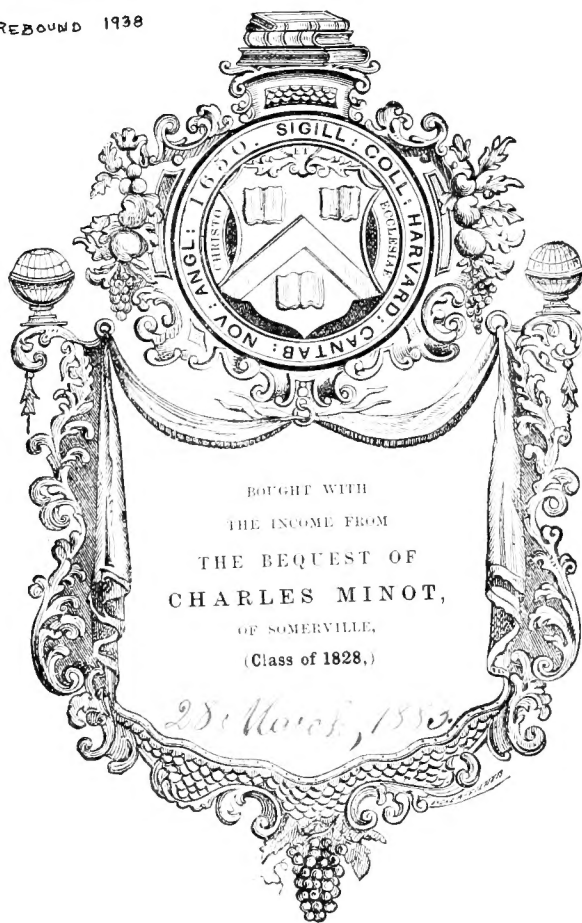




REBOUND 1938



THE GENERA OF DIURNAL LEPIDOPTERA:

COMPRISING

THEIR GENERIC CHARACTERS,
A NOTICE OF THEIR HABITS AND TRANSFORMATIONS, AND
A CATALOGUE OF THE SPECIES OF EACH GENUS.

BY EDWARD DOUBLEDAY, F.L.S. F.Z.S.

ASSISTANT IN THE ZOOLOGICAL DEPARTMENT OF THE BRITISH MUSEUM;
SECRETARY OF THE ENTOMOLOGICAL SOCIETY OF LONDON;

MEM. ROY. GEOGR. SOC.; ENT. SOC. FRANCE, STETTIN, AND PENNSYLVANIA; V. P. BOT. SOC. LONDON; HON. MEM. NAT. HIST. SOC. HESSE-DARMSTADT;
COR. MEM. NAT. HIST. SOC. BOSTON U. S., ROY. SOC. AGR. AND NAT. HIST. LYONS, LINN. SOC. LYONS, ETC. ETC.

AND

Obadiash
JOHN O. WESTWOOD, F.L.S.

PRESIDENT OF THE ENTOMOLOGICAL SOCIETY OF LONDON;

HON. MEM. HIST. SOC. QUEBEC, SOC. NAT. HIST. BOSTON U. S., ENT. SOC. PENNSYLVANIA, AND ENT. SOC. STETTIN;
MEM. SOC. CÆS. NAT. CUR. MOSCOW; PHYSIOGR. SOC. LUND; SOC. ROY. SCI. LILLE; SOC. ROY. LYONS; SOC. HIST. NAT. MAURITIUS;
SOCC. CUVIERR., PHILOMAT., AND ENTOMOL. DE FRANCE, ETC. ETC.

ILLUSTRATED WITH EIGHTY-SIX PLATES,

BY WILLIAM C. HEWITSON,

AUTHOR OF "BRITISH OÖLOGY," ETC.

IN TWO VOLUMES.

VOL. I.

CONTAINING THE FAMILIES PAPILIONIDÆ, PIERIDÆ, AGERONIDÆ, DANAIIDÆ, HELICONIDÆ, ACRÆIDÆ, AND
PART OF THE NYMPHALIDÆ:

BY EDWARD DOUBLEDAY.

LONDON:
LONGMAN, BROWN, GREEN, AND LONGMANS.
1846—1850.

YET 8011
OF 0,000 8100 001
171 1100001

MAR 23 1883

Minor fund.
(I, II.)

LIBRARY
UNIVERSITY
PA USA

LONDON:
SPOTTISWOODES and SHAW,
New-street-Square.

3498
172

A D D R E S S.

ALTHOUGH no order of Insects is more conspicuous for variety of form, peculiarity of development, and beauty of colour, than the Lepidoptera, none have been so much neglected by scientific Entomologists. With the exception of European forms, few Genera have been characterised, either by British or Foreign authors. This may indeed be accounted for from the difficulties connected with the systematic classification of these insects. Latreille, forty years ago, well observed: "Lepidopterorum ordo entomologorum scopulus: horum insectorum etenim instrumenta cibaria simplicia; antennæ pro sexu diversæ; metamorphoses permultorum nobis ignotæ." — *Gen. Crust.* iv. 186.

No work affording a correct idea of the Genera of this Order having been published, it appeared to Mr. E. Doubleday that a work illustrative of the GENERA OF DIURNAL LEPIDOPTERA, adapted to the present state of science, would be favourably received by Entomologists, and would furnish to the Student the means of investigating and arranging his Collection, for which he could derive but little information from books, beyond the mere identification of Species.

The extensive collection of Diurnal Lepidoptera in the British Museum, shown by the recently published Catalogue to be one of the finest ever formed, and still rapidly increasing, constitutes the basis of the work; and much hitherto unpublished information as to their Metamorphoses and Habits has been derived from the large collections of Manuscripts and Drawings in the Library of that Institution, made by Abbot in Georgia, and by the late General Hardwicke in the continent of India and its Dependencies, and also from the private collections of Naturalists resident in India.

The plan of investigation adopted by Mr. Doubleday, by a most scrupulous examination not only of the parts of the mouth, but also more especially of the feet and veins of the wings, was unquestionably the best adapted to remove the reproach made by Latreille, and to effect a satisfactory classification of the Diurnal Lepidoptera. Unfortunately, however, the various avocations of Mr. Doubleday, together with his delicate health, prevented his completing more than one third of the text of the work, and on his decease the task of its completion was confided to me. The same minute system of investigation has been carried on throughout my portion of the work with, I trust, some good effect, both as regards the general and generic distribution of the species. It is due both to Mr. E. Doubleday and myself to state that the descriptions of by far the greater number of the genera, the *names* only of which have been proposed by other writers, are now for the first time published.

That many imperfections will be found in a work of this character is to be expected, the descriptions of many of the species by the older authors being so concise and imperfect, that it is quite impossible to determine their affinities without actual examination of specimens, whilst the loose and often incorrect localities given to the species add greatly to the difficulties connected with their determination. So far, however, as the lists of species are concerned, the book will, I trust, be found to be a complete "species insectorum," up to the present time, having endeavoured in the supplemental pages to introduce every species which has been published during its passage through the press.

As regards the excellency of the Plates and the very careful manner in which they are coloured, our Subscribers will be best able to form their own judgment.

In conclusion, we have great pleasure in offering our best thanks to Dr. Boisduval, W. W. Saunders, Esq., and the Authorities of the British Museum, for the liberal use which they have permitted us to make of their respective Collections.

J. O. W.

August, 1852.

INDEX

TO

THE GENERA OF DIURNAL LEPIDOPTERA.

Obs. The names printed in capitals are those of the Families; those in ordinary type are the Genera adopted in the text; those with a * prefixed are Synonyms; and those printed in *italics* are Sub-Genera, or named Sections of Genera.

- *Abaeis, page 76.
 *Acca, 182. 270. 272.
 *Achillides, 5.
 Achlyodes, 524.
 *Acidalia, 171.
 *Aconthea, 289.
 Acræa, 137.
 ACRÆIDÆ, 137.
 Actinote, 142.
 *Adelpha, 276.
 Adolias, 289.
 Aeria, 35. 126.
 Ætheius, 436.
 Agauisthos, 301.
 Ageronia, 81.
 *Ageronia, 227.
 AGERONIDÆ, 81.
 *Aglaura, 327.
 Agrauius, 153.
 Agrias, 298.
 *Ajantis, 101.
 *Alazonia, 150.
 *Alcyoneis, 206.
 Alesa, 417.
 Amarynthus, 443.
 *Amaryssus, 5.
 Amathusia, 326.
 *Amauris, 89.
 Amblypodia, 477.
 Amnosia, 259.
 *Amphichlora, 81.
 *Amphirene, 264.
 *Amphrisius, 3.
 Amycla, 223.
 *Amyntia, 69.
 Anæa, 318.
 *Anaphæa, 42.
 Anartia, 214.
 *Anartia, 212.
 Anatole, 457.
 *Ancyluris, 428.
 *Anicia, 155.
 Anops, 473.
 *Anosia, 89.
 *Anteos, 69.
 Anteros, 427.
 Antirrhæa, 365.
 *Anthene, 480.
 Anthocharis, 55.
 *Anthora, 282.
 Apatura, 302.
 *Aphacitis, 446.
 *Aphæus, 264. 479.
 *Aphrodite, 55.
 *Aporia, 42.
 *Apostrophia, 33. 101.
 *Appias, 42.
 Araschnia, 187.
 *Arconias, 33.
 Arge, 382.
 *Argus, 488.
 Argynnis, 171.
 *Argyrogonome, 165. 171.
 Argyrophenga, 380.
 *Arhopala, 477.
 *Ariadne, 409.
 Aricoris, 449.
 *Arisbe, 5.
 *Arpidea, 366.
 *Asterope, 258.
 *Astraptes, 511.
 Atella, 165.
 Aterica, 286.
 *Athena, 263.
 Athesis, 109.
 Athyma, 272.
 *Autodeia, 253.
 *Autonema, 266.
 Barbicornis, 425.
 *Belenois, 42.
 Bia, 321.
 *Biblia, 410.
 *Biblis, 403.
 Bæotis, 451.
 BRASSOLIDÆ, 350.
 Brassolis, 350.
 *Brenthis, 171.
 *Brontides, 515.
 Caerois, 366.
 *Calades, 5.
 Caligo, 340.
 Calisto, 399.
 Callianira, 251.
 Callicore, 237.
 *Callicore, 243.
 Callidryas, 66.
 Callidula, 504.
 *Callidula, 231.
 Callithea, 258.
 Callizona, 246.
 Callosune, 57.
 Calospila, 457.
 Calyda, 436.
 *Carcharodus, 516.
 *Caria, 444.
 *Castnius, 509.
 Catagramma, 243.
 *Catargyria, 302.
 *Cathaemia, 42.
 *Catochrysops, 488.
 Catonephele, 222. 526.
 *Catonephele, 256.
 *Catophaga, 42.
 *Catospila, 66.
 *Celæna, 214.
 Ceratinia, 127.
 *Ceratinia, 119.
 Cethosia, 150.
 *Charaxes, 306.
 Charis, 452.
 Chionobas, 381.
 *Chlorippe, 502.
 *Chorina, 431.
 *Chrysilis, 427.
 Chrysophanus, 497.
 *Cigaritis, 500.
 *Cinclidia, 177.
 Cirochroa, 157.
 *Cissia, 372.
 *Citharias, 362.
 Cleis, 504.
 Cleosiris, 504.
 Clerome, 333.
 Clothilda, 155.
 *Coca, 310.
 Cœlites, 367.
 Cœnonympha, 396.
 Colænis, 148.
 *Colænis, 145.
 Colias, 72.
 *Colotis, 59. 66. 72.
 Corades, 354.
 *Corybas, 252.
 *Crastia, 86.
 Cremna, 456.
 Crenis, 223.
 *Cressida, 24.
 *Creteus, 511.
 Cybdelis, 217.
 *Cybdelis, 220.
 Cyclogramma, 219.
 Cyclopides, 520.
 Cylo, 360.
 Cymatogramma, 315.
 *Cymothoe, 287.
 Cynthia, 212.
 Cyrenia, 433.
 Cyrestis, 260.
 Cystineura, 406.
 *Damis, 497.
 *Danaida, 89.
 DANADIDÆ, 84.
 *Danais, 86. 89.
 *Danaus, 86.
 Danis, 497.
 Dasyophthalma, 343.
 Debis, 358.
 *Delias, 33. 42.
 *Desmozona, 447.
 Diadema, 279.
 Didonis, 405.
 *Didonis, 86.
 *Dione, 153.
 *Diophthalma, 453.
 Diorina, 430.
 Dipsas, 479.
 *Dira, 385.
 Dirœna, 119.
 Discophora, 329.
 *Dismorphia, 35.
 Doritis, 28.
 *Doritis, 26.
 *Doxocopa, 302.
 *Driades, 352.
 Drusilla, 334.
 Dytis, 353.
 *Dynamine, 233.
 Dynastor, 346.
 *Eantis, 524.
 Ectima, 227.
 *Elymnias, 403.
 Emesis, 445.
 *Emesis, 421.
 *Enantia, 35.
 Enipe, 292.
 *Enodia, 385.
 *Epargyreus, 511.
 *Ephyriades, 516.
 Epicalia, 256.
 *Epinephile, 385.
 Epiphile, 224.
 Epitola, 470.
 Erebia, 376.
 Eresia, 182.
 Ergolis, 409.
 *Eriboea, 306.
 *Erina, 488.
 Eroessa, 56.
 Eronia, 64.
 Erycides, 509.
 Erycina, 428.
 ERYCINIDÆ, 415.
 Erythia, 437.
 *Esoptria, 279.
 Eteona, 254.
 *Ethelida, 431.
 Eubagis, 233.
 *Euchloe, 55.
 *Eudamus, 510.
 Eueides, 145.
 *Eucides, 128.
 *Eugonia, 195. 198. 206.
 Eumæus, 469.
 *Eumæus, 388.
 *Eumenia, 469.
 Eunice, 222.
 Eunogyra, 463.
 *Euphædra, 283.
 *Euphœades, 5.
 *Eupithes, 287.
 Euplæa, 86.
 Euploia, 168.
 Euphychia, 372.
 Euralia, 281.
 Eurema, 192.
 *Eurema, 76.
 Euripus, 293.
 Eurybia, 416.
 Eurycus, 24.
 Eurygonia, 437.
 Euryphene, 285.
 Eurytela, 408.
 EURYTELIDÆ, 403.
 Eusclasia, 437.
 Euterpe, 33.
 Euschemon, 525.
 *Euthalia, 289.
 *Eutheius, 515.
 Eutresis, 111.
 *Euxanthe, 282.
 *Evena, 269. 283.
 *Evonyma, 251.
 *Fabius, 313.
 *Faunus, 333.
 *Faunus, 355.
 *Ganoris, 38. 55. 69. 72.
 Gerydus, 502.
 Gnesia, 141.
 Gnophodes, 362.
 Godartia, 282.
 Gonerpteryx, 69.
 *Goniapteryx, 69.
 Goniloba, 511.
 Goniuris, 510.
 *Gonopteris, 446.
 Grapta, 195.
 Gynæcia, 248.
 Hades, 434.
 Hæmatera, 231.
 Hætera, 362.
 Hamadryas, 134.
 *Hamatumida, 286. 418. 426.
 *Hamearis, 410.
 *Hames, 366.
 Harma, 287.
 Hebomoia, 62.
 *Hecalene, 314.
 *Helicodes, 313.
 Heliconia, 101.
 HELICONIDÆ, 96.
 Helicopsis, 423.
 *Heraclides, 5.
 Herona, 293.
 Hesperia, 525.
 HESPERIDÆ, 504.
 Hestia, 94.
 Hestina, 281.
 Heterochroa, 276.
 Heteropsis, 323.
 Hexuropteris, 423.
 *Hipio, 360.
 *Hipparchia, 388.
 *Historis, 301. 320.
 *Hyades, 334. 354.
 Hyalites, 140.
 Hymenitis, 125.
 *Hymenitis, 122.
 *Hypanartia, 190.
 Hypanis, 410.
 Hypna, 314.
 *Hypolimnas, 279.
 *Hypophylla, 447.
 *Idaides, 5.
 *Idæa, 94.
 Idmais, 59.
 *Iliades, 5.
 Inachis, 198.
 Iolaus, 480.
 *Iphia, 62.
 *Iphiclidæ, 5. 22.
 Isapis, 465.
 Ismene, 514.
 *Ismene, 27.
 *Issoria, 161.
 *Ithobalus, 5.
 Ithomia, 122.
 Ithomia, 125.
 Ituna, 113.
 *Ixias, 60.
 Jæra, 269.
 *Jasius, 306.
 *Jasoniades, 5.
 Junonia, 206.
 Kallima, 4.
 Lachnoptera, 161.
 *Laertiades, 5.
 Laogona, 190.
 Lasioommata, 385.
 Lethe, 358.

- *Lexias, 294.
 Lemonias, 457.
 *Leonte, 337.
 Leptalis, 35.
 Leptocircus, 22.
 *Leptoria, 83.
 *Leptosia, 38, 76.
 *Leuconia, 42.
 Leucophasia, 38.
 Libythea, 412.
 *Libythea, 220.
 LIBYTHEIDÆ, 412.
 *Licinia, 35.
 Limnas, 459.
 Limenitis, 274.
 *Liptena, 503.
 Loxura, 474.
 Lucia, 500.
 *Lucia, 488.
 Lucinia, 253.
 Lycæna, 488.
 *Lycæna, 497.
 LYCÆNIDÆ, 468.
 Lycorea, 105.
 Lymanopoda, 401.
 Lyropteryx, 432.

 *Mæra, 326.
 *Mantola, 352.
 *Marius, 262.
 *Marmessus, 475.
 *Marpesia, 263.
 *Marpesia, 260.
 Mechanitis, 128.
 *Megalura, 262.
 *Megamede, 337.
 *Megastes, 346.
 Megistanis, 311.
 *Megisto, 373.
 Megophthalma, 455.
 *Melinae, 99, 128, 182.
 *Melanis, 459, 465.
 Melanitis, 403.
 Melitæa, 177.
 *Memphis, 319.
 *Menelaidēs, 5.
 Meneris, 296.
 Mesene, 441.
 Mesosemia, 453.
 Messaras, 163.
 *Metamorphia, 148, 264.
 Methona, 115.
 Methone (Methonella), 422, 527.
 *Migonitis, 101, 145.
 Miletus, 502.
 *Mimoniades, 508.

 Minetra, 265.
 *Minois, 388.
 Monethe, 461.
 Morpheis, 255.
 ΜΟΡΦΙΔÆ, 332.
 Morpho, 337.
 *Murtia, 66.
 Mycalesis, 392.
 *Mygona, 357.
 *Mylothris, 42, 64.
 *Mynes, 267.
 Myrina, 475.
 Myscelia, 220.
 *Myscelus, 526.

 *Nais, 500.
 Narope, 348.
 Nathalis, 54.
 Necyria, 432.
 Nemeobius, 419.
 Neonympha, 373.
 Neorina, 369.
 Neptis, 270.
 *Neria, 466.
 Nessæa, 256.
 *Nessæa, 283, 320.
 *Nestorides, 5.
 *Nica, 253.
 Nirodia, 430.
 Nisomades, 519.
 Nothene, 461.
 NYMPHALIDÆ, 143.
 Nymphalis, 306.
 Nymphidium, 447.
 *Nymula, 446.

 *Ocalis, 371.
 *Ceneis, 388.
 Ogyris, 472.
 *Oleria, 117, 119.
 Olina, 407.
 Olyras, 107.
 Opsiphanes, 344.
 *Oreades, 355.
 *Oreina, 376.
 *Oressina, 371.
 Oressinoma, 371.
 Orinoma, 368.
 Ornithoptera, 3.
 *Orpheides, 5.
 *Oxylides, 480.

 *Palla, 310.
 Pamphila, 521.
 Panara, 442.
 Pandemos, 440.
 Pandora, 300.

 Panopea, 281.
 *Panopæa, 254.
 *Pantoporia, 148, 406.
 Paphia, 317.
 *Paphia, 306.
 Papilio, 5.
 PAPILIONIDÆ, 1.
 *Paraminus, 515.
 *Pararga, 385.
 Pareba, 142.
 *Parides, 5.
 Parnes, 464.
 *Parnassis, 26.
 Parnassius, 26.
 *Parthenos, 265.
 *Pavonia, 340.
 *Peleus, 515.
 Pelia, 229.
 *Pellenis, 137.
 Penetes, 347.
 Pentema, 281.
 Pentila, 503.
 *Peplea, 447.
 *Pepliphorus, 497.
 *Peridromia, 81.
 Perisama, 240.
 Perophthalma, 455.
 *Perryhybris, 42.
 *Petavia, 504.
 *Petreus, 263.
 *Phædra, 473.
 *Phalanta, 165.
 *Phasis, 500.
 Phareas, 515.
 Philognoma, 310.
 *Phlogris, 101.
 *Phocides, 509.
 *Phoebeis, 66.
 Phryne, 398.
 Phyciodes, 179.
 Phytala, 471.
 Pierella, 365.
 PIERIDÆ, 32.
 Pieris, 42.
 *Pithecopis, 488.
 *Pithonides, 515.
 Planema, 140.
 *Polygonia, 195.
 *Polyommatus, 488, 497.
 *Polystichtis, 446.
 Pontia, 40.
 Precis, 209.
 *Precis, 206, 408.
 Prepona, 299.
 *Priamides, 5.
 Pronophila, 357.
 *Proteides, 508, 511.

 Prothoe, 266.
 Protogonius, 313.
 *Psalidopterus, 439.
 Pseudacraea, 281.
 Pyrameis, 202.
 Pyrgus, 516.
 *Pyronia, 388.
 Pyrrhogyra, 252.
 Pyrrhopyga, 508.
 Pycina, 305.

 *Rhetus, 429.
 *Rhodocera, 69.
 Riodina, 430.
 Rodinia, 430.
 Romalæosoma, 283.

 Sais, 131.
 Salamis, 211.
 *Salpinx, 86.
 Sarota, 424.
 *Sarromia, 401.
 SATYRIDÆ, 352.
 Satyrus, 388.
 *Schænis, 177.
 *Scoptes, 500.
 *Semelia, 145.
 Semomesia, 455.
 Sericinus, 524.
 Setabis, 450.
 *Sicyonia, 101.
 Siderone, 320.
 *Sigaritis, 220.
 *Sironia, 233.
 *Siproeta, 264.
 Siseme, 462.
 *Sithon, 479.
 Smyrna, 297.
 *Spilothyrus, 516.
 Stalactis, 466.
 Steroma, 400.
 *Steropes, 520.
 *Sunias, 101.
 *Symbrenthia, 190.
 *Symetha, 502.
 Symmachia, 444.
 *Symmachia, 516.
 Symphædra, 294.
 *Symphædra, 289.
 *Synargis, 447.
 Synchronoe, 185.
 *Synchronoe, 55.
 *Syrictus, 516.
 Syrmatia, 426.

 *Tagiades, 516.
 *Talides, 511.

 Taxila, 421.
 Taygetis, 355.
 Teinopalpus, 2.
 Telchinea, 141.
 *Telegonus, 511.
 *Temenis, 206, 217, 224.
 *Tenaris, 334.
 Terias, 76.
 Terinos, 159.
 *Tetragonus, 504.
 Thais, 30.
 *Thanaos, 519.
 Tharops, 457.
 *Tharops, 436.
 Thaumantis, 335.
 Themone, 461.
 Theope, 439.
 Thestias, 60.
 *Thisbe, 447.
 *Thorassa, 326.
 *Thracides, 511.
 *Thymele, 514.
 *Thymelicus, 521.
 Thyridia, 117.
 Thyridia, 113.
 *Thysanotis, 233.
 *Thysonotus, 497.
 *Tigridia, 246.
 Timetes, 262.
 Tisiphone, 370.
 *Tisiphone, 296.
 Tithorea, 99.
 *Trepischrois, 86.
 Triphysa, 527.
 *Troides, 3.
 *Tyanitis, 447.

 Vanessa, 198.
 Victorina, 264.

 *Xanthidia, 76.
 Xenica, 387.

 Ypthima, 394.

 *Zaretis, 320.
 Zegris, 52.
 Zemeris, 48.
 Zeonia, 431.
 *Zerene, 72.
 Zeritis, 500.
 *Zerynthia, 30, 229.
 *Zetides, 5.
 Zeuxidia, 327.
 Zophoessa, 362.

LIST OF THE PLATES.

Obs. The Species to which a * is prefixed are otherwise (and more correctly) named in the text, the corrected names being here introduced in the line below each.

PAPILIONIDÆ.

PLATE I.

Fig.			
1. <i>Teinopalpus imperialis</i>	p. 2.	n. 1.	North Eastern India.
2. <i>Ornithoptera Amphimedon</i> ♂	4.	6.	Amboyna, Ceylon, &c.

PLATE I.*

1. <i>Papilio Zagreus</i>	Addenda, p. 529.	Venezuela.
2. <i>Papilio Xenocles</i>	p. 20. n. 258.	N. India.

PLATE II.

1. <i>Papilio Iswara</i>	p. 11. n. 58.	Penang.
2. <i>Papilio Evan</i>	14. 104.	N. India.
3. <i>Papilio Polyeuctes</i>	9. 15.	N. India.

PLATE III.

1. <i>Papilio Epidaus</i>	p. 15. n. 138.	Mexico.
2. <i>Papilio Endochus</i>	9. 9.	Madagascar.
3. <i>Papilio Ridleyanus</i>	8. 2.	Congo.
4. <i>Papilio Dionysos</i>	20. 253.	Western Africa.

PLATE IV.

1. <i>Papilio Homerus</i>	p. 13. n. 83.	Jamaica.
2. <i>Papilio Lenæus</i>	16. 148.	Bolivia.
3. <i>Papilio Thymbræus</i>	19. 228.	Mexico.

PLATE IV.*

1. <i>Leptocircus Curius</i>	p. 23. n. 1.	N. India.
2. <i>Thais Rumina</i>	31. 2.	S. Europe.
3. <i>Doritis Apollina</i>	29. 1.	Asia Minor, &c.
4. <i>Parnassius Smyntheus</i>	27. 8.	Rocky Mountains.
5. <i>Eurycus Cressida</i>	25. 1.	Australia.

PIERIDÆ.

PLATE V.

1. <i>Euterpe Nimbece</i>	p. 34. n. 7.	Mexico.
*2. <i>Euterpe Marina</i>	34. 14.	Mex.
Eut. <i>Charops Boisdu</i> ♂		
3. <i>Leptalis Eunoe</i>	36. 10.	Mexico.
4. <i>Leptalis Medora</i>	36. 27.	New Granada.
*5. <i>Pontia Narica</i>	41. 3.	Senegal.
Pont. <i>Alcesta Cr.</i>		
6. <i>Leucophasia Sinapis</i>	39. 1.	Europe.

PLATE VI.

1. <i>Pieris Habra</i>	p. 50. n. 127.	Honduras.
2. <i>Pieris Thestylis</i>	44. 1.	N. India.
3. <i>Pieris Clemanthe</i>	45. 27.	Moulmein.
4. <i>Pieris Theora</i>	47. 61.	W. Africa.
5. <i>Pieris Lalage</i>	50. 138.	N. India.
6. <i>Pieris Eleone</i>	50. 129.	—?

PLATE VII.

1. <i>Anthocharis Creusa</i>	p. 56. n. 6.	Rocky Mountains.
2. <i>Anthocharis Danæ</i>	57. 17.	Bengal, S. Africa.
3. <i>Zegris Eupheme</i>	53. 1.	Andalusia, Crimea, &c.
4. <i>Nathalis Plauta</i>	54. 2.	Venezuela.
5. <i>Idmais Chrysonome</i>	59. 1.	Arabia, Congo.

PLATE VIII.

1. <i>Thestias Pyrene</i>	p. 61. n. 3.	China, India.
*2. <i>Iphia Leucippe</i>	63. 1.	Amboyna.
HEBOMIA <i>Leuc.</i>		
3. <i>Gonepteryx Verhuelii</i>	71. 8.	China, N. India.
4. <i>Gonepteryx Leachiana</i>	71. 1.	Brazil, Bolivia.

PLATE IX.

Fig.			
1. <i>Eronia Cleodora</i>	p. 65. n. 3.		S. Africa.
2. <i>Callidryas Gorgophone</i>	68. 24.		N. W. Australia.
3. (not 4.) <i>Colias Philippa</i> var.	74. 1.		Bolivia.
4. (not 3.) <i>Colias Dimera</i>	74. 15.		—?
5. <i>Terias Gratiola</i>	78. 4.		Venezuela.
6. <i>Terias Brenda</i>	79. 30.		W. Africa.

AGERONIDÆ.

PLATE X.

1. <i>Ageronia Fornax</i>	p. 83. n. 5.	Brazil, Mexico.
2, 3. <i>Ageronia Arete</i> . ♂ ♀.	83. 10.	Brazil.

DANAIDÆ.

PLATE XI.

1. <i>Euploea Pelor</i>	p. 88. n. 34.	N. W. Australia.
2. <i>Euploea Treitschkei</i>	87. 5.	New Ireland.
*3. <i>Euploea Niavius</i>	91. 3.	W. Africa.
(<i>Danais Egialea</i> , See p. 95.)		

PLATE XII.

1. <i>Danaïs Limniace</i>	p. 93. n. 31.	India, Africa.
2. <i>Danaïs Cleothera</i>	91. 47.	Haiti, Venezuela.
3. <i>Danaïs Cleophile</i>	91. 9.	Haiti, Jamaica.
4. <i>Danaïs Tytia</i>	93. 35.	N. India.

PLATE XIII.

*1. <i>Hestia Idea</i>	p. 95. n. 1.	Java, Penang.
Hestia <i>Lynceus, var obscura.</i>		
2. <i>Hestia Leucoæ</i>	95. 4.	Manilla, &c.
3. <i>Hestia D'Urvillii</i>	95. 9.	New Guinea.

HELICONIDÆ.

PLATE XIV.

1. <i>Tithorea Bonplandi</i>	p. 100. n. 2.	New Granada.
2. <i>Tithorea Megara</i>	100. 5.	Para Antilles.
3. <i>Heliconia Atthis</i>	102. 1.	Guyaquil.
4. <i>Heliconia Telchinia</i>	104. 44.	Venezuela.

PLATE XV.

1. <i>Heliconia Hortensia</i>	p. 103. n. 16.	New Granada.
2. <i>Heliconia Telesiphe</i>	103. 21.	Bolivia.
3. <i>Heliconia Cydno</i>	103. 8.	Bogota.
4. <i>Heliconia Anactorie</i>	103. 27.	Bolivia.

PLATE XVI.

1. <i>Lycorea Atergatis</i>	p. 106. n. 4.	Venezuela.
2. <i>Olyras Crathis</i>	108. 1.	Venezuela.
3. <i>Athesis Clearista</i>	110. 1.	Venezuela.
4. <i>Thyridia Ædesia</i>	118. 2.	Venezuela.

PLATE XVII.

1. <i>Ituna Phenarete</i>	p. 114. n. 2.	Bolivia.
2. <i>Dircenna Iambe</i>	121. 1.	Venezuela.
3. <i>Mechanitis Satevis</i>	130. 12.	Bolivia.
4. <i>Mechanitis Lili</i>	130. 9.	Venezuela.

PLATE XVIII.			PLATE XXVII.		
Fig.			Fig.		
1. Sais Cyrianassa	p. 133. n. 2.	Para. Venezuela.	*1. Myscelia Chromis	p. 222. n. 7.	Honduras.
2. Ithomia ? Coeno	127. 67.	Venezuela, Brazil.	EPICALIA C. fem.		
3. Ithomia Iphianassa	127. 71.	Venezuela.	2. Myscelia Cyaniris	222. 2.	Honduras.
4. Ithomia Ocalea	125. 16.	Venezuela.	3. Epiphile Lampethusa	226. 3.	Bolivia.
5. Ithomia Phenomoe	126. 29.	Venezuela.	4. Cybdelis Mnasyllus	219. 3.	Venezuela.
6. Ithomia Dercetis	125. 4.	Venezuela.	*5 Cyclogramma Pandama	219. 5.	Mexico.
			CYBDELIS P.		
PLATE XVIII.*			PLATE XXVIII.		
1. Hamadryas Zoilus	p. 135. n. 1.	New Zealand.			
ACRÆIDÆ.			1. Callianira Alemena	p. 251. n. 1.	Mexico.
*2. Acræa Ozonome	142. 44.	New Granada.	2. Catagramma Cynosura	245. 14.	Bolivia.
A. Ozomene			3. Catagramma Cyllene	245. 9.	Brazil.
3. Acræa Hylonome	142. 43.	Bagota.	4. Catagramma Lyca	245. 2.	Mexico.
4. Acræa Laverna	142. 40.	Venezuela.	*5. Catagramma Euriclea	242. 5.	Venezuela.
5. Acræa Antea	142. 39.	Venezuela.	PERISAMA Eur.		
PLATE XIX.					
1. Acræa Carmentis	p. 140. n. 15.	Ashanti.	1. Gynæcia Dirce	p. 250. n. 1.	S. America.
2. Acræa Lycia var.	140. 12.	W. and S. Africa.	2. Callizona Acesta	247. 1.	S. America.
3. Acræa Neobule	140. 8.	Congo.	*3. Epicalia Aglaura	258. 6.	Mexico.
4. Acræa Perenna	141. 24.	Ashanti.	E. Anæa, var.		
*5. Acræa Terpsichore	142. 37.	China, India.	4. Epicalia Pierrettii	257. 2.	Bolivia.
A. Vesta					
NYMPHALIDÆ.					
PLATE XX.					
1. Eucides Procula	p. 146. n. 2.	Venezuela.			
2. Colanis Dido	149. 5.	S. America.			
3. Colanis Eucroia	149. 4.	Venezuela, &c.			
4. Cethosia Hypsea	151. 3.	Borneo.			
5. Eresia Carme	183. 4.	Venezuela.			
PLATE XXI.					
1. Argynnis Sagana	p. 175. n. 18.	China.			
2. Cirrochroa Aoris	158. 1.	N. India.			
3. Terenos Clarissa	160. 1.	Java, &c.			
4. Clothilda Euryale	156. 3.	Mexico.			
PLATE XXII.					
1. Agraulis Moneta	p. 154. n. 3.	Mexico, New Granada.			
2. Lachnoptera Iole	162. 1.	W. Africa.			
3. Atella Eurytis	167. 2.	W. Africa.			
*4. Brenthis Amathusia	175. 25.	S. Europe.			
ARGYNNIS A.					
PLATE XXIII.					
1. Melitæa Chalcedona	p. 180. n. 21.	Haiti.			
2. Melitæa Anicia	179. 6.	Rocky Mountains.			
3. Melitæa Nycteis	181. 23.	U. States.			
4. Melitæa Proclea	181. 27.	Jamaica.			
*5. Melitæa Astarte	176. 181. and Addenda, p. 531.	Jamaica.			
Argynnis A.					
PLATE XXIV.					
1. Callithea Sapphira	p. 258. n. 1.	S. America.			
2. Synchloe Saundersii	186. 1.	Venezuela.			
*3. Synchloe ? Bonplandii	186. 7. and Add. p. 532.	Venezuela.			
S. ? Narva Fab.					
4. Eurema Kefersteinii	194. 3.	Bolivia, &c.			
5. Anartia Amalthea	216. 4.	Mexico, Brazil.			
[Amalthea]					
PLATE XXV.					
1. Laogona Hypselis	p. 191. n. 2.	India.			
2. Junonia Hadrope	209. 10.	W. Africa.			
*3. Pyrameis Cordelia	204. 3.	Sandwich Islands.			
P. Tammeamea					
4. Cynthia Arsinoë	213. 1.	India, &c.			
*5. Salamis Cytor	211. 39.	Ashanti.			
JUNONIA ? C.					
PLATE XXVI.					
1, 2. Araschnia Prorsa	p. 189. n. 1.	S. Europe.			
3. Grapta G-argenteum	197. 3.	Mexico.			
4. Vanessa Milberti	201. 8.	N. America.			
5. Vanessa Cyanomelas	201. 11.	Mexico.			
PLATE XXVII.					
PLATE XXVIII.					
PLATE XXIX.					
PLATE XXX.					
EURYTELIDÆ.					
PLATE XXXI. ✓					
NYMPHALIDÆ (continued).					
PLATE XXXII. ✓					
PLATE XXXIII.					
PLATE XXXIV.					
PLATE XXXV.					
PLATE XXXVI. ✓					

PLATE XXXVII. ✓

Fig.			
1.	Diadema Nyctelius	p. 281. n. 22.	Sylhet.
2.	Diadema Anthedon	281. 17.	Sierra Leone.
3.	Diadema Boisduvallii	281. 15.	Ashanti.

