September.} \end{array} \right.$

LOCALITIES. England, Wales, and Ireland.

Amphipyra tragopogonis, Linn. THE MOUSE.

LARVA. Pale glaucous green; the 12th segment slightly raised; dorsal, subdorsal, and spiracular lines white, the subdorsal narrower than the others; they commence faintly on the 2nd segment, and meet at the anal flap, the spiracular line extending round it; spiracles pale green, situated in the spiracular line; head dingy green, with a brown mark down each side the face; legs yellowish green; claspers the same as the body. *Plate XL., fig. 8.*

FOOD-PLANTS. Columbine, Dock, Goatsbeard, Larkspur, Monk's-hood, Plantain, Sea Plantain, Spinach, Willow-herb, Whitethorn.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{May to July.} \\ \text{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

MANIA. Tr

Mania typica, Linn. THE GOTHIC.

LARVA. Putty colour, irrorated and mottled with brown; the body tapers somewhat to the head, the 12th segment raised; dorsal and ventral areas abruptly divided by the spiracular line, which is slightly waved and is pale putty colour, bordered above by a black line; spiracles ochreous, contained in the black line; on the 12th segment are two oblique black velvety marks, joined by a narrow transverse black line; there are two similar but less distinct marks on the 11th segment, and some indistinct pale and dark oblique marks above the spiracular stripe; the ventral area is putty colour; above the legs and claspers is a broad, obscure, smoke-coloured stripe; head putty colour reticulated with brown. *Plate XL., fig. 9.*

FOOD-PLANTS. Apple, Dock, Germander Speedwell, Heartsease, Ivy, Pear, Plum, Sowthistle, Violet, Willow-herb.

PUPA. Under the earth.

Time of appearance. $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July to April.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

Mania maura, Linn. THE OLD LADY.

LARVA. Pale ochreous, densely irrorated with dark brown, and marked with the same colour, so as to give the general appearance of dark smoke colour; about two inches and three-eighths long, and tapering towards the head, which is smaller than the 2nd segment; on each side of the back the speckles are rather less numerous, and give place to seven oblique streaks of the ground colour; dorsal line narrow, pale, interrupted, and indistinct, except on the anterior segments; the spiracular line is also interrupted and indistinct, except on the 2nd, 3rd, and 4th segments. On the 12th segment is a black conspicuous transverse line, edged behind with pale ochreous: spiracles ochreous, encircled with brown. Ventral area greenish grey and translucent; head pale, speckled, and marked with brown; corslet brown; claspers the same as the ventral area; legs paler. *Plate XL., fig. 10.*

FOOD-PLANTS. Alder, Apricot, Bramble, Chickweed, Cowslip, Chrysanthemum, Dock, Hornbeam, Ivy, Lettuce, Lilac, Mint, Poplar, Primrose, Sallow, Sorrel, Strawberry, Willow.

PUPA. Under the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to May.} \\ \text{Pupa.} \quad \text{May and June.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common

TOXOCAMPIDÆ, Gn.

TOXOCAMPA, Gn.

Toxocampa pastinum, Tr. THE BLACK NECK.

LARVA: Body somewhat slender, slightly depressed, and tapering towards the extremities; ground colour of the back pale purplish pink, the sides pale pinkish white, and the ventral area chocolate colour; the whole of the back and sides is speckled with chocolate colour; dorsal line dull orange, edged with white; subdorsal line the same; spiracular line broad, white, with an orange-coloured line passing through it; spiracles pale, in black rings; ordinary dots ochreous; head dull smoke colour. *Plate XL., fig. 11.*

FOOD-PLANT. Tufted vetch.

Time of appearance $\left\{ \begin{array}{l} \text{Larva} \quad \text{May.} \\ \text{Pupa.} \quad \text{May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Cornwall, Cambridgeshire, Devonshire, Dorsetshire, Essex, Hants, Kent, Lake District, Norfolk, Suffolk, Surrey, Sussex, Yorkshire.

Toxocampa craccæ, *W.V.* THE NEW BLACK NECK.

LARVA. "Along the back, commencing on the head, is a dark-brown, very finely mottled broad stripe, widest along the middle segment, and with an additional widening on the 11th segment, in the centre of this is a thin rather paler stripe enclosing the very dark-brown dorsal line: the subdorsal stripes are double, brown, with a paler ochreous brown ground, followed by a pale stripe of ochreous, enclosing a very thin brown line; the lateral lines double, dark brown, extending from the mouth to the anal prolegs, edged above with black at the anterior portion of each segment, the upper one widening below at the middle, along which there are some black dots. Belly and legs brown: within the dark portion of the back on each segment are placed four black dots in the usual order, and on the 11th segment there is an additional black dot on each side, outside the dark region; subdorsal line also containing two black dots and a minute ring."—*Ent. Mo. Mag.*, vol. ii., p. 67.

FOOD-PLANTS Bush Vetch, Milk Vetch, Wood Vetch.

PUPA. Beneath the earth.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June?} \\ \text{Imago.} \quad \text{July.} \end{array} \right.$

LOCALITY. Devonshire.

STILBIIDÆ, Gn.**STILBIA**. *Steph.***Stilbia anomala**, *Haw.* THE ANOMALOUS.

LARVA. Cylindrical and short; pale ash grey, dotted with brown; dorsal line white, interrupted and bordered on each side by a brown line; subdorsal line white, bordered above by a broad and below by a narrow brown line; between the dorsal and subdorsal lines is an interrupted line composed of numerous brown dots; between the subdorsal line and the spiracles are three brown spotted lines; spiracular line narrow and cream colour; spiracles black, encircled with buff. Ventral area pale; head smaller than the 2nd segment, buff and shining, the brown bordering of the dorsal line being continued and forming two conspicuous lines down the face; legs and claspers the same colour as the ventral area *Plate XL., fig. 12.*

FOOD-PLANTS Grasses.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{September to February.} \\ \text{Pupa.} \quad \text{February to June.} \\ \text{Imago.} \quad \text{July to September.} \end{array} \right.$

LOCALITIES. Cornwall, Cheshire, Devon, Dorset, Hants, Kent, Lancashire, Surrey, Sussex Scotland. Ireland.

CATEPHIIDÆ.

CATEPHIA.

Catephia alchymista, W.V. THE ALCHEMIST.

LARVA. About two inches long, slender and attenuated; body reddish brown, slightly speckled with black, and irrorated with a paler colour; on the 5th segment are two conspicuous pointed humps; on each of the remaining segments to the 11th the posterior ordinary dots on the back are represented by two black warts; the other ordinary dots are ochreous; the 12th segment is raised and swollen, terminating in a conspicuous bifid hump; spiracles indistinct, buff, encircled with brown. Ventral area pale drab, with a few black spots placed at the inner side of the claspers; head brown; front of 2nd segment yellow; legs long and horny, marked with yellow; claspers long. *Plate XL., fig. 13.*

FOOD-PLANT. Oak.

Time of appearance { *Larva.* August.
 { *Imago.* May.

LOCALITY. One Imago taken in the Isle of Wight.

CATOCALIDÆ, Gn.

CATOCALA, Och.

Catocala fraxini, Linn. THE CLIFDEN NONPAREIL.

LARVA. Convex above, flat beneath, wrinkled, and with a pale fringe along each side. Colour ash grey, or brownish grey speckled with black; the 9th segment has a dorsal hump somewhat pointed and directed backwards; on the 12th segment is a smaller and less pointed protuberance. Ventral area pale ash grey, with a black spot on each segment.

FOOD-PLANTS. Ash, Poplar.

PUPA. Amongst the leaves of the food-plant.

Time of appearance { *Larva.* July and August.
 { *Pupa.* August.
 { *Imago.* August and September.

LOCALITIES. Cambridgeshire, Dorsetshire, Essex, Hants, Isle of Wight, Kent, Lancashire, Norfolk, Salop, Somersetshire, Suffolk, Surrey, Sussex, Wilts, Yorkshire. Scotland. Ireland; rare.



Vincent Brooks Day & Son Lith.

Catocala nupta, Linn. THE RED UNDERWING.

LARVA. About two inches and a quarter long, convex above and flat beneath, slightly wrinkled, and tapering towards both extremities. Colour ash grey, irrorated with brown, with a pale fringe along each side; all those segments from the 5th to the 12th have two warts; the 9th rises into a hump or ridge, and is marked transversely with a dark blotch; the 12th segment also rises in the same manner, and its warts are bordered behind with brown; the spiracles are encircled with brown, and the anal flap and head are bordered with the same colour. Ventral area pale ash grey, with a row of large black spots down the belly, from the 4th to the 12th segments; claspers spreading. *Plate XL., fig. 14.*

FOOD-PLANTS. Ash, Poplar, Willow.