PLATE XXXVIII.

1.	Godartia Eurinome	p. 283. n. 1.	Sierra Leone.
2.	Romalæosoma Sophron	284. 10.	Sierra Leone.
3.	Romalæosoma Pratinas	284. 3.	Ashanti.

PLATE XXXIX. ✓

1.	Diadema Salmacis	p. 280. n. 5.	Africa.
3.	Diadema Nama	281. 21.	India.
*3.	Penthema Lisarda	281. 9.	India.
	DIADEMA L.		

PLATE XL. ✓

1.	Romalæosoma Arcadius	p. 285. n. 18.	W. Africa.
2.	Enispe Euthymius	292. 1.	India.
3.	Harna Theobene	288. 1.	Ashanti.

PLATE XLI. ✓

*1.	Pallene Eupithes	p. 299. n. 9.	Cape of Good Hope.
	HARMA Eup.		
2.	Euripus Halitherses	293. 1.	India.
3.	Herona Marathus	294. 1.	India.
*4.	Itanus Phemius	291. 13.	Silhet.
	ADOLIAS Ph.		

PLATE XLII.

1.	Messarar Erymanthis	p. 164. n. 1.	China India.
2.	Euptoietia Hegesia	170. 1.	W. Indies, Mexico.
3.	Eteona Tisiphone	255. 1.	S. America.
4.	Ectima Iona	228. and Addenda p. 532.	
5.	Apatura Laura	304. 11.	S. America.
6.	Symphædra Thyelia	295. 1.	East India.

PLATE XLIII. ✓

1.	Morpheis Ehrenbergii	p. 255. n. 1.	Mexico.
2.	Iaera Cœnobita	270. 2.	Sierra Leone.
3.	Aterica Rabena	287. 1.	Africa, Madagascar.
4.	Euriphene Sophus	286. 1.	Sierra Leone.
5.	Pandora Prola	301. 1.	Colombia.
6.	Symphædra Æropus	295. 2.	Amboyne, &c.

PLATE XLIV. ✓

1.	Adolias Dirtea	p. 291. n. 17.	India, Java, &c.
2.	Adolias Teuta	291. 5.	Sylhet.
3.	Adolias Dunya	291. 6.	N. India.

PLATE XLV. ✓

1.	Apatura Erminea	p. 304. n. 5.	Amboyne.
2.	Apatura Lucasii	304. 12.	—?
3.	Apatura Vacuna	304. 10.	Brazil.

PLATE XLVI. ✓

1.	Aganisthos Orion	p. 302. n. 1.	Brazil.
2.	Smayna Karwinski	298. 2.	Mexico.
3.	Meneris Tulbaghia	296. 1.	S. Africa.

PLATE XLVII. ✓

1.	Agrias Ædon	p. 298. n. 2.	New Grenada
*2.	Prepona Hercules	300. 9.	Colombia.
	Pr. Chromus		
3.	Prepona Deiphile	300. 8.	Brazil.

PLATE XLVIII. ✓

1.	Nymphalis Erithalion	p. 309. n. 21.	S. Africa.
	N. Ethalion		
2.	Megistanis Beotus	312. 3.	Bogota.
3.	Pycina Zamba	306. 1.	Venezuela.

PLATE XLIX.

1.	Hypna Clytemnestra	p. 315. n. 1.	Brazil.
*2.	Progonius Cecrops	314. 1.	S. America.
	P. Hippona		
3.	Philognoma Lichas	311. 4.	Ashanti.
4.	Cymatogramma Echemus	316. 1.	Honduras.

August 1. 1852.

PLATE L.

Fig.			
1.	Paphia Glycerium	p. 319. n. 10.	Mexico.
2.	Paphia Philumena	319. 18.	Bolivia.
3.	Paphia Pasibula	319. 26.	Venezuela.
4.	Narope Cyllastros	349. 1.	Brazil.

PLATE LI.

1.	Mynes Geoffroyi	p. 268. n. 2.	Offack.
2.	Minetra Gambrius	266. 2.	India.
3.	Prothoe Franckii	267. 1.	Java.
4.	Amnosia decora	260. 1.	Java, &c.

PLATE LII.

*1.	Zeuxidia Luxeri	p. 329. n. 2.	India.
	Z. Doubledaii		
2.	Kallima Rumia	325. 5.	Ashanti, W. Africa.
3.	Kallima Paralekta	325. 1.	Himalaya.
	K. Horsfieldii		

PLATE LIII.

1.	Nymphalis Zoolina	p. 309. n. 23.	S. Africa.
2.	Nymphalis Mycerina	310. 40.	Sierra Leone.
3.	Siderone Itys	321. 5.	Surinam.
4.	Bia Actorion	322. 1.	Brazil.

NYMPHALIDÆ AND MORPHIDÆ.

PLATE LIV.

*1.	Thaumantis Faunula	p. 334. n. 3.	Singapore.
	Clerome F		
*2.	Discophora Timora	331. 2.	Isl. Timor.
	D. Celinde var.		
3.	Pavonia Aorsa	345. 4.	Brazil.
4.	Drusilla Horsfieldii	335. 1.	Java.

PLATE LIV*.

1.	Kallima Eurodoce	p. 325. n. 6.	Madagascar.
2.	Amathusia Phidippus	327. 1.	Java.
3.	Morpho Cytheris fem.	339. 8.	Brazil.
4.	Dyctis bioculatus	354. 2.	N. Guinea.
5.	Clerome Arcesilaus	334. 1.	Java, &c.

MORPHIDÆ.

PLATE LV.

1.	Morpho Polyphemus	p. 339. n. 6.	Mexico.
2.	Thaumantis Camadeva	337. 7.	Sylhet.

PLATE LVI.

1.	Pavonia Rusina	p. 344. n. 1.	Brazil.
2.	Pavonia Ajax	342. 7.	Venezuela, &c.

PLATE LVII.

1.	Opsiphanes Boisduvallii	p. 345. n. 3.	Mexico.
2.	Opsiphanes Sallei	346. 9.	Venezuela.
*3.	Opsiphanes Reevesii	342. 15.	Brazil.
	CALIGO R.		

PLATE LVIII. ✓

1.	Penetes Pamphanis	p. 348. n. 1.	Brazil.
2.	Dynastor Napoleon	347. 1.	Brazil.

BRASSOLIDÆ.

PLATE LIX.

1.	Brassolis Astyra	p. 351. n. 2.	Brazil.
2.	Brassolis Sophoræ	351. 1.	Brazil, &c.
3.	Brassolis Macrosiris	351. 3.	Cayenne.
	b		

LIST OF THE PLATES.

SATYRIDÆ.

PLATE LX.

Fig.			
1. Pronophila Phoronea	p. 358. n. 7.	Colombia.	
2. Pronophila Irimina	358. 5.	Venezuela.	
3. Pronophila Thelebe	358. 1.	Colombia.	
4. Taygetis Chrysogone	357. 11.	Venezuela?	

PLATE LXI.

1. Zophoessa Sura	p. 362. n. 1.	Sylhet.	
2. Gnophodes Parmeno	363. 1.	Sierra Leone.	
3. Debis Samio	360. 8.	E. India.	
4. Cyllo Lowii	361. 8.	Sarawak.	

PLATE LXII.

1. Hætera Larymna	p. 365. n. 7.	Brazil.	
2. Hætera Lena	365. 8.	S. America.	
3. Hætera Piera	365. 1.	S. America.	
4. Hætera Esmeralda	365. 3.	Para.	
5. Oressinoma Typhla	372. 1.	New Granada.	

PLATE LXIII.

1. Corades Iduna	p. 355. n. 2.	Bolivia.	
2. Tsiphone Hercyna	370. 1.	S. America.	
3. Orinoma Damaris	369. 1.	E. India.	
4. Euptychia Gera	373. 4.	Amazons.	
5. Heteropsis Drepana	323. 1.	Madagascar.	
6. Argyrophenga Antipodum	381. 1.	New Zealand.	

PLATE LXIV.

1. Chionobas Chryxus	p. 383. n. 13.	Rocky Mountains.	
2. Erebia Mancinus	380. 58.	Rocky Mountains.	
3. Erebia Vesagus	380. 59.	Rocky Mountains.	
4. Lasimomata Satricus	387. 14.	E. India.	
5. Arge Clotho	384. 4.	S. Europe.	

PLATE LXV.

1. Caerois Chorinæus	p. 367. n. 1.	Surinam.	
2. Neorina Hilda	370. 1.	E. India.	
3. Satyrus Anthelæa	390. 21.	Turkey &c.	
4. Satyrus Bischoffii	391. 42.	Turkey.	
5. Euptychia tricolor	373. 15.	Amazons.	

PLATE LXVI.

1. Pronophila Tauropolis	p. 358. n. 6.	Oajaca.	
2. Cœlites Nothis	368. 1.	E. India.	
3. Mycalesis Safitza	394. 10.	Africa.	
4. Mycalesis Nicotia	394. 11.	E. India.	
5. Calisto Zangis	399. 1.	W. Indies.	
6. Steroma Bega	400. 1.	Venezuela.	

PLATE LXVII. (in some copies printed as LXVI.).

*1. Ipthima Norma	p. 35. n. 5.	N. China.	
YPTHIMA N.			
2. Cœnonympha California	398. 15.	California.	
*3. Hypocysta Euphenia	398. 28.	N. Holland.	
CÆNONYMPHA Euph.			
4. Neonympha Phares	375. 18.	Brazil.	
*5. Sarromia obsoleta	402. 3.	Bolivia.	
LYMANOPODA obs.			
6. Lymanopoda Samius	402. 1.	Colombia.	
*7. Lymanopoda Samius, fem.	402. 2.	Colombia.	
Lym. Ionius			

EURYTELIDÆ, LIBYTHEIDÆ, AND LYCÆNIDÆ.

PLATE LXVIII.

*1. Hypanis Ilithyia	p. 411. n. 1.	W. Africa, E. India.	
2. Melanitis Patna	405. 6.	E. India.	
3. Melanitis Bammakoo	405. 12.	Ashanti.	
4. Ergolis Taprobana	410. 3.	Ceylon.	
5. Epitola Elion	471. 1.	Ashanti.	
6. Libythea Labdaca	412. 4.	Sierra Leone.	

ERYCINIDÆ.

PLATE LXIX.

*1. Methone Cicilia	p. 423. n. 1. & Add. p. 533.	S. America.	
METHONELLA Cic.			
2. Taxila Egeon	422. 2.	Nepaul.	
3. Taxila Fylla	422. 8.	India.	
4. Euribia Lycisca	417. 6.	Honduras.	
5. Zemerus Flegyas	419. 1.	China, India.	
*6. & 7. Emesis Orphna, m. & f.	422. 7.	Borneo, India.	
TAXILA Or.			

PLATE LXX.

Fig.			
1. Erycina Belphegor	p. 430. n. 9.	Amazons.	
2. Barbicornis Mona	425. 2.	Amazons.	
3. Syrmatica Dorilas	426. 1.	S. America.	
4. Theope Eudocia	439. 3.	Para.	
5. Pandemos Areuta	440. 3.	Pernambuco.	
6. Anteros Renaldus	427. 1.	Brazil.	
7. Amarantibis Meneria	444. 1.	S. America.	
8. Alesa Prema	418. 1.	Brazil.	
9. Mesene Hya	442. 8.	Brazil.	
10. Calydna Euthria	436. 2.	Brazil, &c.	

PLATE LXXI.

*1. Bæotis Parthenis	p. 451. n. 2.	Brazil.	
2. Bæotis Ærope	452. 6.	Para.	
*3. Anatole Glaphyra	458. 9.	—?	
LEMONIAS Gl.			
*4. Anatole Erostratus	458. 12.	Venezuela.	
LEMONIAS Er.			
5. (not 6.) Mesosemia formosa	454. 1.	Amazons.	
6. (not 5.) Mesosemia Gneris	454. 3.	Cayenne.	
7. Eurigona Zara	438. 8.	S. America.	
8. Cremna Orpheus	456. 4.	Brazil.	
9. Charis Perone	453. 11.	Brazil.	
10. Helicopsis Dematria	424. 3.	Honduras.	
*11. Tharops Menander	458. 1.	Brazil.	
LEMONIAS M.			
*12. Calospila Aristus	458. 1.	Para.	
LEMONIAS leucocyana			

PLATE LXXII.

*1. Lyropteryx Apollonia	p. 433. n. 1.	Amazons.	
2. Cyrenia Martia	434. 1.	Amazons.	
3. Hades Noctula	435. 1.	Colombia.	
4. Zeonia Xantippe	432. 1.	Brazil.	
5. Isapis Agyrus	465. 1.	Brazil.	
6. Emesis Ovidius	447. 1.	S. America, W. Indies.	
7. Aricoris Tisiphone	450. 2.	Brazil.	
8. Aricoris Serica	450. 7.	Para.	
9. Themone Pais	461. 1.	Bengal.	
10. Siseme Alectryo	463. 2.	Colombia.	
11. Eunogyra Satyrus	463. 1.	Para.	
12. Panara Barsacus	443. 2.	Amazons.	

PLATE LXXIII.

1. Symmachia Praxila	p. 445. n. 2.	Rio Janiero.	
2. Lemonia Nepia	459. 24.	S. America.	
3. Parnes Nycteis	464. 1.	Para.	
4. Nymphidium Platea	448. 8.	S. America.	
5. Nymphidium Azan	448. 4.	Para.	
6. Stalactis Magdalena	467. 3.	New Granada.	
7. Limnas Inaria	460. 9.	S. America.	
8. Limnas Smithiæ	460. 1.	Brazil.	
*9. Necyria Bellina	432. 1.	Brazil.	
N. Bellona			

EUMEIDÆ AND LYCÆNIDÆ.

PLATE LXXIV.

1. Eumæus Atala	p. 470. n. 3.	Cuba.	
*2. Myrina Pita	475. 2.	Java, India.	
LOXURA Pita			
3. Myrina Pharis	476. 12.	Java, India.	
4. Thecla Hugo	486. 97.	Brazil.	
*5. Anops Silas	481. 5.	S. Africa.	
IOLAUS S.			
6. Amplypodia Anthelus	478. 5.	E. India.	
7. Dipsas Ataxus	480. 2.	Simla.	

LYCÆNIDÆ (continued.)

PLATE LXXV.

1. Iolaus Antifaunus	p. 481. n. 1.	Sierra Leone.	
*2. Herda Androcles	487. 141.	Silhet.	
THECLA A.			
*3. Ialmeus Myrsilus	487. 138.	Van Diemen's Land.	
THECLA M.			
*4. Aphnæus Natalensis	479. 28.	Port Natal.	
AMBLYPODIA Nat.			
5. Anops Bulis	473. 3.	Upper India.	
*6. Anthene Calisto	407. 136.	Sierra Leone.	
THECLA Cal.			
7. Thecla Ambrax	485. 73.	Brazil.	
8. Ogyris Abrota	472. 1.	Australia.	

PLATE LXXVI.			
Fig.			
1. <i>Lycæna Acca</i>	p. 495. n. 153.	S. Africa.	
2. <i>Lycæna Acmon</i>	494. 139.	California.	
3. <i>Lycæna Ethion</i>	490. 37.	E. India.	
*4. <i>Lucia Agricola</i>	496. 199.	Australia.	
<i>LYCÆNA Agr.</i>			
*5. <i>Geridus Epius</i>	502. 2.	Ceylon.	
<i>LUCIA Ep.</i>			
*6. <i>Polyommatus Edna</i>	499. 25.	New Zealand.	
*7. <i>Pentila Zymna</i>	503. 4.	Ashanti.	
<i>MILETUS Z.</i>			
*8. <i>Pithecopus Hylax</i>	496. 198.		
<i>LYCÆNA H.</i>			
9. <i>Zeritis Thyra</i>	501. 9.	Africa	
PLATE LXXVII.			
1. <i>Thecla ducalis</i>	p. 483. n. 7.	Brazil.	
2. <i>Phytala Elais</i>	471. 1.	Ashanti.	
3. <i>Zeritis Alphæus</i>	500. 4.	S. Africa.	
4. <i>Damis Sebæ</i>	497. 1.	Amboyna &c.	
*5. <i>Liptena Abraxas</i>	504. 2.	Ashanti.	
<i>PENTILA Abr.</i>			
*6. <i>Liptena Acræa</i>	504. 3.	Ashanti.	
<i>PENTILA Acr.</i>			
*7. <i>Petavia Sakuni</i>	504.	Java.	
<i>CALLIDULA Petavia</i>			
*8. <i>Polyommatus Tarquinius</i>	499. 32.	Nova Scotia.	
<i>CHRYSOPTERUS S.</i>			
9. <i>Cleosiris Catamita</i>	504.	Java.	
HESPERIDÆ.			
PLATE LXXVIII.			
1. <i>Pyrrhopyga Xantippe</i>	p. 509. n. 8.	Brazil.	
2. <i>Pyrrhopyga Charybdis</i>	509. 5.	Brazil?	
*3. <i>Ericides Machaon</i>	p. 509. 11.	S. America.	
<i>PYRRHOPYGA M.</i>			
Fig.			
4. <i>Phareas Cæleste</i>	516. 9.	Para.	
*5. <i>Telegonus Hesus</i>	513. 40.	— ?	
<i>GONIOLOBA H.</i>			
*6. <i>Myscelus Sebalus</i>	526. 2.	Surinam.	
<i>HESPERIA Crameri.</i>			
PLATE LXXIX.			
*1. <i>Erycides Urania</i>	p. 510. n. 7.	Mexico.	
2. <i>Ismene Chalybe</i>	515. 2.	Guinea.	
3. <i>Nisoniades Costalis</i>	519. 5.	— ?	
*4. <i>Cyclopides Sator</i>	523. 26.	Guinea.	
<i>PAMPHILA ? S.</i>			
5. <i>Pamphila Venezuelæ</i>	523. 31.	Venezuela.	
6. <i>Pyrgus Vindex</i>	518. 18.	Cape of Good Hope.	
7. <i>Goniuris Proteus</i>	511. 11.	S. America.	
*8. <i>Hesperia Sanguinalis</i>	524. 13.	Quito.	
<i>ACHLYODES S.</i>			
PLATE LXXX.			
*1. <i>Epyargreus Pseudexadeus</i>	p. 512. n. 22.	S. America.	
<i>GONIOLOBA Exadeus var.</i>			
*2. <i>Thracides Aristoteles</i>	513. 61.	Amazons.	
<i>Goniloba Arist.</i>			
*3. <i>Paramimus Empolæus</i>	518. 41.	— ?	
<i>PYRGUS ? Emp.</i>			
*4. <i>Pithonides Loxus</i>	516. 10.	Brazil.	
<i>PHAREAS Lox.</i>			
5. <i>Euschemon Rafflesia</i>	525. 1.	N. Holland.	
6. <i>Achlyodes Pausus</i>	524. 10.	Brazil.	
SUPPLEMENTAL PLATE.			
*1. <i>Sericinus Telamon</i>	Addend. p. 530.	China.	
<i>Sericinus n. s. G. R. Gray.</i>			
2. <i>Eutresis Hypereia</i>	p. 112. n. 1.	Venezuela.	
3. <i>Methone Themisto</i>	116. 1.	Brazil.	

DIRECTIONS TO THE BINDER.

It is proposed to bind this work in Two Volumes; in which case Vol. I. will contain the Address, Index to Genera, and Text as far as p. 250.; and Vol. II. will contain the remainder of the Text, with the Additions and Corrections. It is further suggested that the Plates should form a Third Volume, with the printed List of the Plates at the beginning. If, however, it should be preferred that the Plates should be bound with the Text, the printed List of the Plates should be placed at the beginning of Vol. I., after the Address, and the Elementary Plate and its description at the commencement of the Plates; and Plates I—XXX., together with Plates I*, IV*, and XVIII*.† should be bound with Vol. I.; and Plates XXXI.‡—LXXX.§, together with Plate LIV* and the Supplemental Plate, should be bound with Vol. II.

† Some of the early impressions of Plate XVIII.* were printed as Plate XVIII., from which it may be distinguished by containing only five instead of six figures.

‡ This Plate should have been headed EURYTELIDÆ instead of NYMPHALIDÆ. It ought systematically to be placed next before Plate LXVIII.

§ Some of the early impressions of Plate LXVII. were printed as Plate LXVI., from which it may be distinguished by containing seven instead of six figures.

Family I. PAPILIONIDÆ.

Antennæ gradually clavate; the club elongate, mostly more or less arched, sometimes slightly tapering towards the apex.

Wings ample, the discoidal cells always closed; the anterior wings mostly subtriangular, rarely falcate or rounded; the lower discoidal nervule united to the third median, so as to appear to be a fourth median nervule; the abdominal margin of the posterior wings excised, never forming a channel for the reception of the abdomen.

Legs all perfect. Anterior Tibiæ with a stout spur about the middle; the posterior tibiæ with two spurs at the apex. Claws all simple*, without any pulvilli or other appendages.

LARVA stout, subcylindric; the prothoracic segment furnished with two retractile tentacula.

PUPA braced, sometimes subfolliculate; with the head bifid, square, subtruncate, or rounded, never pointed.

The Papilionidæ may always be known by the apparently four-branched median nervule, and the spur on the anterior tibiæ, characters found in no other family.

The simple claws have been often given as another character separating them from the next family, the Pieridæ; but this character is not constant, though as yet we only know of one exception to it. This is in the genus *Leptocircus*, consisting of only two species, so closely allied, that for many years they have been confounded together; yet one has the claws simple, the other deeply bifid.

The typical genera mostly have the anterior wings subtriangular, but in *Parnassius* they approach the more rounded form common in the next family. The posterior wings have the abdominal margin excised, often in the males folded back upon the wing, the inside of this fold sometimes lined with a cottony substance; this margin is never produced under the abdomen, so as to form a cavity for its reception.

The Larvæ are furnished with two retractile tentacula on the prothoracic segment, which are extended when the animal is irritated, and then exhale an aromatic, but mostly disagreeable, odour.

The Pupa is braced or subfolliculate, varying much in form, but never having the head pointed, as in the next family.

The Papilionidæ are closely allied, by means of *Parnassius*, to the Pieridæ, and are generally considered to have some affinity to the Hesperidæ. The long palpi of *Teinopalpus* would suggest an affinity to the Nymphalidæ, but there are no other characters to connect them.

Of the eight genera which compose this family, six seem confined to the Old World, and a seventh as yet is only known to have one American species. *Teinopalpus*, *Ornithoptera*, and *Leptocircus* are purely Asiatic; *Eurycus* is Australian; *Thais* and *Doritis* belong to what may be termed the Mediterranean fauna; *Parnassius* is found in the mountains of Europe, Asia, and America; *Papilio* in every country between the arctic and antarctic circles, unless it be the islands of the Pacific Ocean.

* Except in *Leptocircus* *Curius*.

Genus I. **TEINOPALPUS** *Hope*.*Hope, Trans. of Linn. Soc. XIX. 131. (1843).***HEAD** large, produced anteriorly.*Eyes* oval, prominent.*Maxillæ* rather long.*Labial Palpi* long, porrect, convergent; basal joint short; second long, clothed with scales and long hairs; third joint about half the length of the second, pointed, slightly bent downwards, clothed with appressed scales.*Antennæ* short, gradually clavate, arched; the club short, slightly truncate.**THORAX** stout.*Anterior Wings* triangular, slightly falcate; the upper disco-cellular nervule very short; the lower discoidal nervule curving upwards; the third subcostal nervule thrown off precisely at the end of the cell; median and submedian nervules united by a baseo-median nervule.*Posterior Wings* dentate, caudate; the precostal nervule two-branched, the inner nervule bent downwards, and united to the costal nervule.*Legs* moderately robust. *Anterior Tibiæ* with a short stout spur, covered by a tuft of hair. *Tarsi* spiny, the first joint about equal in length to the others combined. *Claws* simple, curved.**ABDOMEN** of moderate length, curved in the male.

This beautiful genus, of which one species only is yet known, may be distinguished at a glance from the others of this family by its long porrect palpi. There is little else in its structure to separate it from *Ornithoptera* or *Papilio*, though some of its peculiarities indicate an approach to *Thais*, a genus in which the palpi are more developed than in any other of the *Papilionidæ*, with the exception of *Teinopalpus*.

The posterior wings differ materially in the two sexes; in the male they are dentate, one-tailed, in the female three-tailed.

Of the habits of this genus nothing is known beyond the fact of its inhabiting the highest ranges of the Himalayas, especially towards the frontiers of Assam, and there it seems to be of very rare occurrence.

TEINOPALPUS *Hope*.

1. *T. IMPERIALIS* *Hope, Trans. Linn. Soc. XIX. 131. (1843).*

Westwood, Arc. Ent. t. 59. (1843).

- ♀ *T. Parryiæ* *Hope, Trans. Linn. Soc. XIX. 132. (1843).*

Westwood, Arc. Ent. t. 60. (1843).

North-Eastern India.

Genus II. **ORNITHOPTERA** *Boisd.**Boisd. Faune de l'Océanie, t. 4. f. 1. (1832).**TROIDES* *Hübner. Verz. bek. Schmett. 87. (1816).***AMPHRISIUS* *Swainson, Zool. Ill. 2d ser. t. 98. (1833).***HEAD** large.*Eyes* large, round.*Maxillæ* of moderate length.*Labial Palpi* closely pressed to the forehead, short, obscurely triarticulate, covered with long hairs, the basal and apical joints very small, especially the former, which is barely discernible.*Antennæ* very long, gradually clavate; the club arched, slightly tapering towards the apex.**THORAX** very stout, the prothorax very distinctly developed.*Anterior Wings* powerful, elongate, triangular; upper disco-cellular nervule about equal in length to the space between the two discoidal nervules; third median nervule mostly thrown off exactly opposite the end of the cell; median and submedian nervule connected by a baseo-median nervule.*Posterior Wings* small in proportion to the anterior, subtriangular; the costa slightly rounded; the outer margin rounded, dentate; precostal nervule two-branched, the inner branch bent downwards and united to the costal nervule.*Legs* strong, elongate. *Anterior Tibiæ* with a very stout spur. *Tarsi* with the first joint about equal in length to the rest combined; fourth joint shortest; second, third, and fifth nearly equal. *Claws* simple, strong.**ABDOMEN** elongate, stout, the last segment always furnished in the males with two very large valves.*LARVA* tuberculate; the tentacula contained in a fixed bifid sheath.*PUPA* stout, slightly arched, tuberculate; head bifid.

The species composing this genus are so closely allied to *Papilio*, that the propriety of separating them seems almost questionable. In the larva state they differ in having an external forked sheath for the prothoracic tentacula. The perfect insects have the prothorax more developed; the abdomen larger, longer, and very deeply grooved below; and the valves of the last segment far larger than in any species of *Papilio*.

The Larvæ, of which the discovery is due to Dr. Horsfield, resemble those of *Thais* and of some *Papiliones* in being tuberculated. The Pupa has the peculiarity of not being surrounded by a transverse band, but sustained by a silken thread on each side, attached to a small lateral tubercle.†

* Hübner's name, *Troides*, cannot be retained. Vide Linné, *Phil. Bot.* 226.† Boisd. *Sp. Gen.* i. 173.

For size and beauty of colour, this genus is unrivalled among the butterflies of the Old World, and few in the New World can vie with it in either respect.

There are two distinct types of colouring in the species, and each type has its distinct geographical range.

The first group has the anterior wings of the males above of a rich velvety black, with splendid satiny blue or green markings, the green varying with the light to an almost golden or coppery hue; the posterior wings blue or green, with orange and black markings. The females, as far as known, are brown, with dull white or yellowish markings.

These species are peculiar to the more eastern of the Indian islands, as Amboyna, New Guinea, and the extreme north of Australia. Orn. Poseidon was found in great numbers on Darnley Island by Messrs. Jukes and M'Gillivray, flying very high amongst the groups of cocoa-nut trees. The natives of that little remote rocky islet capture them, and, securing them by one end of a long thread, they fasten the other end of the thread to their hair, allowing the butterflies to flutter around their heads.

The second group have the anterior wings black, sometimes, especially in the females, marked between the nervules with whitish streaks; the posterior wings mostly of a golden yellow, with a black border of various width. These have a range extending from the westernmost limit of the other group to Java, Sumatra, Ceylon, and the continent of India, as far north as the Himalayas.

ORNITHOPTERA Hope.

1. ORN. PRIAMUS *Boisd. Sp. Gén. i. 173. n. 1. (1836).*
P. Pri. Linn. Syst. Nat. ii. 744. n. 1. (1767).
Cram. t. 23. f. A. B. (1775).
Fab. Ent. Syst. iii. i. 11. n. 32. (1793).
Godt. Enc. M. ix. 25. n. 1. (1819).
 ♀ *P. Panthous* *Linn. Syst. Nat. ii. 748. n. 17. (1767).*
Fab. Ent. Syst. iii. i. 18. n. 56. (1793).
Cram. t. 123. f. A. t. 124. f. A. (1776).
Godt. Enc. M. ix. 25. n. 2. (1819).
 Amboyna, Rawack, N. Australia.
2. ORN. URVILLIANA *Boisd. Sp. Gén. i. 175. n. 2. (1836).*
P. Urv. Guérin, Voy. de la Coquille, Ins. t. 3 f. 1, 2. (1829).
 Orn. Priamus var., *Boisd. Faune de l'Océanie, Lépid. 35. (1833).*
 Offak.
3. ORN. POSEIDON *E. Doubleday, List. of Lep. Ins. of Brit. Mus. App. (1846).*
 Darnley Island.
4. ORN. TITHONUS *De Haan, Verh. Nat. Ges. Ned. Overz. Bez. Ins. t. 1. f. 1. (1839).*
 New Guinea.
5. ORN. PANTHOS.
 ♀ *P. Panthous* *Linn. Mus. Lud. Utr. 195. n. 14. (1764).*
Clerck, Icones, t. 18. (1764).
P. Hypolithus Cram. t. 10. f. A. B. t. 11. f. A. B. (1775).
P. Remus Cram. t. 135. f. A. t. 136. f. A. t. 386. f. A. B. (1776—1782).
Fab. Ent. Syst. iii. i. 11. n. 34. (1793).
Godt. Enc. M. ix. 26. n. 3. (1819).
 Orn. Remus *Boisd. Sp. Gén. i. 176. n. 3. (1836).*
 Amboyna.
6. ORN. AMPHIMEDON *Boisd. Voy. de l'Astrolabe, t. 4. f. 1, 2. (1832).*
Boisd. Sp. Gén. i. 176. n. 4. (1836).
Cram. t. 194. f. A. (1779).
Fab. Ent. Syst. iii. i. 15. n. 45. (1793).
Godt. Enc. M. ix. 26. n. 4. (1819).
 ♂ Orn. Haliphron *Boisd. Sp. Gén. i. 181. n. 9. (1836).*
 Amboyna, Celebes, Ceylon.
7. ORN. HELENA *Boisd. Sp. Gén. i. 177. n. 5. (1836).*
P. Hel. Linn. Syst. Nat. ii. 748. n. 19. (1767).
Cram. t. 140. f. A. B. (1776).
Fab. Ent. Syst. iii. i. 19. n. 59. (1793).
Godt. Enc. M. ix. 27. n. 6. (1819).
 Amboyna.
8. ORN. AMPHRISIUS *Boisd. Sp. Gén. i. 178. n. 6. (1836).*
P. Amph. Cram. t. 219. f. A. (1779).
Fab. Ent. Syst. iii. i. 11. n. 33. (1793).
Godt. Enc. M. ix. 27. n. 7. (1819).
 Java, Penang.
9. ORN. POMPEIUS.
 ♀ *P. Pomp. Cram. t. 25. f. A. (1775).*
 ♀ *P. Astenous Fab. Syst. Ent. ii. 448. n. 27. (1775).*
 ♂ *P. Minos Cram. t. 195. f. A. (1779).*
 ♀ ♂ *P. Heliakon Fab. Ent. Syst. iii. i. 19. n. 60. (1793).*
 ♀ ♂ Orn. Heliakon *Boisd. Sp. Gén. i. 178. n. 7. (1836).*
 ♂ *P. Amphrisius Godt. Enc. M. ix. 27. n. 7. (1819).*
 Amphrisius Nymphalides *Swainson, Zool. Ill. 2d ser. t. 98. (1833).*
 Java.
10. ORN. RHADAMANTHUS *Boisd. Sp. Gén. i. 180. n. 8. (1836).*
 Cochin China, India.

Genus III. **PAPILIO** *Linn.*

AMARYSSUS *Dalman* (1814).

IPHICLIDES, JASONIADES, EUPHŒADES, HERACLIDES, LAERTIADES, MENELAIDES, ACHILLIDES, IDAIDES, ZETIDES, ORPHEIDES, NESTORIDES, CALAIDES, PRIAMIDES, PARIDES, ITHOBALUS, ILIADES, ARISBE, *Hübner. Verz. bek. Schmett.* 82—89. (1816).

HEAD large.

Eyes rounded, prominent.

Maxillæ often of considerable length.

Labial Palpi short, pressed closely to the fore part of the head, triarticulate; the last joint short, indistinct, all clothed with scales and long hairs.

Antennæ generally rather long, with an elongate arched club.

THORAX rather stout; prothorax not strikingly developed.

Anterior Wings mostly subtriangular, sometimes falcate, elongate, or rounded; the upper discocellular nervule about equal to the space between the two discoidal nervules; third subcostal nervule thrown off immediately opposite the end of the cell; median and submedian nervures united by a baseo-median.

Posterior Wings subtriangular or rounded, sometimes gradually prolonged into a tail, more often with the outer margin rounded, more or less deeply dentate, with one or more of the teeth prolonged into a tail, sometimes of great length; the precostal nervure two-branched, the inner branch bent downwards, and united to the costal.

Legs generally long, powerful. *Anterior Tibiæ* with a spine of various length, but always very distinct. *Tarsi* with the first joint generally equal in length to the rest combined; fourth joint shortest. *Claws* all simple.

ABDOMEN moderately large, not much elongated.

LARVA rather short, stout; the tentacula without any external sheath.

PUPA supported by a filament passed entirely round it.