PUPA. Amongst leaves, or on the bark.

Time of appearance { *Larva.* May to July.
 { *Pupa.* July and August.
 { *Imago.* July to September.

LOCALITIES. England, Southern and South-Eastern Counties. Scotland.

Catocala promissa, W.V. THE LIGHT CRIMSON UNDERWING.

LARVA. Newman describes it from Hübner's figure. "The colour of the head and body is greenish grey, with sundry black marks on the dorsal surface of every segment; there are no two segments in which the black markings are similar, but all of them are distinct and most clearly defined; on the 8th segment these assume the appearance of two capital letter XX. The ventral area is flattened, and there is a fringe of bristles, mixed with fleshy threads, extending the entire length of the body, at the junction of the dorsal and ventral areas; the ventral surface and claspers are pale green."—*Newman's Moths*, p. 467.

FOOD-PLANT. Oak.

PUPA. Amongst the leaves of the tree.

Time of appearance { *Larva.* May and June.
 { *Pupa.* July.
 { *Imago.* August.

LOCALITIES. Berks, Devonshire, Hants, Sussex.

Catocala spona, Linn. THE DARK CRIMSON UNDERWING.

LARVA. About two inches and a half long, convex above, flattened beneath, with a pale fringe along each side. Pale greyish ochreous, or brownish ochreous; dorsal line very fine, bordered with purplish; on the 5th segment

there is an ochreous transverse patch, between the 9th and 10th a brown or purplish patch, on the 10th a pale ochreous mark, and on the 12th a dark patch: spiracles dingy white, in dark rings. Ventral area whitish, with dark reddish ventral spots; head dingy red, bordered above with a black band.

FOOD-PLANT. Oak.

PUPA. In a loose cocoon amongst the leaves of the tree.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{May and June.} \\ \text{Pupa.} \quad \text{June and July.} \\ \text{Imago.} \quad \text{July and August.} \end{array} \right.$

LOCALITIES. Dorset, Essex, Hants, Kent, Surrey, Sussex.

OPHIUSIDÆ, Gn.

OPHIODES, Gn.

Ophiodes lunaris, W.V. THE LUNAR DOUBLE STRIPE.

LARVA. Described by Newman, from Sepp's figure, as being long and leech-like, tapering to the anal extremity, arched when crawling; the first pair of claspers shorter than the others, having a small excrescence on each side of the 5th segment, two dorsal papillæ on the 12th, and two smaller on the 13th; anal claspers long and slender, spreading backwards. Colour bistre brown, with a narrow chain-like stripe, containing as it were two beads in each segment, and on each side of this a broad dark stripe, intersected by a chain of pale spots; below this three fine lines. Head light brown, or greenish brown, with two darker stripes down the face, united by a band round the mouth.

FOOD-PLANT. Oak.

PUPA. In a cocoon amongst leaves.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{July.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Hants, Surrey. Ireland; very rare.

EUCLIDIIDÆ, Gn.

EUCLIDIA, Och.

Euclidia mi, Linn. THE MOTHER SHIPTON.

LARVA. About one inch and a quarter long, and tapering towards the anal extremity. Colour pale ochreous; subdorsal line pale greyish brown, intersected by two narrow darker brown longitudinal lines, and bordered on both sides by a paler ochreous colour than the body the subdorsal line passes

down the face, and extends to the anal flap; spiracular line nearly white, bordered above and below with a narrow dark-brown line; between the sub-dorsal and the spiracular lines is a pale line extending from the head to the 4th segment; spiracles white, in black rings. Ventral area marked with several longitudinal lines; head pale pinkish drab; claspers the same, six in number, the anal pair spreading.

FOOD-PLANTS. Black Medick, Clover, Melilot

PUPA. In a cocoon amongst moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

Euclidia glyphica, Linn. THE BURNET NOCTUA.

LARVA. Long and tapering towards the anal extremity; claspers six in number, the anal pair spreading. "Dull ochreous, beneath brownish; spiracular line whitish; head brown (*Hub.*)"—*Stain. Man.*, vol. i., p. 318.

FOOD-PLANTS. Black Medick, Clover.

PUPA. In a cocoon amongst moss.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September} \\ \text{Pupa} \quad \text{September to April} \\ \text{Imago.} \quad \text{May and June.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland; common.

POAPHILIDÆ, Gn.

PHYTOMETRA, Haw.

Phytometra Ænea, W.V. THE SMALL PURPLE BARRED.

LARVA. Rich green and velvety; pulsating vessel darker than the body, bordered with pale lines; there are also three pale longitudinal lines on each side the back; spiracular stripe pale; spiracles yellowish; ordinary dots black, in pale rings.

FOOD-PLANT. Milkwort.

PUPA. In a cocoon amongst the food-plant.

Time of appearance $\left\{ \begin{array}{l} \text{Larva.} \quad \text{August and September.} \\ \text{Pupa.} \quad \text{September to May.} \\ \text{Imago.} \quad \text{June and July.} \end{array} \right.$

LOCALITIES. Great Britain and Ireland.

FOOD PLANTS OF LARVÆ.

Additional food plants will be found in this list to those in the body of the work, further information having been obtained since the foregoing part was printed.

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TIMES OF APPEARANCE.

l. larva; p. pupa; i. imago.

DIURNI.

	Page	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Papilio Machaon	1	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>pi</i>	<i>li</i>	<i>lp i</i>	<i>lp i</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>
Leuco. sinapis	1	<i>p</i>	<i>p</i>	<i>p</i>	<i>pi</i>	<i>pi</i>	<i>l</i>	<i>p</i>	<i>li</i>	<i>lp</i>	<i>lp</i>	<i>lp</i>	<i>p</i>
Pieris crategi	2	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>brassicæ</i>	2	<i>p</i>	<i>p</i>	<i>p</i>	<i>pi</i>	<i>li</i>	<i>lp i</i>	<i>lp i</i>	<i>li</i>	<i>lp</i>	<i>lp</i>	<i>p</i>	<i>p</i>
<i>rapæ</i>	3	<i>p</i>	<i>p</i>	<i>p</i>	<i>pi</i>	<i>i</i>	<i>li</i>	<i>pi</i>	<i>i</i>	<i>lp</i>	<i>lp</i>	<i>lp</i>	<i>lp</i>
<i>napi</i>	3	<i>p</i>	<i>p</i>	<i>p</i>	<i>pi</i>	<i>li</i>	<i>lp i</i>	<i>lp i</i>	<i>lp i</i>	<i>lp</i>	<i>p</i>	<i>p</i>	<i>p</i>
<i>Daplidice</i>	3	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>li</i>	<i>l</i>	<i>p</i>	<i>pi</i>	<i>lp</i>	<i>p</i>	<i>p</i>	<i>p</i>
Antho. cardamines	4	<i>i</i>	<i>i</i>	<i>i</i>	<i>pi</i>	<i>li</i>	<i>li</i>	<i>lp</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>
Gon. rhamni	4	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>li</i>	<i>li</i>	<i>pi</i>	<i>pi</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>
Colias edusa	5	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>li</i>	<i>lp</i>	<i>i</i>	<i>li</i>	<i>lp i</i>	<i>i</i>	<i>i</i>
<i>hyale</i>	6	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>li</i>	<i>lp</i>	<i>i</i>	<i>li</i>	<i>lp i</i>	<i>i</i>	<i>i</i>
Argyn. Paphia	6	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp i</i>	<i>i</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Aglaiæ</i>	6	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Adippe</i>	7	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Niobe</i>	7	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp i</i>	<i>pi</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Lathonia</i>	7	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>li</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Euphrosyne</i>	8	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>i</i>	<i>lp i</i>	<i>lp</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Selene</i>	8	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp i</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
Melitæa Artemis	9	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp i</i>	<i>lp i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Cinxia</i>	9	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>lp i</i>	<i>lp i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Athalia</i>	9	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp i</i>	<i>lp i</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
Vanessa C-album	10	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>li</i>	<i>lp</i>	<i>pi</i>	<i>li</i>	<i>pi</i>	<i>i</i>	<i>i</i>	<i>i</i>
<i>urticæ</i>	10	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>li</i>	<i>li</i>	<i>pi</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>
<i>polychloros</i>	10	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>lp i</i>	<i>pi</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>
<i>Antiopa</i>	11	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>
<i>Io</i>	11	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>il</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>
<i>Atalanta</i>	11	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>li</i>	<i>lp</i>	<i>lp i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>
<i>cardui</i>	12	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	<i>li</i>	<i>lp</i>	<i>lp i</i>	<i>li</i>	<i>i</i>	<i>i</i>	<i>i</i>
Lim. Sibylla	12	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Apatura Iris</i>	13	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Arge Galatæa</i>	13	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Erebia Cassiope</i>	14	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Blandina</i>	14	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>p</i>	<i>pi</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
Satyrys Egeria	15	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>l</i>	<i>lp i</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Megæra</i>	16	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>l</i>	<i>lp</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Semele</i>	16	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp i</i>	<i>pi</i>	<i>li</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Janira</i>	16	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Tithonus</i>	17	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>hyperanthus</i>	17	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>lp</i>	<i>lp</i>	<i>lp i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
Chorto. Davus	18	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Pamphilus</i>	18	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>lp i</i>	<i>lp i</i>	<i>lp i</i>	<i>lp i</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>
Thecla rubi	19	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>pi</i>	<i>li</i>	<i>lp</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>
<i>quercus</i>	19					<i>l</i>	<i>lp</i>	<i>pi</i>					
<i>W-album</i>	20					<i>l</i>	<i>lp i</i>	<i>pi</i>	<i>i</i>				
<i>pruni</i>	20					<i>l</i>	<i>lp i</i>	<i>pi</i>					
<i>betulæ</i>	20					<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>i</i>			
Poly. hippothoë	21						<i>li</i>	<i>lp i</i>	<i>i</i>				
<i>phlæas</i>	21	<i>l</i>	<i>l</i>	<i>lp</i>	<i>i</i>	<i>l</i>	<i>lp i</i>	<i>i</i>	<i>li</i>	<i>lp i</i>	<i>li</i>	<i>l</i>	<i>l</i>
Lycæna Ægon	22					<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>				
<i>Agestis</i>	23	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>lp</i>	<i>li</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Alexis</i>	24					<i>lp i</i>	<i>i</i>	<i>l</i>	<i>lp i</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Adonis</i>	24	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp</i>	<i>li</i>	<i>p</i>	<i>pi</i>	<i>li</i>	<i>l</i>	<i>l</i>	<i>l</i>
<i>Corydon</i>	24	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>lp i</i>	<i>lp</i>	<i>pi</i>	<i>i</i>	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>

	Page	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Lycæna Acis	26						i	i					
Alsus	26	l	l	l	l	l	pi	li	l	l	l	l	l
Argiolus	26	p	p	p	pi	i	lp	pi	li	lp	lp	p	p
Arion	27	l	l	l	l	l	li	li	l	l	l	l	l
Nemco. Lucina	27	p	p	p	p	pi	lp	l	l	lp	p	p	p
Syr. alveolus	28	p	p	p	p	pi	li	l	l	lp	p	p	p
Tha. Tages	28	l	l	l	lp	i	li	lp	i	l	l	l	l
Hesp. Paniscus	29						i	i	li	l	l	l	l
Sylvanus	29	l	l	l	l	l	i	i	li	l	l	l	l
comma	29						lp	pi	i	l	l	l	l
linea	30	l	l	l	l	l	lp	pi	i	l	l	l	l
Actæon	30						lp	pi	i	l	l	l	l

NOCTURNI.

Smer. ocellatus	31	p	p	p	p	pi	pi	li	l	lp	p	p	p
populi	31	p	p	p	p	pi	pi	i	l	lp	lp	p	p
tiliæ	32	p	p	p	p	pi	pi	l	l	l	lp	p	p
Ach. Atropos	32	p	p	p	p	p	pi	li	li	lp	lp	p	p
Sph. convolvuli	33							lp	pi	pi	i		
ligustri	34	p	p	p	p	pi	pi	i	l	l	lp	p	p
Deil. euphorbiæ	34	p	p	p	p	p	pi	l	l	lp	p	p	p
gali	34	p	p	p	p	p	pi	i	li	l	lp	p	p
lineata	35						l	lp	l	l			
Chœ. celerio	36								lp	lp	i		
porcellus	36	p	p	p	p	p	pi	l	lp	lp	p	p	p
elpenor	37	p	p	p	p	p	pi	l	l	lp	p	p	p
nerii	37							l	l	lp	i		
Mac. stellatarum	37	i	i					l	lp	lp	i	i	i
fuciformis	38	p	p	p	p	pi	li	l	lp	p	p	p	p
bombylifformis	38	p	p	p	p	pi	i	li	lp	p	p	p	p
Sesia myopiformis	39	l	l	l	l	lp	li	l	l	l	l	l	l
culiciformis	39	l	l	l	l	lp	li	li	l	l	l	l	l
formiciformis	39	l	l	l	l	lp	li	li	l	l	l	l	l
chrysidiformis	40	l	l	l	l	lp	i	i	l	l	l	l	l
ichneumoniformis	40	l	l	l	l	l	lp	pi	l	l	l	l	l
cynipiformis	41	l	l	l	l	lp	pi	li	li	l	l	l	l
musciformis	41	l	l	l	l	lp	lp	li	l	l	l	l	l
tipuliformis	41	l	l	l	lp	lp	i	li	l	l	l	l	l
allantiformis	42						i	i					
scoliformis	42	l	l	l	l	p	i	i	l	l	l	l	l
sphæciformis	42					l	p	pi					
asiliformis	42					l	p	i					
bembiciformis	43	l	l	l	l	lp	i	i	l	l	l	l	l
apiformis	43	l	l	l	l	lp	i	i	l	l	l	l	l
Mac. arundinis	44	l	l	l	l	lp	li	li	l	l	l	l	l
Zeu. œsculi	44	l	l	l	l	lp	lp	li	l	l	l	l	l
Coss. ligniperda	45	lp	lp	lp	lp	lp	lp	lp	lp	lp	lp	lp	lp
Hepialus hectus	45	l	l	l	l	lp	lp	lp	l	l	l	l	l
lupulinus	46	l	l	l	l	lp	lp	l	l	l	l	l	l
Sylvanus	46	l	l	l	l	lp	lp	li	li	l	l	l	l
velleda	46	l	l	l	lp	lp	lp	li	li	l	l	l	l
humuli	47	l	l	l	lp	lp	li	l	l	l	l	l	l
Limac. asellus	47	p	p	p	p	p	pi	pi	l	l	lp	p	p
testudo	47	p	p	p	p	p	pi	l	l	l	lp	p	p
Procris statices	48	l	l	l	l	l	lp	li	l	l	l	l	l
Geryon	48	l	l	l	l	lp	i	li	l	l	l	l	l
globulariæ	49					lp	i	i					
Zygæna Minos	49	l	l	l	l	l	pi	p	l	l	l	l	l
nubigena	50	l	l	l	l	p	l	l	l	l	l	l	l
exulans	50	l	l	l	l	l	lp	i	l	l	l	l	l
meliloti	50	l	l	l	l	l	lp	lp	l	l	l	l	l
trifolii	51	l	l	l	l	lp	pi	l	l	l	l	l	l
loniceræ	51	l	l	l	l	l	pi	i	l	l	l	l	l