In the *Systema Naturæ* the genus *Papilio* comprises the whole of what are now known as the Diurnal Lepidoptera, several species now excluded from that group, as well as one or two moths placed in the genus apparently from ignorance of the structure of their antennæ. Linné only knew about two hundred and sixty species properly belonging to his genus *Papilio*, a number about equal to those contained in the group to which the name is now restricted, corresponding in a great measure to his section *Equites*; about one fourth of the species in that section are, however, not now included in the *Papilionidæ*. Fabricius, in the *Entomologia Systematica*, lopped off the section *Plebeii* of Linné, calling them *Hesperia*; and in the *Systema Glossatorum*, left unfinished at his death, he had restricted the genus *Papilio* nearly to its present limits, retaining in it the species which compose the genera *Ornithoptera* and

Eurycus of Boisduval, and probably Leptocircus of Swainson, but excluding *P. Pylades* and two other species, of which he formed the genus *Zelima*. In this he is followed by Latreille and Godart, the latter, however, incorporating the Fabrician genus *Zelima*, and excluding the *P. Curius* of Fabricius, now the type of *Leptocircus*.

Three years previous to the appearance of Godart's volume of the *Encyclopédie Méthodique*, Hübner, in his *Verzeichniss bekannter Schmetterlinge*, had divided the Fabrician genus *Papilio* into eighteen "Vereine," of which the only one that can be considered generic is *Troides*; this name, as has been already remarked, cannot be retained. Swainson, in his *Zoological Illustrations*, next indicated various sections, to which he gave names, unfortunately entirely inadmissible, from his adoption of specific for generic names. Two of his groups correspond to *Ornithoptera* and *Eurycus* of Boisduval.

The genus is here adopted precisely as limited by Boisduval; for, though, from its great extent and the variety of forms it comprises, it would be very desirable to subdivide it, "there does not exist a more compact or more natural genus, or one which more entirely resists all attempt at division. There is no middle course, we must either leave it as it is, or divide it into two scores of genera." *

In the *Papiliones* the palpi are triarticulate, generally densely covered with scales and hairs, are closely applied to the forehead, and but little, if at all, visible from above; the terminal joints are very small. The antennæ are more or less elongate; the club gradually enlarged, and curved outwards. The thorax is robust; the prothorax less developed than in *Ornithoptera*; the abdomen less elongate, and more oval, than in that genus.

The anterior wings are mostly triangular, the costal and outer margins being longer than the inner margin. They are sometimes more rounded, elongate, or falcate, than what may be considered the typical form. They have a distinct baseo-median nervule, and an upper disco-cellular of considerable length; the subcostal nervule throws off two nervules near together, about the middle of the cell†; the third exactly at the end of the cell; and the fourth about midway between this and the apex. In *P. Sarpedon*, *P. Agapenor*, and their allies, and also in the small African group of which *P. Leonidas* is the type, the first subcostal nervule, instead of running to the costa, below, and parallel to, the costal nervule, runs immediately into this nervule; a peculiarity which recurs in the *Danai* with green spotted wings, so closely analogous to the last-named species.

The posterior wings vary much in form, even in the same species, as, for instance, in *P. Pammon*, where the tail is sometimes wanting in the males; and in *P. Memnon*, where they are never caudate in the males, but not unfrequently in the females have a spatulate tail.

When not tailed, the outer margin is mostly rounded and dentate; but sometimes, as in *P. Sarpedon* and its allies, the wings have a triangular outline, sometimes an oval or ovate, as in *P. Rhetenor* and *P. Elephenor*. When tailed they vary still more in form: the tails are sometimes short, obtuse, spatulate, or short and pointed, sometimes very long and slender. Occasionally, as in *P. Payeni* and *P. Evan*, the whole wing is gradually produced into a tail; in general there is merely a greater or less prolongation of one of the dentations. The group of which *P. Grayii* and *P. Lenæus* are a type have the posterior wings very similar in form to those of some species of *Charaxes*, and, like these, have the costal margin of the anterior wings serrated; a correspondence in structure analogous to that already noticed between *P. Leonidas* and certain *Danai*.

In *P. Aidoneus* the disco-cellular nervule, already very short in *P. Mincreus* and its allies, is entirely wanting, the cell being closed by the actual contact of the third subcostal and third median nervules.

The legs are generally very robust, but there is considerable difference in this respect. The claws are simple, more or less curved, generally equal, but in *P. Triopas* of unequal length.

The *LARVÆ* differ materially in form, and, if ever we can gain tolerably complete information in regard to them, will probably afford good characters for dividing the species into sections. The little we know of any, except those of European species, is to be learned chiefly from the works of Stoll, Abbot, and Horsfield, and from the drawings of Abbot and Hardwicke now in the British Museum.

Those of *P. Hector*, *Polydorus*, &c., which, like those of *Ornithoptera* and *Thais*, live on *Aristolochiæ*, are dark-coloured, have tubercles on each segment, disposed in rows, as in the larvæ of those genera. From those of the former genus they differ solely in not having the external sheath for the tentacula; from those of the latter in not having the tops of the tubercles hairy. Those of *P. Polymnestor*, *P. Pammon*, *P. Arjuna*, *P. Erectheus*, *P. Cresphontes*, *P. Troilus*,

* Boisduv. Sp. Gen. i. 185.

† One of these is wanting in *P. Bellerophon*.

P. Turnus, *P. Calchas*, and some of their allies, have the prothoracic segment small; the two or three following very much larger, one or more of them marked with an ocellated spot; the rest gradually tapering to the extremity. These have the power of retracting the head and prothorax into the two following segments, as is the case in the larvæ of some *Sphingidæ*. They are mostly green with white markings, and feed on *Laurineæ* and *Aurantiaceæ*, especially the latter, though some species are found on *Drupaceæ* and *Juglandææ*.

Closely allied to these are the somewhat limaciform larvæ of *P. Marcellus*, *P. Sarpedon*, and *P. Podalirius*. These commonly have the fourth segment the largest, and taper slightly to each extremity. They are generally of a pale colour, and have often a green or dark blue band across the shoulders. They seem partial to *Anonaceæ* and *Drupaceæ*.

The larvæ of our only well authenticated British species, *P. Machaon*, and of its allies, which mostly live on *Umbelliferæ*, are nearly cylindrical, generally of a bright green, with black transverse bands, dotted with red or yellow.

The general habits of the larvæ in this genus are solitary: but it contains one group, composed of species peculiar to the warmer parts of America, distinguished by their general black colour, and the rose-coloured, crimson, or beautifully opalescent markings of their posterior wings; the larvæ of which are gregarious, living in societies on the *Aurantiaceæ*. They are said to possess a very disagreeable odour; and, if we can trust to Stoll's figure, in one species, *P. Hippason*, the prothoracic tentacula, or osmateria, are largely developed. These larvæ are nearly cylindrical, slightly tuberculated, and generally variegated with brown and white, resembling in many respects that of *P. Cresphontes Cram.*, which commonly lives also on the orange, though it is not confined to the *Aurantiaceæ*, for I have found it in East Florida on *Xanthoxylon fraxineum*.

The larva of *P. dissimilis* is singularly beautiful. The prothoracic segment is square, with the anterior angles slightly produced. The five following segments have each two short curved horns, directed forward on each side; all the following segments have a single horn on each side pointing backward. The ground colour is olive, with numerous crimson and black spots, and longitudinal yellow markings. The horns are black.

In *P. Philenor*, *P. Crassus*, and their allies, the larvæ, which feed on *Aristolochiæ* and *Aurantiaceæ*, are brown or purplish, with numerous tubercles, which, on the anterior and posterior segments, are prolonged into horns.

The PUPÆ, like the larvæ, vary much in form. Those of *P. Hector* and *P. Diphilus* are tuberculated, and have transverse elevated ridges on the abdominal segments, which give them a singularly distorted appearance. These pupæ are brown. Those of *P. Polymnestor*, *P. Memnon*, and *P. Pammon*, are green, smooth, much bent, the head divided into two acute spines. *P. Calchas* has a pupa of similar form, but less bent, and with the head less acutely bifid. That of *P. Turnus* is rough, with a blunt tubercle on the back, and the head obtusely bifid. In that of *P. Sarpedon* there is a long horn-like tubercle, arising from the back of the thoracic portion, and produced forward. The head is truncate. Those of *P. Ajax*, *P. Marcellus*, and *P. Antiphates*, and it is said, also, that of *P. Crassus*, offer a similar, but less developed, structure. Those of *P. Machaon* and *P. Asterias* are angular, scarcely tuberculate; that of *P. dissimilis* is elongate, sub-cylindrical, with the head deeply notched. Stoll represents the pupa of *P. Amosis* with the head notched, and the back furnished with a rough tubercle; a form much resembling that of *P. Cresphontes Cram.*

Little is known of the habits of the PERFECT INSECTS, except of the two common European species. Beské's remarks in Silberman's *Revue Entomologique* on those of Brazil, Lacordaire's in the *Annals of the French Entomological Society* on those of Cayenne, a few scattered notes on other American and some few Indian species, make nearly the sum of what has been published on this head.

In general they are insects of rapid and powerful flight; but the large group, of which *P. Polymetus* and *P. Idæus* may be considered the types, are said to be slow and rather weak. *P. Ajax*, *P. Marcellus*, *P. Protesilaus*, and their allies, have a low, rapid, unsteady flight, generally amongst the scattered brushwood on the skirts of forests, or in old neglected plantations. They take long circuits, returning after the lapse of a few minutes in the same direction, and often in precisely the same track they have just passed over. I have often, in the old cotton-fields of East Florida, waited by the side of a large bush of some *Vaccinium*, or *Andromeda*, for a specimen of *P. Ajax*, which I had seen pass it; and my patience in remaining quiet for a few minutes, has mostly been rewarded by its capture.

P. Marcellus, *P. Troilus*, *P. Protesilaus*, *P. Turnus*, and some other species, are fond of alighting by the side of springs, or where a little water-course crosses a high road, and may then be captured with ease.

P. Cresphontes, and its southern ally, *P. Thoas*, have a powerful and bold flight, sailing along with their wings expanded. They are fond of alighting on the end of a dead twig, and do not then close their wings, but rather let them

droop, so as to bring the apex below the level of the body. *P. Ascanius* is stated by Beské to have a slow flight, and to suck the honey from flowers without alighting on them.

The Geographical Range of the species is often rather limited, but a few are spread over a very wide extent of country. *P. Machaon* is found from Sweden to the Mediterranean, from Siberia to Central India, from England to Japan. *P. Epius* extends from the Himalayas to Van Diemen's Land; *P. Idæus*, from Honduras to Rio Janeiro. Other species, as *P. Hospiton*, *P. Homerus*, *P. Phorbanta*, and *P. disparilis*, are more confined. The two latter are found only in the islands of Mauritius and Bourbon; each confined to its own island, each the only species found there.

Europe possesses only four species of this genus, and two of these occur also in Asia and Africa; Australia, generally poor in diurnal Lepidoptera, is known to possess twelve species; Africa, thirty-five; Asia, one hundred; and America, one hundred and twenty-two.

Neither Europe nor Australia offers any type peculiar to its own limits. The European species belong to two groups, one of which has its representative in every part of the globe where the genus occurs; the other, in all save Australia. The Australian species, except *P. Anactus* and *P. Erectheus*, are of forms dispersed throughout Asia, and in some cases more widely; and the species last-named belongs to a group common to all the easternmost islands of the Indian seas; the former is closely allied to an African type.

Asia possesses some very well-marked and peculiar forms; as, for instance, *P. Polyeuctes*, *P. Evan*, and their respective allies. The beautiful group with black wings, powdered and banded with green and gold, and sometimes ornamented with blue and crimson markings, of which *P. Arcturus* and *P. Paris* are well known representatives, is purely Asiatic, and seems most to abound in Northern India. Africa possesses an analogous but very distinct group, of which *P. Nireus* affords a good example. It has two other groups peculiar to itself, of which *P. Latreillanus* and *P. Zenobius* may be considered the types.

The most striking American group is that numerous one to which *P. Idæus* and *Polymetus* belong, so numerous in all the tropical portions of America as to constitute nearly one-sixth of the known species of the genus. There are several smaller groups, also confined to the New World.

In the Arrangement of the Species I have nearly followed Dr. Boisduval, but have made some changes to bring those having similar larvæ more nearly together, commencing with the species which in this respect are nearest to Ornithoptera. Some species which I have not seen, will probably be found slightly misplaced, and, it may happen, that even now the sexes in some instances are left as separate species, especially amongst the allies of *P. Proteus* and *Polymetus*. In these each sex of nearly every species has received a separate name. This has arisen from the variation both in colour and form for which they are remarkable. In general the males have the anterior wings more elongate and acute than the females; the posterior wings marked with a palmate crimson spot, or a very abbreviated band of the same colour, often splendidly opalescent, which in the females is replaced by a transverse band of pale hue, and never opalescent. The anterior wings in the males often have one or more round white, or greenish white spots on the disc; these, not unfrequently, are followed by a short greenish band, always wanting in the other sex. The spot or spots on the disc are generally found in a slightly different position in the females. It is needful to mention these facts to justify the placing, as sexes of the same species, insects which all other authors have considered to be quite distinct.

The following list contains more than fifty species which are not to be found in the first volume of Dr. Boisduval's *Spécies Général*. Probably an equal number yet remain undescribed in the various European collections.

PAPILIO Linn.

- | | |
|---|---|
| 1. <i>P. ANTIMACHUS</i> <i>Drury</i> , III. t. 1. (1782).
<i>Fab. Ent. Syst.</i> III. i. 11. n. 31. (1793).
<i>Godt. Enc. M.</i> IX. 28. n. 8. (1819).
<i>Boisd. Sp. Gén.</i> I. 188. n. 1. (1836).
Sierra Leone. | 2. <i>P. RIDLEYANUS</i> <i>White</i> , <i>Ann. Nat. Hist.</i> new ser. XII. 264.
(1843).
Congo. B. M. |
| | 3. <i>P. CYRNUS</i> <i>Boisd.</i> <i>Sp. Gén.</i> I. 239. n. 63. (1836).
Madagascar. B. M. |

4. P. LATREILLANUS *Godt. Enc. M.* ix. 44. n. 57. (1819).
Guérin, Icon. du Règne Anim. Ins. t. 76. f. 1.
 (1835).
Boisd. Sp. Gén. i. 240. n. 64. (1836).
 Western Africa. B. M.
5. P. TYNDARÆUS *Fab. Ent. Syst.* iii. i. 35. n. 104. (1793).
Donovan, Naturalist's Rep. t. 83. (1825).
Boisd. Sp. Gén. i. 241. n. 65. (1836).
 P. Nausinous *Godt. Enc. M.* ix. 45. n. 58.
 (1819).
 Western Africa. B. M.
6. P. LEONIDAS *Fab. Ent. Syst.* iii. i. 35. n. 103. (1793).
Godt. Enc. M. ix. 44. n. 56. (1819).
Boisd. Sp. Gén. i. 242. n. 66. (1836).
 P. similis *Cram.* t. 9. f. B.C. (1775).
 Arisbe sim. *Hüb. Verz. bek. Schmett.* 89.
 (1816).
 Western Africa, Pt. Natal. B. M.
7. P. ADAMASTOR *Boisd. Sp. Gén.* i. 371. n. 216. (1836).
Westwood, Arc. Ent. t. 38. f. 3. (1842).
 Var. P. Agamedes *Westwood, Arc. Ent.* t. 37. f. 3.
 t. 39. f. 3. (1842).
 Western Africa. B. M.
8. P. PYLADES *Fab. Ent. Syst.* iii. i. 34. n. 100. (1793).
Godt. Enc. M. ix. 43. n. 54. (1819).
Donovan, Naturalist's Rep. t. 13. (1823).
Boisd. Sp. Gén. i. 244. n. 69. (1836).
 Western Africa. B. M.
9. P. ENDOCHUS *Boisd. Sp. Gén.* i. 243. n. 68. (1836).
 Madagascar.
10. P. ANACTUS *M^cLeay, King's Survey of Australia, App.* 458.
 n. 134. (1828).
Boisd. Sp. Gén. i. 219. n. 37. (1836).
Westwood, Arc. Ent. t. 52. f. 3. (1843).
 Australia. B. M.
11. P. VARUNA *White, Entomologist*, 280. (1842).
Westwood, Ann. Nat. Hist. new ser. ix. 37.
 (1842).
 ♂ P. Astorion *Westwood, Arc. Ent.* t. 66. f. 1.
 (1845).
Westwood, Ann. Nat. Hist. new ser. ix. 37.
 (1842).
 ♀ P. Chara *Westwood, Arc. Ent.* t. 66. f. 2. (1845).
 Penang, N. India. B. M.
12. P. NOX *Swainson, Zool. Ill.* 1st ser. t. 102. (1822).
Boisd. Sp. Gén. i. 277. n. 100. (1836).
 P. Memercus *Godt. Enc. M.* ix. *Suppl.* 809. n.
 12-13. (1823).
 P. Neesius *Zinken. Nov. Act. Acad. Nat. Cur.* xv.
 t. 14. f. 4. (1831).
 Java, Penang. B. M.
13. P. AIDONEUS *E. Doubleday, Ann. Nat. Hist.* new ser. xvi. 178.
 (1845).
 N. India.
14. P. PHILOXENUS *G. R. Gray, Lep. Ins. of Nepaul*, t. 2.
Boisd. Sp. Gén. i. 264. n. 88. (1836).
 N. India. B. M.
15. P. POLYEUCTES *E. Doubleday, in Gray's Zool. Misc.* (1842).
 P. Philoxenus var. ?
 N. India. B. M.
16. P. MINEREUS *G. R. Gray, Lep. Ins. of Nepaul*, t. 1.
 (1831).
 P. Latreillanus *Donovan, Naturalist's Rep.* t.
 140. (1826).
 P. Philoxenus ♀ *Boisd. Sp. Gén.* i. 264. n. 88.
 (1836).
 Nepaul. B. M.
17. P. BOOTES *Westwood, Ann. Nat. Hist.* new ser. ix. 38.
 (1842).
Westwood, Arc. Ent. t. 31. (1842).
 Silhet. B. M.
18. P. POLYDORUS *Linn. Syst.* ii. 746. n. 10. (1767).
Clerck, Icones, t. 33. f. 2. (1764).
Fab. Ent. Syst. iii. i. 9. n. 26. (1793).
 Menelaides Poly. *Hüb. Samml. Exot. Schmett.*
 (1806-27).
Hüb. Verz. bek. Schmett. 84. (1816).
 P. Leobotes *De Haan, Verh. Nat. Ges. Ned.*
Overz. Bez. Ins. t. 6. f. 3. (1839).
 Indian Archipelago. B. M.
19. P. ALCINOUS *Klug, Neue Schmett.* t. 1. (1836).
 Japan, China. B. M.
20. P. DIPHILUS *Esper, Ausl. Schmett.* t. 40. f. 1. (1801).
 P. Polydorus *Cram.* t. 128. f. A. B. (1776).
Godt. Enc. M. ix. 71. n. 130. (1819).
Boisd. Sp. Gén. i. 267. n. 90. (1836).
 Polydorus Thoas *Swainson, Zool. Ill.* 2d ser. t. 100.
 (1833).
 India, Java. B. M.
21. P. ANTIPHUS *Fab. Ent. Syst.* iii. i. 10. n. 28. (1793).
Donovan, Ins. of India. (1800-1803).
Godt. Enc. M. ix. 71. n. 129. (1819).
Boisd. Sp. Gén. i. 26. n. 89. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez.
 t. 8. f. 2. (1839).
 P. Polygius *Godt. Enc. M.* ix. *Suppl.* 8. n. 11.
 129-130. (1823).
 Java, Borneo, Philippines. B. M.
22. P. MELANIDES *De Haan, Verh. Nat. Ges. Ned. Overz. Bez.*
 t. 8. f. 3. (1839).
 Moluccas.
23. P. POLYPHONTES *Boisd. Sp. Gén.* i. 268. n. 91. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez.
 t. 8. f. 4. (1839).
 Celebes.
24. P. LIRIS *Godt. Enc. M.* ix. 72. n. 132. (1819).
Boisd. Sp. Gén. i. 269. n. 92. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez.
 t. 4. f. 2. (1839).
 Timor, N. W. Australia. B. M.
25. P. HECTOR *Linn. Syst. Nat.* ii. 745. n. 2. (1767).
Cram. t. 143. f. A. (1776).
Fab. Ent. Syst. iii. i. 3. n. 7. (1793).
Godt. Enc. M. ix. 70. n. 124. (1819).
Boisd. Sp. Gén. i. 269. n. 93. (1836).
 Menelaides Hect. *Hüb. Verz. bek. Schmett.*
 84. (1816).
 N. India, Ceylon, Pegu. B. M.

26. *P. ROMULUS* Cram. t. 43. f. A. (1775).
Menelaides Rom. *Hüb. Verz. bek. Schmett.* 84. (1816).
P. Mutius Fab. *Ent. Syst.* III. i. 3. n. 6. (1793).
Godt. Enc. M. IX. 70. n. 125. (1816).
Boisd. Sp. Gén. I. 270. n. 94. (1836).
P. Astyanax Fab. *Ent. Syst.* III. i. 13. n. 37. (1793).
Jones, Icones, I. t. 20. (ined.).
Donovan, Ins. of India. (1800-1803).
Ceylon, N. India. B. M.
27. *P. PRIAPUS* Boisd. *Sp. Gén.* I. 190. n. 3. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez.
t. 2. f. 1. (1839).
Java.
28. *P. LAMPUSCUS* Boisd. *Sp. Gén.* I. 190. n. 4. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez.
t. 2. f. 2. (1839).
Pegu.
29. *P. POLYMNISTOR* Cram. t. 53. f. A. B. (1775).
Fab. Ent. Syst. III. i. 18. n. 55. (1793).
Godt. Enc. M. IX. 29. n. 11. (1819).
Boisd. Sp. Gén. I. 191. n. 5. (1836).
Iliades Pol. Hüb. Verz. bek. Schmett. 88. (1816).
India. B. M.
30. *P. MEMNON* Linn. *Syst. Nat.* II. 747. n. 13. (1767).
Fab. Ent. Syst. III. i. 12. n. 36. (1793).
Cram. t. 91. f. C. (1776).
Godt. Enc. M. IX. 29. n. 10. (1819).
Boisd. Sp. Gén. I. 192. n. 6. (1836).
Iliades Mem. Hüb. Verz. bek. Schmett. 89. (1816).
P. Arbates Zinken. *Nov. Act. Acad. Nat. Cur.*
xv. 151. (1831).
Var. *P. Androgeos* Cram. t. 91. f. A. B. (1775).
Var. *P. Anceus* Cram. t. 222. f. A. B. (1780).
Var. *P. Laomedon* Cram. t. 50. f. A. B. (1775).
Var. *P. Agenor* Linn. *Syst. Nat.* II. 747. n. 14.
Cram. t. 32. f. A. B. (1767).
Var. *P. Achates* Fab. *Ent. Syst.* III. i. 9. n. 24.
(1793).
Cram. t. 182. f. A. B. t. 243. A. (1777).
Var. *P. Alcanor* Cram. t. 166. f. A. (1776).
India, China, Java, Borneo, &c. B. M.
31. *P. EMALTHION* Hüb. *Samml. Exot. Schmett.* (1806).
Boisd. Sp. Gén. I. 196. n. 7. (1836).
P. Floridor Godt. *Enc. M. Suppl.* 809. n. 10-11.
(1823).
Manilla.
32. *P. DESCOMBESII* Boisd. *Sp. Gén.* I. 197. n. 8. (1836).
♀ *P. Floridor* Godt. *Enc. M.* IX. *Suppl.* 809. n.
10-11. (1823).
Manilla.
33. *P. CENOMAUS* Godt. *Enc. M.* IX. 72. n. 133. (1819).
Boisd. Sp. Gén. I. 198. n. 9. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez.
t. 4. f. 1. (1839).
Timor.
34. *P. PROTENOR* Cram. t. 49. f. A. B. (1775).
Fab. Ent. Syst. III. i. 13. n. 38. (1793).
Godt. Enc. M. IX. 30. n. 12. (1819).
Boisd. Sp. Gén. I. 198. n. 10. (1836).
Iliades Pro. Hüb. Verz. bek. Schmett. 89. (1816).
♀ *P. Laomedon* Fab. *Ent. Syst.* III. i. 12. n. 35.
(1793).
N. India, China. B. M.
35. *P. RHETENOR* Westwood, *Arc. Ent.* t. 16. f. 1. 1 a. (1842).
N. India, Assam. B. M.
36. *P. ELEPHENOR* E. Doubleday, *Ann. Nat. Hist.* new ser. XVI.
305. (1845).
N. India. B. M.
37. *P. DEMETRIUS*, Cram. t. 385. f. E. F. (1782).
Godt. Enc. M. IX. 71. n. 128. (1819).
Boisd. Sp. Gén. I. 199. n. 11. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez.
t. 6. f. 1. (1839).
Menelaides Dem. Hüb. Verz. bek. Schmett. 84.
(1816).
Japan.
38. *P. ASCALAPHUS* Boisd. *Sp. Gén.* I. 200. n. 12. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez.
t. 1. f. 2. (1839).
Ternate.
39. *P. DEIPHOBUS* Linn. *Syst. Nat.* II. 746. n. 7. (1767).
Cram. t. 181. f. A. B. (1776).
Fab. Ent. Syst. III. i. 5. n. 14. (1793).
Godt. Enc. M. IX. 64. n. 106. (1819).
Boisd. Sp. Gén. I. 200. n. 13. (1836).
Achillides Dei. Hüb. Verz. bek. Schmett. 86.
(1816).
♀ *P. Alcandor* Cram. t. 40. f. A. B. (1775).
Moluccas.
40. *P. NEPTUNUS* Guérin, in *Délessert, Souv. d'un Voy. dans*
l'Inde, 69. t. 19. ("P. Saturnus") (1843).
Malacca.
41. *P. COON* Fab. *Ent. Syst.* III. i. 10. n. 27. (1793).
Donovan, Ins. of China (1800-1803).
Lucas, Lép. Exot. t. 6. f. 2. (1835).
Boisd. Sp. Gén. I. 201. n. 14. (1836).
P. Hypenor Godt. *Enc. M.* IX. 65. n. 108.
(1819).
Java, Burmah. B. M.
42. *P. ULYSSES* Linn. *Syst. Nat.* II. 748. n. 21. (1767).
Cram. t. 121. f. A. B. (1776).
Fab. Ent. Syst. III. i. 23. n. 67. (1793).
Godt. Enc. M. IX. 65. n. 110. (1819).
Boisd. Sp. Gén. I. 202. n. 15. (1836).
Laertias Ul. Hüb. Verz. bek. Schmett. 84.
(1816).
♀ *P. Diomedes* Linn. *Syst. Nat.* II. 749. n. 23.
(1767).
Cram. t. 122. f. A. (1776).
Amboyna. B. M.
43. *P. GYAS* Westwood, *Arc. Ent.* t. 11. f. 1. (1841).
N. India, Assam. B. M.

44. *P. PERANTHUS* *Fab. Ent. Syst.* III. i. 15. n. 44. (1793).
Donovan, Ins. of China. (1798).
Godt. Enc. M. IX. 66. n. 111. (1819).
Lucas, Léop. Exot. t. 12. f. 2. (1835).
Boisd. Sp. Gén. I. 203. n. 16. (1836).
 Java, Borneo. B. M.
45. *P. BIANOR* *Cram.* t. 103. f. C. (1776).
Fab. Ent. Syst. III. i. 1. n. 2. (1793).
Boisd. Sp. Gén. I. 205. n. 17. (1836).
Achillides Bi. Hübn. Verz. bek. Schmett. 85. (1816).
 ♀ *P. Paris* *Godt. Enc. M.* IX. 67. n. 116. (1819).
 N. India, China. B. M.
46. *P. POLYCTOR* *Boisd. Sp. Gén.* I. 205. n. 18. (1836).
Blanchard, Voy. de Jacquemont, Ins. t. i. f. 1, 2. (1844).
 N. India. B. M.
47. *P. ARCTURUS* *Westwood, Ann. Nat. Hist.* new ser. IX. 37. (1842).
Westwood, Arc. Ent. t. 27. (1842).
 N. India, Assam. B. M.
48. *P. GANESA* *Doubledoy, in Gray's Zool. Misc.* 73. (1842).
 Nepaul, N. Bengal. B. M.
49. *P. BLUMEI* *Boisd. Sp. Gén.* I. 206. n. 19. (1836).
 Amboyna.
50. *P. CRINO* *Fab. Ent. Syst.* III. i. 5. n. 13. (1793).
Godt. Enc. M. IX. 66. n. 113. (1819).
Boisd. Sp. Gén. I. 207. n. 20. (1836).
 Cochín China, Ceylon.
51. *P. PALINURUS* *Fab. Mant. Ins.* II. 2. n. 10. (1787).
Fab. Ent. Syst. III. i. 5. n. 12. (1793).
Godt. Enc. M. IX. 66. n. 112. (1819).
Boisd. Sp. Gén. I. 207. n. 21. (1836).
P. Regulus *Stoll.* t. 41. f. 1 a, 1 b. (1791).
Laertias *Reg. Hübn. Verz. bek. Schmett.* 84. (1816).
P. Brama *Guérin, in Délessert, Souvenirs d'un Voyage dans l'Inde, App.* 71. (1843).
 Tranquebar, Ceylon.
52. *P. PARIS* *Linn. Syst. Nat.* II. 745. n. 3. (1767).
Cram. t. 103. f. A. B. (1776).
Fab. Ent. Syst. III. i. 1. n. 1. (1793).
Godt. Enc. M. IX. 67. n. 116. (1819).
Boisd. Sp. Gén. I. 208. n. 22. (1836).
Achillides *Pa. Hübn. Verz. bek. Schmett.* 85. (1816).
 N. India, China. B. M.
53. *P. ARJUNA* *Horsf. Desc. Cat. Lep. E. I. C.* t. i. f. 14. (1828).
Boisd. Sp. Gén. I. 209. n. 23. (1836).
P. Paris var., *Godt. Enc. M.* IX. 67. n. 116. (1816).
P. Paris *Zink. Nov. Act. Acad. Nat. Cur.* xv. 142. (1831).
 Java. B. M.
54. *P. HESPERUS* *Westwood, Arc. Ent.* t. 48. (1843).
 Western Africa. B. M.
55. *P. CHAON* *Westwood, Arc. Ent.* t. 52. f. 1, 2. (1845).
 Nepaul, Assam. B. M.
 December, 1846.
56. *P. NEPHELUS* *Boisd. Sp. Gén.* I. 210. n. 24. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez. t. 4. f. 3. (1839).
 Var. *P. Saturnus*, *Guérin, Délessert in Souvenirs d'un Voyage dans l'Inde*, 70. t. 18. ("P. Nep-
 tunus.")
 Celebes, Malacca, Nepaul. B. M.
57. *P. HELENUS* *Linn. Syst. Nat.* II. 754. n. 4. (1767).
Cram. t. 153. f. A. B. (1776).
Fab. Ent. Syst. III. i. 2. n. 3. (1793).
Godt. Enc. M. IX. 68. n. 117. (1819).
Boisd. Sp. Gén. I. 211. n. 25. (1836).
Achillides *Hel. Hübn. Verz. bek. Schmett.* 85. (1816).
 India, China, Java. B. M.
58. *P. ISWARA* *White, Entomologist*, 280. (1842).
 Penang. B. M.
59. *P. SEVERUS* *Cram.* t. 277. f. A. B. t. 278. f. A. B. (1780).
Godt. Enc. M. IX. 68. n. 118. (1819).
Guérin, Voy. de la Coquille, Ins. t. 14. f. 1. (1826).
Boisd. Sp. Gén. I. 212. n. 26. (1836).
Achillides *Sev. Hübn. Verz. bek. Schmett.* 85. (1816).
 Amboyna, Celebes, New Guinea.
60. *P. CAPANEUS* *Westwood, Arc. Ent.* t. 52. f. 1, 2. (1843).
 Australia.
61. *P. CANOPUS* *Westwood, Ann. Nat. Hist.* new ser. IX. 37. (1842).
Westwood, Arc. Ent. t. 68. (1845).
 Melville Island, N. Western Australia. B. M.
62. *P. PAMMON* *Linn. Syst. Nat.* II. 746. n. 8. (1767).
Cram. t. 141. f. B. (1776).
Fab. Ent. Syst. III. i. 7. n. 20. (1793).
Godt. Enc. M. IX. 74. n. 139. (1819).
Boisd. Sp. Gén. I. 272. n. 96. (1836).
Laertiades *Pam. Hübn. Verz. bek. Schmett.* 84. (1816).
 Var. ♂ *P. Cyrus* *Fab. Ent. Syst.* III. i. 7. n. 19. (1793).
Laertiades *Cy. Hübn. Verz. bek. Schmett.* 84. (1816).
 Var. ♂ *P. Ledebourus* *Escholtz in Kotz.* III. t. 3. f. 7.
 ♀ *P. Polytes* *Linn. Syst. Nat.* II. 746. n. 5. (1767).
Cram. t. 265. f. A. B. C. (1780).
Fab. Ent. Syst. III. i. 2. n. 5. (1793).
Godt. Enc. M. IX. 70. n. 126. (1819).
Menelaides *Pol. Hübn. Verz. bek. Schmett.* 85. (1816).
P. H. Stichius *Hübn. Samml. Exot. Schmett.* (1806-27).
 N. India, China, Java, &c. B. M.
63. *P. THESEUS* *Cram.* t. 180. f. B. (1776).
Fab. Ent. Syst. III. i. 2. n. 4. (1793).
Godt. Enc. M. IX. 71. n. 127. (1819).
Boisd. Sp. Gén. I. 276. n. 99. (1836).
Menelaides *The. Hübn. Verz. bek. Schmett.* 84. (1816).
 Sumatra.
64. *P. OROPHANES* *Boisd. Sp. Gén.* I. 275. n. 98. (1836).
 New Guinea.