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Zygæna filipendulæ . . .	52	l	l	l	l	l	pi	l	l	l	l	l	l
Syntomis Phegea . . .	52	l	l	l	l	l	p	i	i	l	l	l	l
Nacليا ancilla . . .	53						i						
Nola cucullatella . . .	53					lp	lpi	i					
cristulalis . . .	53	l	l	l	l	lpi	i	l	l	l	l	l	l
strigula . . .	54					l	lp	pi					
centonalis . . .	54							i					
Albula . . .	54	l	l	l	l	l	l	lpi	l	l	l	l	l
Nudaria senex . . .	54	l	l	l	l	l	lpi	li	li	l	l	l	l
mundana . . .	55	l	l	l	l	l	lp	i	i	l	l	l	l
Setina irrorella . . .	55	l	l	l	l	l	p	i	li	l	l	l	l
Callig. miniata . . .	56	l	l	l	l	lp	pi	i	l	l	l	l	l
Lithosia mesomella . . .	56	l	l	l	l	l	pi	i	l	l	l	l	l
muscerda . . .	56	l	l	l	l	l	p	i	li	l	l	l	l
aureola . . .	57	l	l	l	l	lp	i	i			l	l	l
pygmaeola . . .	57					l	l	p	i				
caniola . . .	57	l	l	l	l	l	l	lp	lpi	l	l	l	l
molybdeola . . .	57	l	l	l	l	lp	p	i	l	l	l	l	l
helveola . . .	58	l	l	l	l	lp	lpi	i	l	l	l	l	l
complanula . . .	58	l	l	l	l	l	lpi	i	li	l	l	l	l
complana . . .	59	l	l	l	l	l	lp	i	i	l	l	l	l
griseola . . .	59	l	l	l	l	l	lpi	i	l	l	l	l	l
quadra . . .	60	l	l	l	l	l	lp	lpi	li	l	l	l	l
rubricollis . . .	60	l	l	p	p	i	i	i	l	l	l	l	l
Eulepia grammica . . .	60												
cribrum . . .	61	l	l	l	l	l	i	i	li	l	l	l	l
Deiop. pulchella . . .	61						i	i	li	i	i		
Euche. jacobææ . . .	61	p	p	p	p	p	pi	li	lp	p	p	p	p
Callim. Hera . . .	62	l	l	l	lp	lpi	pi	l	l	l	l	l	l
dominula . . .	62	l	l	l	lp	lp	pi	l	l	l	l	l	l
Euth. russula . . .	63	l	l	l	l	lp	i	l	l	l	l	l	l
Chelonia plantaginis . . .	63	l	l	l	l	lp	i			l	l	l	l
caja . . .	64	l	l	l	l	l	pi	li	l	l	l	l	l
villica . . .	64	l	l	l	l	lp	pi	i	l	l	l	l	l
Arctia fuliginosa . . .	64	l	l	l	l	lp	lpi	l	lpi	lpi	l	l	l
mendica . . .	65	p	p	p	pi	pi	pi	l	lp	lp	p	p	p
lubricepeda . . .	65	p	p	p	p	p	pi	i	l	l	lp	p	p
menthastri . . .	66	p	p	p	pi	i	i	li	lp	lp	p	p	p
urticæ . . .	66	p	p	p	p	p	i	i	lp	p	p	p	p
Liparis chrysoorrhœa . . .	66	l	l	l	l	l	lp	p	i	l	l	l	l
auriflua . . .	67	l	l	l	l	l	lp	i	li	l	l	l	l
salicis . . .	67	l	l	l	l	l	lp	i	li	l	l	l	l
dispar . . .	68				l	l	lpi	lpi	pi				
monacha . . .	68				l	l	l	lpi	i				
Orgyia pudibunda . . .	69	p	p	p	p	pi	li	i	l	l	lp	p	p
fascelina . . .	69	l	l	l	l	lp	pi	i	l	l	l	l	l
cænosa . . .	70	p	p	p	p	p	i	li	li	l	l	p	p
gonostigma . . .	70	l	l	l	l	lp	pi	i	l	l	l	l	l
antiqua . . .	70				l	l	lp	lpi	lpi	lpi	i		
Demas coryli . . .	71	p	p	p	pi	li	l	l	lp	lp	p	p	p
Trich. cratægi . . .	71			l	l	l	lp	p	pi	i			
Pœcil. populi . . .	72				l	l	l	p	p	p	p	pi	i
Eri. lanestris . . .	72	p	pi	i	i	l	l	lp	lp	p	p	p	p
Bombyx neustria . . .	72				l	l	lp	lpi	i				
castrensis . . .	73				l	l	lp	pi	i	l	l	l	l
rubi . . .	73	l	l	l	l	lp	pi	i	l	l	l	l	l
quercus . . .	74	l	l	l	l	lp	lpi	i	i	l	l	l	l
trifolii . . .	75	l	l	l	l	l	lp	p		l	l	l	l
Odon. potatoria . . .	75	l	l	l	l	l	l	p	i	l	l	l	l
Lasi. quercifolia . . .	75	l	l	l	l	l	pi			l	l	l	l
ilicifolia . . .	76	p	p	p	pi	i	l	l	l	p	p	p	p
Eudromis versicolor . . .	76	p	p	pi	i	l	l	l	l	p	p	p	p
Saturnia carpini . . .	77	p	p	p	pi	lpi	l	lp	lp	lp	p	p	p

GEOMETRINA.

	Page	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Urop. sambucaria	78	l	l	l	l	l	lp	lp i	l	l	l	l	l
Epione vespertaria	78						lp	lp i					
apiciaria	79						li	lp i		i			
advenaria	79	p	p	p	p	p i	lp	lp	lp	p	p	p	p
Rumia cratægata	80	l	l	l	lp i	lp i	li	li	lp i	lp i	li	l	l
Venilia maculata	80	p	p	p	p	p i	li	lp	lp	lp	p	p	p
Ange prunaria	80	l	l	l	l	lp i	p i	l	l	l	l	l	l
Met. margaritata	81	l	l	l	l	l	p i			l	l	l	l
Ello, fasciaria	81	l	l	l	l	l	p i			l	l	l	l
Eury. dolabraria	82	p	p	p	p	p i			l	lp	p	p	p
Peri. syringaria	82	l	l	l	p	lp	lp i	i		l	p	p	p
Selenia illunaria	82	p	p i	i	li	l	lp	li	li	i	lp	p	p
lunaria	83	p	p	p	p	p i	li	li	lp	p	p	p	p
illustraria	83	p	p	p	p i	i	lp	i	i	l	lp	p	p
Odon. bidentata	84	p	p	p	p i	li	l	l	l	l	lp	p	p
Croc. elinguarua	84				l	l	lp	p i					
Ena. autumnaria	85						l	lp	lp	i			
almiaria	85						l	lp	p i	i			
fuscantaria	86					l	l	lp	lp	lp i			
orosaria	86					l	l	li	lp i				
angularia	86				l	l	lp	lp	p i	i			
Himera pennaria	87					l	lp	p	p	p i	i	i	p i
Phi. pilosaria	88	i	i	i		l	l	lp	p	p	p	p	p
Nyss. zonaria	88	p	p	p	p i	l	lp	p	p	p	p	p	p
hispidaria	88	p	p i	i		l	lp	lp	p	p	p	p	p
lapponaria	89	p	p	p	p i		lp	lp	p	p	p	p	p
Biston hirtarius	89	p	p	p	lp i	l	l	lp	p	p	p	p	p
Amp. prodromaria	90	p	p	p	i		l	l	lp	p	p	p	p
betularia	90	p	p	p	p	p i	i	l	lp	lp	lp	p	p
Heme abruptaria	90	p	p	p	p i	i	li	l	li	p	p	p	p
Cleora viduaria	91												
glabraria	91					l	lp	lp i	i				
licheuaria	91	l	i	l	l	l	lp	i		l	l	l	l
Boar. repandata	92	l	l	l	l	lp	p i	i		l	l	l	l
rhomboidaria	92	l	l	l	l	lp	p i	li	l	l	l	l	l
perfumaria	93	l	l	l	l	lp	p i	i	l	l	l	l	l
abietaria	93	i	l	l	l	l	lp	i		l	l	l	l
cinctaria	93	p	p	p	p	li	li	lp	p	p	p	p	p
roboraria	93	l	l	l	l	l	lp	p i	i	l	l	l	l
consortaria	94	p	p	p	p	p	p	i	l	p	p	p	p
Teph. consonaria	94	p	p	p	p	li	i	i	i	p	p	p	p
crepuscularia	95	p	p i	i				i	l	lp	p	p	p
extersaria	95	p	p	p	p	p	i	i	p	lp	p	p	p
punctulata	96	p	p	p	p	i	li	l	l	l	p	p	p
Gnophos obscurata	96	l	l	l	l	lp	p	lp i	l	l	l	l	l
Dasy. obfuscata	96	l	l	l	l	l	lp	p i	i	i	l	l	l
Psodos trepidaria	97							i					
Mnio. cineraria	97					l	lp	i					
Bole. fuliginaria	97						i						
Pseud. cytisaria	98	l	l	l	l	l	lp	lp i	l	l	l	l	l
Geo. papilionaria	98	l	l	l	l	l	lp i	i		l	l	l	l
smaragdaria	99					l	lp i	i					
Nemoria viridata	99	p	p	p	p	p i	li	li	l	lp	p	p	p
lodes vernaria	99	l	l	l	l	lp i	li	li	l	lp	p	p	p
lactearia	100	p	p	p	p	p	i	i	lp	lp	p	p	p
Phoro. bajularia	100	p	p	p	p	p	i	li	lp	p	p	p	p
Hemi. thymiaria	100	l	l	l	l	lp	p i	lp	l	l	l	l	l
Ephyra porata	101	p	p	p	p	p i	li	li	i	l	lp	p	p
punctaria	101	p	p	p	p	p i	i	lp		li	p	p	p
trilinearia	102	p	p	p	p	i	i	l	l	lp	lp	p	p

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Ephyra omicronaria	102	p	p	p	p	p	li	l	l	p	p	p	p
orbicularia	102	p	p	p	p	pi	i	l	lp	p	p	p	p
pendularia	103	p	p	p	p	pi	l	li	i	l	p	p	p
Hyria auroraria	103	l	l	l	l	l	pi	l	l	l	l	l	l
Asthena luteata	104	p	p	p	p	p	li	li	l	l	lp	p	p
candidata	104	p	p	p	lp	li	li	p	p	p	p	p	p
sylvata	104						i	i	l	l			
Blomeri	105	p	p	p	p	p	i	li	l	l	lp	p	p
Eupis. heparata	105	p	p	p	p	p	i	li	l	lp	p	p	p
Venusia cambrica	105	p	p	p	p	p	i	i	l	l	p	p	p
Acidalia ochreatea	106						i	i	i	l			
rubricata	106	l	l	l	l	l	lp	i	li	l	l	l	l
scutulata	106	l	l	l	l	l	lp	i	li	l	l	l	l
bisetata	107	l	l	l	l	l	lp	i	li	l	l	l	l
trigeminata	107	p	p	p	p	p	z	li	pi	p	p	p	p
contiguaria	108	l	l	l	l	lp	p	pi	l	l	l	l	l
rusticata	108	l	l	l	l	l	p	l	l	l	l	l	l
interjectaria	109	l	l	l	l	lp	pi	li	l	l	l	l	l
holosericata	109	l	l	l	l	lp	p	li	li	l	l	l	l
incanaria	109						i	i	l	l			
circellata	109						i	li	l	l			
ornata	110	l	l	l	lp	i	i	li	li	l	l	l	l
pronutata	110	l	l	l	l	lp	i	l	l	l	l	l	l
straminata	110	l	l	l	l	l	ip	lp	l	l	l	l	l
subsericata	111	l	l	l	l	lp	i	l	l	l	l	l	l
strigaria	111												
immutata	111	l	l	l	l	lp	pi	li	l	l	l	l	i
remutata	112	l	l	l	l	lp	li	l	l	l	l	l	l
fumata	112	l	l	l	l	lp	pi	i	l	l	l	l	l
strigilata	112	l	l	l	l	lp	lp	i	l	l	l	l	l
imitaria	113	l	l	l	l	lp	lp	p	pi	l	l	l	l
emutaria	113	l	l	l	l	l	p	pi	l	l	l	l	l
aversata	113	l	l	l	l	l	pi	li	l	l	l	l	l
inornata	114	l	l	l	l	lp	lp	i	l	l	l	l	l
degeneraria	114	l	l	l	l	p	p	i	l	l	l	l	l
emarginata	115	l	l	l	l	l	li	lp	i	l	l	l	l
Timandra amataria	115	l	l	l	l	lp	pi	li	li	l	l	l	l
Cabera pusaria	115	p	p	p	p	p	pi	li	li	lp	p	p	p
rotundaria	116	p	p	p	p	pi			lp	p	p	p	p
exanthemaria	116	p	p	p	p	pi	li	li	lp	p	p	p	p
Corycia tenerata	117	p	p	p	p	pi	li	l	lp	p	p	p	p
taminata	117	p	p	p	p	i	i	lp	lp	p	p	p	p
Aleucis pictaria	118	p	p	p	pi	i	l	lp	p	p	p	p	p
Maca. alternata	118	p	p	p	p	p	p	i		lp	p	p	p
notata	118	p	p	p	p	p	i	i		lp	lp	p	p
liturata	118	p	p	p	p	i	i	i		l	lp	p	p
Halia vaularia	119						lp	i					
Strenia clathrata	119	p	p	p	p	pi	li	lp	pi	p	p	p	p
Panagra petriaria	120					lp	li						
Nume. pulveraria	120	p	p	p	pi	i	l	lp	lp	p	p	p	p
Scodionia belgiaria	120	l	l	l	l	pi	li	l	l	l	l	l	l
Selidosema plumaria	121					l	p	i					
Fidonia carbonaria	121	p	p	p	p	pi	li	lp	p	p	p	p	p
atomaria	121	p	p	p	p	pi	li	lp	p	p	p	p	p
pinaria	122	p	p	p	z	i			lp	p	p	p	p
pinetaria	122					lp	p	i					
conspicua	123	p	p	p	p	pi	li	i	l	l	p	p	p
Minoa euphorbiata	123	p	p	p	p	p	i	i	l	l	lp	p	p
Scoria dealbata	123	l	l	l	l	lp	pi	l	l	l	l	l	l
Sterria saccharia	124						lp	i	li	lp	pi		
Aplasta ouonaria	124	p	p	p	lp	i	p	i	i	lp	p	p	p
Lythria purpuraria	125	p	p	p	p	pi	pi	i	lp	p	p	p	p
Aspilates strigillaria	125	l	l	l	l	lp	pi	i		l	l	l	l
citraria	125	p	p	p	p	pi	li	l	lp	lp	p	p	p

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Eupith. expallidata	150	p	p	p	p	p	p	i	i	l	lp	p	p
absynthiata	150	p	p	p	p	p	p	i	i	l	lp	lp	p
minutata	151	p	p	p	p	p	p	i	i	lp	lp	p	p
assimilata	152	p	p	p	p	p	p	i	li	l	lp	p	p
tenuiata	152		l	l	l	l	p	i	i				
subciliata	152				l	lp	p	i	i				
dodoneata	153	p	p	p	p	i	i	l	l	l	lp	p	p
abbreviata	153	p	p	p	p	i	l	lp	p	l	lp	p	p
exiguata	154	p	p	p	p	p	i	i	l	l	lp	p	p
sobrinata	154		l	l	l	l	lp	p	l	p	l	p	p
togata	155	p	p	p	p	p	p	i	l	p	p	p	p
pumilata	155	p	p	p	p	p	l	p	l	lp	p	p	p
coronata	155	p	p	p	p	i	i	l	l	p	p	p	p
rectangulata	156				l	lp	p	i					
debiliata	156				l	lp	p	i					
Collix sparsata	156						i		lp	l			
Lobo. sexalata	156	p	p	p	p	p	i	l	l	lp	p	p	p
hexapterata	157	p	p	p	p	p	l	l	l	lp	p	p	p
viretata	157	p	p	p	p	lp	i	lp	p	lp	p	p	p
lobulata	157	p	p	p	p	p	l	p	p	p	p	p	p
polycommata	158	p	p	p	p	p	l	l	p	p	p	p	p
Thera juniperata	158						l	l	l	lp	p		
simulata	158			l	li	li	lp	p	l	l			
variata	159			l	l	lp	i	lp	i				
firmata	159				l	lp	p	i	li				
Ypsipetes ruberata	159	p	p	p	p	p	i	i		l	l		p
impluviata	160	p	p	p	p	p	p	i		l	l	l	lp
elutata	160				l	l	l	p	i				
Melanth. rubiginata	161					l	lp	i	i				
ocellata	161	p	p	p	p	p	i	li	li	lp	p	p	p
albicillata	161	p	p	p	p	p	li	li	lp	lp	p	p	p
Melanip. hastata	162	p	p	p	p	p	p	i	li	p	p	p	p
tristata	162	p	p	p	p	p	p	i	li	lp	p	p	p
procellata	162	p	p	p	p	p	p	i	li	l	lp	p	p
unaugulata	163	p	p	p	p	p	p	i	li	lp	p	p	p
rivata	163	p	p	p	p	p	li	li	lp	p	p	p	p
subtristata	164	p	p	p	p	p	p	i	li	lp	p	p	p
montanata	164	l	l	lp	lp	p	p	i	li	l	lp	p	p
galata	164	p	p	p	p	p	p	i	li	lp	lp	p	p
fluctuata	165	p	p	p	p	p	i	li	p	i	lp	lp	p
Anticlea sinuata	165	p	p	p	p	p	p	i	li	l	lp	p	p
rubidata	166	p	p	p	p	p	lp	i	li	l	lp	p	p
badiata	166	p	p	p	li	l	l	lp	p	p	p	p	p
derivata	167	p	p	p	lp	i	li	lp	lp	p	lp	p	p
berberata	167	p	p	p	p	lp	i	l	p	p	lp	p	p
Coremia munitata	168	l	l	lp	p		lp	i	li	l	l	l	l
propugnata	168					i	li	lp	p	i	l		
ferrugata	168					i	li	l	lp	i	l		
unidentaria	169					i	i	l	lp	i	l		
quadrifasciaria	169	l	l	l	l	p	i	li	l	l	l	l	l
Campto. bilineata	170				l	p	i	i	l				
fluviata	170	p	p	p	p	lp	i	li	lp	l	lp	p	p
Phiba. tersata	170	p	p	p	p	p	l	p	li	lp	p	p	p
lapidata	171						lp	p	l				
lignata	171					i	i	l	lp	i			
polygrammata	171				i					l			
vitalbata	172	p	p	p	p	p	lp	i	lp	i	lp	p	p
Scotosia dubitata	172	i	i	i		l	lp	p	p	i	i	i	i
vetulata	172					l	lp	i	i				
rhamnata	173					l	lp	i	i				
certata	173	p	p	p	p	i	li	lp	p	p	p	p	p
undulata	173	p	p	p	p	p	i	li	l	lp	p	p	p
Midaria psittacata	174	i	i	i	i		l	l	lp	p	p	p	p
miata	174	i	i	i	i	l	l	lp	lp	i	i	i	i