65. *P. ALPHENOR* *Cram.* t. 90. f. B. (1775).
Boisd. Sp. Gén. i. 274. n. 97. (1836).
Menelaides Alph. Hüb. Verz. bek. Schmett. 85. (1816).
Princeps Heroicus Stichius, Hüb. Samml. Exot. Schmett. (1806-27).
 Amboyna, Celebes.
66. *P. ANTENOR* *Drury*, II. t. 3. f. 1. (1773).
Fab. Ent. Syst. III. i. 4. n. 9. (1793).
Godt. Enc. M. IX. 69. n. 123. (1819).
Boisd. Sp. Gén. i. 189. n. 2. (1836).
 Central Africa?
67. *P. LALANDEI* *Godt. Enc. M.* IX. *Suppl.* 811. n. 121-122. (1823).
Lucas, Léop. Exot. t. 20. f. 2. (1835).
Boisd. Sp. Gén. i. 326. n. 169. (1836).
Westwood, Arc. Ent. t. 37. f. 1, 2. (1842).
 S. Africa.
68. *P. THERSANDER* *Fab. Ent. Syst.* III. i. 32. n. 93. (1793).
Jones, Icones, i. t. 71. (ined.)
Westwood, Arc. Ent. t. 38. f. 1, 2. (1842).
 W. Africa. B. M.
69. *P. MENESTHEUS* *Drury*, II. t. 9. f. 1, 2. (1773).
Cram. t. 142. f. A. B. (1776).
Fab. Ent. Syst. III. i. 31. n. 91. (1793).
Godt. Enc. M. IX. 59. n. 93. (1819).
Boisd. Sp. Gén. i. 236. n. 59. (1836).
Heraclides Men. Hüb. Verz. bek. Schmett. 83. (1816).
 W. Africa. B. M.
70. *P. DEMOLEUS* *Linn. Syst. Nat.* II. 753. n. 47. (1767).
Cram. t. 231. f. A. B. (1780).
Fab. Ent. Syst. III. i. 34. n. 101. (1793).
Godt. Enc. M. IX. 43. n. 52. (1819).
Boisd. Sp. Gén. i. 237. n. 60. (1836).
Orpheides Dem. Hüb. Verz. bek. Schmett. 86. (1816).
P. Demodocus Esper, Ausl. Schmett. t. 51. f. 1. (1785-1798).
 W. Africa, S. Africa, Madagascar.
71. *P. ERITHONIUS* *Cram.* t. 232. f. A. B. (1780).
P. Epius Fab. Ent. Syst. III. i. 35. n. 102. (1793).
Godt. Enc. M. IX. 43. n. 53. (1819).
Boisd. Sp. Gén. i. 238. n. 61. (1836).
Orpheides Ep. Hüb. Verz. bek. Schmett. 86. (1816).
P. Demoleus Esper, Ausl. Schmett. t. 50. f. 1-4. (1785-98).
 Var. *P. Sthenelus M'Leay, King's Survey of Australia*, App. 457. (1828).
Boisd. Sp. Gén. i. 239. n. 62. (1836).
 N. India, China, Australia. B. M.
72. *P. CASTOR* *Westwood, Ann. Nat. Hist.* new ser. IX. 37. (1842).
Westwood, Arc. Ent. t. 80. f. 2, 3.
 N. India, Assam. B. M.
73. *P. PHESTUS* *Boisd. Sp. Gén.* i. 212. n. 27. (1836).
Guérin, Voy. de la Coquille, Ins. t. 14. f. 2. (1826).
 New Guinea.
74. *P. ILIONEUS* *Donovan, Ins. of New Holland* (1805).
Godt. Enc. M. IX. 68. n. 119. (1819).
Boisd. Sp. Gén. i. 213. n. 28. (1836).
 Australia.
75. *P. GAMBRISIUS* *Cram.* t. 157. f. A. B. (1776).
Godt. Enc. M. IX. 31. n. 14. (1819).
Boisd. Sp. Gén. i. 213. n. 29. (1836).
Nestorides Gam. Hüb. Verz. bek. Schmett. 86. (1816).
 Amboyna.
76. *P. ORMENUS* *Guérin, Voy. de la Coquille, Ins.* t. 14. f. 3. (1826).
Boisd. Sp. Gén. i. 214. n. 30. (1836).
 New Guinea. B. M.
77. *P. ERECTHEUS* *Donovan, Ins. of New Holland.* (1805).
Godt. Enc. M. IX. 31. n. 15. (1819).
Boisd. Sp. Gén. i. 215. n. 31. (1836).
 ♀ *P. Ægeus Donovan, Ins. of New Holland.* (1805).
Godt. Enc. M. IX. 31. n. 17. (1819).
 Australia. B. M.
78. *P. AMANGA* *Boisd. Voy. de l'Astrolabe, Ent.* i. 39. n. 3. (1832).
Boisd. Sp. Gén. i. 216. n. 32. (1836).
 New Guinea.
79. *P. AMPHITRYON* *Cram.* t. 7. f. A. B. (1775).
Fab. Ent. Syst. III. i. 37. n. 111. (1793).
Godt. Enc. M. IX. 30. n. 13. (1819).
Boisd. Sp. Gén. i. 217. n. 33. (1836).
Nestorides Amph. Hüb. Verz. bek. Schmett. 86. (1816).
 Celebes, Amboyna.
80. *P. DRUSIUS* *Cram.* t. 227. f. A. t. 230. f. A. (1780).
Boisd. Sp. Gén. i. 218. n. 34. (1836).
Nestorides Dru. Hüb. Verz. bek. Schmett. 86. (1816).
P. Drimachus Godt. Enc. M. IX. 31. n. 16. (1819).
 Amboyna.
81. *P. AMBRAX* *Boisd. Voy. de l'Astrolabe, Ent.* i. 40. n. 8. (1832).
Boisd. Sp. Gén. i. 218. n. 35. (1836).
De Haan, Verh. Nat. Ges. Ned. Overz. Bez. t. 7. f. 1, 2. (1839).
 New Guinea.
82. *P. EUCHENOR* *Guérin, Voy. de la Coquille, Ins.* t. 13. f. 3. (1826).
P. Axion Boisd. Voy. de l'Astrolabe, Ent. i. 46. n. 6. (1832).
Boisd. Sp. Gén. i. 219. n. 36. (1836).
 New Guinea.

83. *P. HOMERUS* *Fab. Ent. Syst.* III. i. 29. n. 85. (1793).
Esper, Ausl. Schmett. t. 45. f. 1. (1785-1798).
Godt. Enc. M. Suppl. 811. n. 105-106. (1823).
Boisd. Sp. Gén. I. 345. n. 185. (1836).
 Jamaica. B. M.
84. *P. ASCLEPIUS* *Hüb. Samml. Exot. Schmett.* (1806-27).
P. Cincinnatus Boisd. Sp. Gén. I. 346. n. 186. (1836).
 Mexico, Honduras. B. M.
85. *P. TROILUS* *Linn. Syst. Nat.* II. 746. n. 6. (1767).
Cram. t. 207. f. A. B. C. (1780).
Fab. Ent. Syst. III. i. 4. n. 10. (1793).
Godt. Enc. M. IX. 60. n. 97. (1819).
Boisd. Sp. Gén. I. 334. n. 176. (1836).
Euphæades Tr. Hüb. Verz. bek. Schmett. 83. (1816).
P. Ilioneus Smith, Abbot. Ins. of Georgia, I. t. 2. (1797).
 United States, Mexico, Jamaica. B. M.
86. *P. MACHAONIDES* *Esper, Ausl. Schmett.* t. 45. (1785-1793).
Boisd. Sp. Gén. I. 344. n. 184. (1836).
P. Lycoræus Godt. Enc. M. IX. 63. n. 105. (1819).
Lucas, Léop. Exot. t. 18. f. 1. (1835).
 Haiti. B. M.
87. *P. ANDRÆMON* *Boisd. Sp. Gén.* I. 343. n. 183.
Heraclides Andr. Hüb. Samml. Exot. Schmett. (1806-27).
 Cuba, Honduras. B. M.
88. *P. DAUNUS* *Boisd. Sp. Gén.* I. 342. n. 182. (1836).
 Mexico. B. M.
89. *P. PILUMNUS* *Boisd. Sp. Gén.* I. 340. n. 181.
 Mexico. B. M.
90. *P. TURNUS* *Linn. Mant. Alt.* 536. (1771).
Fab. Ent. Syst. III. i. 29. n. 86. (1793).
Godt. Enc. M. IX. 55. n. 87. (1816).
Boisd. et Leconte, Icon. Léop. Am. Sept. t. 6, 7. (1830).
Boisd. Sp. Gén. I. 338. n. 179. (1836).
Jasoniades Tur. Hüb. Verz. bek. Schmett. 83. (184).
P. Alcidamus Cram. t. 38. f. A. B. (1775).
P. Antilochus Linn. Syst. Nat. II. 751. n. 35. (1767).
P. Antinous Donovan, Ins. of New Holland. (1805).
 Var. *P. Glaucus Linn. Syst. Nat.* II. 746. n. 9. (1767).
Cram. t. 139. f. A. B. (1776).
Boisd. et Lec. Icon. Léop. Am. Sept. t. 8, 9. (1830).
Euphæades Gl. Hüb. Verz. bek. Schmett. 83. (1816).
 Hudson's Bay to E. Florida. B. M.
91. *P. PALAMEDES* *Drury* I. t. 19. f. 1, 2. (1770).
Cram. t. 93. f. A. B. (1776).
P. Calchas Fab. Ent. Syst. III. i. 31. n. 90. (1793).
Godt. Enc. M. IX. 59. n. 92. (1816).
Boisd. Sp. Gén. I. 337. n. 178. (1836).
Euphæades Cal. Hüb. Verz. bek. Schmett. 83. (1816).
 United States (Southern States). B. M.
92. *P. MEROPE* *Cram.* t. 151. f. A. B. t. 378. f. D. E. (1776-1782).
P. Brutus Fab. Ent. Syst. III. i. 22. n. 65. (1793).
Godt. Enc. M. IX. 69. n. 122. (1819).
Boisd. Sp. Gén. I. 221. n. 39. (1836).
Laertiades Br. Hüb. Verz. bek. Schmett. 84. (1816).
P. sulfureus Pal. de Beauv. Ins. Afr. et Am. Léop. t. 1. (1805-21).
 W. and S. Africa, Madagascar. B. M.
93. *P. PHORCAS* *Cram.* t. 2. f. B. C. (1775).
Godt. Enc. M. IX. 67. n. 114. (1819).
Heraclides Ph. Hüb. Verz. bek. Schmett. 84. (1816).
P. Doreus Fab. Ent. Syst. III. i. 68. n. 212. (1793).
Boisd. Sp. Gén. I. 223. n. 40. (1836).
 W. Africa. B. M.
94. *P. DEMOLION* *Cram.* 89. f. A. B. (1775).
P. Cresphontes Fab. Ent. Syst. III. i. 33. n. 95. (1793).
Godt. Enc. M. IX. 61. n. 98. (1819).
Boisd. Sp. Gén. I. 220. n. 38. (1836).
Heraclides Cres. Hüb. Verz. bek. Schmett. 84. (1816).
 Java, Borneo, Burmah. B. M.
95. *P. ORIBAZUS* *Boisd. Sp. Gén.* I. 223. n. 41. (1836).
 Madagascar.
96. *P. CHAROPUS* *Westwood, Arc. Ent.* t. 47. (1843)
 W. Africa.
97. *P. NIREUS* *Linn. Syst. Nat.* II. 750. n. 28. (1767).
Fab. Ent. Syst. III. i. 36. n. 106. (1793).
Cram. t. 187. f. A. B. (1777).
Godt. Enc. M. IX. 48. n. 67. (1819).
Boisd. Sp. Gén. I. 224. n. 42. (1836).
Idaides Ni. Hüb. Verz. bek. Schmett. 85. (1816).
 Western Africa. B. M.
98. *P. LYÆUS* *E. Doubleday, Ann. Nat. Hist.* new ser. XVI. 178. (1845).
P. Nireus Cram. t. 378. f. F. G. (1782).
P. Charopus Boisd. MSS.
 S. Africa. B. M.
99. *P. BROMIUS* *E. Doubleday, Ann. Nat. Hist.* new ser. XVI. 176. (1845).
 W. Africa. B. M.
100. *P. PHORBANTA* *Linn. Mant.* 535. (17).
Fab. Ent. Syst. III. i. 6. n. 17. (1793).
Godt. Enc. M. IX. 47. n. 66. (1819).
Lucas, Léop. Exot. t. 10. f. 1. (1835).
Boisd. Sp. Gén. I. 225. n. 43. (1836).

- P. Manlius* *Fab. Ent. Syst. Suppl.* 422. n. 30-31. (1775).
 ♀ *P. Gracchus* *Fab. Ent. Syst. Suppl.* 422. n. 30-31. (1775).
 Mauritius. B. M.
101. *P. EPIPHORBAS* *Boisd. Faune Ent. de Madag.* t. 1. f. 1. (1834).
Boisd. Sp. Gén. 1. 226. n. 44. (1836).
 Madagascar.
102. *P. DISPARILIS* *Boisd. Faune Ent. de Madag.* t. 1. f. 2. (1834).
Lucas, Léop. Exot. t. 10. f. 2. (1835).
Boisd. Sp. Gén. 1. 227. n. 45. (1836).
P. Phorbanta *Herbst. Schm.* t. 12. f. 3. (1783).
 Bourbon. B. M.
103. *P. PAYENI* *Boisd. Sp. Gén.* 1. 235. n. 57. (1836).
Van der Hoeven, Tijdschrift Voor Nat. Gesch. v. t. 8. f. 1, 2. 6. (1838).
 Java.
104. *P. EVAN* *E. Doubleday, Ann. Nat. Hist.* new ser. xvi. 235. (1815).
 N. India. B. M.
105. *P. CODRUS* *Cram.* t. 179. f. A. B. (1776).
Fab. Ent. Syst. III. i. 31. n. 89. (1793).
Godt. Enc. M. ix. 48. n. 68. (1819).
Boisd. Sp. Gén. 1. 228. n. 46. (1836).
Idaides *Co. Hübn. Verz. bek. Schmett.* 85. (1816).
 Amboyna.
106. *P. EMPEDOCLES* *Fab. Ent. Syst.* III. i. 70. n. 217. (1793).
Donovan, Ins. of India. (1800-1803).
Godt. Enc. M. ix. *Suppl.* 810. n. 68-59. (1823).
Boisd. Sp. Gén. 1. 229. n. 47. (1836).
 Indian Archipelago.
107. *P. MACLEAYANUS* *Leach, Zool. Miscell.* t. 5. (1814).
Godt. Enc. M. ix. 47. n. 65. (1819).
Hübner, Zool. f. 501, 502. (1825).
Boisd. Sp. Gén. 1. 229. n. 48. (1836).
 Australia. B. M.
108. *P. ÆGISTUS* *Linn. Syst. Nat.* II. 754. n. 48. (1767).
Cram. t. 241. f. C. D. (1780).
Godt. Enc. M. ix. 47. n. 64. (1819).
Boisd. Sp. Gén. 1. 231. n. 50. (1836).
Zetides *Æg.* *Hübner, Verz. bek. Schmett.* 86. (1816).
 Moluccas.
109. *P. AGAMEMNON* *Linn. Syst. Nat.* II. 748. n. 22. (1767).
Cram. t. 106. f. C. D. (1776).
Fab. Ent. Syst. III. i. 33. n. 98. (1793).
Godt. Enc. M. ix. 46. n. 63. (1819).
Boisd. Sp. Gén. 1. 230. n. 49. (1836).
Iphiclides *Ag.* *Hübner, Verz. bek. Schmett.* 82. (1816).
 N. India, China, Indian Archipelago. B. M.
110. *P. ARYCLES* *Boisd. Sp. Gén.* 1. 231. n. 51. (1836).
 Nepaul, Sincapore, Sumatra. B. M.
111. *P. BATHYCLES* *Zinken-Sommer, Nov. Act. Acad. Nat. Cur.* xv. t. 14. f. 6, 7. (1831).
Boisd. Sp. Gén. 1. 232. n. 52. (1836).
 Java, India. B. M.
112. *P. LYCAON* *Boisd. MSS.*
Westwood, Arc. Ent. II. 15. (1843). not described.
 Australia.
113. *P. EURYPILUS* *Linn. Syst. Nat.* II. 754. n. 49. (1767).
Cram. t. 122. f. C. D. (1776).
Fab. Ent. Syst. III. i. 20. n. 61. (1793).
Godt. Enc. M. ix. 45. n. 61. (1819).
Boisd. Sp. Gén. 1. 233. n. 54. (1836).
Zetides *Eu.* *Hübner, Verz. bek. Schmett.* 86. (1816).
 N. India, Java, Burmah, Philippines, &c. B. M.
114. *P. EVEMON* *Boisd. Sp. Gén.* 1. 234. n. 55. (1836).
 Java, Sumatra. B. M.
115. *P. SARPEDON* *Linn. Syst. Nat.* II. 747. n. 15. (1767).
Cram. t. 122. f. D. E. (1776).
Fab. Ent. Syst. III. i. 14. n. 41. (1793).
Godt. Enc. M. ix. 45. n. 62. (1819).
Boisd. Sp. Gén. 1. 235. n. 57. (1836).
Zetides *Sarp.* *Hübner, Verz. bek. Schmett.* 86. (1816).
Chlorissus *Sarp.* *Swainson, Zool. Ill.* 2nd ser. t. 89. (1833).
 Northern India, China, Java, New Guinea, North-Western Australia, Van Diemen's Land. Sandwich Islands? B. M.
116. *P. CLOANTHUS* *Westwood, Arc. Ent.* t. 11. f. 2. (1842).
 N. India, Assam. B. M.
117. *P. RHESUS* *Boisd. Sp. Gén.* 1. 253. n. 77. (1836).
P. Celtibericus *Boisd. Ind. Meth.* 1. (1828).
 Bengal.
118. *P. ARISTÆUS* *Cram.* t. 318. f. E. F. (1782).
Godt. Enc. M. ix. 51. n. 76. (1819).
Boisd. Sp. Gén. 1. 76. n. 252. (1836).
Iphiclides *Arist.* *Hübner, Verz. bek. Schmett.* 82. (1816).
 Amboyna, Celebes.
119. *P. NOMIUS* *Esper, Aust. Schmett.* t. 32. f. 3. (1785).
Boisd. Sp. Gén. 1. 650. n. 75. (1836).
P. Orestes *Fab. Ent. Syst.* III. i. 34. n. 99. (1793).
Jones, Icones. 1. t. 79. (ined.).
P. Niamus *Godt. Enc. M.* ix. 51. n. 72. (1816).
Swainson, Zool. Ill. 2nd ser. t. 32. (1832).
Princeps heroicus *Meges* *Hübner, Samml. Exot. Schmett.* (1806-27).
Iphiclides *Me.* *Hübner, Samml. Exot. Schmett.* 82. (1816).
 N. India. B. M.
120. *P. ANTICRATES* *E. Doubleday, Ann. of Nat. Hist.* xviii. (1846).
 N. India. B. M.

121. *P. LEOSTHENES* *E. Doubleday*, in *Taylor's Annals of Nat. History*, XVIII. (1846).
Australia. B. M.
122. *P. GLYCERION* *G. R. Gray*, *Lep. Ins. of Nepaul*, t. 1 f. 2. (1831).
Boisd. Sp. Gén. i. 247. n. 71. (1836).
Westwood, Arc. Ent. t. 55. f. 3. (1844).
Nepaul, Assam. B. M.
123. *P. AGETES* *Westwood*, *Arc. Ent.* t. 56. f. 1, 2. (1844).
N. India. B. M.
124. *P. PODALIRIUS* *Linn. Syst. Nat.* II. 751. n. 36. (1767).
Fab. Ent. Syst. III. i. 24. n. 71. (1793).
Hübner, Europ. Schmett. Pap. f. 388, 389. (1806-27).
Godt. Enc. M. IX. 50. n. 74. (1819).
Boisd. Sp. Gén. i. 245. n. 70. (1836).
Pieris *Pod. Schrank. Fauna Boica*, II. i. 163. (1801).
Iphiclides *Pod. Hübner, Verz. bek. Schmett.* 82. (1816).
Var. *P. Feisthamelii* *Godt. Dup. Lép. de France Suppl.* t. 1. f. 1. (1832).
Europe, Asia Minor, Northern Africa. B. M.
125. *P. ANTIPHATES* *Cram.* t. 72. f. A. B. (1775).
Fab. Ent. Syst. III. i. 25. n. 72. (1793).
Godt. Enc. M. IX. 49. n. 71. (1819).
Boisd. Sp. Gén. i. 248. n. 72. (1836).
Iphiclides *Ant. Hübner, Verz. bek. Schmett.* 82. (1816).
P. Pompilius *Fab. Ent. Syst.* III. i. 25. n. 74. (1793).
P. Alcibiades *Fab. Ent. Syst.* III. i. 25. n. 73. (1793).
N. India, China, Java. B. M.
126. *P. EVOMBAR* *Boisd. Sp. Gén.* i. 254. n. 78. (1836).
Madagascar.
127. *P. ANTHEUS* *Cram.* t. 234. f. B. C. (1780).
Jones, Icon. i. t. 56. (ined.)
Fab. Ent. Syst. III. i. 36. n. 105. (1793).
Iphiclides *Ant. Hübner, Verz. bek. Schmett.* 82. (1816).
P. Antharis *Godt. Enc. M.* IX. 52. n. 78. (1819).
P. Agapenor *Boisd. Sp. Gén.* i. 255. n. 79. (1836).
Western Africa. B. M.
128. *P. POLICENES* *Cram.* t. 37. f. A. B. (1775).
Boisd. Sp. Gén. i. 261. n. 84. (1836).
P. Agapenor *Fab. Ent. Syst.* III. i. 26. n. 76. (1793).
Jones, Icon. i. t. 51. (ined.)
P. Scipio *Pal. de Beauv. Ins. Af. et Am. Lép.* t. 2. f. 1. (1805-1821).
P. Polixenus *Godt. Enc. M.* IX. 52. n. 77. (1819).
Western Africa. B. M.
129. *P. PHILOLAUS* *Boisd. Sp. Gén.* i. 256. n. 80. (1836).
Mexico. B. M.
130. *P. SINON* *Fab. Ent. Syst.* 452. n. 39. (1775).
Cram. t. 317. f. C. D. E. F. (1782).
Fab. Ent. Syst. III. i. 26. n. 75. (1793).
Godt. Enc. M. IX. 53. n. 80. (1816).
Boisd. Sp. Gén. i. 260. n. 83. (1836).
- Iphiclides* *Si. Hübner, Verz. bek. Schmett.* 82. (1816).
Jamaica, Cuba, East Florida.
131. *P. MARCELLINUS* *E. Doubleday, List of Lep. Ins. Brit. Mus.* 8. (1845).
P. Protesilaus *Drury*, i. t. 22. f. 1, 2. (1770).
Jamaica. B. M.
132. *P. MARCELLUS* *Boisd. & Leconte, Icon. Lép. Am. Sept.* t. 2. f. 1-4. (1830).
Boisd. Sp. Gén. i. 257. n. 81. (1836).
P. Ajax *Esper, Schm. von Europa*, t. 51. f. 1. (1785).
Princeps heroicus *Ajax Hübner, Samml. Exot. Schmett.* (1806-27).
United States, especially Virginia, Ohio, and Kentucky. B. M.
133. *P. AJAX* *Linn. Syst. Nat.* II. 750. n. 32. (1767).
Fab. Ent. Syst. III. i. 33. n. 97. (1793).
Sm—Abb. Ins. of Georgia, i. t. 4. (1797).
Godt. Enc. M. IX. 53. n. 79. (1819).
Boisd. Sp. Gén. i. 258. n. 82. (1836).
Iphiclides *Aj. Hübner, Verz. bek. Schmett.* 82. (1816?).
P. Marcellus *Cram.* t. 98. f. F. G. (1776).
Georgia, Florida. B. M.
134. *P. HIPPODAMUS* *Boisd. MSS.*
E. Doubleday, List of Lep. Ins. Brit. Mus. 9. (1844).
Colombia. B. M.
135. *P. BELLEROPHON* *Dalm. Annal. Ent.* 37. n. 1. (1823).
Boisd. Sp. Gén. i. 264. n. 87. (1836).
P. Coresilaus *Godt. Enc. M. ix. Suppl.* 810. n. 73-74. (1823).
Prot. Swainsonianus *Swainson, Zool. Ill.* 2d ser. t. 104.
Brazil. B. M.
136. *P. AGESILAUS* *Boisd. in Guér. et Perch. Gén. Ins. Lép.* t. 1.
Boisd. Sp. Gén. i. 263. n. 86. (1836).
P. Protesilaus *Esper, Ausl. Schmett.* t. 52. f. 1. (1785-1798).
Mexico, Colombia. B. M.
137. *P. PROTESILAUS* *Linn. Syst. Nat.* II. 752. n. 39. (1767).
Cram. t. 198. f. A. B. (1779).
Fab. Ent. Syst. III. i. 23. n. 69. (1793).
Godt. Enc. M. IX. 50. n. 73. (1819).
Boisd. Sp. Gén. i. 262. n. 85. (1836).
Iphiclides *Prot. Hübner, Verz. bek. Schmett.* 82. (1816).
Honduras, Guiana, Brazil. B. M.
138. *P. EPIDAUUS* *Boisd. MSS.*
Doubleday & Hewitson, t. 3. f. 1. (1846).
Mexico, Honduras. B. M.
139. *P. TELAMON* *Donovan, Insects of China.* (1798).
Boisd. Sp. Gén. i. 251. n. 74. (1836).
N. China.
140. *P. ANDROCLES* *Boisd. Sp. Gén.* i. 249. n. 73. (1836).
Celebes.

141. *P. DORCUS* De Haan, *Verh. Nat. Ges. Ned. Overz. Bez.*
Ins. t. 7. f. 4. (1839).
Indian Archipelago.
142. *P. TORQUATUS* Cram. t. 177. f. A. B. (1776).
Godt. Enc. M. ix. 62. n. 100. (1819).
Boisd. Sp. Gén. i. 367. n. 211. (1836).
Brazil. B. M.
143. *P. TORQUATUS* Esper, *Ausl. Schmett.* t. 45. f. 2. (1785–1798).
Boisd. Sp. Gén. i. 368. n. 212. (1836).
P. Pandrosus Godt. *Enc. M.* ix. 62. n. 101. (1819).
Brazil. B. M.
144. *P. PELEIDES* Boisd. *Sp. Gén.* i. 366. n. 209. (1836).
P. Pelasus Herbst. *Schmett.* t. 19. f. 1.
S. America?
145. *P. DUPONCHELII* Lucas, *Ann. Soc. Ent. de France*, viii. t. 8. f. 1. (1839).
Paraguay, Brazil?
146. *P. SCAMANDER* Boisd. *Sp. Gén.* i. 363. n. 206. (1836).
Brazil.
147. *P. VICTORINUS* E. Doubleday, *Ann. Nat. Hist.* new ser. xiv. 418. (1844).
Guayaquil? B. M.
148. *P. LENÆUS* Doubleday & Hewitson, t. 4. f. 2.
Bolivia. B. M.
149. *P. PHAËTON* Boisd. *MSS.*
Columbia. B. M.
150. *P. CLEOTAS* G. R. Gray, in *Griff. Ann. King. Ins.* t. 86. (1832).
Boisd. Sp. Gén. i. 364. n. 207. (1836).
Brazil, Missions of the Uruguay. B. M.
151. *P. GRAYI* Boisd. *Sp. Gén.* i. 365. n. 208. (1836).
Brazil. B. M.
152. *P. POLYCAON* Cram. t. 203. f. A. B. (1780).
Fab. Ent. Syst. iii. i. 33. n. 96. (1793).
Godt. Enc. M. ix. 41. n. 48. (1819).
Boisd. Sp. Gén. i. 361. n. 205. (1836).
Calaisides Polyc. *Hüb. Verz. bek. Schmett.* 86. (1816).
♀ *P. Androgeos* Cram. t. 16. f. C. D. (1775).
Fab. Ent. Syst. iii. i. 15. n. 43. (1793).
Var. ♀ *P. Pyranthus* Cram. t. 204. f. A. B. (1780).
P. Glaucus Fab. *Mant.* ii. 3. n. 18. (1787).
P. Laodocus Fab. *Ent. Syst.* iii. i. 8. n. 23. (1793).
Brazil, Guiana. B. M.
153. *P. SERVILLEI* Godt. *Enc. Suppl.* 809. n. 46–47. (1819).
Boisd. Sp. Gén. i. 346. n. 187. (1836).
Brazil?
154. *P. DOLICAON* Cram. t. 17. f. C. D. (1775).
Fab. Ent. Syst. iii. i. 23. n. 66. (1793).
Boisd. Sp. Gén. i. 347. n. 188. (1836).
Iphiclides Dol. *Hüb. Verz. bek. Schmett.* 82. (1816).
Brazil. B. M.
155. *P. IPHITAS* Boisd. *Sp. Gén.* i. 348. n. 189. (1836).
Eurytides Iph. *Hüb. Samml. Exot. Schmett.* (before 1816).
P. Dolicaon Godt. *Enc. M.* ix. 40. n. 46. (1819).
Brazil. B. M.
156. *P. ALEXANDER* Esper, *Schmett. von Europa*, t. 110. cont. 65. f. 1. (1777–1805).
Godt. Enc. M. ix. 56. n. 88. (1819).
Boisd. Sp. Gén. i. 329. n. 172. (1836).
Jasoniades Al. *Hüb. Verz. bek. Schmett.* 83. (1816).
P. Polydamas De Prunner, *Lép. Pedem. Suppl.* 69. n. 134. (1798).
S. Europe. B. M.
157. *P. XUTHUS* Linn. *Syst. Nat.* ii. 751. n. 34. (1767).
Cram. t. 73. f. A. B. (1775).
Fab. Ent. Syst. iii. i. 32. n. 92. (1793).
Godt. Enc. M. ix. 58. n. 90. (1819).
Boisd. Sp. Gén. i. 327. n. 170. (1836).
Jasoniades Xu. *Hüb. Verz. bek. Schmett.* 83. (1816).
N. India, China, Siberia, N.W. Australia. B. M.
158. *P. MACHAON* Linn. *Syst. Nat.* ii. 750. n. 33. (1767).
Fab. Ent. Syst. iii. i. 30. n. 87. (1793).
Hüb. Europ. Schmett. Pap. f. 390, 391. (1806–27).
Godt. Enc. M. ix. 57. n. 89. (1819).
Boisd. Sp. Gén. i. 328. n. 171. (1836).
Amaryssus Mach. *Dalm. Konigl. Vet. Acad. Holm.* xxxvii. 85. (1816).
Jasoniades Mach. *Hüb. Verz. bek. Schmett.* 83. (1816).
P. Sphyrus *Hüb. Europ. Schmett. Pap.* f. 777, 776. (1823?).
Europe, N. India, Japan, N. Africa. B. M.
159. *P. HOSPITON* Géné, *Ins. Sard. Min. Cogn.* t. 2. f. 20, 21. (1838).
Géné, Mem. R. Acad. Torino xxxix.
Sardinia.
160. *P. ARISTOR* Godt. *Enc. M.* ix. 60. n. 95. (1819).
Boisd. Sp. Gén. i. 332. n. 174. (1836).
Mexico?
161. *P. ASTERIAS* Drury, i. t. 11. f. 2, 3, 5. (1770).
Fab. Ent. Syst. iii. i. 6. n. 16. (1793).
Godt. Enc. M. ix. 58. n. 91. (1819).
Boisd. Sp. Gén. i. 332. n. 175. (1836).
Euphræades Ast. *Hüb. Verz. bek. Schmett.* 83. (1816).
P. Ajax Clerck, *Icones*, t. 83. f. 3, 4. (1764).
P. Troilus Smith, *Abb. Lep. of Georgia*, i. t. 1. (1797).
United States, Antilles, Mexico, New Granada, Quito. B. M.
162. *P. LEUCASPIS* Godt. *Enc. M.* ix. 55. n. 85. (1819).
Boisd. Sp. Gén. i. 349. n. 190. (1836).
Peru? B. M.
163. *P. THYASTES* Drury, iii. t. 35. f. 1. (1782).
Fab. Ent. Syst. iii. i. 26. n. 77. (1793).
Godt. Enc. M. ix. 54. n. 83. (1819).
Boisd. Sp. Gén. i. 349. n. 191. (1836).

- Iphiclides Diaphorus Hübn. *Samml. Exot. Schm.* (1806-27).
Brazil. B. M.
164. P. MARCHANDII *Boisd. Sp. Gén.* I. 350. n. 192. (1836).
Mexico. B. M.
165. P. MENTOR *Boisd. Sp. Gén.* I. 354. n. 193. (1836).
Brazil. B. M.
166. P. THERSITES *Fab. Ent. Syst.* III. i. 30. n. 88. (1793).
Jones, Icones, I. t. 78. (ined.).
Donovan, Nat. Rep. t. 24. (1823).
Jamaica. B. M.
167. P. LYCOPHRON *Boisd. Sp. Gén.* I. 353. n. 194. (1836).
Heraclides Lyc. *Hüb. Samml. Exot. Schm.* (1806-27).
P. Astyalus *Godt. Enc. M.* IX. 62. n. 102. (1819).
P. Mentor *Delman, Annal. Ent.* 37. (1823).
Brazil. B. M.
168. P. PALLAS *E. Doubleday, List of Lep. Ins. Brit. Mus.* 17. (1845).
Mexico. B. M.
169. P. CRESPHONTES *Cram.* t. 165. f. A. B. t. 166. f. A. (1776).
P. Thoas var. *Boisd. Sp. Gén.* I. 355. n. 197. (1836).
Heraclides Oxilus *Hüb. Verz. bek. Schm.* 83. (1816).
United States (Southern States), Mexico, Jamaica. B. M.
170. P. THOAS *Linn. Mant.* I. 536. (1771).
Cram. t. 167. f. A. B. (1776).
Fab. Ent. Syst. III. i. 32. n. 94. (1793).
Godt. Enc. M. IX. 62. n. 103. (1819).
Boisd. Sp. Gén. I. 355. n. 197. (1836).
Heraclides Th. *Hüb. Verz. bek. Schm.* 83. (1816).
Brazil. B. M.
171. P. ORNYTHION *Boisd. Sp. Gén.* I. 354. n. 196. (1836).
Yucatan.
172. P. PÆON *Boisd. Sp. Gén.* I. 356. n. 198. (1836).
Chili.
173. P. ARISTODEMUS *Esper, Ausl. Schm.* t. 56. f. 2. (1785-1798).
Boisd. Sp. Gén. I. 357. n. 199. (1836).
P. Temenes *Godt. Enc. M.* IX. 63. n. 104. (1819).
Antilles.
174. P. OXYNIUS.
Laertias Ox. *Hüb. Samml. Exot. Schm.* (1823?).
P. Augustus *Boisd. Sp. Gén.* I. 358. n. 200. (1836).
Cuba.
175. P. PIRITHOUS *Boisd. Sp. Gén.* I. 358. n. 201. (1836).
Cuba? Missions of the Uruguay.
176. P. ACAMAS *Fab. Ent. Syst.* III. i. 8. n. 22. (1793).
Donovan, Nat. Rep. t. 18. (1823).
Boisd. Sp. Gén. I. 360. n. 203. (1836).
Jamaica. B. M.
177. P. CEBALUS *Boisd. Sp. Gén.* I. 360. n. 204. (1836).
S. America.
178. P. GARAMAS.
Euphaedres Gar. *Hüb. Samml. Exot. Schm.* (1823?).
Mexico.
179. P. PELAEUS *Fab. Ent. Syst.* III. i. 5. n. 15. (1793).
P. Imerius *Godt. Enc. M.* IX. 69. n. 121. (1819).
Boisd. Sp. Gén. I. 312. n. 150. (1836).
P. Augias *Ménétrières, Nouv. Mém. Soc. Imp. de Mosc.* III. t. 10. f. 1, 2. (1834).
Haiti, Jamaica. B. M.
180. P. HECTORIDES *Esper, Ausl. Schm.* t. 40 c. f. 1. (1785-1798).
Boisd. Sp. Gén. I. 303. n. 137. (1836).
P. Argentus *Martin, Psyche*, t. 14. (1797).
Menelaides Chirodamas *Hüb. Samml. Exot. Schm.* (1806-27).
P. Lysithous *Godt. Enc. M.* IX. 73. n. 136.
Thoas Lys. *Swainson, Zool. Ill.* 2d ser. t. 121. (1831).
Brazil. B. M.
181. P. MEZENTIUS *E. Doubleday, Ann. Nat. Hist.* new ser. XIV. 417. (1844).
Guayaquil? B. M.
182. P. LYSITHOUS.
Hectorides Lys. *Hüb. Samml. Exot. Schm.* (1806-27).
P. Claudius *Boisd. Sp. Gén.* I. 311. n. 149. (1836).
Brazil. B. M.
183. P. LAIUS *Boisd. Sp. Gén.* I. 311. n. 148. (1836).
P. Harrisianus var. *Godt. Enc. M.* IX. *Suppl.* 812. n. 138-139. (1823).
Brazil.
184. P. HARRISIANUS *Swainson, Zool. Ill.* 1st ser. t. 109. (1821).
Godt. Enc. M. IX. *Suppl.* 812. n. 138-139. (1823).
Boisd. Sp. Gén. I. 310. n. 147. (1836).
Brazil. B. M.
185. P. ASTYAGAS *Drury*, III. t. 35. f. 4. (1782).
P. Asius *Fab. Ent. Syst.* III. i. 8. n. 21. (1793).
Godt. Enc. M. IX. 55. n. 84. (1819).
Boisd. Sp. Gén. I. 309. n. 146. (1836).
P. Manlius *Perty*, t. 29. f. 1. 16. (1830-1833).
Brazil. B. M.
186. P. BUNICHUS *Boisd. Sp. Gén.* I. 308. n. 145. (1836).
Menelaides Bunichus *Hüb. Samml. Exot. Schm.* (1806-).
P. Ascalus *Godt. Enc. M.* IX. *Suppl.* 812. n. 137-138. (1823).
Brazil. B. M.
187. P. ECHEDORUS *Boisd. Sp. Gén.* I. 308. n. 144. (1836).
Brazil.
188. P. PRONEUS *Boisd. Sp. Gén.* I. 307. n. 143. (1836).
Hectorides Pr. *Hüb. Zut.* f. 497, 498. (1823).
Brazil.
189. P. AGAVUS *Drury*, III. t. 9. f. 4. (1782).
Godt. Enc. M. IX. 73. n. 137. (1819).
Boisd. Sp. Gén. I. 306. n. 142. (1836).