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sagittata . . .	175	p	p	p	p	p	p	p i	l p	l p	p	p	p
russata . . .	176	l p	l p	p	p i	p i	l	l	l i	l p	l p	l p	l p
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suffumata . . .	177	p	p	p i	p i	l i	l p i	p	p	p	p	p	p
reticulata . . .	177	p	p	p	p	p	p	p i	l	l	l p	p	p
silaceata . . .	178	p	p	p	p	p i	l i	l		p	p	p	p
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testata . . .	178				l	l	l p i	p i					
populata . . .	179			l	l	l	l p	p i					
fulvata . . .	179				l	l	l p	p i					
pyraliata . . .	180			l	l	l p	p i	i					
dotata . . .	180				l	l	l p	i	i				
Pelurga comitata . . .	180	p	p	p	p	p	p	i	l	l p	l p	p	p
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bipunctaria . . .	182	l	l	l	l	l	l	p i	l i	l	l	l	l
lineolata . . .	182	p	p	p	p i	l i	l i	l	l p	l p	p	p	p
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Anai, plagiata . . .	183	l	l	l	l	i	i l	l p	i	i	l	l	l
Litho. griseata . . .	183	p	p	p	p	p	i	l	l p	p	p	p	p
Ghesia spartiata . . .	184					l	l	p		p i			
obliquaria . . .	184	p	p	p	p	i	i	l i	l p	l p	p	p	p
Tana. chærophyllata . . .	184					l	l p i	i					

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hamula . . .	187	p	p	p	p	p i	l i	p	i	l	p	p	p
unguicula . . .	187	p	p	p	p	p i	l p	p	l i	l p	p	p	p
Cilix spinula . . .	188	p	p	p	p	l p i	l p i	l p	l p i	l p	l p	p	p

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bifida . . .	190	p	p	p	p	p	i	l i	l	l p	p	p	p
vinula . . .	190	p	p	p	p	p i	l i	l	l p	l p	p	p	p
Stauro. fagi . . .	191	p	p	p	p	p	i	l i	l	l p	p	p	p
Petas. cassinea . . .	192					l	l p	p	p	p	p i	i	
nubeculosa . . .	192	p	p	p i	p i	l p	l p	p	p	p	p	p	p
Pygera Bucephala . . .	193	p	p	p	p	p	p i	l i	l	l	l p	p	p
Clostera curtula . . .	193	p	p	p	l p i	l i	p	i	l	l	l p	p	p
anachoreta . . .	193	p i	p i	p i	p i	p i		l	l i	l i	l p i	p i	p i
reclusa . . .	194	p	p	p	p	p i		l	l i	l p	p	p	p
Glyp. crenata . . .	194					i	i	l	l				
Ptilop. plumigera . . .	195				l	l	l	l p	p	p	p i	i	
Ptilod. palpina . . .	195	p	p	p	p	p	i	l p	l	l p	l p	p	p
Noto. camelina . . .	195	p	p	p	p	p i	i	l i	l i	l i	l p	p	p
cucullina . . .	196	p	p	p	p	p i			l	l	p	p	p
carmelita . . .	196	p	p	p i	p i		l	l p	p	p	p	p	p
bicolor . . .	197	p	p	p	p	p	p i	l	l p	p	p	p	p
dictæa . . .	197	p	p	p	p	p i	l i	l	l	l p	p	p	p
dictæoides . . .	197	p	p	p	p	p i	i		l	l p	l p	p	p
dromedarius . . .	198	p	p	p	p	p	i		l	l p	p	p	p
trilophus . . .	198	p	p	p	p	p i	i	l i	l i	l p	p	p	p
ziczac . . .	199	p	p	p	p	p i	p i	l i	l i	l p	l p	p	p
trepida . . .	199	p	p	p	p	l p i	i i	l	l	p	p	p	p
chaonia . . .	200	p	p	p	p	p i	l i	l	l	l	p	p	p
dodones . . .	200	p	p	p	p	p i		l	l	l p	p	p	p
Di. cæruleocephala . . .	200		l	l	l	l	l	p	p	i			

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Thyatira derasa	202	p	p	p	p	p	i	i	l	lp	p	p	p
batis	202	p	p	p	p	p	pi	li	lp	lp	p	p	p
Cyba, duplari	203	p	p	p	p	p	i	i	l	l	lp	p	p
fluctuosa	203	p	p	p	p	p	i	i	l	l	lp	p	p
diluta	203						l	lp	pi	i			
or	203	p	p	p	p	p	i	i	l	lp	p	p	p
ocularis	204	p	p	p	p	pi	lp	li	l	l	p	p	p
flavicornis	204	p	p	pi	i	l	l	l	p	p	p	p	p
ridens	205	p	pi	pi	i	l	l	l	p	pi	p	p	p
Bryophila glandifera	205	l	l	l	l	l	p	pi	pi	i	l	l	l
perla	205	l	l	l	l	l	p	pi	pi	i	l	l	l
algæ	206							i					
Diphthera Orion	206	p	p	p	p	p	lp	li	lp	lp	p	p	p
Acronycta tridens	207	p	p	p	p	p	i	l	l	lp	lp	p	p
psi	207	p	p	p	p	p	i	l	l	lp	lp	p	p
leporina	208	p	p	p	p	p	pi	li	l	lp	p	p	p
aceris	208	p	p	p	p	p	pi	li	l	lp	p	p	p
megacephala	208	p	p	p	p	p	pi	li	l	lp	p	p	p
strigosa	209	p	p	p	p	p	i	li	l	lp	p	p	p
alni	209	p	p	p	p	pi	i	li	lp	p	p	p	p
ligustri	210	p	p	p	p	p	pi	li	l	lp	p	p	p
rumicis	210	p	p	p	p	pi	i	l	l	lp	lp	p	l
auricoma	211	l	i	l	l	lp	i	l	l	l	l		
menyanthidis	211						i	i	l	l	l		
myricæ	212						i	i	l	l	l		
Simyra venosa	212						pi	l	i	i			
Synia musculosa	212						i	i	i	i	l	l	l
Leucania conigera	213	l	l	l	l	lp	p	i	li	l	li	l	l
vitellina	213	l	l	lp	lp	p	p	pi	i	i	l	l	l
turca	213												
lithargyria	214	l	l	l	l	l	li	lp	pi	i	l	l	l
albipuncta	214												
extranea	214												
obsoleta	214	p	p	p	p	p	i	i	l	l	p	p	p
Lorei	215												
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littoralis	215	l	l	l	l	lp	lp	i	l	l	l	l	l
pudorina	216												
comma	216	l	l	l	l	p	l	i	l	l	l	l	l
straminea	216												
impura	217	l	l	l	l	lp	pi	i	i	l	l	l	l
pallens	217	l	l	l	l	lp	pi	i	i	l	l	l	l
phragmitidis	217	l	l	l	l	l	lp	li	l	l	l	l	l
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brevilinea	220												
geminipuncta	220					l	lp	pi					
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typhæ	220							l	lp	i			
lutosæ	221		l	l	l	l	l	l	lp	i	i		
Gortyna flavago	221				l	l	l	l	lp	pi	lp	pi	
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petasitis	222												
micacca	222					l	l	lp	pi	pi			

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Axylia putris	222	p	p	p	p i	i	i	l	lp				
Xyloph. rurea	223	l	l	l	lp	p	p i	i		p	p	p	p
lithoxylia	223	l	l	l	l	p	lp	l-i	l	l	l	l	l
sublustris	224	l	l	l	l	p	p i	l	l	l	l	l	l
polyodon	224	l	l	l	l	p	p i	l i	l	l	l	l	l
hepatica	225	i	l	l	lp	p	p i	i					
scolopacina	225					l	lp	i	i				
Dipt. pinastri	225	p	p	p	p	p i	i	l	l	p	p	p	p
Xylom. conspicillaris	226	p	p	p	p i	p i	l i	l	l	p	p	p	p
Aporophyla australis	226	l	lp	lp	lp	p	p	p i	p i	p i	p	p	p
Laph. exigua	227												
Neuria. saponariæ	227	l	l	l	lp	p	p i	i					
Heliophobus popularis	227	l	l	l	l	lp	p	p	p i	i	l	l	l
hispidus	228	l	l	l	lp	p	p	p	p	i	l	l	l
Char. graminis	228	l	l	l	l	l	l	l	l	i	l	l	l
Pache. leucophæa	229	l	l	l	lp	p	p i	p i	i	i	l	l	l
Cerigo Cytherea	229	l	l	l	l	p	p	p					
Luperina testacea	229	l	l	l	l	l	l	p					
Dumerili	230							p		i			
Gueneei	230												
cespitis	230				l	l	l	p	i				
Mames. abjecta	230												
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furva	231	l	l	p	p	p	lp	l	i	p	p	p	p
brassicæ	231	p	p	p	p	p i	l i	l i	l i	l p i	l p	p	p
persicariæ	232	p	p	p	p	p	p i	l i	l i	l p	l p	p	p
Apam. basilinea	233	l	l	lp	p	p i	p i	l	l	l	l	l	l
connexa	233												
gemina	233	l	l	l	l	lp	p i	i	i	l	l	l	l
unanimitis	233	l	l	l	l	p	p	i	l	l	l	l	l
ophiogramma	234												
fibrosa	234					l	p	i					
oculea	234	l	l	l	l	p	p	i	i	l	l	l	l
Miana strigilis	235	l	l	l	l	lp	p	i		l	l	l	l
fasciuncula	235					l	lp	i					
literosa	235						l	i					
furuncula	236				l	l	lp	i					
expolita	236												
arcuosa	236					l	p i	i					
Celæna Haworthi	237						l	lp	i				
Gram. trilinea	237	l	l	l	l	p	i	i	l	l	l	l	l
Hydr. palustris	238									l	l	l	l
Acos. caliginosa	238												
Cara. Morpheus	238	p	p	p	p	p	p i	i	l	l	l	l	l
alsines	238	l	l	l	p	lp	p	p i	i	l	l	l	l
blanda	239	l	l	lp	p	p	p i	i	i	l	l	l	l
cubicularis	239	l	l	l	p	lp	p i	i	i	l	l	l	l
Rusina tenebrosa	240	l	l	l	p	p i	i	i	l	l	l	l	l
Agrotis vallisera	240	l	l	l	p	lp	p i	i	i	l	l	l	l
puta	240	p	p	p	p	p i	i	i	i	l	l	l	l
suffusa	241	p	p	p i	l i	l	l	l	p	i	l	l	l
saucia	241	p	p	p	p	i	i	l	l	i	l	l	l
segetum	242	l	l	l	p	lp	lp	i	l	l	l	l	l
lunigera	242												
exclamationis	242	p	p	p	p	p	p i	l	l	l	l	l	l
corticea	243	l	l	l	lp	p	p i	p i	l	l	l	l	l
cinerea	243	l	l	l	l	lp	p i	p i	l	l	l	l	l
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cursoria	244												
nigricans	244				l	l	lp	l	l	l	l	l	l
tritici	245						lp	p i					
aquilina	245					l	lp	p i					
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ravida	247	l	l	l	l	l	p	i		l	l	l	l
pyrophila	248							i	l				
lucerneæ	248			l	l	lp	p	i					
Ashworthi	248	l	l	l	l	p	p	pi	li	l	l	l	l
Triphaena janthina	249	l	l	l	l	lp	p	i	i	li	l	l	l
fimbria	249	l	l	l	l	lp	pi	i	i	li	l	l	l
interjecta	250	l	l	l	l	p	p	i		l	l	l	l
subsequa	250	l	l	l	l	p	p	i		l	l	l	l
orbona	251	l	l	l	l	l	p	i		l	l	l	l
pronuba	251	l	l	l	l	lp	lpi		l	l	l	l	l
Noctua glareosa	252	l	l	l	l	l	lp	i	li	li	l	l	l
depuncta	252				l	l	p	i	i	l			
augur	252	l	l	l	l	lp	pi	li		l	l	l	l
plecta	253	p	p	p	p	pi	li	lpi	pi	p	p	p	p
flammatra	254							i					
C-nigrum	254	p	p	p	p	pil	il	p	i	li	lp	p	p
ditrapezium	254					l	p	i					
triangulum	254				l	lp	pi						
rhomboidea	255	l	l	l	l	l	lp	i		l	l	l	l
brunnea	255	l	l	l	lp	p	i	i		l	l	l	l
festiva	256	l	l	lp	lpi	lpi	pi	lpi	l	l	l	l	l
confusa	256	l	l	l	l	lp	pi	li	l	l	l	l	l
Dahli	257	l	l	l	l	l	pi	i	l	l	l	l	l
subrosea	257					l	p	i					
rubi	257					l	l	lp	pi				
umbrosa	258	l	l	l	l	l	p	i	li	l	l	l	l
baja	258					l	p	i					
sobrina	258							i					
neglecta	259	l	l	l	l	l	p	p	i		l	l	l
xanthographa	259	l	l	l	l	lp	p	pi	pi	li	l	l	l
Trach. piniperda	260	p	p	pi	i		l	lp	pi	p	p	p	p
Pach. alpina	260							i					
Taenio. gothica	260	p	p	pi	pi	l	l	lp	p	p	p	p	p
leucographa	261	p	p	pi	pi	l	lp	lp	p	p	p	p	p
rubricosa	261	p	p	pi	li	l	lp	p	p	p	p	p	p
instabilis	262	p	p	pi	i	l	l	lp	p	p	p	p	p
opima	262	p	p	pi	li	l	l	lp	p	p	p	p	p
populeti	263	p	p	pi	li	l	l	lp	p	p	p	p	p
stabilis	263	p	p	pi	i	l	l	lp	p	p	p	p	p
gracilis	263	p	p	pi	i	li	l	lp	p	p	p	p	p
miniosa	264	p	p	pi	i	l	lp	p	p	p	p	p	p
munda	264	p	p	pi	i	l	l	lp	p	p	p	p	p
cruda	265	p	p	pi	i	l	l	lp	p	p	p	p	p
Orth. suspecta	265					l	l	l					
ypsilon	265					l	lp	pi	i				
lota	266					l	lp	p	p	pi	i	i	i
macilenta	266				l	l	l	l	p	pi	i	i	i
Ancho. rufina	267			l	l	l	lp	p	p	pi	i	i	i
pistacina	267				l	l	lp	p	p	pi	i	i	i
lunosa	267	l	l	l	l	p	p	p	p	pi	i	l	l
litura	268				l	l	lp	p	p	pi	i	i	i
Cerastis vaccinii	268	i	i	i		l	l	lp	p	p	p	pi	i
spadicea	268	i	i	i		lp	lp	p	p	p	p	pi	i
erythrocephala	269	i	i	i		l	l	p	p	p	pi	i	i
Scopel. satellitia	269	i	i	i		l	l	p	p	p	pi	i	i
Dasyampa rubiginea	269	i	i	i	i	l	l	l	p	p	pi	i	i
Oporina croceago	270	i	i	i	il	l	lp	pl	p	p	pi	i	i
Xanthia citrago	270					l	l	lp	pi	pi	i	i	i
cerago	271					l	lp	lp	i	i	i	i	i
silago	271				l	l	lp	p			i	i	i
aurago	271					l	l	l	pi				