- Menelaides Ag. *Hüb. Verz. bek. Schmett.* 85. (1816).
P. Lysander *Fab. Ent. Syst.* III. i. 9. n. 25. (1793).
Brazil. B. M.
190. P. ASCANIUS *Cram.* t. 14. f. A. (1775).
Fab. Ent. Syst. III. i. 3. n. 8. (1793).
Godt. Enc. M. IX. 73. n. 138. (1819).
Boisd. Sp. Gén. I. 306. n. 141. (1836).
Brazil. B. M.
191. P. CAUDIUS *Boisd. Sp. Gén.* I. 301. n. 135. (1836).
Princeps dominans Cau. *Hüb. Samml. Exot. Schmett.* (1806-27).
Priamides Cau. *Hüb. Verz. bek. Schmett.* 87. (1816).
Brazil.
192. P. ORCHAMUS *Boisd. Sp. Gén.* I. 300. n. 133. (1836).
Colombia.
193. P. POLYBIUS *Swainson, Zool. Ill.* 1st ser. t. 137. (1821).
Troilides Tros *Hüb. Samml. Exot. Schmett.* (1806-27).
P. *Trojanus* *Boisd. Sp. Gén.* I. 301. n. 134. (1836).
Brazil. B. M.
194. P. DARDANUS *Fab. Ent. Syst.* III. i. 10. n. 29. (1793).
Godt. Enc. M. IX. 73. n. 134. (1819).
Boisd. Sp. Gén. I. 304. n. 139. (1836).
♀ P. *Tros* *Fab. Ent. Syst.* III. i. 10. n. 30. (1793).
Godt. Enc. M. IX. 73. n. 135. (1819).
Boisd. Sp. Gén. I. 304. n. 138. (1836).
Brazil. B. M.
195. P. ARCAS *Cram.* t. 378. f. C. (1782).
Godt. Enc. M. IX. 37. n. 35. (1819).
Boisd. Sp. Gén. I. 293. n. 122. (1836).
Honduras, Mexico. B. M.
196. P. SERAPIS *Boisd. Sp. Gén.* I. 298. n. 130. t. 1 B. f. 2. (1836).
♀ P. *Arrhiphus* *Boisd. Sp. Gén.* I. 293. n. 123. (1836).
Colombia. B. M.
197. P. PYROCHLES *E. Doubleday, Ann. Nat. Hist.* new ser. XVI. 416. (1845).
New Granada. B. M.
198. P. ERITHALION *Boisd. Sp. Gén.* I. 295. n. 125. (1836).
♂ P. *Rhameses* *Boisd. MSS.*
Colombia. B. M.
199. P. NEPHALION *Godt. Enc. M.* IX. 37. n. 36. (1819).
Boisd. Sp. Gén. I. 294. n. 124. (1836).
Brazil. B. M.
200. P. VERTUMNUS *Cram.* 211. f. B. C. (1780).
Fab. Ent. Syst. III. i. 16. n. 49. (1793).
Boisd. Sp. Gén. I. 298. n. 129. (1836).
Parides Vert. *Hüb. Verz. bek. Schmett.* 87. (1816).
Guiana.
201. P. TULLUS.
♀ P. *Tull.* *Cram.* t. 277. f. C. D. (1781).
Godt. Enc. M. IX. 37. n. 37. (1836).
- Priamides* *Tul. Hüb. Verz. bek. Schmett.* 87. (1816).
♂ P. *Vertumnus* *Godt. Enc. M.* IX. 37. n. 38. (1819).
♂ P. *Proteus* *Boisd. Sp. Gén.* I. 297. n. 128. (1836).
Brazil. B. M.
202. P. ÆNEAS *Linn. Syst. Nat.* II. 747. n. 16. (1767).
Fab. Ent. Syst. III. i. 17. n. 50. (1793).
Cram. t. 279. f. A. B. C. D. (1782).
Boisd. Sp. Gén. I. 286. n. 112. (1836).
Parides Gargasus *Hüb. Verz. bek. Schmett.* 87. (1816).
Guiana. B. M.
203. P. TIMIAS *E. Doubleday, List of Lep. Ins. Brit. Mus. App.* (1846).
Guayaquil. B. M.
204. P. EURIMEDES *Cram.* 386. f. E. F. (1782).
Godt. Enc. M. IX. 34. n. 26. (1819).
Boisd. Sp. Gén. I. 285. n. 111. (1836).
Parides Æneas *Hüb. Verz. bek. Schmett.* 87. (1816).
Guiana, Venezuela. B. M.
205. P. CYMOCHLES *E. Doubleday, Ann. Nat. Hist.* new ser. XVI. 416. (1845).
Trinidad. B. M.
206. P. SPARTACUS *E. Doubleday, List of Lep. Ins. Brit. Mus. App.* (1846).
Brazil. B. M.
207. P. ARIARATHES *Esper, Ausl. Schmett.* t. 14. f. 2. (1785-98).
Boisd. Sp. Gén. I. 287. n. 114. (1836).
Guiana. B. M.
208. P. NUMA *Boisd. Sp. Gén.* I. 289. n. 116. (1836).
S. America.
209. P. CÆLUS *Boisd. Sp. Gén.* I. 289. n. 117. (1836).
Guiana.
210. P. ECHELUS.
♂ *Princeps dominans* *Ech. Hüb. Samml. Exot. Schmett.* (1806-27).
Boisd. Sp. Gén. I. 287. n. 113. (1836).
Parides Ech. *Hüb. Verz. bek. Schmett.* 87. (1816).
♀ *Priamides Marcus* *Hüb. Samml. Exot. Schmett.* (1806-27).
Brazil. B. M.
211. P. ZACYNTHUS *Fab. Ent. Syst.* III. i. 15. n. 46. (1793).
Jones, Icones, I. t. 22. (ined.)
Donovan, Nat. Rep. t. 26. f. 1. (1823).
♀ P. *Dimas* *Fab. Ent. Syst.* III. i. 16. n. 47. (1793).
Godt. Enc. M. IX. 36. n. 33. (1819).
Donovan, Nat. Rep. t. 26. f. 2. (1823).
Boisd. Sp. Gén. I. 292. n. 120. (1836).
Brazil. B. M.
212. P. POLYMETUS *Godt. Enc. M.* IX. 35. n. 28. (1819).
Swainson, Zool. Ill. 1st ser. t. 92. (1821).
Boisd. Sp. Gén. I. 283. n. 108. (1836).
♀ *Princeps dominans* *Echemon* *Hüb. Samml. Exot. Schmett.* (1806-27).

- Priamides Ech. *Hübner, Verz. bek. Schmett.* 87. (1816).
Brazil.
213. *P. SESOSTRIS* *Cram.* t. 211. f. F. G. (1780).
Godt. Enc. M. ix. 38. n. 40. (1819).
Boisd. Sp. Gén. i. 209. n. 131. (1836).
Princeps dominans *Ses. Hübner, Samml. Exot. Schmett.* (1806-27).
Parides *Ses. Hübner, Verz. bek. Schmett.* 87. (1816).
Var. *P. Childrenæ G. R. Gray* in *Griffith's An. Kingdom*, t. 38. f. 1, 2. (1832).
Honduras, Guiana, Brazil. B. M.
214. *P. HIPPARION* *Cram.* t. 29. f. E. (1775).
Godt. Enc. M. ix. 35. n. 30. (1819).
Boisd. Sp. Gén. i. 281. n. 106. (1836).
Princeps dominans *Hipp. Hübner, Samml. Exot. Schmett.* (1806-27).
Priamides *Hipp. Hübner, Verz. bek. Schmett.* 85. (1816).
♀ *P. Amosis Cram.* t. 269. f. A. B. (1780).
Godt. Enc. M. ix. 35. n. 29. (1819).
Guiana. B. M.
215. *P. OPLEUS* *Godt. Enc. M.* ix. 33. n. 22. (1819).
Boisd. Sp. Gén. i. 281. n. 105. (1836).
S. America.
216. *P. PHARNACES* *E. Doubleday, List of Lep. Ins. Brit. Mus. Appendix* (1846).
E. Doubleday, Annals of Nat. Hist. xviii. (1846).
Bolivia. B. M.
217. *P. BRANCHIUS* *E. Doubleday, List of Lep. Ins. Brit. Mus. Appendix* (1846).
E. Doubleday, Annals of Nat. Hist. xviii. (1846).
Honduras. B. M.
218. *P. ILUS* *Fab. Ent. Syst.* iii. i. 17. n. 51. (1793).
Godt. Enc. M. ix. 33. n. 21. (1816).
Boisd. Sp. Gén. i. 280. n. 104. (1836).
West coast of S. America. B. M.
219. *P. IDÆUS* *Fab. Ent. Syst.* iii. i. 16. n. 48. (1793).
Donovan, Ins. of India. (1800).
P. Evander Godt. Enc. M. ix. 32. n. 18. (1819).
Boisd. Sp. Gén. i. 277. n. 101. (1836).
Priamides *Ev. Hübner, Samml. Exot. Schmett.* (1806-27).
Princeps dominans *Capys. Hübner, Samml. Exot. Schmett.* (1806-27).
Priamides *Cap. Hübner, Verz. bek. Schmett.* 87. (1816).
Brazil. B. M.
220. *P. IPHIDAMAS* *Fab. Ent. Syst.* iii. i. 17. n. 52. (1793).
S. America.
221. *P. ROGERI* *Boisd. Sp. Gén.* i. 278. n. 102. (1836).
Yucatan.
222. *P. ANCHISIADES* *Esper, Ansl. Schmett.* t. 13. f. 1, 2. (1795-1798).
Boisd. Sp. Gén. i. 279. n. 103. (1836).
January, 1847.
- P. Anchises Cram.* t. 318. f. A. B. C. D. (1781).
P. Archelaus Godt. Enc. M. ix. 32. n. 19. (1819).
Priamides *Hipponous Hübner, Verz. bek. Schmett.* 87. (1816).
Brazil? Guiana. B. M.
223. *P. HARMODIUS* *E. Doubleday, List of Lep. Ins. Brit. Mus. Appendix* (1846).
E. Doubleday, Annals of Nat. Hist. xviii. (1846).
Bolivia. B. M.
224. *P. ANCHISES* *Linn. Mus. Lud. Utr.* 191. n. 10. (1764).
Clerck, Icones. t. 29. f. 1. (1764).
Boisd. Sp. Gén. i. 291. n. 119. (1836).
Guiana? Honduras. B. M.
225. *P. PANTHONUS* *Cram.* t. 278. f. C. D. (1781).
P. Anchises Fab. Ent. Syst. iii. i. 13. n. 40. (1793).
Godt. Enc. M. ix. 36. n. 31. (1819).
♀ *P. Arbat's Cram.* t. 386. f. C. D. (1782).
Hübner, Samml. Exot. Schmett. (1806-27).
Boisd. Sp. Gén. i. 290. n. 118. (1836).
P. Pompeius Hübner, Samml. Exot. Schmett. (1806-27).
Priamides *Pompeius Hübner, Verz. bek. Schmett.* 87. (1816).
Guiana. B. M.
226. *P. PERRHEBUS* *Boisd. Sp. Gén.* i. 305. n. 140. (1836).
Paraguay.
227. *P. MONTEZUMA* *Westwood, Arc. Ent.* t. 18. f. 3. (1841).
Mexico. B. M.
228. *P. THYMBRÆUS* *Boisd. Sp. Gén.* i. 302. n. 136. (1836).
Mexico.
229. *P. PHOTINUS* *E. Doubleday, Ann. Nat. Hist.* new ser. xiv. 415 (1845).
Mexico. B. M.
230. *P. PHILENOR* *Linn. Mant.* 535. (1771).
Drury i. t. 11. f. 1, 4. (1770).
Fab. Ent. Syst. iii. i. 6. n. 18. (1793).
Godt. Enc. M. ix. 40. n. 47. (1819).
Boisd. Sp. Gén. i. 324. n. 167. (1836).
Laertias Ph. Hübner, Verz. bek. Schmett. 84. (1816).
P. Astenous Cram. t. 208. f. A. B. (1779).
United States, Mexico. B. M.
231. *P. VILLIERSII* *Godt. Enc. M.* ix. *Suppl.* 810. n. 47-48. (1823).
Boisd. & Lec. Icon. Léop. Am. Sept. t. 14. (1830).
Boisd. Sp. Gén. i. 325. n. 168. (1836).
Cuba, Florida.
232. *P. CRASSUS* *Cram.* t. 112. f. C. (1776).
Boisd. Sp. Gén. i. 314. n. 153. (1836).
Ithobalus Cr. Hübner, Verz. bek. Schmett. 88. (1816).
Var. *P. Belus Godt. Enc. M.* ix. 38. n. 42. (1819).
Brazil, Cayenne. B. M.

233. *P. BELUS* *Cram.* 112. f. A. B. (1776).
Godt. Enc. M. ix. 38. n. 42. (1819).
Boisd. Sp. Gén. i. 315. n. 154. (1836).
Ithobalus *Be. Hüb. Verz. bek. Schmett.* 88.
 (1816).
 Surinam.
234. *P. AMULIUS* *Esper, Ausl. Schmett.* t. 27. f. 1. (1785-1798).
Boisd. Sp. Gén. i. 316. n. 155. (1836).
 Guiana?
235. *P. LUCIDAS* *Cram.* t. 113. f. A. (1776).
Boisd. Sp. Gén. i. 317. n. 156. (1836).
Ithobalus *Lyc. Hüb. Verz. bek. Schmett.* 88.
 (1816).
P. Belus var. *Godt. Enc. M.* ix. 38. n. 42. (1819).
 Var. *P. Erymanthus* *Cram.* t. 113. f. C. (1776).
 Cayenne, Surinam.
236. *P. NUMITOR* *Cram.* t. 113. f. B. (1776).
Boisd. Sp. Gén. i. 317. n. 157. (1836).
Ithobalus *Num. Hüb. Verz. bek. Schmett.* 88.
 (1816).
 Var. *P. Belus* *Godt. Enc. M.* ix. 38. n. 42.
 (1819).
 Surinam.
237. *P. CHORIDAMAS* *Boisd. Sp. Gén.* i. 318. n. 158. (1836).
 Brazil, Guiana. B. M.
238. *P. HYPERION* *Boisd. Sp. Gén.* i. 319. n. 159. (1836).
Ithobalus *Hyp. Hüb. Samml. Exot. Schmett.*
 (1806-27).
 ♀ *P. Protodamas* ♀ *Godt. Enc. M.* ix. 40. n. 45.
 (1819).
P. Zonaras *Perty*, t. 29. f. 3, 3. b. (1830-1833).
 Brazil. B. M.
239. *P. PHAON* *Boisd. Sp. Gén.* i. 319. n. 160. (1836).
 Mexico, Honduras. B. M.
240. *P. XENODAMAS* *Boisd. Sp. Gén.* i. 320. n. 161. (1836).
Ithobalus *Xen. Hüb. Samml. Exot. Schmett.*
 (1806-27).
P. Cebriones *Dalm. Anal.* 38. n. 3. (1823).
 Brazil. B. M.
241. *P. POLYDAMAS* *Linn. Syst. Nat.* 11. 747. n. 12. (1767).
Fab. Ent. Syst. III. i. 14. n. 42. (1793).
Cram. t. 211. f. D. E. (1779).
Godt. Enc. M. ix. 39. n. 44. (1819).
Boisd. Sp. Gén. i. 321. n. 162. (1836).
Ithobalus *Poly. Hüb. Verz. bek. Schmett.* 88.
 (1816).
 Brazil, Honduras, Jamaica. Florida? B. M.
242. *P. ARCHIDAMAS* *Boisd. Sp. Gén.* i. 321. n. 163. (1836).
 Chili. B. M.
243. *P. MADYES* *E. Doubleday in Taylor's Annals of Nat.*
Hist. XVIII. (1846).
 Bolivia. B. M.
244. *P. PROTODAMAS* *Godt. Enc. M.* ix. 40. n. 45. (1819).
Boisd. Sp. Gén. i. 322. n. 164. (1836).
Ithobalus *Prot. Hüb. Samml. Exot. Schmett.*
 (1806-27).
 Brazil. B. M.
245. *P. BITIAS* *Godt. Enc. M.* ix. 39. n. 43. (1819).
Boisd. Sp. Gén. i. 323. n. 165. (1836).
 S. America.
246. *P. CORISTHEUS* *Boisd. Sp. Gén.* i. 323. n. 166. (1836).
P. Aristæus *Cram.* t. 361. f. A. B. (1782).
 Var. *P. Bitias* *Godt. Enc. M.* ix. 39. n. 43. (1819).
 Surinam.
247. *P. TRIOPAS* *Godt. Enc. M.* ix. 33. n. 23. (1819).
Boisd. Sp. Gén. i. 313. n. 151. (1836).
 Cayenne, N. Brazil. B. M.
248. *P. CORETHRUS* *Boisd. Sp. Gén.* i. 314. n. 152. t. 1. C. f. 2.
 (1836).
 S. America?
249. *P. ZENOBIUS* *Fab. Ent. Syst.* III. i. 37. n. 108. (1793).
Donovan, Naturalist's Rep. t. 179. (1828).
Godt. Enc. M. ix. 74. n. 140. (1819).
Lucas, Léop. Exot. t. 24. f. 1. (1835).
Boisd. Sp. Gén. i. 369. n. 213. (1836).
 Western Africa. B. M.
250. *P. MESSALINA* *Stoll*, t. 26. f. 2. (1791).
P. Cynortas *Godt. Enc. M.* ix. 75. n. 141. (1819).
Lucas, Léop. Exot. t. 24. f. 2. (1835).
Boisd. Sp. Gén. i. 370. n. 214. (1836).
 Western Africa. B. M.
251. *P. CYNORTA* *Fab. Ent. Syst.* III. i. 37. n. 109. (1793).
Jones, Icones, i. t. 87. (ined.)
Westwood, Arc. Ent. t. 40. f. 3, 4. (1842).
P. Zerynthius *Boisd. Sp. Gén.* i. 370. n. 215.
 (1836).
 Western Africa. B. M.
252. *P. BOISDUVALLIANUS* *Westwood, Arc. Ent.* t. 40. f. 1, 2.
 (1842).
 Western Africa. B. M.
253. *P. DIONYSOS* *Doubleday & Hewitson*, t. 3. f. 4. (1846).
 Western Africa.
254. *P. HIPPOCOON* *Fab. Ent. Syst.* III. i. 38. n. 112. (1793).
Jones, Icones, i. t. 88. (ined.)
 ♀ *P. Nivius* *Cram.* t. 234. f. A. (1780).
Danaïs Nivaria ♀ *Godt. Enc. M.* ix. 182. n. 22.
 (1819).
P. Westermanni *Boisd. Sp. Gén.* i. 372. n. 217.
 (1836).
 Western Africa. B. M.
255. *P. CENEA* *Stoll*, t. 29. f. 1. (1791).
Danaïs Rechila *Godt. Enc. M.* ix. 183. n. 24.
 (1819).
 ♀ *P. Trophonius* *Westwood, Arc. Ent.* t. 39. f. 1, 2.
 (1842).
 Western and Southern Africa. B. M.
256. *P. MEGARUS* *Westwood, Arc. Ent.* t. 52. f. 3. (1845).
 N. India, Assam. B. M.
257. *P. DELESSERTII* *Guérin, Rev. Zool.* 233. (1839).
P. Laodocus *De Haan, Verh. Nat. Ges. Ned.*
Overz. Bez. Ins. t. 8. f. 5. (1839).
 Singapore. B. M.
258. *P. XENOCLES* *E. Doubleday, in Gray's Zool. Misc.* 74.
 (1842).
 N. India. B. M.

259. *P. MACAREUS* *Godt. Enc. M.* ix. 76. n. 144. (1819).
Horsfield, Desc. Cat. Lep. E. I. C. t. 5. f. 1. (1828).
Lucas, Léop. Exot. t. 23. f. 1. (1835).
Boisd. Sp. Gén. i. 374. n. 220. (1836).
P. striatus *Zinken, Nova Acta Acad. Nat. Cur.* xv. t. 14. (1831).
 Java, N. India. B. M.
260. *P. DEUCALION* *Boisd. Sp. Gén.* i. 375. n. 221. (1836).
 Moluccas.
261. *P. ENCELADUS* *Boisd. Sp. Gén.* i. 376. n. 222. (1836).
 Moluccas.
262. *P. AGESTOR* *G. R. Gray, Lep. Ins. of Nepaul,* t. 4. f. 2. (1831).
Boisd. Sp. Gén. i. 376. n. 223. (1856).
Westwood, Arc. Ent. t. 16. f. 2. (1841).
 Nepaul, Assam. B. M.
263. *P. DISSIMILIS.*
 ♂ *P. dis.* *Linn. Syst. Nat.* ii. 782. n. 195. (1767).
Cram. t. 82. f. C. D. (1775).
Fab. Ent. Syst. iii. i. 38. n. 113. (1793).
Godt. Enc. M. ix. 175. n. 143. (1816).
Boisd. Sp. Gén. i. 377. n. 224. (1836).
 ♀ *P. Panope* *Linn. Syst. Nat.* ii. 782. n. 196. (1767).
Fab. Ent. Syst. iii. i. 59. n. 186. (1793).
Cram. t. 295. f. E. F. (1780).
Godt. Enc. M. ix. 75. n. 142. (1816).
- ♂ ♀ *Arisbe* *Pan. Hübn. Verz. bek. Schmett.* 89. (1816).
 Var. *P. Clytia* *Linn. Syst. Nat.* ii. 781. n. 189. (1767).
Clytia dis. *Swainson, Zool. Ill.* 2d ser. t. 120. (1832).
 N. India, China, Ceylon, Timor. B. M.
264. *P. POLLUX* *Westwood, Ann. Nat. Hist.* new ser. ix. 37. (1842).
Westwood, Arc. Ent. t. 80. f. 1, 2. (1845).
 N. India. B. M.
265. *P. PALEPHATES* *Westwood, Arc. Ent.* t. 79. f. 1, 2. (1845).
 Manilla.
266. *P. LEUCOTHOE* *Westwood, Arc. Ent.* t. 79. f. 3. (1845).
 N. India, Singapore. B. M.
267. *P. LACEDÆMON* *Fab. Ent. Syst.* iii. i. 36. n. 107. (1793).
Donovan, Ins. of India. (1800-1803).
Godt. Enc. M. ix. 38. n. 41. (1819).
Boisd. Sp. Gén. i. 374. n. 219. (1836).
 Malabar.
268. *P. PARADOXA.*
Zelima *Par. Zinken Sommer, Nova Acta Acad. Nat. Cur.* xvi. 162. t. 15. f. 9, 10. (1831).
 Java. B. M.

Since the above list was compiled, Mr. Westwood has read at the meeting of the Entomological Society on December 7th, descriptions of two new species of *Papilio*, for which he proposes the names of *P. Erostratus* and *P. Zetes*: the former is from Central America, and must be placed next to *P. Oxyntius*; the latter from Haiti, and is very near to *P. Villiersii*. In the first part of his *Cabinet of Indian Entomology* a fine species from Assam, near to *P. Bootes*, will be figured under the name of *P. Icarius*. In the museum of the East India Company there is an Indian species closely allied to *P. Paradoxa*, but having a strong resemblance to Jones's figure of *P. Lacedæmon*: this will be figured in the same work.

I am indebted to the same gentleman for the information that the female of *P. Corethrus* is furnished with a pair of broad horny plates on the last segment of the abdomen, appendages evidently analogous to the pouch of *Eurycus* and *Parnassius*.

I have omitted from the list *P. Jason* *Linn. Mus. Lud. Ulr.* 210., and *P. Palamedes* *Fab. Ent. Syst.* iii. i. 68. n. 213., because it is probable that they are now known under other names; but from the brief descriptions given by Linné and Fabricius they are not recognisable.

P. Pelas *Herbst.* t. 19. f. 1. is probably an imaginary species, drawn, like his *P. Pandarus*, to fit the description of Fabricius. His *P. Miltiades* t. 44. f. 1, 2. is a fictitious species, composed of the anterior wings of *P. Erithonius* and the posterior of *P. Ajax*.

Genus IV. **LEPTOCIRCUS** *Swainson*.*Swainson, Zool. Ill. 2d ser. t. 106. (1832).*PAPILIO *Fabr.*ERYCINA *Godt.*IPHICLIDES *Hübner*.

HEAD large; forehead broad.

Eyes ovate, prominent.*Maxillæ* rather long.*Labial Palpi* very short, clothed with long loose scales; apparently triarticulate, but the articulations barely discernible.*Antennæ* rather long, slightly arched; club but slightly elongate, compressed.

THORAX stout.

Anterior Wings triangular; the anterior and outer margins nearly equal, the inner about half the length of the anterior. Costal and subcostal nervules united at their origin; first subcostal nervule thrown off considerably before the middle of the cell; the second not far from its end; third and fourth at rather more than an equal distance beyond it, united at their origin for about one third of their course; upper disco-cellular nearly equal to the space between the two discoidal nervules, directed obliquely downwards and backwards; baseo-median, not reaching the submedian nervule.*Posterior Wings* folded longitudinally; the inner margin straight, nearly double the length of the abdomen, in the male folded back upon the wings and furnished with a tuft of delicate hairs; anterior margin about half the length of the inner; posterior margin sinuate, gradually produced into a long tail curving outwards at the extremity. Precostal nervule branched, the inner directed forward, the outer anastomosing with the costal. Discoidal cell very short and narrow. Third subcostal nervule bent, and united to the third median nervule so as to seem to be a fourth median nervule.*Legs* rather long, slender. *Anterior Tibiæ* with a stout spur near the middle, covered with scales.*Tarsi* rather longer than the *tibiæ*; the first joint equal to the three following combined; second and third nearly equal; fourth longer than these; fifth longer than the fourth. *Tarsi* of the second and posterior legs nearly double the length of the *tibiæ*; their first joints elongate; second, third, and fourth progressively shorter; fifth about equal to the third. *Claws* simple or bifid.

ABDOMEN short, stout.

LARVA and *PUPA* unknown.

This anomalous genus, place it where we will, interrupts the natural succession of the genera in the family to which it belongs. In the situation in which it is now placed it disturbs the very easy transition from *Papilio*, through *Euryeus*, to *Parnassius*; but its affinities to some of the species of *Papilio* are so close, that we cannot, in a linear arrangement, interpose any other form between it and that genus.

The neururation of the anterior wings is very remarkable from the apparent bifurcation of the third subcostal nervule; an appearance due to the union, at their origin, of the third and fourth subcostal nervules. The posterior wings offer an equally striking character, the smallness of the cell; to which must be added the singular bend of the third subcostal nervule, which might cause it to be mistaken for a fourth median. This peculiarity, and the structure of the posterior wings in *Leucophasia* and some other genera, lead me to suspect that this nervule should be considered as quite distinct from the subcostal nervules, and analogous to the discoidal nervules of the anterior wings.

But the most striking anomaly in the genus is the totally different form of the claws in the only two known species, which are simple in the one species as is usual in this family, bifid in the other as is the case in the *Pieridæ*.

Godart, or perhaps more properly Latreille, misled by the resemblance of this genus to some species of *Erycina*, placed it in his genus *Erycina* near *E. Licarsis* and *E. Chorinaeus*, but its only resemblance is in colouring.

Of the two known species, one seems confined to the northern parts of India, the other to the islands of the Indian Ocean, and the southern extremities of the continent. The only specimen of the latter which I have seen from the Indian continent, differs slightly from the specimens from Java, and may prove to be a distinct species.

LEPTOCIRCUS *Swainson*.

1. *L. CURIUS* *E. Doubleday, Zoologist*, 111. cum fig. (1843).
P. Cur. Fab. Ent. Syst. iii. i. 28. n. 81. (1793).
Donovan, Ins. of India (1800-3).
N. India. B. M.
2. *L. MESES* *E. Doubleday, Zoologist*, 111. cum fig. (1843).
P. Me. Zinken, Nov. Act. Acad. Nat. Cur. xv. 161. (1831).
Lept. Curius Swainson, Zool. Ill. 2d ser. t. 106. (1833).
Boisd. Sp. Gén. i. 381. n. 1. (1836).
Erycina Cur. Godt. and Latr. Enc. M. ix., *Suppl.* 827. n. 5. (1823).
Java, Moulmein. B. M.

Genus V. **EURYCUS** *Boisd.**Boisd. Sp. Gén.* I. 391. (1836).CRESSIDA *Swainson, Zool. Ill.* 2d ser. t. 94. (1832).

HEAD large.

Eyes oval, prominent.*Maxillæ* of moderate length.*Labial Palpi* very short, triarticulate; basal joints very short; second elongate, curved, tapering towards the apex; third joint very short, oval.*Antennæ* gradually clavate, not arched.

THORAX not remarkably stout.

Anterior Wings diaphanous, with opaque markings in the males, elongate, triangular, rounded at the apex; third subcostal nervule thrown off at the end of the cell; upper disco-cellular nervule about equal to the space between the two discoidal nervules; median and submedian nervures connected by a baseo-median nervule.¹ *Posterior Wings* ovate, dentate, inner margin in the males much excised; the precostal nervule branched, its inner nervule directed towards the base, the outer anastomosing with the costal nervule, which is combined at its origin with the subcostal, then directed anteriorly, until it meets the precostal nervule, thus forming a basal areola of considerable size, afterwards it is bent at a right angle, and assumes the appearance of a continuation of the precostal. Cell elongate.*Legs* elongate, especially the first and second pairs. *Anterior Tibiæ* long, with a very distinct curved spur before the middle. *Tarsi*, especially the anterior and middle, longer than the tibiæ, spiny; basal joints in all longest; second, third, and fourth progressively shorter; fifth joint longer than the third: anterior and middle tarsi of the males rather enlarged, fringed on each side with stout spines. *Claws* long, simple.

ABDOMEN rather clavate in the male, the last segment with two corneous valves below, and a curved triangular process above; in the female with a corneous pouch-like appendage.

LARVA and *PUPA* unknown.

As yet only one species of this curious genus is known. It appears to be confined to Australia, being most plentiful in the warmer parts of that continent. Of its habits we know nothing, except that its flight is not strong. From *Papilio* it is at once distinguished by its antennæ, which only differ from those of *Parnassius* in being more elongate; by the greater size of the basal areola of the posterior wings; the form of the tarsi, which strikingly remind us of those of the Neuropterous genus *Bittacus*; and by the abdominal pouch of the female. This last character, its diaphanous anterior wings with black spots in the cell in the males, and its straight antennæ, show its close affinity to *Parnassius*;

whilst the neuration of the anterior wings, and the structure of its palpi, bring it equally near to *Papilio*. The almost total absence of any markings on the wings of the female has caused the two sexes to be considered as distinct species. I believe that Commander Ince was the first person who actually proved their specific identity, from observations made when engaged in the survey of the northern parts of Australia.

The name given by Swainson, being the specific name of the only species, cannot be retained.

EURYCUS *Boisd.*

1. *Eu. CRESSIDA* *Boisd. Sp. Gén.* i. 392. n. 1. (1836).

P. Cr. Fab. Ent. Syst. iii. i. 20. n. 62. (1793).

Donovan, Ins. of New Holland (1805).

Godt. Enc. M. ix. 76. n. 145. (1819).

Cressida Heliconides *Swainson, Zool. Ill.* 2d ser. t. 94. (1833).

♀ *Eur. Harmonia* *Boisd. Sp. Gén.* i. 393. n. 2. (1836).

P. Har. Fab. Ent. Syst. iii. i. 20. n. 63. (1793).

Donovan, Ins. of New Holland (1805).

P. Harmonides *Godt. Enc. M.* ix. 76. n. 146. (1819).

Australia.

Genus VI. **PARNASSIUS** Latr.*Latr. Hist. Nat. des Crust. et Ins.* XIV. 110. (1805).*DORITIS* Fab. *Syst. Gloss.* (ined.).*PARNASSIS* Hübn. *Verz. bek. Schmett* 90. (1816).*PIERIS* Schrank.**HEAD** small, very hairy.*Eyes* oval, not prominent.*Maxillæ* of moderate length.*Labial Palpi* distinctly triarticulate; the joints nearly equal, the basal one curved.*Antennæ* short, gradually clavate, not arched.**THORAX** rather stout, very hairy.*Anterior Wings* subtriangular, rounded externally, diaphanous. Subcostal nervure terminating in only four nervules; of which one is thrown off beyond the middle of the cell, the second a little before its end, the third about half-way between the cell and the apex of the wing. Upper disco-cellular and baseo-median nervules both wanting.*Posterior Wings* elongate, ovate, emarginate internally, without any abdominal folds, subdiaphanous.

Precostal nervure not branched.

Legs short. *Anterior Tibiæ* with a short flat spur. *Tarsi* longer than the *tibiæ*; basal joints about equal to the rest combined; second, third, and fourth progressively shorter; fifth longer than the second. *Claws* simple; inner very sharp, long, grooved internally; outer about two thirds the length of the inner; the points directed inward; base of the claws with a horny projection.**ABDOMEN** short, stout, very hairy, terminated in the females by a corneous pouch or plate.*LARVA* cylindric, slightly tuberculate.*PUPA* cylindrico-conic, subfolliculate.

This genus may be known from all the other Papilionidæ by the structure of the anterior wings, in which one subcostal nervule, apparently the first, is wanting. This character, and its more distinctly triarticulate palpi, separate it from *Doritis* on the one hand, and *Eurycus* on the other.

There is a striking resemblance in the markings of the anterior wings in this genus and in *Eurycus*, more especially in the round black spots in the middle of, and at the end of, the cell. In fact *Eurycus* may be viewed as the Australian representative of *Parnassius*.

Until lately this genus was supposed to be confined to the Old World, though Boisduval hazarded a conjecture that it might possibly occur in the Rocky Mountains of America, a conjecture which has proved to be correct, as the Earl of Derby's collector, Mr. Burke, discovered the species which I have named *P. Smintheus*, on the summits of those mountains, in the summer of 1845. This species is more closely allied to some Caucasian, than to any European, species.

As yet the genus is only known to occur in the mountainous parts of Europe, Asia, and America, the species being most numerous in the Caucasian ranges. Possibly the mountains of North Africa, if of sufficient elevation, will be found to offer some new species.

The LARVÆ, as far as is known, feed on sedums, saxifrages, and fumitories; they are pubescent, velvety black, with numerous orange spots, and small tubercles.

The PUPÆ are enclosed in a loose silken web, supported also by some transverse threads: they are subcylindric, conic posteriorly, not angular, and, from being covered with bluish powder, very much resemble those of the genus *Catocala* amongst moths.

The flight of the PERFECT INSECTS is slow and graceful until disturbed, and very much like that of *Pieris Cratægi*. After an unsuccessful attempt to capture them, *P. Apollo* and *P. Phœbus* are capable of great speed. Mr. Hewitson informs me that *P. Apollo* is everywhere abundant in the mountainous districts of Switzerland, and though frequenting the Alpine pastures and grassy slopes, seems to delight also in flying up and down those bare heaps of small stones which mark the course of an avalanche. *P. Phœbus*, although met with like *Apollo* on the dry mountain sides, is much more frequently found in marshy spots, and rarely far distant from them.

P. Mnemosyne is a local species, and has the habit of many of the true *Papiliones*, of returning repeatedly over the same ground in its flight. They are all three fond of elevated districts, sometimes very near the borders of the glaciers. Fresh specimens of *P. Apollo* and *P. Phœbus* may be taken through the whole summer.

PARNASSIUS Latr.

1. PAR. APOLLO Latr. *Hist. Nat. des Crust. et Ins.* xiv. 110. (1805).

Godt. *Enc. M.* ix. 79. n. 1. (1819).

Boisd. *Sp. Gén.* i. 395. n. 1. (1836).

P. Ap. Linn. *Syst. Nat.* ii. 754. n. 50. (1767).

Fab. *Ent. Syst.* iii. i. 181. n. 560. (1793).

Hüb. *Europ. Schmett. Pap.* f. 396, 397. f. 730, 731. (1806-27).

Mountains of Europe and Northern Asia. B. M.

2. PAR. NOMION Fisch. *Ent. Imp. Ross.* ii. 242. t. 6. (1823-4).

Boisd. *Sp. Gén.* i. 397. n. 2. (1836).

Siberia.

3. PAR. PHÆBUS Godt. *Enc. M.* ix. 80. n. 2. (1819).

Boisd. *Sp. Gén.* i. 398. n. 3. (1836).

Fab. *Ent. Syst.* iii. i. 181. n. 561. (1793).

Hüb. *Europ. Schmett. Pap.* f. 684, 685. (1806-27).

P. Delius Esper, *Schmett.* t. 115. cont. 70. f. 5. (1777-1805).

Hüb. *Europ. Schmett. Pap.* f. 649-652. (1806-27).

♀ *P. Apollo* Esper, *Schmett.* t. 112. cont. 67. f. 5. (1777-1805). B. M.

Alps, Russia, Siberia.

4. PAR. CORYBAS Fischer, *Ent. Imp. Ross.* ii. t. 6. f. 1, 2. (1823-4).

Boisd. *Sp. Gén.* i. 399. n. 4. (1836).

Kamtschatka.

5. PAR. CLARIUS.

Doritis Cl. Eversmann, *Bull. Soc. Imp. Nat. Mosc.* xvi. 539. t. 9. f. 1. a, b, c. (1843).

Altai.

6. PAR. DELPHIUS.

Doritis Delph. Eversmann, *Bull. Soc. Imp. Nat. Mosc.* xvi. 541. t. 7. f. 1 a, b. (1843).

Altai.

7. PAR. ACTIUS.

Doritis Act. Eversmann, *Bull. Soc. Imp. Nat. Mosc.* xvi. 540. t. 9. f. 2 a, b. (1843).

Altai.

8. PAR. SMINTHEUS Doubleday & Hewitson, t. 4*. f. 4. (1847).

Rocky Mountains.

B. M.

9. PAR. JACQUEMONTII Boisd. *Sp. Gén.* i. 400. n. 5. (1836).

Blanchard, *Voy. de Jacquemont. Ins.* t. 1. f. 3, 4. (1844).

Himalayas.

10. PAR. HARDWICKII G. R. Gray, *Lep. of Nepaul*, t. 4. f. 1. 1 a. (1831).

Boisd. *Sp. Gén.* i. 400. n. 6. (1836).

Nepaul.

B. M.

11. PAR. HELIOS.

Ismene He. Nickerl, *Ent. Zeit.* vii. 207. cum figuris (July, 1846).

Kirguis Steppes.

12. PAR. MNEMOSYNE Latr. *Hist. Nat. des Crust. et Ins.* xiv. 111. (1805).

Godt. *Enc. M.* ix. 80. n. 3. (1819).

Boisd. *Sp. Gén.* i. 401. n. 7. (1836).

P. Mn. Linn. *Syst.* ii. 754. n. 51. (1767).

Fab. *Ent. Syst.* iii. i. 182. n. 562. (1793).

Hüb. *Europ. Schmett. Pap.* f. 798. (1806-27).

Europe.

B. M.

Genus VII. **DORITIS** Hübn.*Hübn. Verz. bek. Schmett.* 89. (1816).*Fab. Syst. Gloss.?* (ined.)*THAIS* Latr. Godt. &c.

HEAD small, clothed with long hairs.

Eyes oval, rather prominent.

Maxillæ of moderate length.

Labial Palpi projecting beyond the forehead, clothed with long hair and scales, indistinctly triarticulate, the articulations nearly equal, the third being shortest.

Antennæ short, with an elongate arched club.

THORAX stout, very hairy.

Anterior Wings triangular, with the apex and outer margin rounded, wrinkled transversely between the nervules, sub-diaphanous, especially in the males. First subcostal nervule thrown off beyond the middle, second just before the end of the cell, third at about one-third the distance between the origin of the second and the outer margin, fourth at very little distance from the third. Upper disco-cellular nervule very short.

Posterior Wings elongate, ovate, wrinkled between the nervules, the inner margin much excised without any abdominal fold in the males. Precostal nervule not branched.

Legs short, the thighs stout, covered with long hair. *Tibiæ* very short, the anterior with a strong compressed spur about the middle, all with numerous stout spines at the apex, of which two on the posterior *tibiæ* are elongate. *Tarsi* about twice as long as the *tibiæ*; first joint nearly equal to all the rest; second, third, and fourth progressively shorter; fifth about equal to the second, spiny. *Claws* simple, the inner long, outer short, received into a deep groove in the side of the inner claw.

ABDOMEN stout, hairy.

LARVA cylindrical, clothed with short hairs, head small.

PUPA contracted, the head square.

The general characters of this genus are very nearly the same as those of *Thais*, but it may easily be known by its shorter, and less distinctly triarticulate palpi. From *Parnassius* it may at once be known by the difference in the neuration of the wings, the absence of the corneous pouch in the females, and by its arched antennæ.

The *LARVA* of the only known species is stated by Kinderman closely to resemble that of *Parnassius*; it is cylindrical, clothed with short hairs, black, with two rows of red spots on each side, between which on the middle segments are a

series of six white spots. It spins together the leaves of the *Aristolochiæ*, living in them until full grown, when it undergoes its metamorphosis on the surface of the earth.

The PUPA is short, contracted across the wing cases and at the shoulders, with the head square.

The PERFECT INSECT appears in February and March, having passed about ten months in the pupa state. The wings are curiously wrinkled between the nervules, in a transverse direction; they are for the most part thinly covered with scales, so as to be subdiaphanous; this is more particularly the case in the anterior wings of the males. The females would appear to be much rarer than the males, as, in collections of *Lepidoptera* from the Levant, I have generally observed them not to amount to one fourth the number of the latter sex. They vary much in colour. The specimen figured is a beautiful variety, of which many specimens were obtained by Dr. Emerich Frivaldszky during his travels in the Levant.

The geographical range of this species seems to be limited to the eastern shores of the Mediterranean and the Greek Islands.

DORITIS Hübn.

1. *D. APOLLINA* *Boisd. Icon. Hist.* t. 4. f. 1, 2. (1832).

Boisd. Sp. Gén. i. 390. n. 1. (1836).

Freyer, *Neu Beit.* t. 253.

P. Ap. Herbst. Schmett. t. 250. f. 5-8. (1783-1806).

Thais Ap. Godt. Enc. M. ix. 82. n. 1. (1819).

P. Pythius Esper, Schmett. von Eur. t. 177. cont. 72. f. 1-4. (1777-1805).

P. Thia Hübn. Europ. Schmett. Pap. f. 633-36. f. 730, 731. (1806-1827).

Doritis Th. Hübn. Verz. bek. Schmett. 89. (1816).

B. M.

Asia Minor, Greek Islands.

Genus VIII. **THAIS** *Fab.**Fab. Syst. Gloss. (ined.)*PIERIS *Schrank.*ZERYNTHIA *Ochs. Schmett. von Europa, iv. 29. (1816).*

HEAD small, hairy.

Eyes rather small, round.*Maxillæ* of moderate length.*Labial Palpi* very hairy, distinctly triarticulate; basal joint shortest, third joint about equal in length to the second, much slenderer.*Antennæ* short, with an elongate arched club.

THORAX rather slender.

Anterior Wings triangular, the outer margin rounded. First subcostal nervule thrown off beyond the middle of the cell, second much nearer to the first than to the end of the cell, third considerably beyond the cell, fourth not far from the third. Upper disco-cellular nervule short, or entirely wanting. Baso-median nervule wanting.*Posterior Wings* somewhat ovate, the inner margin, especially in the males, deeply excised, outer margin dentate, or tailed. Precostal nervule not branched; disco-cellular nervule almost wanting.*Legs* rather short. *Anterior Tibiæ* with a sharp spur beyond the middle; *tibiæ* of the second and third pair with two sharp spurs at the end. *Tarsi* spiny, rather slender, long; the basal and fifth joints longest; second, third, and fourth progressively shorter. *Claws* very sharp; the outer short, received into a groove of the inner.

ABDOMEN slender, furnished in the males with two large deeply toothed corneous plates.

LARVA cylindrical, short, with several longitudinal series of fleshy tubercles, tufted with short hairs at their apex.*PUPA* subcylindric, slightly angular, the head truncate.

This genus is closely allied to *Doritis*, and not very distantly to *Teinopalpus*, thus completing the circle of the Papilionidæ. The tailed posterior wings of *H. Cerisyi*, and the elongate palpi, bring it very near to the last-named group.

The *LARVÆ* live on *Aristolochiæ*, and differ from those of *Doritis* in being tuberculate. According to Dr. Rambur, when about to undergo their metamorphosis, they not only fasten themselves by a transverse thread like the *Parnassii*, but also surround themselves by a very slight silken web.

The three species which compose the genus are inhabitants of Southern Europe, Northern Africa, and the Levant. The numerous varieties of the two most widely dispersed species have caused each to be divided into numerous nominal species.

THAIS *Fab.*

- | | |
|--|---|
| <p>1. TH. HYPSPYLE <i>Godt. Enc. M. ix. 82. n. 2. (1819).</i>
 <i>Boisd. Sp. Gén. i. 384. n. 2. (1836).</i>
 <i>P. Hyp. Fab. Spec. Ins. ii. 95. n. 417. (1787).</i>
 <i>P. Rumina Esper, Europ. Schmett. t. 15. f. 1. (1777-1805).</i>
 <i>P. Hypermnestra Scopoli, Ent. Carn. 149. n. 125. (1763) non Linnæi.</i>
 <i>P. Aristolochiæ Borkh. Pap. Europ. i. 113. n. 250. (1788).</i>
 <i>P. Polyxena Herbst. Pap. t. 250. f. 1, 2. (1783-1804).</i>
 <i>Hüb. Europ. Schmett. Pap. f. 392, 593. (1806-27).</i>
 <i>Var. P. Cassandra Hüb. Europ. Schmett. Pap. f. 392, 393. (1806-27).</i>
 <i>Th. Cass. Boisd. Sp. Gén. i. 386. n. 3. (1836).</i>
 S. Europe. B. M.</p> | <p>2. TH. RUMINA <i>Godt. Enc. M. ix. 83. n. 3. (1819).</i>
 <i>Boisd. Sp. Gén. i. 387. n. 4. (1836).</i>
 <i>P. Rum. Linn. Syst. Nat. ii. 783. n. 200. (1767).</i>
 <i>Fab. Ent. Syst. iii. i. 244. n. 759. (1793).</i>
 <i>Hüb. Europ. Schmett. Pap. f. 633, 634. and Var. f. 394, 395. (1806-27).</i>
 <i>Var. P. Medesicaste Hüb. Europ. Schmett. Pap. f. 632. (1806-27).</i>
 <i>Th. Med. Godt. Enc. M. ix. 84. n. 4. (1819).</i>
 <i>Boisd. Sp. Gén. i. 388. n. 5. (1836).</i>
 <i>Var. Th. Honnoratii Boisd. Icon. Hist. t. 3. f. 3-5. (1832).</i>
 S. Europe. B. M.</p> <p>3. TH. CERISYI <i>Godt. Enc. M. ix. Suppl. 812. n. 1-2. (1823).</i>
 <i>Boisd. Icon. Hist. t. 2. f. 1. 3. (1832).</i>
 <i>Boisd. Sp. Gén. i. 383. n. 1. (1836).</i>
 <i>Freyer, Neuere Beit. t. 259. (1839).</i>
 Asia Minor, S. Europe. B. M.</p> |
|--|---|

It has already been remarked, under the genus *Leptocircus*, that perhaps the nervule commonly viewed as the third subcostal nervule of the posterior wings is in reality a discoidal nervule. A careful examination of the posterior wings in *Leucophasia*, *Leptalis*, *Terias*, the *Heliconidæ*, and many *Heterocera*, has convinced me of the correctness of this opinion.

I believe it will be found that no nervure ever throws off nervules from both sides: but that those nervures which constitute the framework of the upper or anterior portion of the wing always throw them off towards the costa, or the apical portion of the outer margin; those belonging to the lower portion of the wing towards the inner margin, or the posterior portion of the outer margin. The discoidal nervure of the anterior wings, which merely divides into two nervules directed almost immediately forwards, can hardly be considered to form an exception to this rule.

Now in *Leucophasia*, *Leptalis*, and many species of *Terias*, we find the subcostal nervure apparently throwing off a nervule from its inner side, then at some distance dividing into two nervules. In many *Heliconidæ* we find the third subcostal nervule (as it would commonly be considered) not a branch of that nervure, but connected with it by a distinct disco-cellular nervule, which forms an acute angle with the subcostal nervure, being directed backwards into the cell; and we find this so called third subcostal nervule extending into the cell, beyond the point of union with the disco-cellular nervule, as is often the case with the discoidal nervule of the anterior wings in this group. In some *Heterocera* we find a distinct nervure traversing the cell longitudinally, and reaching the outer margin; being thus a true discoidal nervure, not branching into nervules.

I shall, therefore, henceforth consider the subcostal nervure of the posterior wings as dividing into only two nervules; and what has been called its third branch as a discoidal nervure of which the basal portion is wanting, and which consequently arises either from the subcostal or median nervures, or one of their nervules, or is connected with both by a disco-cellular nervule.

I shall, also, vary slightly from the nomenclature of the nervules which I have endeavoured to establish in the *Transactions of the Linnean Society*, by speaking of the connecting portion of the two discoidal nervules of the anterior wings as the middle disco-cellular nervule; though I am aware that this designation is not quite correct, and that it would be more proper to call it the disco-cellular portion of the discoidal nervules.

In the family we are about to enter on, a structure of the claw occurs which is not to be found in the *Papilionidæ*. Outside of the claw is an appendage of a more or less triangular form, membranaceous and hairy, often so broad as almost to conceal the claw, sometimes very narrow and almost linear. To this M. Doyère has applied the name of *Manchette*, a word which does not appear to me to be exactly applicable to it. I shall speak of these appendages as *Paronychia*.

Family II. PIERIDÆ.

Maxillæ rather long.

Antennæ elongate, with a more or less ovate club; or short, thickened gradually to the apex, which is truncate.

Wings with the discoidal cell always closed. The upper disco-cellular nervule mostly entirely wanting; the first discoidal nervule being frequently united to the subcostal for some distance beyond the end of the cell. Abdominal margin of the posterior wings forming a distinct channel for the reception of the abdomen.

Legs all perfect. Anterior Tibiæ without any spur in the middle. Tarsi with the first joint longest; second, third, and fourth progressively shorter; fifth longer than the fourth. Claws bifid; mostly with pulvilli, and paronychialia.

LARVA more or less pubescent, rather slender, tapering slightly to each extremity.

PUPA braced, angular; the head pointed.

This family may be readily known from the preceding, by the absence of the spur invariably found on the anterior tibiæ of the Papilionidæ, by the channel formed by the abdominal margin of the posterior wings for the reception of the abdomen, and by the different structure of the median nervure.

Great diversity occurs in the neururation both of the anterior and posterior wings. In the former, the number of subcostal nervules varies from three to five; the third median nervule in one genus is united to the second discoidal almost as in the Papilionidæ: in the latter, the discoidal nervure is sometimes united to the subcostal nervure, often to the second subcostal, sometimes to the third median nervule.

The *LARVÆ* differ from those of the Papilionidæ in having no tentacula on the prothoracic segments, and are generally more slender; the head of the *PUPA* is always pointed, never bifid or truncate.

Some of the species, especially in the genus *Leptalis*, have a marked affinity with the Heliconidæ; others, as the genus *Terias*, approach very near to the Lycænidæ.

The different genera vary much in form, especially in the structure of the antennæ; which, in some of the genera, are long, with an abrupt ovate club; in others, become gradually thicker from the base to the apex. The genera possessing antennæ of the latter form are generally more robust insects than the others of the family; but the genus *Terias*, of which one species is nearly the smallest and most delicate butterfly known, is a remarkable exception.

The typical genus *Pieris*, like all typical genera, has a wide geographical range, extending from the arctic circle to the southern extremity of both Africa and America, and occurring also throughout Australia. The genera *Anthocharis* and *Colias* have nearly an equal range, but as yet neither of these genera has occurred in Australia; *Terias* and *Callidryas* are found in the tropical and sub-tropical regions of Asia, Africa, and America, and also in Australia. In the New World both genera reach higher latitudes than in the Old World. *Gonepteryx*, under various forms, occurs in both hemispheres, but is wanting in Australia; in Europe it extends much farther north than in America.

Euterpe and *Leptalis* belong to Tropical America; *Pontia* and *Idmais* to Tropical Asia and Africa; *Thestias* and *Iphiax* to Tropical Asia. *Leucophasia* is almost purely European, *Eronia* African, and *Nathalis* is entirely American.

Genus I. **EUTERPE** *Swainson*.*Swainson, Zool. Ill. 2d ser. t. 74. (1831).*PIERIS, HELICONIA, *Godt*.PRIAMIDES, ARCHONIAS, DELIAS, APOSTRAPHIA, *Hübner*.

HEAD broad, hairy.

Eyes oval, prominent.*Labial Palpi* distinctly triarticulate; porrect, projecting beyond the head about half their length.

Basal joint stout, curved at the base, longer than either of the others; second stout, shorter than the first; both clothed above with scales, below with long hairs; third joint very slender, cylindrical, sometimes longer sometimes shorter than the second, clothed with short appressed scales, and a few hairs at the base.

Antennae long, terminating gradually in an elongate obovate club, sometimes slightly compressed.

THORAX stout, hairy.

Anterior Wings triangular, or elongate, more rounded externally in the females than in the males.

First discoidal nervule united, for a considerable space beyond the cell, to the subcostal nervule.

Lower disco-cellular nervule about equal to the space between the second discoidal nervule and the subcostal nervule.

Posterior Wings obovate. The discoidal cell long. The discoidal nervule appearing to be a third subcostal nervule.*Legs* rather stout. Claws deeply bifid. Paronychiae broad, subtriangular, not quite so long as the claws. Pulvillus jointed, as long as the claws.

ABDOMEN not extending beyond the posterior wings.

LARVA and *PUPA* unknown.

This genus, consisting of but a small number of species, presents great diversity in form and colour.

Some of the species, as *Eut. Charops*, offer a close resemblance to that group of the genus *Pieris* to which *Pi. Thisbe* and *Pi. Belladonna* belong; others, as *Eut. Tereas*, much resemble the females of many South American *Papilionæ*, as *P. Polymetus* and its allies. On the other hand, *Eut. Bellona* and *Eut. Theano* very much resemble some of the *Heliconiæ*. *Eut. Nimbee* and its allies have a facies altogether peculiar. *Eut. Notha* has almost precisely the colouring of *Pieris Habra*.

There are three distinct types in the neurulation of the anterior wings. In *Eut. Charops*, *Antodyca*, and *Swainsonii*, there are only three subcostal nervules; the first thrown off considerably before the end of the cell, the second considerably beyond it. This also is the case with *Eut. Dysoni*. In *Eut. Notha* we find four subcostal nervules; the first and second very little distant from one another, both emitted considerably before the end of the cell; the third

thrown off very near the apex of the wing. All the remaining species with which I am acquainted have four subcostal nervules; the first thrown off before the cell, the second a little beyond it, the third near the apex.

In all the species the discoidal nervure of the posterior wings has the appearance of a third subcostal nervule; but *Eut. Dysoni* differs from its congeners in having it placed only very slightly below the point where the subcostal nervure branches.

The sexes in some species vary much; and, misled by this circumstance, I have on the plate given a new name to what I believe to be the male of *Eut. Charops*, of which the only specimen I have seen is the one figured, which was received by Mr. Hewitson from Paris as a new species.

EUTERPE Swainson.

- | | |
|---|--|
| 1. <i>EUT. NOTHA</i> <i>Boisd. MSS.</i>
Venezuela. B. M. | 7. <i>EUT. NIMBICE</i> <i>Boisd. Sp. Gén. i. 409. n. 6. (1836).</i>
Mexico. B. M. |
| 2. <i>EUT. TEREAS</i> <i>Swainson, Zool. Ill. 2d ser. t. 74. (1832).</i>
<i>Boisd. Sp. Gén. i. 405. n. 1. (1836).</i>
<i>P. Ter. Godt. Enc. M. ix. 38. n. 39. (1819).</i>
<i>Priamides Iulus Hübn. Zut. f. 383, 384. (182).</i>
<i>Archonias Marcias Hübn. Zut. f. 461, 462. (182).</i>
Brazil, Venezuela. B. M. | 8. <i>EUT. SEMIRAMIS</i> <i>Boisd. MSS.</i>
New Granada. B. M. |
| 3. <i>EUT. BELLONA.</i>
<i>P. Bell. Cram. t. 13. f. E. F. (1775).</i>
<i>P. Erycinia Cram. t. 177. f. E. (1776).</i>
<i>Eut. Ery. Boisd. Sp. Gén. i. 406. n. 2. (1836).</i>
<i>Pi. Eryc. Godt. Enc. M. ix. 149. n. 107. (1819).</i>
<i>P. Brassolis Fab. Ent. Syst. iii. i. 169. n. 520. (1795).</i>
<i>Helic. Bras. Godt. Enc. M. ix. 207. n. 13. (1819).</i>
<i>Apostrophia Bras. Hübn. Verz. bek. Schmett. 13. (1816).</i>
<i>P. Myrti Fab. Ent. Syst. 462. n. 82? (1775).</i>
Guiana, Bolivia. B. M. | 9. <i>EUT. COLLA</i> <i>E. Doubleday, Ann. Nat. Hist. xix. (1847).</i>
Bolivia. B. M. |
| 4. <i>EUT. BITHYS</i> <i>Boisd. Sp. Gén. i. 410. n. 7. (1836).</i>
<i>Delias Bi. Hübn. Zut. f. 467, 468. (1825).</i>
Brazil. B. M. | 10. <i>EUT. PINAVA</i> <i>E. Doubleday, Ann. Nat. Hist. xix. (1847).</i>
Bolivia. B. M. |
| 5. <i>EUT. TEUTILA</i> <i>E. Doubleday, Ann. Nat. Hist. xix. (1847).</i>
Mexico. B. M. | 11. <i>EUT. MANCO</i> <i>E. Doubleday, Ann. Nat. Hist. xix. (1847).</i>
Bolivia. B. M. |
| 6. <i>EUT. TOCA</i> <i>E. Doubleday, Ann. Nat. Hist. xix. (1847).</i>
Bolivia. B. M. | 12. <i>EUT. EMERIS</i> <i>Boisd. Sp. Gén. i. 408. n. 5. (1836).</i>
Chili? Brazil? |
| | 13. <i>EUT. DYSONI</i> <i>E. Doubleday, Ann. Nat. Hist. xix. (1847).</i>
Caraccas. B. M. |
| | 14. <i>EUT. CHAROPS</i> <i>Boisd. Sp. Gén. i. 407. n. 3. t. 2. C. f. 1. (1836).</i>
<i>♂ Eut. Marina E. Doubleday.</i>
Mexico. B. M. |
| | 15. <i>EUT. ANTODYCA</i> <i>Boisd. Sp. Gén. i. i. 407. n. 4. (1836).</i>
Brazil. |
| | 16. <i>EUT. SWAINSONII</i> <i>G. R. Gray, in Griff. An. King. t. 38. f. 2, 3. (1832).</i>
Brazil. B. M. |
| | 17. <i>EUT. TREANO</i> <i>Boisd. Sp. Gén. i. 411. n. 9. (1836).</i>
Brazil. B. M. |

Note. *Eut. Tisiphone* *Boisd., Sp. Gén. 411. n. 8. (1836)*, is now considered by Dr. Boisduval to belong to the Heliconiæ. *Eut. Hylonomie* *E. Doubleday, Ann. Nat. Hist. xiv. 481. (1846)*, belongs to the Acraeidæ.

Genus II. **LEPTALIS** *Dalman*.*Dalman, Anal. Ent. 39. (1823).**LICINIA Swainson, Zool. Ill. 1st ser. t. 15. (1820).**AERIA, DISMORPHIA, ENANTIA, Hübn.**PIERIS Godt.*

HEAD small, scaly, and slightly hairy.

Eyes round, prominent.

Labial Palpi distinctly triarticulate, sometimes shorter than the head, sometimes very slightly longer, clothed with scales and short hairs. Basal joints longer than the two other joints combined, curved at the base; second joint cylindric-ovate; third joint shorter, obovate, rather pointed.

Antennæ long, slender, very gradually clavate.

THORAX rather slender, covered with scales.

Anterior Wings narrow, elongate; pointed, falcate, or rounded. The subcostal nervure dividing into five nervules; the first thrown off a little before, or slightly beyond, the cell, sometimes anastomosing with the subcostal; the second, third, and fourth thrown off at about equal distances. Upper disco-cellular very short, or wanting; the first discoidal, in the latter case, springing from the subcostal nervure at the end of the cell. Lower disco-cellular very short; second discoidal nervule, especially in the males, sometimes so intimately united to the third median, as almost to appear a fourth median nervule.

Posterior Wings ovate, elongate, much broader than, and nearly or quite as long as, the anterior. The discoidal nervure thrown off from the subcostal considerably before it branches; mostly bent where it is joined by the short lower disco-cellular, so as to appear a fourth median nervule.

Legs elongate, slender. Paronychia very narrow, triangular, nearly equal in length to the claws.

Pulvillus very small, or wanting.

ABDOMEN slender, extending beyond the wings.

LARVA and *PUPA* unknown?

This interesting genus is closely allied in many respects to the *Heliconidæ*, and, as has been suggested by Dr. Boisduval, may perhaps, at some future time, when the larva and pupa shall be certainly known, constitute a separate group, connecting that family and the *Pieridæ*. There seems to be considerable ground for doubting whether the larva figured by Stoll be really that of *Lept. Amphione*. This larva is cylindrical, stout, furnished with two long curved spines, placed on the sides behind the head. The chrysalis, which he says is "perpendicular," a term of doubtful signification, is not figured. The larva appears much larger than would be expected for so slender an insect as that which it is said to produce, and probably is that of one of the *Danaidæ*.

February, 1847.

L

The neuration of the posterior wings and the five-branched subcostal nervure, with four of its nervules very short, running almost directly to the costa, the long slender abdomen, the elongate wings, and other characters, bring this genus very near to the *Heliconidæ*. It approaches the *Danaidæ* by having the posterior margin of the anterior, and the anterior margin of the posterior, wings very often dilated in the males; in which case the posterior wings above, and the anterior below, have a large shining patch, with silvery, greyish, or steel-blue reflections, composed of very minute closely appressed scales, in the middle of which is an oval spot of a dull chalky white or ash colour. When the wings are expanded these two patches exactly correspond, the shining portion of the under surface of the anterior wings precisely covering the similar portion of the upper surface of the posterior.

The form of the wings varies much, both in different species, and in the sexes of the same species. The anterior wings are generally smaller and more falcate or pointed in the male than in the female, and the posterior wings larger. The sexes also differ in some species very materially in colour.

In *Leptalis Medora*, the middle disco-cellular nervule is so nearly atrophied that the cell at first sight appears to be open.

The habits of this genus, according to M. Lacordaire, closely resemble those of the *Heliconidæ*; and, like that family, they are confined to the tropical, or the immediately subtropical, parts of the New World.

LEPTALIS Dalman.

1. LEPT. EUMELIA.

- ♀ P. Eum. *Cram.* t. 280. f. D. (1780).
 ♂ P. Vocola *Cram.* t. 353. f. C. D. (1782).
Aeria Voc. *Hübner. Verz. bek. Schmett.* (1816).
Lept. Voc. *Boisd. Sp. Gén.* i. 414. n. 1. (1836).
Pi. Voc. Godt. Enc. M. ix. 166. n. 158. (1819).
Pi. Enodia Godt. Enc. M. ix. 167. n. 160. (1819).
 Guiana, N. Brazil. B. M.

2. LEPT. METHYMNA *Boisd. Sp. Gén.* i. 415. n. 2. (1836).

- Pi. Meth. Godt. Enc. M.* ix. 166. n. 159. (1819).
 Brazil. B. M.

3. LEPT. ORISE *Boisd. Sp. Gén.* i. 415. n. 3. (1836).

Cayenne.

4. LEPT. ASTYOCHA *Boisd. Sp. Gén.* i. 416. n. 4. (1836).

- Dismorphia* Ast. *Hübner. Zut.* f. 485, 486. (1825).
 Brazil. B. M.

5. LEPT. AMPHIONE *Boisd. Sp. Gén.* i. 418. n. 6. t. 2. C. f. 2. (1836).

- P. Amph. Cram.* t. 232. f. E. F. (1780).
Dismorphia Amph. *Hübner. Verz. bek. Schmett.* 10. (1816).
Pi. Amph. Godt. Enc. M. ix. 165. n. 156. (1819).
 Guiana. B. M.

6. LEPT. ASTYNOME *Dalman, Anal.* 39. n. 5. (1823).

- Boisd. Sp. Gén.* i. 417. n. 5. (1836).
Dism. Polymela *Hübner. Zut.* f. 723, 724. (1827?).
 Brazil. B. M.

7. LEPT. THEUCHARILA *E. Doubleday, Ann. Nat. Hist.* xix. (1847).

- Venezuela. B. M.

8. LEPT. LAIA *Boisd. Sp. Gén.* i. 419. n. 7. (1836).

- P. La. Cram.* t. 232. f. C. D. (1780).
Pi. La. Godt. Enc. M. ix. 165. n. 157. (1819).
Dismorphia La. *Hübner. Verz. bek. Schmett.* 10. (1816).
 Guiana.

9. LEPT. PRAXINOE *E. Doubleday, Ann. Nat. Hist.* xiv. 419. (1844).

- Mexico. B. M.

10. LEPT. EUNOE *E. Doubleday, in Ann. Nat. Hist.* xiv. 419. (1844).

- Mexico. B. M.

11. LEPT. EUMARA *E. Doubleday, Ann. Nat. Hist.* xix. (1847).

Brazil?

12. LEPT. MELIA *Boisd. Sp. Gén.* i. 420. n. 8. (1836).

- Pi. Me. Godt. Enc. M. Suppl.* 814. n. 155-156. (1823).
 Brazil.

13. LEPT. SPIO *Boisd. Sp. Gén.* i. 420. n. 9. (1836).

- Pi. Sp. Godt. Enc. M.* ix. 166. n. 163. (1819).
 Antilles.

14. LEPT. NEMESIS *Boisd. Sp. Gén.* i. 421. n. 10. (1836).

- Pi. Nem. Latr. in Humb. et Bonp. Zool. II.* t. 35. f. 7, 8. (1811?).
Godt. Enc. M. ix. 166. n. 161. (1819).
 ♀ *Lept. Atthis Doubleday, in Gray's Zool. Misc.* 75. (1842).
 Mexico, Bolivia. B. M.

15. LEPT. CRISIA *Boisd. Sp. Gén.* i. 422. n. 11. (1836).

- Pi. Cr. Drury, III.* t. 37. f. 1, 2. (1782).
Fab. Ent. Syst. III. i. 166. n. 515. (1793).
Pi. Cr. Godt. Enc. M. ix. 167. n. 122. (1819).
 Brazil. B. M.

- | | |
|---|---|
| <p>16. LEPT. MELITE <i>Boisd. Sp. Gén. i. 422. n. 12. (1836).</i>
 <i>P. Mel. Linn. Syst. Nat. ii. 755. n. 57. (1767).</i>
 <i>Cram. t. 153. f. C. D. (1776).</i>
 <i>Fab. Ent. Syst. iii. i. 160. n. 494. (1793).</i>
 <i>Enantia Mel. Hüb. Verz. bek. Schmett. 96. (1816).</i>
 <i>Pi. Mel. Godt. Enc. M. ix. 165. n. 155. (1819).</i>
 Guiana, Brazil. B. M.</p> <p>17. LEPT. THEUGENIS <i>E. Doubleday, Ann. Nat. Hist. xix. (1847).</i>
 Bolivia. B. M.</p> <p>18. LEPT. IETHYS <i>Boisd. Sp. Gén. i. 423. n. 13. (1836).</i>
 Mexico.</p> <p>19. LEPT. THERMESIA <i>Boisd. Sp. Gén. i. 424. n. 14. (1836).</i>
 <i>Pi. Ther. Godt. Enc. M. ix. 164. n. 154. (1819).</i>
 Brazil. B. M.</p> <p>20. LEPT. CRITOMEDIA <i>Boisd. Sp. Gén. i. 424. n. 15. (1836).</i>
 <i>Enantia Cr. Hüb. Zut. f. 795, 796. (1827?).</i>
 Brazil. B. M.</p> | <p>21. LEPT. PSAMMATHE <i>Boisd. Sp. Gén. i. 425. n. 16. (1836).</i>
 <i>P. Ps. Fab. Ent. Syst. iii. i. 207. n. 647. (1793).</i>
 <i>Donovan, Nat. Rep. i. t. 9. (1823).</i>
 <i>Pi. Ps. Godt. Enc. M. ix. 164. n. 153. (1819).</i>
 Guiana. B. M.</p> <p>22. LEPT. PHRONIMA <i>Boisd. Sp. Gén. i. 426. n. 17. (1836).</i>
 Guiana. B. M.</p> <p>23. LEPT. ISODRITA <i>Boisd. Sp. Gén. i. 426. n. 18. (1836).</i>
 Brazil. B. M.</p> <p>24. LEPT. KOLLARI <i>Boisd. Mss.</i>
 Brazil.</p> <p>25. LEPT. DILIS <i>Boisd. Sp. Gén. i. 427. n. 19. (1836).</i>
 Brazil.</p> <p>26. LEPT. MEDORA <i>E. Doubleday, Ann. Nat. Hist. xiv. 420. (1844).</i>
 New Granada. B. M.</p> <p>27. LEPT. NEHEMIA.
 <i>Pi. Ne. Boisd. Sp. Gén. i. 528. n. 132. (1836).</i>
 <i>Lept. Cydno E. Doubleday, in Gray's Zool. Misc. 75. (1842).</i>
 Mexico, Brazil. B. M.</p> |
|---|---|

Note. Leptalis Cyra *E. Doubleday, Ann. Nat. Hist. xiv. 418. (1844)*, is probably a Heliconian.