	Page	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Xanthia gilvago . . .	272				l	l	l	p	p ⁱ	i			
ferruginea . . .	272				l	l	l	lp	p	p ⁱ	i		
Cirr. xerampelina . . .	272	l	l	l	l	l	l	lp	p ⁱ	p ⁱ	l	l	l
Tethea subtusa . . .	273				l	l	l	p	p ⁱ				
retusa . . .	274					l	lp	lp	p ⁱ	i			
Eup. fulvago . . .	274						l	l		i			
Dicycla oo . . .	274					l	lp ⁱ	i	i				
Cosmia trapezina . . .	275					l	l	lp	p ⁱ				
pyralina . . .	275				l	l	l	p		i			
diffinis . . .	276					l	l	l	p ⁱ	i			
affinis . . .	276					l	l	l	p ⁱ	i			
Krem. ochroleuca . . .	276					l	lp	i	i	i			
Dian. irregularis . . .	277						l	i	i	l			
carpophaga . . .	277	p	p	p	p	p	i	li	lp	p	p	p	p
capsophila . . .	277	p	p	p	p	p	p ⁱ	li	li	lp	p	p	p
capsincola . . .	278	p	p	p	p	p ⁱ	i	l	li	l	p	p	p
cucuballi . . .	278	p	p	p	p	p	i	l	l	p	p	p	p
alhimacula . . .	278	p	p	p	p	p	i	l	p	p	p	p	p
conspersa . . .	279	p	p	p	p	p	i	li	l	l	p	p	p
caesia . . .	279	p	p	p	p	p	li	l	l	p	p	p	p
Barretti . . .	280						i	i					
Hecat. dysodea . . .	280	p	p	p	p	p	p	li	l	p	p	p	p
serena . . .	280	p	p	p	p	p	l	li	l	p	p	p	p
Polia chi . . .	281			l	l	l	lp	p ⁱ	i	i			
nigrocincta . . .	281						l	lp	i	i			
flavicincta . . .	282					l	l	lp	p ⁱ	i			
Dasy. templi . . .	282	i	i	i	l	l	l	lp	lp	p	p ⁱ	i	i
Epund. lutulenta . . .	282	l	l	l	lp	p	lp	p	p	p ⁱ	l	l	l
nigra . . .	283					l	l	p	p	i			
viminalis . . .	284						lp ⁱ	p ⁱ					
lichenea . . .	284	l	l	l	l	lp	p	p	p ⁱ	i	i	l	l
Valc. oleagina . . .	285	p	p	p ⁱ	i	l	l	lp	p	p	p	p	p
Misc. oxyacanthæ . . .	285					l	l	lp	lp	p	p	p	p
Agriopsis aprilina . . .	285			l	l	l	l	lp	p	p	p ⁱ	i	i
Phlo. meticulosa . . .	286			l	lp	lp ⁱ	l	l	l	lp ⁱ	lp ⁱ	l	l
empyrea . . .	287	l	l	l	l	l	l	p	p	p	lp ⁱ	l	l
Euplexia lucipara . . .	287	p	p	p	p	p ⁱ	li	li	lp	lp	p	p	p
Aplecta herbida . . .	287	l	lp	lp	lp	p	p ⁱ	li	l	l	l	l	l
occulta . . .	288	l	l	l	l	lp	p	i	i	li	l	l	l
nebulosa . . .	288	l	l	l	l	lp	p ⁱ	i	i	l	l	l	l
tincta . . .	289	l	l	l	l	lp	p ⁱ	i	i	l	l	l	l
advena . . .	289	l	l	lp	lp	p	p ⁱ	li	l	l	l	l	i
Hadena satura . . .	289					l	l	p	i				
assimilis . . .	290						i	i					
adusta . . .	290	l	l	l	lp	p ⁱ	i	l	l	l	l	l	l
protea . . .	290					l	l	p	p ⁱ	i			
glauca . . .	291	p	p	p	p	p	l	li	l	p	p	p	p
dentina . . .	291						lp ⁱ	i					
peregrina . . .	292					l	l	lp ⁱ	i	i			
chenopodii . . .	292	p	p	p	p	p	i	li	li	lp	p	p	p
atriplicis . . .	292	p	p	p	p	p	i	l	l	lp	p	p	p
suasa . . .	293	p	p	p	p	p	p ⁱ	l	l	lp	lp	p	p
oleracea . . .	293	p	p	p	p	p	p	li	lp	p	p	p	p
pisi . . .	294	p	p	p	p	p	p ⁱ	i	l	l	lp	p	p
thalassina . . .	294	p	p	p	p	p ⁱ	i	li	l	p	p	p	p
contigua . . .	295	p	p	p	p	p	i	i	l	lp	p	p	p
genistæ . . .	295	p	p	p	p	p ⁱ	i	i	lp	lp	p	p	p
rectilinea . . .	295	l	l	lp	p	p ⁱ	p ⁱ	li	l	l	l	l	l
Xylo. lithoriza . . .	296	p	p	p ⁱ	i	l	lp	lp	lp	p	p	p	p
Cloa. perspicillaris . . .	296					i	l	l	l	i			
solidaginis . . .	297						l	p		i			
Calo. vetusta . . .	297	i	i	i	i	l	l	l	p	p ⁱ	i	i	i
exoleta . . .	297	i	i	i	li	l	l	lp	p ⁱ	i	i	i	i
Xylina furcifera . . .	298	i	i	i	i	l	l	l	p	i	i	i	i

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Xylina Zinckenii 298												
rhizolitha 299	i	i	i	i	l	l	p	p	p	pi	i	i
semibrunnea 299	i	i	i	i			lp	p	p	pi	i	i
petrificata 299	i	i	i	i	l	l	l	p	p	p	p	p
Cucul. verbasci 299	p	p	p	pi	i	l	l	p	p	p	p	p
scrophulariæ 300	p	p	p	p	pi	l	l	p	p	p	p	p
lychnitis 300	p	p	p	p	p	pi	li	l	lp	p	p	p
asteris 301	p	p	p	p	p	p	l	l	p	p	p	p
gnaphalii 301	p	p	p	p	p	i	l	l	lp	p	p	p
absynthii 302	p	p	p	p	p	pi	l	l	lp	lp	p	p
chamomillæ 302	p	p	p	pi	li	li	l	p	p	p	p	p
umbratica 303	p	p	p	p	p	i	li	l	lp	p	p	p
Heliothis marginatus 303	p	p	p	p	pi	l	l	l	lp	p	p	p
peltiger 304	p	p	p	p	pli	li	li	li	pi	p	p	p
armiger 304						l	lp	pi	pi	i		
dipsaceus 305	p	p	p	p	p	pi	pi	l	lp	p	p	i
scutosa 305	i	i	i	i	i	i	i	l	l	pi	i	
Anarta melanopa 305	p	p	p	p	p	li	lp	p	p	p	p	p
cordigera 306	p	p	p	p	pi	li	lp	p	p	p	p	p
myrtilli 306	p	p	p	p	p	pi	li	lp	lp	p	p	p
Heliodes arbuti 307	p	p	p	p	pi	li	l	p	p	p	p	p
Agr. sulphuralis 307						li	li	li				
Acontia luctuosa 308					li	li	lp	i				
solaris 308							i					
Eras. venustula 308	p	p	p	p	p	pi	li	l	p	p	p	p
fuscata 309	p	p	p	p	p	i	i	l	lp	lp	p	p
Bank. argentula 309	p	p	p	p	p	i	i	l	p	p	p	p
Hydr. unca 310	p	p	p	p	p	i	i		lp	p	p	p
Micra ostrina 310						i	i					
parva 310						i	i					
Brephos Parthenias 311	p	p	pi	i			l	lp	p	p	p	p
notha 311	p	p	pi	i			l	lp	pi	p	p	p
Aborostola urticæ 312	p	p	p	p	p	i	i	li	li	p	p	p
triplasia 312	p	p	p	p	p	i	lp	lp	lp	p	p	p
Plusia orichalcea 313												
chrysitis 313	l	l	l	l	p	li	lp	i	l	l	l	l
bractea 313					l	lp	l	i				
festuæ 314					l	lp	lp	i				
iota 314	l	l	l	l	l	pi	li	i	l	l	l	l
V-aureum 314					l	pi	i					
gamma 315	p	p	p	p	li	li	li	li	lp	p	p	p
ni 315								i	i	l	l	l
interrogationis 315	l	l	l	l	l	lp	i	i	l	l	l	l
Gono. libatrix 316	i	i	i	i	li	l	lp	lp	lp	i	i	i
Amph. pyramidea 316					l	lp	lp	lp	lp			
tragopogonis 317					lp	lp	pi	i	i	l	l	l
Mania typica 317	l	l	l	l	p	i	l	l	l	l	l	l
maura 318	l	l	l	l	lp	p	i	i	l	l	l	l
Toxo. pastinum 318					lp	i	i	i				
cracca 319					l	lp	i	i				
Stil. anomala 319	l	lp	p	p	p	p		i	li	l	l	l
Cate. alchymista 320					i			l	l			
Cato. fraxini 320								lp	pi	i		
nupta 321					l	l	lp	pi	i			
promissa 321					l	l	l	pi	i			
sponsa 321					l	l	lp	pi	i			
Ophi. lunaris 322					i	i	i					
Euclidia ni 322	p	p	p	p	pi	i		l	lp	p	p	p
glyphica 323	p	p	p	p	pi	i		l	lp	p	p	p
Phytometra Aenea 323	p	p	p	p	p	i	i	l	lp	p	p	p

ADDITIONS AND CORRECTIONS.

- Page 14, line 4 from top, *for* "fig. 1" *read* "fig. 1a."
,, 14, ,, 6 ,, *after* "pale reddish" *read* "plate iv., fig. 1."
,, 17, ,, 10 from bottom, *after* "Pinkish buff" *add* "or green."
,, 23, bottom line, *for* "Scotland only" *read* "Great Britain and Ireland."
,, 93, line 8 from top, *for* "fig. 4a" *read* "figs. 5 and 5a."
,, 133, ,, 5 ,, bottom, *after* "Heath" *delete* comma.
,, 175, ,, 8 ,, top, *for* "fig. 6" *read* "figs. 7 and 7a."
,, 175, ,, 16 ,, bottom, *for* "fig. 7" *read* "fig. 6."
,, 180, ,, 7 ,, ,, *for* "fig. 17" *read* "fig. 23."
,, 190, ,, 2 ,, top, *for* "XXXVIII." *read* "XXVIII."
,, 207, ,, 12 ,, ,, *for* "fig. 6" *read* "fig. 1."
,, 208, lines 14 and 15 from bottom, transpose the words "Pupa" and "Larva."
,, 238, line 5 from bottom, *for* "May" *read* "August."

I N D E X.

- Abbreviata, Eupithecia, 153
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