The scales of the silvery portion of the under surface of the anterior wings in the male of *Leptalis Nemesis* are exceedingly minute and of rather peculiar form. They do not exceed the six hundred and fiftieth part of an inch in breadth, or the four-hundredth of an inch in length. They are heart-shaped, deeply lobed at the base, more or less rounded at the apex; varying a little in the proportions of the length to the breadth. The lobes at the base project much more than the length of the little footstalk by which they are attached to the wing, which has its origin at the deepest part of the notch between the lobes. It is consequently bent, to allow of its attachment to the wing. These scales are scarcely imbricated. The fuscous chalky spot in the middle of this silvery patch is composed of scales of ordinary form, more erect and more imbricate than is generally the case.

The form of the scales on the silvery portion of the wings much resembles that of those which are found at the base of the anterior wings in the males of many species of this family, and of the *Heliconidæ*; but they want the fringe at the apex, which the latter possess. The variations in the form of the scales will be treated of more fully in an introductory chapter, when, aided by the researches of my friend Mr. A. Ingpen, I hope to give much interesting matter on this subject.

Genus III. **LEUCOPHASIA** *Stephens*.*Stephens, Ill. Haust. I. 24. (1827).*LEPTOSIA *Hübner*.GANORIS *Dalman*.PONTIA *Ochs*.PIERIS *Godt*.LEPTORIA *Westwood*, in *Humphreys's Brit. Butterflies*, 31. (1840).

HEAD rather large, very hairy.

Eyes large, round, prominent.*Labial Palpi* rather longer than the head, very hairy. Basal joints long, curved at the base, carinate externally, obliquely truncate at the apex; second joint rather more than one third the length of the first, much more slender, ovate, truncate at the base; third joint about one sixth the length of the first, oval.*Antennæ* short, terminating in an abrupt, short, compressed club.

THORAX rather slender.

Anterior Wings elongate, rounded externally. The discoidal cell very small, barely one third the length of the wing. Subcostal nervure five-branched; the first nervule thrown off about the middle of the wing; second about equally distant from the first and third; fourth rather nearer to the third than that is to the second. Upper disco-cellular nervule very short, barely visible above. Submedian nervure bent near the base.*Posterior Wings* obovate. The discoidal cell very small. Subcostal nervure branching beyond the middle of the wing. Discoidal nervure thrown off from the subcostal about midway between the bifurcation of the latter and the base of the wing, much bent at the end of the cell. Lower disco-cellular nervule short. Submedian nervure bent near the base. Precostal nervure branched; the inner branch very short and obscure, the outer rather long.*Legs* slender. *Paronychiae* as long as the claws, very slender. *Pulvillus* very minute, consisting merely of a very small fringed cushion, placed between the claws, quite at the base, only visible below.

ABDOMEN slender, elongate, extending slightly beyond the posterior wings.

LARVA slender, tapering towards each extremity, pubescent.*PUPA* elongate, angular, not arched.Closely allied to *Leptalis* in many points of structure, this genus may be always known from it by its palpi, which in *Leptalis* are more minute than in any other genus of this family; by its short abruptly clavate antennæ, and its very

small discoidal cells. As yet only two species of the genus are known, and some very good Lepidopterists still consider them only varieties of one species. Both are confined to Europe; one is not uncommon in Britain.

In general they frequent open places in woods, flying not very rapidly, with an undulating unsteady motion. Our own species occurs both in the spring and autumn. Those of the autumnal brood almost entirely wanting the black at the apex have been formed into a species by Hübner, under the name of *P. Erysimi*.

The LARVA feeds on various Papilionaceous plants, especially *Vicia Cracca* and *Lotus corniculatus*; resembling in this respect those of the genera *Terias*, *Colias*, and *Callidryas*, more than those of *Pieris* and *Anthocharis*. It is green, with a lateral yellow stripe. The PUPA is elongate, very pointed at each extremity.

LEUCOPHASIA *Stephens*.

1. LEU. SINAPIS *Steph. Ill. Haust. i. 24. (1827).*
Boisd. Sp. Gén. i. 429. n. 1. (1836).
P. Sin. Linn. Syst. Nat. ii. 760. n. 79. (1767).
Fab. Ent. Syst. iii. i. 187. n. 577. (1793).
Hübner. Europ. Schmett. Pap. f. 410, 411. (1806-1827).
Pi. Sin. Godt. Enc. M. ix. (1819).
Leptosia Lathyri Hübner. Verz. bek. Schmett. 95. (1816).
Leptoria candida Westwood, in Humphreys's British Butterflies, 31. (1840).
 Europe. B. M.
2. LEU. LATHYRI *Boisd. Sp. Gén. i. 429. n. 2. (1836).*
P. Lath. Hübner. Europ. Schmett. Pap. f. 797, 798. (1806-1827).
 S. Europe.

Genus IV. **PONTIA** *Boisd.**Boisd. Sp. Gén. I. 430. (1836).**PONTIA* *Fab., M^cLeay.**PIERIS* *Godt.*

HEAD rather small, the forehead clothed with scales and short hairs.

Eyes large, round, very prominent.

Labial Palpi longer than the head, scaly, densely furnished with long hair in front. Basal joint elongate, subcylindric, curved at the base, perhaps rather widening towards the apex, which is truncate; second joint nearly half the length of the first, oval, truncate at the base; third joint shorter than the second, very slender, fusiform.

Antennæ rather long, with a compressed fusiform club.

THORAX slender, clothed with small scales, mingled posteriorly with short hairs.

Anterior Wings rounded anteriorly and outwardly. Subcostal nervure three-branched; its first nervule thrown off about the middle of the cell; the second more than half-way between this and the end of the cell. Upper discoidal nervule united to the subcostal for a space about equal to that between the second subcostal and the end of the cell. Middle disco-cellular very short; lower long, curved inwards. Cell large.

Posterior Wings large, obovate. Discoidal nervure appearing to be a third subcostal. Disco-cellular nervule long, curved. Precostal nervule not branched, curved outwards. Cell ample.

Legs elongate, slender. Paronychial not so long as the claws, broad, subtriangular. Pulvillus jointed, as long as the claws.

ABDOMEN slender, elongate, but not extending beyond the posterior wings.

This genus is confined to the tropical parts of the Old World, where it seems to replace *Leucophasia* or *Leptalis*. In the delicate texture of its wings it resembles the former genus, and some species of *Leptalis* as *Lept. Voca*, but differs from both those genera by very marked characters.

Its three-branched subcostal nervure and long pulvilli separate it from both these genera, and from the latter it is likewise distinguished by its longer palpi.

Its nearest allies are some species of *Pieris*, but its shorter palpi and the fusiform club of its antennæ readily distinguish it from them.

The few species known are all of a delicate pearly white, with the apex of the interior wings black above; mostly there is a round spot of the same colour near the outer margin, and the costa is freckled with fuscous. Below, the apex and base of the anterior wings, and the whole surface of the posterior, are more or less tinged with greenish yellow freckled with delicate olive green dots, disposed in clouds or transverse bands. The cell of the anterior wing is marked

above by a deep furrow, branching before the middle, exactly indicating the place of the discoidal nervure in those *Heterocera* which possess it most distinctly.

M. Goudot states that the habits of *P. Dorothea* very much resemble those of *Leucophasia Sinapis*. It is very abundant in the most shady woods of Madagascar.

PONTIA *Boisd.*

1. *PON. CROKERA* *M'Leay*, in *King's Survey of Australia*, App. 458. (1828).

Boisd. Sp. Gén. I. 431. n. 1. (1836).

N. W. Australia.

2. *PON. NINA* *Boisd. Sp. Gén.* I. 431. n. 2. (1836).

P. Ni. Fab. Ent. Syst. III. i. 194. n. 604. (1793).

Pi. Ni. Godt. Enc. M. IX. 162. n. 147. (1819).

P. Niphia Fab. Mant. II. 20. n. 204. (1787).

Var. *Leptosia chlorographa* *Hübner. Zutr.* 47, 48. (1818).

Hübner. Verz. bek. Schmett. 95. (1816).

Bengal, Java.

B. M.

3. *PON. ALCESTA*.

P. Alc. Cram. t. 379. f. A. (1782).

P. Narica Fab. Ent. Syst. III. i. 187. n. 578. (1793).

Pi. Nar. Godt. Enc. M. IX. 163. n. 149. (1819).

Pon. Nar. Boisd. Sp. Gén. I. 433. n. 3. (1836).

Senegal, Gold Coast.

B. M.

4. *PON. DOROTHEA*.

P. Dor. Fab. Ent. Syst. III. i. 194. n. 602. (1793).

Jones, Icones, III. t. 3. f. 2. (ined.)

Pon. Sylvicola Boisd. Sp. Gén. I. 433. n. . (1836).

Madagascar.

5. *PON. MEDUSA* *Boisd. Sp. Gén.* I. 433. n. 5. (1836).

P. Me. Cram. t. 150. f. F. (1776).

Pi. Empeda Godt. Enc. M. IX. 139. n. 71. (1819).

Bengal.

Genus V. **PIERIS** *Boisd.**Boisd. Sp. Gén. i. 434. (1836).**PIERIS* *Schrank, Latr., Godt. &c.**PONTIA* *Fabr., Ochs., Stephens, &c.**APORIA, MYLOTHRIS, APPIAS, PERRYHYBRIS, DELIAS, CATHEMIA, PONTIA, BELENOIS, ACRÆA, ANAPHILÆA, CATOPHAGA, SYNCHLOË, Hübn.**LEUCONIA* *Donzel.***HEAD** rather small, hairy.*Eyes* round, moderately prominent.*Labial Palpi* longer than the head; the first joint generally much longer than the second, both stout, more or less cylindric, especially the first, clothed anteriorly with long hairs; third joint cylindric, slender, rather pointed, mostly as long as, or longer than, the second, clothed with short appressed scales, and a few hairs in front at the base.*Antennæ* of moderate length, with a short obconic club, generally compressed.**THORAX** moderately stout, clothed with long delicate hairs.*Anterior Wings* more or less triangular, sometimes elongate, slightly falcate, or rounded externally.

Subcostal nervure three, or four branched. Upper discoidal nervule united to the subcostal for some distance beyond the cell. Lower disco-cellular rather long, curved inwards.

Posterior Wings obovate, sometimes rather elongate, with the base slightly produced anteriorly; sometimes more rounded. Discoidal nervule becoming a third median nervule. Inner margin forming a very distinct channel for the reception of the abdomen.*Legs* moderately strong. Claws deeply bifid. Paronychia not quite equal to them in length, broad, subtriangular. Pulvillus as long as the claws, jointed.**ABDOMEN** rather slender, not extending to the end of the wings.*LARVA* subcylindric, with the head small, rounded; more or less clothed with hair.*PUPA* angular, pointed anteriorly, not arched, sometimes tuberculate; abdominal segments tapering to a point.

This extensive genus is extremely difficult to characterise in a satisfactory manner, on account of the great variations in the form and structure of nearly allied species. The palpi, in nearly all the species, have the third joint slender, mostly longer than, or at least quite as long as, the second; though to this there are exceptions, as *Pi. Daplidice*, where the third joint is a little shorter than the second, and in some few species it is very short. The antennæ have the club less elongate than in *Euterpe*, to which genus some species of this are so closely allied that it is with great hesitation I have followed Dr. Boisduval in separating them by the interposition of so many genera.

The wings of many species closely resemble in structure and colour those of some species of *Euterpe*, whilst others are nearly allied to *Anthocharis*. *Pieris Cratægi* in many respects approaches the *Parnassii*, especially *Par. Mnemosyne*.

As in *Euterpe* the structure of the subcostal nervure varies much, and will afford great assistance in dividing the species into sections.

The form of the anterior wings differs much in the sexes of some species, especially of the Indian group to which *Pieris Nero* belongs; in which the males have them triangular, very elongate, pointed; the females rather short, subtriangular, with the outer margin rounded, slightly sinuate about the middle. The posterior wings have the channel for the abdomen more distinct than in *Euterpe*.

The colour of the wings is as various as in any known genus of butterflies, and sometimes the two surfaces offer striking contrasts. This is peculiarly the case with the Australian species. To the merely British or European collector the genus *Pieris* is essentially connected with the idea of a white butterfly, with more or less of black at the apex of the anterior wings, and more or less of yellow or green below. This is the constant colouring of the European species, as well as of those of Asia and America north of the tropics. But as we reach the tropical parts of either continent we find a great change in this respect, less however in the New than in the Old World. In Tropical America two or three species assume, on the under surface of the males, and on both surfaces of the females, the markings of the *Heliconiæ*, and the males of one or more species put on the yellow and black garb of the genus *Colias*; in the other species white is the predominant colour, as it is on the upper surface of the males of those species which below resemble some of the *Heliconiæ*.

In the Indian continents and islands, and in Australia, we find the greatest variety of colour. One or two species are more or less blue above; others of a bright red-lead colour; others black, with yellow and white markings; some beautifully variegated with black and orange on a white ground. The under surface is generally darker and more varied than the upper, especially in the males; as for instance *Pieris Nigrina* and its allies, the males of which are white above with the apex of the anterior wings black, but below are black varied with crimson and yellow and some white clouds. The females have the upper surface much darker than the males; a character by which the sex is distinguished in nearly every group, the ground colour itself frequently varying, and all the black markings being larger and more distinct.

The LARVÆ, as far as known, are cylindrical, rather slender, slightly attenuated at each extremity, more or less pubescent, and striped longitudinally. They are particularly attached to the *Crucifera*, but also feed on *Resedaceæ*, *Tropæoleæ*, and *Capparideæ*. Those of our common European species do considerable damage to our gardens, devouring our cabbages, turnips, nasturtiums, and mignonette, and abounding in some years so as to be a serious annoyance. In the North of the United States, a nearly allied species, first described by Dr. T. W. Harris, in the *New England Farmer*, under the name of *Pieris oleracea*, often proves equally injurious to the turnips, cabbages, and other garden *Crucifera*. Those of one European species, *Pieris Cratægi*, rather rare and very local in England, resemble very much those of some moths, especially some species of *Trichiura* and *Clisiocampa*; they live upon the white-thorn and most garden fruit-trees. With us they seem confined to the white-thorn; but in France and Germany they sometimes commit great ravages upon the plum, pear, and apple trees. Of the larvæ of the tropical species we know scarcely anything. Stoll has figured that of one species, which probably is not that of *P. Lyncida* of Cramer, to which he assigns it, but of some South American species of similar form. This larva, in form, resembles those of the European species; is of an olive green, with pale longitudinal stripes; and would appear to be not only clothed with hair, but to have several rows of short black spines along the back and sides.

That of *Pieris Mesentina*, as represented in General Hardwicke's collection of drawings, is downy, of a pale green, with a dark lateral stripe. It feeds on a species of *Capparis*. That of *Pieris Belisama* figured by Dr. Horsfield has the head very small, and is furnished with long delicate hairs placed widely apart, as in the larva of *Acronycta Ligustri*.

The larva of *Pieris Monuste*, or at least of that variety found in the southern parts of the United States, to which Dr. Boisduval gave the name of *Pieris Cleomes*, is purplish, with longitudinal yellow stripes, the head and whole under surface being yellow. It is found in the Southern States on *Cleome pentaphylla*, and may feed on other similar plants. I have on one occasion found a larva much resembling it on the cauliflower, but this was in the state of New York where I have not heard of the occurrence of the perfect insect.

The PUPÆ are always more or less angular, the head distinctly pointed, the body not arched, the abdominal segments tapering gradually to a point. Stoll's figure of the pupa which he refers to *P. Lyncida* represents the back as slightly tuberculate, with two short, black, curved spines; the head terminating suddenly in a sharp point, with two black spines immediately behind it. That of *Pieris Mesentina* has the head very pointed, and a short acute spine on the back. The pupa of *Pieris Belisama* has several short curved dorsal spines pointing backward.

The habits of the PERFECT INSECTS must be very varied, but we know little of those of the exotic species.

The two most common European species are but too well known as the pests of our kitchen-gardens, and, to a less extent, of our parterres. *Pieris Daplidice* in Europe, and *Pieris Protodice* in America, are less frequent in gardens; they have a quicker flight; and the latter, as far as I have observed, is never seen playing in groups, and ascending into the air, as our *Pieris Brassicæ* and *Pieris Rapæ* are often seen to do. *Pieris Callidice* frequents the summits of the Alps and Pyrenees, and is found also on the Rocky Mountains of America. It ascends to the limits of perpetual snow.

Pieris Demophile, *Pieris Margarita*, and *Pieris Monuste* are stated by Lacordaire, in his remarks on the entomology of Guiana, to frequent the summits of the trees during the day, and to descend to rest in the brushwood at sunset. In Florida I have never observed this habit in *Pieris Monuste*; on the contrary, I have generally found it flying low, in old cotton fields, or the openings in the oak woods, and alighting frequently on flowers.

The Geographical Range of the species is very great. Several species appear to extend over nearly all Europe, N. Africa, and Asia as far south as Cashmere, and even the Neilgherries. One or two species are common to Tropical Asia and Africa. The Australian species all appear to be peculiar to that continent. *Pieris Callidice* I believe to be the only species as yet known to be common to the Old and New Worlds.

In the Arrangement of the Species I have endeavoured to place them in natural groups, founded chiefly on the venuration of the wings; but, as there are many species only known to me by descriptions or figures, I leave these with hesitation in those groups to which I imagine them to belong. It is possible that in some cases the sexes may yet be placed in separate sections, as has been the case hitherto with several species.

PIERIS *Boisd.*

Section I. *Anterior Wings with only three Subcostal Nervules; the first thrown off beyond the middle of the cell, the second near to the apex.*

1. *PI. THESTYLIS* Doubleday, in *Gray's Zool. Misc.* 76. (1842).
Doubleday and Hewitson, t. 6. f. 2. (1847).
N. India. B. M.
2. *PI. BELLADONNA* *Boisd. Sp. Gén.* i. 447. n. 14. (1836).
P. Bell. *Fab. Ent. Syst.* iii. i. 180. n. 557. bis, (1793).
Donovan, *Nat. Rep.* t. 35. (1823).
Pi. Horsfieldii *G. R. Gray, Lep. of Nepal*, t. 8. f. 2. (1830).
Boisd. Sp. Gén. i. 448. n. 15. (1836).
N. India. B. M.
3. *PI. CRITHOË* *Boisd. Sp. Gén.* i. 450. n. 18. (1836).
Boisd. in *Guérin et Perch. Genera Lepid.*
Lepid. t. 2. f. 1. (1836).
Java. B. M.
4. *PI. EGIALEA* *Boisd. Sp. Gén.* i. 450. n. 17. (1836).
P. Eg. *Cram.* t. 189. f. D. E. t. 253. f. E. F. (1777-80).
Pi. Pasithoe var. *Godt. Enc. M.* ix. 148. n. 105. (1819).
Delias Apriate *Hübner, Verz. bek. Schmett.* 91. (1816).
Java, Sumatra, Manilla. B. M.
5. *PI. PASITHOË* *Godt. Enc. M.* ix. 148. n. 105. (1819).
Boisd. Sp. Gén. i. 451. n. 19. (1836).
P. Pas. *Linn. Syst. Nat.* ii. 755. n. 53. (1767).
Fab. Ent. Syst. iii. i. 179. n. 555. (1793).
Delias Pas. *Hübner, Verz. bek. Schmett.* 91. (1816).
6. *PI. THISBE* *Boisd. Sp. Gén.* i. 449. n. 16. (1836).
P. Th. *Cram.* t. 233. f. C. (1780).
Pi. Acalis *Godt. Enc. M.* ix. 148. n. 106. (1819).
N. India, China. B. M.
7. *PI. PERIBÆA* *Godt. Enc. M.* ix. 154. n. 124. (1819).
Boisd. Sp. Gén. i. 453. n. 22. (1836).
Timor?
8. *PI. AUTONOË* *Boisd. Sp. Gén.* i. 454. n. 23. (1836).
P. Aut. *Stoll*, t. 33. f. 2, 2 B. (1791).
P. Hyparete var. *Godt. Enc. M.* ix. 153. n. 123. (1819).
Pontia Hierte *Hübner, Verz. bek. Schmett.* 92. (1816).
Hübner, Zutr. f. 77, 78. (1818).
China, N. India. B. M.
9. *PI. HYPARETE* *Godt. Enc. M.* ix. 153. n. 123. (1819).
Boisd. Sp. Gén. i. 455. n. 24. (1836).
P. Hy. *Linn. Syst. Nat.* ii. 763. n. 92. (1767).
Pontia Hy. *Hübner, Verz. bek. Schmett.* 92. (1816).
P. Autonoe *Cram.* t. 187. f. C. D. t. 320. f. A. B. (1777-82).
Java. B. M.
10. *PI. EUCHARIS.*
P. Eu. *Drury*, ii. t. 10. f. 5, 6. (1773).
Cram. t. 201. f. B. C. t. 202. f. C. (1779 or 1780).
Pontia Eu. *Hübner, Verz. bek. Schmett.* 92. (1816).

- P. Hyparete* *Fab. Ent. Syst.* III. i. 178. n. 534. (1793).
Pieris Epicharis *Godt. Enc. M.* IX. 153. n. 122. (1816).
Boisd. Sp. Gén. I. 457. n. 25. (1836).
 N. India. B. M.
11. *PI. ARGENTHONA*.
P. Arg. *Fab. Ent. Syst.* III. i. 200. n. 624. (1793).
Pi. Protocharis *Boisd. Sp. Gén.* I. 457. n. 27. (1836).
 Australia. B. M.
12. *PI. MYSES* *Godt. Enc. M.* IX. 150. n. 111. (1819).
Boisd. Sp. Gén. I. 460. n. 31. (1836).
P. My. *Fab. Syst. Ent.* 475. n. 138. (1775).
Donovan, Ins. of New Holland (1805).
 N. Australia. B. M.
13. *PI. AGANIPPE* *Godt. Enc. M.* IX. 153. n. 121. (1819).
Boisd. Sp. Gén. I. 457. n. 26. (1836).
P. Ag. *Donovan, Ins. of New Holland* (1805).
 Australia. B. M.
14. *PI. HARPALYCE* *Godt. Enc. M.* IX. 149. n. 111. (1819).
Boisd. Sp. Gén. I. 458. n. 28. (1836).
P. Harp. *Donovan, Ins. of New Holland.* (1805).
 Australia. B. M.
15. *PI. NIGRINA* *Godt. Enc. M.* IX. 149. n. 108. (1819).
Swainson, Zool. Ill. IX. 2d ser. t. 69. (1830).
Boisd. Sp. Gén. I. 459. n. 29. (1836).
P. Nigr. *Fab. Syst. Ent.* 475. n. 139. (1775).
 Australia. B. M.
16. *PI. NYSA* *Godt. Enc. M.* IX. 152. n. 119. (1819).
Boisd. Sp. Gén. I. 476. n. 55. (1836).
P. Ny. *Fab. Syst. Ent.* 473. n. 128. (1775).
 ♀ *P. Endora* *Donovan, Ins. of New Holland* (1805).
 Australia. B. M.
17. *P. DORIMENE* *Boisd. Sp. Gén.* I. 464. n. 36. (1836).
P. Dor. *Cram.* t. 387. f. C. D. (1782).
Cathæmia Dor. *Hübner, Verz. bek. Schmett.* 93. (1816).
Pi. Ageleis *Godt. Enc. M.* IX. 147. n. 103. (1819).
 Amboyna. B. M.
18. *PI. BELISAMA* *Godt. Enc. M.* IX. 147. n. 104. (1819).
Boisd. Sp. Gén. I. 464. n. 37. (1836).
P. Bel. *Cram.* t. 258. f. A—D. (1780).
Cathæmia Bel. *Hübner, Verz. bek. Schmett.* 92. (1816).
 Java, Sumatra. B. M.
19. *PI. DESCOMBESI* *Boisd. Sp. Gén.* I. 465. n. 38. (1836).
 N. India. B. M.
20. *PI. STHENOBÆA* *Boisd. Sp. Gén.* I. 466. n. 39. (1836).
 Moluccas.
21. *PI. ARUNA* *Boisd. Faune de l'Océanie*, 48. (1833).
Boisd. Sp. Gén. I. 466. n. 40. (1836).
 New Guinea.
22. *PI. BAJURA* *Boisd. Faune de l'Océanie*, 48. (1833).
Boisd. Sp. Gén. I. 467. n. 41. (1836).
 New Guinea.
23. *PI. TIMORENSIS* *Boisd. Sp. Gén.* I. 459. n. 30. (1836).
 Timor.
24. *PI. BAGOË* *Boisd. Faune de l'Océanie*, 49. (1833).
Boisd. Sp. Gén. I. 461. n. 33. (1836).
 New Ireland.
25. *PI. ISSE* *Godt. Enc. M.* IX. 151. n. 114. (1819).
Boisd. Sp. Gén. I. 462. n. 34. (1836).
P. Is. *Cram.* t. 55. f. E. F. t. 339. f. C. D. (1775-82).
Cathæmia Is. *Hübner, Verz. bek. Schmett.* 92. (1816).
 Amboyna, Celebes, &c.
26. *PI. PHILYRA* *Godt. Enc. M.* IX. 159. n. 110. (1819).
Boisd. Sp. Gén. I. 462. n. 35. (1836).
P. Hyparete *Cram.* t. 210. f. A. B. t. 329. f. E. F. (1779-82).
P. Plexaris var. *Donovan, Ins. of New Holland* (1805).
Cathæmia Anthyparete *Hübner, Verz. bek. Schmett.* 92. (1816).
 Amboyna, New Guinea.
- Section II. *Anterior Wings mostly with four Subcostal Nervules; the third sometimes wanting; two nervules always thrown off before the end of the cell.*
27. *PI. CLEMANTHE* *Doubleday, in Taylor's Ann. Nat. Hist.* XVII. 23. (1846).
 Moulmein.
28. *PI. PHILONOME* *Boisd. Sp. Gén.* I. 453. n. 21. (1836).
 Java.
29. *PI. AUTOTHISBE* *Boisd. Sp. Gén.* I. 452. n. 20. (1836).
Delias Aut. *Hübner, Samml. Exot. Schmett.* (1806-27).
 Java. B. M.
30. *PI. JUDITH* *Godt. Enc. M.* IX. 121. n. 8. (1819).
Boisd. Sp. Gén. I. 468. n. 44. (1836).
P. Ju. *Fab. Ent. Syst.* III. i. 202. n. 632. (1793).
Acræa Ju. *Hübner, Zut.* f. 669, 670. (1826).
 Java. B. M.
31. *PI. LEA* *Doubleday, in Taylor's Ann. Nat. Hist.* XVII. 23. (1846).
Doubleday & Hewitson, t. 6. f. 3. "Pi. Clemanthe." (1847).
 Moulmein, Borneo. B. M.
32. *PI. ASPASIA* *Godt. Enc. M.* IX. 154. n. 125. (1819).
Boisd. Sp. Gén. I. 469. n. 45. (1836).
P. Asp. *Stoll, t. 33. f. 3. 3. C.* (1791).
Acræa Asp. *Hübner, Verz. bek. Schmett.* 93. (1816).
 Manilla, Cochin China.

33. *PI. RACHEL* *Boisd. Sp. Gén. i. 469. n. 46. (1836).*
Java.
34. *PI. EPERIA* *Boisd. Sp. Gén. i. 470. n. 48. (1836).*
Java.
35. *PI. CORONIS* *Godt. Enc. M. ix. 132. n. 43. (1819).*
Boisd. Sp. Gén. i. 471. n. 49. (1836).
P. Cor. Cram. t. 44. f. B. C. (1775).
Fab. Ent. Syst. iii. i. 198. n. 619. (1793).
Var. P. Evagete Cram. t. 221. f. F. G. (1780).
Var. P. Zeuxippe Cram. t. 362. f. E. F. (1782).
Bengal, China, Java. B. M.
36. *PI. HINDA* *E. Doubleday, List of Lep. Ins. of Brit. Mus.*
28. (1845).
Moulmein. B. M.
37. *PI. VETURIA* *E. Doubleday, List of Lep. Ins. of Brit. Mus.*
App. (1847).
Mussourie. B. M.
38. *PI. NAMA* *E. Doubleday, List. of Lep. Ins. of Brit. Mus.*
28. (1845).
N. India. B. M.
39. *PI. SABA* *Godt. Enc. M. ix. 134. n. 46. (1819).*
♂ *P. Cora Fab. MS. in Jones, Icon. iii. t. 23. f. 1.*
(ined).
♂ *P. Orbona Boisd. Faune de Madag. t. 1. f. 3.*
(1834).
♂ ♀ *P. Orb. Boisd. Sp. Gén. i. 497. n. 89. (1836).*
Var. ♂ Pi. Pritha Boisd. MSS.
♀ *P. Saba Fab. Ent. Syst. iii. i. 201. 627. (1793).*
♀ *P. Hypatheia Drury, iii. t. 32. f. 5, 6. (1782).*
♀ *P. Epaphia Cram. t. 207. f. D. E. (1780).*
♀ *Pi. Higinia Godt. Enc. M. ix. 135. n. 45.*
(1819).
♀ *Pi. Malatha Boisd. Faune de Madag. t. 1. f. 4, 5.*
Madagascar, W. Africa. B. M.
40. *PI. CNEORA* *Boisd. Sp. Gén. i. 499. n. 91. (1836).*
P. Cn. Fab. Ent. Syst. iii. i. 200. n. 626.
(1793).
East Indies.
41. *PI. EUBOTEA* *Godt. Enc. M. ix. 144. n. 90. (1819).*
Boisd. Sp. Gén. i. 500. n. 92. (1836).
East Indies? Africa?
42. *PI. CREONA* *Godt. Enc. M. ix. 131. n. 38. (1819).*
Boisd. Sp. Gén. i. 505. n. 99. (1836).
P. Cr. Cram. t. 95. f. C—F. (1775).
Amphæis Cr. *Hübner, Verz. bek. Schmett. 93.*
(1816).
W. Africa, Bengal. B. M.
43. *PI. PITYS* *Godt. Enc. M. ix. 134. n. 48. (1819).*
Boisd. Sp. Gén. i. 470. n. 47. (1836).
Timor. B. M.
44. *PI. LIBYTHEA.*
P. Lib. Fab. Ent. Syst. iii. i. 190. n. 591.
(1793).
Donovan, Ins. of India (1800–3).
P. Libitina Godt. Enc. M. ix. 133. n. 44.
(1819).
Boisd. Sp. Gén. i. 499. n. 90. (1836).
East Indies?
45. *PI. ZOCHALIA* *Boisd. Sp. Gén. i. 506. n. 100. (1836).*
S. Africa. B. M.
46. *PI. HYOMA* *Boisd. Sp. Gén. i. 508. n. 102. (1836).*
W. Africa.
47. *PI. PROTOMEDIA* *Klug-Ehren. Sym. Phys. t. 8. f. 13, 14.*
(18).
Boisd. Sp. Gén. i. 509. n. 103. (1836).
Arabia, Nubia, Dongola.
48. *PI. NABELLICA* *Boisd. Sp. Gén. i. 509. n. 104. (1836).*
N. India.
49. *PI. SEVERINA* *Godt. Enc. M. ix. 131. n. 36. (1819).*
Boisd. Sp. Gén. i. 507. n. 101. (1836).
P. Sev. Cram. t. 338. f. G. H. (1782).
S. Africa. B. M.
50. *PI. MESENTINA* *Godt. Enc. M. ix. 130. t. 34. (1819).*
Boisd. Sp. Gén. i. 501. n. 95. (1836).
P. Mes. Cram. t. 270. f. A. B. (1780).
P. Aurota Fab. Ent. Syst. iii. i. 197. n. 614.
(1793).
Congo, Cape of Good Hope, Madagascar, Ceylon,
N. India. B. M.
51. *PI. TEUTONIA* *Godt. Enc. M. ix. 152. n. 120. (1819).*
Boisd. Sp. Gén. i. 473. n. 50. (1836).
P. Teu. Fab. Syst. Ent. 474. n. 137. (1775).
Donovan, Ins. of New Holland. (1805).
Australia, New Guinea, Timor. B. M.
52. *PI. CORONEA* *Godt. Enc. M. ix. 151. n. 115. (1819).*
Boisd. Sp. Gén. i. 474. n. 52. (1836).
Pi. Cor. Cram. t. 68. f. B. C. t. 360. f. G. H.
(1775–82).
Fab. Ent. Syst. iii. i. 201. n. 628. (1793).
Anaphæis Cor. *Hübner, Verz. bek. Schmett. 93.*
(1816).
♀ *P. Deiopeia Donovan, Ins. of New Holland*
(1805).
Timor, Java, Celebes, Sumatra. B. M.
53. *PI. PERIMALE* *Godt. Enc. M. ix. 152. n. 117. (1819).*
Boisd. Sp. Gén. i. 475. n. 53. (1836).
P. Per. Donovan, Ins. of New Holland (1805).
Australia.
54. *PI. CLYTIE* *Godt. Enc. M. ix. 151. n. 116. (1819).*
Boisd. Sp. Gén. i. 475. n. 54. (1836).
P. Cl. Donovan, Ins. of New Holland (1805).
Australia.
55. *PI. NISEIA* *M^cLeay, in King's Survey of Australia, App.*
459. n. 138. (1828).
Boisd. Sp. Gén. i. 473. n. 51. (1836).
Australia.
56. *PI. MOMEA* *Boisd. Sp. Gén. i. 477. n. 56. (1836).*
Java.
57. *PI. LANASSA* *Boisd. Sp. Gén. i. 477. n. 57. (1836).*
Australia.
58. *PI. AUGUSTA* *Godt. Enc. M. ix. 130. n. 35. (1819).*
Boisd. Sp. Gén. i. 503. n. 96. (1836).
P. Aug. Oliver, Voy. en Syrie, t. 35. f. 3.
(1801–7).
Syria.

59. *PI. GIDICA* *Godt. Enc. M.* ix. 131. n. 37. (1819).
Boisd. Sp. Gén. i. 503. n. 97. (1836).
 Senegal. B. M.
60. *PI. CALYPSO* *Godt. Enc. M.* ix. 130. n. 33. (1819).
Boisd. Sp. Gén. i. 504. n. 98. (1836).
P. Cal. Drury, t. ii. t. 17. f. 3, 4. (1773).
Cram. t. 154. f. C—F (1776).
Fab. Ent. Syst. iii. i. 191. n. 592. (1793).
Belenois Cal. Hüb. Verz. bek. Schmett. 92. (1816).
 W. Africa. B. M.
61. *PI. THEORA* *Doubleday*, in *Taylor's Ann. Nat. Hist.* xvii. 25. (1845).
Doubleday & Hewitson, t. 6. f. 4. (1847).
 W. Africa. B. M.
62. *PI. SABRATA* *E. Doubleday*, *List of Lep. Ins. of Brit. Mus. App.* (1847).
 Congo. B. M.
63. *PI. LAMIA* *E. Doubleday*, *List of Lep. Ins. of Brit. Mus. App.* (1847).
 W. Africa.
64. *PI. IANTHE* *Doubleday*, in *Gray's Zool. Misc.* 77. (1842).
P. Pisinoë Boisd. MSS.
 W. Africa. B. M.
65. *PI. HEDYLE* *Godt. Enc. M.* ix. 146. n. 97. (1819).
Boisd. Sp. Gén. i. 500. n. 93. (1836).
P. Hed. Cram. t. 186. f. C. D. (1776).
Mylothris Hed. Hüb. Verz. bek. Schmett. 91. (1816).
 W. Africa. B. M.
66. *PI. RHENA* *Doubleday*, in *Ann. Nat. Hist.* xvii. 24. (1846).
 W. Africa. B. M.
67. *PI. HELCIDA* *Boisd. Faune de Madag.* t. 2. f. 1, 2. (1833).
Boisd. Sp. Gén. i. 501. n. 94. (1836).
 Madagascar.
68. *PI. ALETHE* *E. Doubleday*, *List of Lep. Ins. of Brit. Mus.* 31. (1845).
 Congo. B. M.
69. *PI. PIGEA* *Boisd. Sp. Gén.* i. 523. n. 124. (1836).
 W. and S. Africa. B. M.
70. *PI. LARIMA* *Boisd. Sp. Gén.* i. 524. n. 126. (1836).
 Senegal. B. M.
71. *PI. CHARINA* *Boisd. Sp. Gén.* i. 525. n. 128. (1836).
 Var. *PI. Anactorie Doubleday*, in *Gray's Zool. Misc.* 77. (1842).
 S. Africa. B. M.
72. *PI. POLYCASTE* *Boisd. Sp. Gén.* i. 525. n. 127. (1836).
 Pon. *Acaste Klug-Ehren. Symb. Phys.* t. 7. f. 16, 17. (1829–45).
 Arabia, Senegal.
73. *PI. HALIMEDE* *Boisd. Sp. Gén.* i. 526. n. 129. (1836).
 Pont. Hal. *Klug-Ehren. Symb. Phys.* t. 7. f. 12–15. (1829–45).
 Arabia.
 March, 1847.
74. *PI. DOXO* *Godt. Enc. M.* ix. 123. n. 15. (1819).
Boisd. Sp. Gén. i. 527. n. 130. (1836).
 Africa.
75. *PI. EUDOXIA*.
 ♀ *P. Eu. Cram.* t. 213. f. C. (1780).
Drury, iii. t. 32. f. 1, 2. (1782).
Fab. Ent. Syst. iii. i. 199. n. 620. (1793).
Jones, Icones, iii. t. 20. f. 2. (ined.).
 ♂ *P. Syl. Fab. Ent. Syst.* iii. i. 188. n. 582. (1793).
Jones, Icones, iii. t. 21. f. 1. (ined.).
 ♂ *P. Poppæa Godt. Enc. M.* ix. 138. n. 68. (1819).
Boisd. Sp. Gén. i. 511. n. 107. (1836).
 W. Africa.
76. *PI. POPPÆA*.
P. Pop. Cram. t. 110. f. D. (1776).
Fab. Ent. Syst. iii. i. 188. n. 581. (1793).
P. Rhodope Fab. Ent. Syst. iii. i. 196. n. 609. (1793).
Jones, Icones, iii. t. 42. (ined.).
PI. Eudoxia Boisd. Sp. Gén. i. 511. n. 105. (1836).
 W. Africa. B. M.
77. *PI. PASIPHÆ* *Boisd. Sp. Gén.* i. 549. n. 158. (1836).
P. Pas. Cram. t. 80. f. E. (1775).
Pieris Perigone Godt. Enc. M. ix. 139. n. 70. (1816).
 Surinam? Africa?
78. *PI. AGATHINA* *Godt. Enc. M.* ix. 139. n. 69. (1819).
Boisd. Sp. Gén. i. 511. n. 106. (1836).
P. Ag. Cram. t. 237. f. E. F. (1780).
 W. Africa. B. M.
79. *PI. PHILERIS* *Boisd. Faune de Madag.* t. 2. f. 3–5. (1833).
Boisd. Sp. Gén. i. 512. n. 108. (1836).
 Madagascar.
80. *PI. CHLORIS* *Godt. Enc. M.* ix. 160. n. 143. (1819).
Boisd. Sp. Gén. i. 516. n. 115. (1836).
P. Ch. Fab. Syst. Ent. 473. n. 129. (1778).
Drury, iii. t. 32. f. 3, 4. (1782).
P. Thermopyle Cram. t. 207. f. F. G. (1780).
 W. Africa. B. M.
81. *PI. EUMELIS* *Boisd. Faune de l'Océanie*, 50. (1833).
Boisd. Sp. Gén. i. 516. n. 115. (1836).
 New Ireland.
82. *PI. ? ERIS* *Boisd. Sp. Gén.* i. t. 6. f. 15, 16. (1836).
 Pont. Er. *Klug-Ehren. Symb. Phys.* t. 6. f. 15, 16. (18).
 Senegal, Nubia, Arabia.
83. *PI. ERIPHIA* *Godt. Enc. M.* ix. 157. n. 134. (1819).
Lucas, Léop. Exot. t. 28. f. 2. (1835).
Boisd. Sp. Gén. i. 513. n. 109. (1836).
 Africa.
84. *PI. TRITOGENTIA* *Boisd. Sp. Gén.* i. 513. n. 110. (1836).
 Pont. Trit. *Klug-Ehren. Symb. Phys.* t. 8. f. 17, 18. (1829–45).
 Nubia, Dongola, Senegal. B. M.

85. *PI. AGATHON* *G. R. Gray, Lep. Ins. of Nepaul, t. 8. f. 1.* (1830).
Boisd. Sp. Gén. i. 447. n. 13. (1836).
 Var. *PI. Phryxe Boisd. Sp. Gén. i. 446. n. 12.* (1836).
Blanchard, Voy. de Jacquemont, Ins. t. 2. f. 1. (1840).
 N. India.
86. *PI. SORACTA Boisd. MSS.*
 N. India. B. M.
87. *PI. CRATÆGI Godt. Enc. M. ix. 154. n. 127. (1819).*
Boisd. Sp. Gén. i. 445. n. 11. (1836).
P. Cr. Linn. Syst. Nat. ii. 758. n. 72. (1767).
Fab. Ent. Syst. iii. i. 182. n. 563. (1793).
Hübner, Europ. Schmett. Pap. f. 339, 340. (1806-27).
Aporia Cr. Hübner, Verz. bek. Schmett. 90. (1816).
Pontia Cr. Steph. Ill. Haust. i. 27. (1827).
Leuconea Cr. Donzel, Ann. Soc. Ent. de France, vi. 80. (1837).
 Europe.
88. *PI. N. SP.*
 Abyssinia. B. M.
89. *PI. GLAUCONOME Boisd. Sp. Gén. i. 546. n. 155. (1836).*
Pontia Gl. Klug-Ehren. Symb. Phys. t. 7. f. 18, 19. (1829-45).
 Arabia, Egypt.
90. *P. HELICA Godt. Enc. M. ix. 129. n. 30. (1819).*
Boisd. Sp. Gén. i. 546. n. 156. (1836).
P. Hell. Linn. Mus. Lud. Ultr. 243. (1764).
Synchloë Hell. Hübner, Verz. bek. Schmett. 94. (1816).
Cram. t. 171. f. C. D. (1776).
P. Raphani Fab. Ent. Syst. iii. i. 188. n. 579. (1793).
 S. Africa. B. M.
91. *PI. CALLIDICE Godt. Enc. M. ix. 129. n. 32. (1819).*
Boisd. Sp. Gén. i. 542. n. 151. (1836).
P. Call. Esp. Schmett. t. 115. cont. 70. f. 2, 3. (18).
Synchloë Call. Hübner, Verz. bek. Schmett. 94. (1816).
 Alps, Pyrenees, Rocky Mountains. B. M.
92. *PI. PROTODICE Boisd. et Leconte, Icon. Lep. Am. Sept. t. 17.* f. 13. (1832).
Boisd. Sp. Gén. i. 543. n. 152. (1836).
 United States (Middle States). B. M.
93. *PI. CHLORIDICE Boisd. Icon. Hist. t. 6. f. 5, 6. (18).*
Boisd. Sp. Gén. i. 543. n. 153. (1836).
P. Ch. Ochs. Schmett. von Europa, iv. 154. (18).
Hübner, Verz. bek. Schmett. 94. (1816)
 Siberia, Eastern Russia. B. M.
94. *PI. LEUCODICE.*
Pontia Leu. Eversmann, Bull. Soc. Imp. Nat. Mosc. xvi. 541. (1845).
 Lake of Noord-Saisan.

95. *PI. DAPLIDICE Godt. Enc. M. ix. 128. n. 29. (1819).*
Boisd. Sp. Gén. i. 544. n. 154. (1836).
P. Dap. Linn. Syst. Nat. ii. 760. n. 81. (1767).
Fab. Ent. Syst. iii. i. 191. n. 593. (1793).
Hübner, Europ. Schmett. Pap. f. 414, 415. (1806-27).
Synchloë Dap. Hübner, Verz. bek. Schmett. 94. (1816).
 Var. *P. Bellidice Brahm. i. C. p. 362.*
P. Belemida, Hübner, Europ. Schmett. Pap. f. 931-34. (1806-47).
 Europe, Asia Minor, N. Africa. B. M.
96. *PI. NAPI Godt. Enc. M. ix. 161. n. 145. (1819).*
Boisd. Sp. Gén. i. 518. n. 118. (1836).
P. Na. Linn. Syst. Nat. ii. 760. n. 77. (1767).
Fab. Ent. Syst. iii. i. 187. n. 576. (1793).
Hübner, Europ. Schmett. Pap. f. 406-7. (1806).
Catophaga Na. Hübner, Verz. bek. Schmett. 93. (1836).
Pontia Na. Steph. Ill. Haust. i. 20. (1827).
 Var. *P. Napææ Esper, Schmett. t. 116. cont. 71.* t. 5. (17).
 Var. *PI. Bryoniae Godt. Ent. M. ix. 162.* n. 146. (1819).
 Var. *Pon. Sabellicæ Steph. Ill. Haust. t. 3.* f. 3, 4. (1827).
 Europe, Siberia. B. M.
97. *PI. N. SP.*
 W. Africa. B. M.
98. *PI. MÆNACTE Boisd. Sp. Gén. i. 517. n. 116. (1836).*
 Paraguay.
99. *PI. OLERACEA Harris, in New England Farmer (1827?).*
Boisd. Sp. Gén. i. 518. n. 117. (1836).
 Canada, United States. B. M.
100. *PI. CRUCIFERARUM Boisd. Sp. Gén. i. 519. n. 119.* (1836).
 United States.
101. *PI. RAPÆ Godt. Enc. M. ix. 161. n. 144. (1819).*
Boisd. Sp. Gén. i. 520. n. 120. (1836).
P. Ra. Linn. Syst. Nat. ii. 759. n. 76. (1767).
Fab. Ent. Syst. iii. i. 186. n. 575. (1793).
Hübner, Europ. Schmett. Pap. f. 404-5. (1806-27).
Catophaga Ra. Hübner, Verz. bek. Schmett. 93. (1816).
 Var. *P. Ergane Hübner, Europ. Schmett. Pap.* f. 904-7. (1806-27).
 Var. *Pont. Metra Steph. Ill. Haust. i. 19.* (1827).
 Europe, N. Asia, Cachemire, Egypt. B. M.
102. *PI. GLICIRIA Boisd. Sp. Gén. i. 524. n. 125. (1836).*
P. Gli. Cram. t. 171. f. E. F. (1777).
Catophaga Gli. Hübner, Verz. bek. Schmett. 93. (1816).

- Pi. *Glaphyra* *Godt. Enc. M.* ix. 160. n. 140 (1819).
China, N. India. B. M.
103. Pi. *BRASSICÆ* *Godt. Enc. M.* ix. 158. n. 138. (1819).
Boisd. Sp. Gén. i. 521. n. 121. (1836).
P. Bras. *Linn. Syst. Nat.* ii. 759. n. 75. (1767).
Fab. Ent. Syst. iii. i. 186. n. 574. (1793).
Hüb. Europ. Schmett. Pap. f. 401-3. (1806-27).
Catophaga Bras. *Hüb. Verz. bek. Schmett.* 93. (1816).
Var. P. *Chariclea Steph. Ill. Haust.* i. t. 3. f. 1, 2. (1827).
Europe, Northern and Central Asia. B. M.
104. P. *CHEIRANTHI* *Godt. Enc. M.* ix. 159. n. 139. (1819).
Boisd. Sp. Gén. i. 522. n. 122. (1836).
P. Ch. *Hüb. Europ. Schmett. Pap.* f. 647-8. (1806-27).
Catophaga Ch. *Hüb. Verz. bek. Schmett.* 93. (1816).
Canaries. B. M.
105. Pi. *ACASTE* *Godt. Enc. M.* ix. 160. n. 141. (1819).
Boisd. Sp. Gén. i. 523. n. 123. (1836).
P. Ac. *Linn. Mus. Lud. Utr.* 250. (1764).
"In Indiis," *Linn.*
106. Pi. *MONUSTE* *Godt. Enc. M.* ix. 141. n. 79. (1819).
Boisd. Sp. Gén. i. 495. n. 88. (1836).
P. Mon. *Linn. Syst. Nat.* ii. 760. n. 80. (1767).
Fab. Ent. Syst. iii. i. 189. n. 585. (1793).
Cram. t. 141. f. F. (1776).
Mylothris Mon. *Hüb. Verz. bek. Schmett.* 91.
Pontia *Feronia Steph. Ill. Haust.* i. 149. (1827).
Var. Pi. *Cleomes Boisd. et Lec. Icon. Léop. Am. Sept.* t. 16. f. 1-5. (1830).
Var. ♀ Pi. *Suasa Boisd. Sp. Gén.* 549. n. 160. (1836).
United States (Southern States), Mexico, West Indies, Guiana, Brazil, Peru. B. M.
107. Pi. *VIRGINIA* *Godt. Enc. M.* ix. 141. n. 81. (1819).
Boisd. Sp. Gén. i. 494. n. 85. (1836).
Mylothris Hemitheia Hüb. Zut. f. 693-4. (1825).
? P. *Licinia Fab. Ent. Syst.* iii. i. 197. n. 613. (1793).
West Indies. B. M.
108. Pi. *JOPPE* *Boisd. Sp. Gén.* i. 495. n. 87. (1836).
Cuba.
109. Pi. *VALLEI* *Boisd. Sp. Gén.* i. 494. n. 86. (1836).
Cuba.
110. Pi. *LEUCANIA* *Boisd. Sp. Gén.* i. 493. n. 83. (1836).
Brazil.
111. Pi. *EVONIMA* *Boisd. Sp. Gén.* i. 493. n. 84. Cuba.
112. Pi. N. SP.
Mexico. B. M.
113. Pi. N. SP.
Venezuela. B. M.
114. Pi. N. SP.
Jamaica. B. M.
115. Pi. *JOSEPHINA* *Godt. Enc. M.* ix. 158. n. 156. (1819).
Boisd. Sp. Gén. i. 532. n. 139. (1836).
Catophaga *Josephina Hüb. Samml. Exot. Schmett.* (1806-27).
Yucatan, Mexico. B. M.
116. Pi. *PYLOTIS* *Godt. Enc. M.* ix. 158. n. 137. (1819).
Boisd. Sp. Gén. i. 530. n. 135. (1836).
Brazil. B. M.
117. Pi. *BUNIA* *Boisd. Sp. Gén.* i. 530. n. 136. (1836).
Catophaga Bu. *Hüb. Samml. Exot. Schmett.* (1806-27).
Pi. *Eudeis Godt. Enc. M.* ix. 158. 135. (1819).
Brazil. B. M.
118. Pi. *AUSIA* *Boisd. Sp. Gén.* i. 531. 137. (1836).
Brazil.
119. Pi. *PHALOË* *Godt. Enc. M.* ix. 156. n. 131. (1819).
Lucas, Léop. Exot. t. 27. f. 1. (1835).
Boisd. Sp. Gén. i. 532. n. 138. (1836).
Brazil, Venezuela. B. M.
120. Pi. *DEMOPHILE*.
♀ P. Dem. *Linn. Amæn. Acad.* vi. 406. n. 66. (1764?).
Linn. Syst. Nat. ii. 761. n. 82. (1767).
♀ *Clerck, Icon.* t. 28. f. 4. (1764).
♀ *Fab. Ent. Syst.* iii. i. 192. n. 596. (1793).
♂ ♀ *Mylothris* Dem. *Hüb. Verz. bek. Schmett.* 91. (1816).
♂ P. *Amathonte Cram.* t. 116. f. A. B. (1776).
♂ ♀ Pi. Am. *Godt. Enc. M.* ix. 157. n. 132. (1819).
Boisd. Sp. Gén. i. 438. n. 1. (1836).
♀ P. *Molpheia Cram.* t. 116. f. c. (1776).
Guiana, Brazil. B. M.
121. Pi. *CALYDONIA* *Boisd. Sp. Gén.* i. 439. n. 2. (1836).
Venezuela. B. M.
122. Pi. *MARANA* *E. Doubleday, Ann. Nat. Hist.* xiv. 421. (1842).
Guayaquil? B. M.
123. Pi. N. SP.
Venezuela. B. M.
124. Pi. *VIARDI* *Boisd. Sp. Gén.* i. 439. n. 3. (1836).
Mexico.
125. Pi. *PYRRHA* *Godt. Enc. M.* ix. 155. n. 128. (1819).
Boisd. Sp. Gén. i. 440. n. 4. (1836).
P. Pyr. *Cram.* t. 63. f. A. B. (1775).
Fab. Spec. Ins. ii. 46. n. 200. (1787).
♀ P. *Pamela Cram.* t. 319. f. A. (1782).
♀ Var. P. *Iphigenia Fab. Ent. Syst.* iii. i. 199. n. 621. (1793).
Perrhybris Eueidias Hüb. Verz. bek. Schmett. 91. (1816).
Guiana, Brazil.
126. Pi. N. SP.
Venezuela. B. M.

127. *PI. HABRA* *Doubleday, Ann. Nat. Hist.* xvii. 22. (1846).
Honduras. B. M.
128. *PI. N. SP.*
Venezuela. B. M.
129. *PI. ELEONE* *Boisd. MSS.*
Doubleday & Hewitson, t. 6. f. 6. (1847).
130. *PI. ARIPA* *Boisd. Sp. Gén. i. 528. n. 131.* (1836).
Caraccas. B. M.
131. *PI. BALIDIA* *Boisd. Sp. Gén. i. 529. n. 133.* (1836).
Brazil. B. M.
132. *PI. ELODIA* *Boisd. Sp. Gén. i. 529. n. 134.* (1836).
Mexico.
133. *PI. ELEUSIS* *Boisd. MSS.*
Bolivia. B. M.
134. *PI. N. SP.*
Venezuela. B. M.
135. *PI. NEOMBO* *Boisd. Sp. Gén. i. 539. n. 148.* (1836).
Brazil?
136. *PI. PANDIONE* *Boisd. Sp. Gén. i. 537. n. 145.* (1836).
Hiposcritia Pa. Hübn. Zut. f. 651-2. (1826).
Java. B. M.
137. *PI. PAULINA* *Godt. Enc. M. ix. 142. n. 86.* (1819).
Boisd. Sp. Gén. i. 538. n. 147. (1836).
P. Paul. Cram. t. 110. f. E. F. (1776).
Fab. Ent. Syst. iii. i. 189. n. 583. (1793).
Catophaga Leis Hübn. Zut. f. 771, 772. (1827).
Bengal, Java. B. M.
138. *PI. LALAGE* *Doubleday, in Gray's Zool. Misc. 76.* (1842).
N. India. B. M.
139. *PI. MELANIA* *Godt. Enc. M. ix. 132. n. 42.* (1819).
Boisd. Sp. Gén. i. 537. n. 146. (1836).
P. Mel. Fab. Ent. Syst. iii. i. 201. n. 629. (1793).
Donovan, Ins. of New Holland (1805).
♂ *PI. Ega* *Boisd. Sp. Gén. i. 536. n. 144.* (1836).
Australia. B. M.
140. *PI. GABIA* *Boisd. Faune de l'Océanie, 49.* (1832).
Boisd. Sp. Gén. i. 478. n. 58. (1836).
New Guinea.
141. *PI. ZELMIRA* *Godt. Enc. M. ix. 143. n. 88.* (1819).
Boisd. Sp. Gén. i. 533. n. 140. (1836).
P. Zel. Cram. t. 320. f. C—F. (1782).
Fab. Ent. Syst. iii. i. 197. n. 615. (1793).
Bengal, Java.
142. *PI. NERISSA* *Godt. Enc. M. ix. 142. n. 84.* (1819).
Boisd. Sp. Gén. i. 535. n. 142. (1836).
P. Ner. Fab. Ent. Syst. iii. i. 192. n. 595. (1793).
Acræa Ner. Hübn. Verz. bek. Schmett. 93. (1816).
Bengal, Java.
143. *PI. AMASENE* *Boisd. Sp. Gén. i. 535. n. 143.* (1836).
P. Am. Cram. t. 44. f. A. (1775).
PI. Nerissa var. Godt. Enc. M. ix. 142. n. 84. (1819).
Java.
144. *PI. HIRLANDA* *Godt. Enc. M. ix. 145. n. 96.* (1819).
Boisd. Sp. Gén. i. 478. n. 59. (1836).
P. Hir. Stoll, t. 35. f. I. 1. A. (1791).
Cathæmia Hir. Hübn. Verz. bek. Schmett. 92. (1816).
Bengal?
145. *PI. ADA* *Godt. Enc. M. ix. 145. n. 74.* (1816).
Boisd. Sp. Gén. i. 479. n. 60. (1836).
P. Ada Cram. t. 363. f. C. D. (1782).
Cathæmia Ada Hübn. Verz. bek. Schmett. 92. (1816).
Amboyna, New Guinea.
146. *PI. ENARETE* *Boisd. Sp. Gén. i. 480. n. 61.* (1836).
Moluccas.
147. *PI. ALBINA* *Boisd. Sp. Gén. i. 480. n. 62.* (1836).
Amboyna.
148. *PI. ROUXII* *Boisd. Sp. Gén. i. 481. n. 63.* (1836).
Bengal.
149. *PI. PHRYNE.*
P. Ph. Fab. Ent. Syst. iii. i. 196. n. 612. (1793).
P. Eleonora Boisd. Sp. Gén. i. 481. n. 64. (1836).
PI. Enyo Boisd. Sp. Gén. i. 481. n. 65. (1836).
♀ *P. Hippo Cram. t. 195. f. B. C.* (1779).
PI. Hip. Godt. Enc. M. ix. 143. n. 89. (1819).
Boisd. Sp. Gén. i. 534. n. 141. (1836).
? ♂ *P. Lyncida Cram. t. 131. B.* (1776).
Java, Amboyna, Borneo, India. B. M.
150. *PI. SCYLLARA* *M'Leay, in King's Survey of Australia, App. 459.* (1828).
Boisd. Sp. Gén. i. 482. n. 66. (1836).
Australia.
151. *PI. PLACIDIA* *Godt. Enc. M. ix. Suppl. 814. n. 102, 103.* (1823).
Boisd. Sp. Gén. i. 483. n. 68. (1836).
P. Pl. Stoll, t. 28. f. 4. C. (1791).
Pandemos Pl. Hübn. Verz. bek. Schmett. 25. (1816).
Amboyna.
152. *PI. LIBERIA* *Godt. Enc. M. ix. Suppl. 814. n. 103, 104.* (1823).
Boisd. Sp. Gén. i. 484. n. 69. (1836).
P. Lib. Cram. t. 210. f. G. H. (1780).
Fab. Ent. Syst. iii. i. 42. n. 126. (1793).
Pandemos Lib. Hübn. Verz. bek. Schmett. 25. (1816).
Amboyna.
153. *PI. CELESTINA* *Boisd. Faune de l'Océanie, i. 46.* (1833).
Boisd. Sp. Gén. i. 484. n. 70. (1836).
Celebes, New Guinea.
154. *PI. PANDA* *Godt. Enc. M. ix. 147. n. 102.* (1819).
Boisd. Sp. Gén. i. 485. n. 71. (1836).
Java. B. M.

155. *PI. NERO* *Boisd. Sp. Gén.* i. 485. n. 72. (1836).
P. Ne. Fab. Ent. Syst. III. i. 153. n. 471. (1793).
Pi. Thy. Godt. Enc. M. ix. 147. n. 101. (1819).
Pontia Thy. Horsfield, Zool. Journal, iv. t. 4. f. 2. (1829).
 Java, Borneo, Indian Continent. B. M.
156. *PI. ZARINDA* *Boisd. Sp. Gén.* i. 484. n. 73. t. 2. C. f. 4. (1836).
 Java.
157. *PI. MARGARITA*.
Mylothris Margarita Hübn. Samml. Exot. Schmett. (1806-27).
Pi. Ilairé Godt. Enc. M. ix. 142. n. 83. (1819).
Boisd. Sp. Gén. i. 491. n. 80. (1836).
Hübn. Verz. bek. Schmett. 91. (1816).
 ♀ *Pi. Mysia Godt. Enc. M.* ix. 143. n. 87. (1819).
Mylothris Molpadia Hübn. Zut. f. 259, 260. (1823).
 ? ♂ Var. *P. Drusilla Cram.* t. 110. f. C. (1776).
 Brazil, Venezuela, Honduras, W. Indies. B. M.
158. *PI. ISANDRA* *Boisd. Sp. Gén.* i. 490. n. 79. (1836).
 Mexico, Honduras. B. M.
159. *PI. ELISSA*.
 Bolivia. B. M.
160. *PI. ALBUNEA* *Dalman, Anal. Ent.* 39. (1823).
Boisd. Sp. Gén. i. 490. n. 78. (1836).
 Brazil.
161. *PI. SALACIA* *Godt. Enc. M.* ix. 144. n. 91. (1819).
Boisd. Sp. Gén. i. 489. n. 77. (1836).
 S. America? B. M.
162. *PI. HELVIA* *Latr. in Voy. de Humb. et Bonpl. Zool.* i. t. 41. f. 1, 2. (1811-19).
Godt. Enc. M. ix. 145. n. 95. (1819).
Boisd. Sp. Gén. i. 488. n. 76. (1836).
 Mexico.
163. *PI. FLIPPANTHA*.
P. Fl. Fab. Ent. Syst. III. i. 202. 631. (1793).
Pi. Limnoria Godt. Enc. M. ix. 143. n. 93. (1819).
Swainson, Zool. Ill. 2d ser. t. 79. (1832).
Boisd. Sp. Gén. i. 488. n. 75. (1836).
 Brazil, Bolivia. B. M.
164. *PI. LVCIMNIA* *Godt. Enc. M.* ix. 144. n. 92. (1819).
Boisd. Sp. Gén. i. 487. n. 74. (1836).
P. Ly. Cram. t. 105. f. E. F. (1776).
 Brazil, Guiana, Mexico. B. M.
165. *PI. AUTODICE* *Boisd. Sp. Gén.* i. 539. n. 149. (1836).
Synchlœ Aut. Hübn. Samml. Exot. Schmett. (1806-27).
 Chili, Paraguay. B. M.
166. *PI. THEODICE* *Boisd. Faune de l'Océanie*, 51. (1833).
Boisd. Sp. Gén. i. 540. n. 150. (1836).
 Peru.

Section III. *Subcostal Nervure of Anterior Wings four-branched; its first nervule thrown off beyond the middle of the cell; the second and third near to the apex of the Wing, but little distant from one another.*

167. *PI. N. SP.*
 Bolivia. B. M.
168. *PI. N. SP.*
 Bolivia. B. M.
169. *PI. ANGUITIA* *Godt. Enc. M.* ix. 146. n. 100. (1819).
Boisd. Sp. Gén. i. 492. n. 82. (1836).
 Brazil. B. M.
170. *PI. N. SP.*
 Mexico. B. M.
171. *PI. MARCHALII* *Guérin, Icon. du R. Anim. texte*, II. 468. (1836-42).
 Bolivia. B. M.
172. *PI. N. SP.*
 Bolivia. B. M.
173. *PI. N. SP.*
 Bolivia. B. M.
174. *PI. N. SP.*
 Bolivia. B. M.
175. *PI. N. SP.*
 Bolivia. B. M.

Doubtful Species.

176. *PI. CASSIDA* *Godt. Enc. M.* ix. 164. n. 151. (1819).
Boisd. Sp. Gén. i. 552. n. 166. (1836).
P. Cas. Fab. Ent. Syst. Suppl. v. 427. n. 595, 596. (1793).
 East Indies.
177. *PI. CRONIS* *Boisd. Sp. Gén.* i. 548. n. 157. (1836).
P. Cr. Cram. t. 60. f. C. (1775).
 West Indies.
178. *PI. PHILETE* *Boisd. Sp. Gén.* i. 550. n. 161. (1836).
P. Phi. Fab. Ent. Syst. III. i. 190. n. 590. (1793).
 America.
179. *PI. FABIA* *Boisd. Sp. Gén.* i. 550. n. 162. (1836).
P. Fa. Fab. Ent. Syst. Suppl. v. 926. n. 587, 588. (1831).
 West Indies?
180. *PI. ILEA* *Boisd. Sp. Gén.* i. 551. n. 163. (1836).
P. Il. Fab. Ent. Syst. Suppl. v. n. 87, 88. (1793).
 East Indies.

Genus VI. **ZEGRIS** Rambur.

Rambur, *Ann. Soc. Ent. de France*, v. 581. (1836).

PIERIS Godt., *Ménétriés*.

PONTIA Eversman.

HEAD broad, clothed with long hairs.

Eyes round, not very prominent.

Labial Palpi densely hairy; the first and second joints about equal, rather slender, subcylindric; third joint about one third the length of the second.

Antennæ short; terminated by an abrupt, oval, compressed club.

THORAX very stout, densely clothed with fine long hairs.

Anterior Wings triangular; the costa slightly sinuate. Costal nervure stout. Subcostal nervule five-branched: its first nervule thrown off at about three fourths the length of the cell; the second at the end of the cell; the third and fourth near the apex, the latter about equidistant from the third and the apex. First discoidal nervule united for a considerable distance to the subcostal. Lower disco-cellular long, curved.

Posterior Wings subquadrate, rounded. Abdominal margin scarcely forming a channel of the abdomen. Precostal nervure simple. Discoidal nervure appearing to be a third subcostal nervule.

Legs rather short. Tarsi with the second, third, and fourth joints nearly equal. Claws long, very deeply bifid, the inner tooth much shorter than the outer. Paronychialia not so long as the claws, reaching nearly to the end of their inner tooth, lancet-shaped, slender. Pulvillus very short, not one fourth the length of the claws.

ABDOMEN short, rather stout, hairy.

LARVA stout, hairy, nearly cylindrical.

PUPA short, gibbous, not tuberculate; head pointed, blunt; abdomen arched, pointed, the segments immovable. Enclosed in a delicate, silken, net-like web, and sustained by a transverse thread.

This remarkable genus differs from *Anthocharis* in having the antennæ shorter and stouter; the thorax much more robust and hairy; the legs stouter, with the claws longer, and the pulvillus very short. The tarsi, though still retaining the general characters of the group, have the second, third, and fourth joints more nearly equal than usual.

In the habits of the larva, and in the form of the pupa, it presents a marked distinction from any known genus of the Pieridæ, and approaches more nearly to *Parnassius*, to which genus its short antennæ and robust thorax give it a great resemblance.

From the observations of M. Graslin and Dr. Rambur on *Z. Eupheme*, we learn that the LARVA, which feeds on *Sinapis incana*, is yellowish, with a paler lateral line, marked with oblique black streaks, and a series of black dots disposed in groups of three on the sides of each segment. Its growth is very slow; when arrived at maturity it spins a delicate, silken, net-like web on the stems of the *Sinapis*; suspending itself also by a very fine transverse thread, and by the tail.

The PUPA, which is singularly gibbous, has, like *Anthocharis*, the abdominal segments immovable.

The PERFECT INSECTS appear in April, the winter being passed in the pupa state. They fly with great rapidity, and are very difficult to capture. It has been taken by several collectors in Andalusia, and the Tschaptshatschi Mountains, and the original specimen figured by Esper was taken near Sebastopol.

I regret much that the extreme rarity of this insect has compelled me to trust to Dr. Rambur's figure of the palpi, which, however, is without doubt, accurate. The only specimen which I am aware of in any English collection is the one from which the accompanying figure was taken, which is now in the collection of Mr. Gutch, who obtained it in one of his recent visits to Madrid from Sr. Graells, and immediately placed it at my service for examination. It is less bright in colour than specimens which I have seen in the collections of Dr. Boisduval and M. Pierret.

The other species of the genus as yet are only known to me by the descriptions and figures of MM. Eversmann and Ménétriés.

ZEGRIS Rambur.

- | | |
|---|---|
| <p>1. <i>ZE. EUPHEME</i> Rambur, <i>Ann. Soc. Ent. de France</i>, v. 581. (1836).
 <i>Boisd. Sp. Gén.</i> I. 553. n. 1. (1836).
 <i>P. Euph. Esper, Schmett.</i> t. 113. cont. 68. f. 2, 3. (1777-1805).
 <i>Pi. Eupheno</i> ♀ var. <i>Godt. Enc. M.</i> ix. (1819).
 <i>Pon. Erothoë Eversmann, Nouv. Mem. Soc. Imp. Nat. de Mosc.</i> II. t. 20. f. 1, 2. (1832).
 Andalusia, Crimea, Orenburg.</p> | <p>2. <i>ZE MENESTHO</i> <i>Boisd. Sp. Gén.</i> I. 555. n. 2. (1836).
 <i>Pi. Men. Ménétriés, Cat. Rais.</i> 245. n. 1165. Caucasus.</p> <p>3. <i>ZE PYROTHOË</i> <i>Boisd. Sp. Gén.</i> I. 555. n. 3. (1836).
 <i>Pont. Pyr. Eversmann, Nouv. Mém. Soc. Imp. Nat. Mosc.</i> II. t. 20. f. 3, 4. (1832).
 Orenburg.</p> |
|---|---|

Genus VII. **NATHALIS** *Boisd.**Boisd. Sp. Gén.* i. 589. (1836).**HEAD** rather broad, very hairy.*Eyes* round, rather prominent.*Labial Palpi* scaly at the base, very hairy beyond, projecting beyond the head. First joints rather stout, curved; second rather shorter than the first, subcylindric, slightly tapering; third joint one third the length of the first, slender, obovate, rather pointed.*Antennæ* short, terminated by a short, obovate, compressed club.**THORAX** rather slender, hairy.*Anterior Wings* rather elongate, rounded at the apex, or subtriangular. The subcostal nervure three-branched; the first nervule thrown off beyond the middle of the cell; the second exactly at the end of it. First discoidal nervule united for some distance beyond the cell to the subcostal.*Posterior Wings* obovate, the cell rather short. Discoidal nervure separating from the subcostal at its bifurcation.*Legs* small. Claws very long, deeply bifid, without paronychia. Pulvillus very minute.**ABDOMEN** slender, about equal in length to the inner margin of the posterior wings.*LARVA* and *PUPA* unknown.

Nathalis may be known by its short abruptly clavate antennæ; the three-branched subcostal nervure of its anterior wings; the want of paronychia; and the very small pulvillus, which resembles that of the *Leucophasiæ*.

The species on which Dr. Boisduval founded the genus has been met with in Mexico and Jamaica by different collectors, and by myself on a mamelle upon the eastern shore of the Mississippi, nearly opposite to the mouth of the Missouri. I there found it plentiful, flitting over the grass and low herbage. Its flight is slow and weak, but the afternoon being cloudy few were actually on the wing. I never met with it afterwards, nor do I know of any other person having captured it in the United States.

NATHALIS *Boisd.*

- 1.
- NATH. IOLE**
- Boisd. Sp. Gén.*
- i. 589. n. 1. (1836).

United States, Jamaica, Mexico.

B. M.

- 2.
- NATH. PLAUTA**
- Boisd. MSS.*

Doubleday & Hewitson, t. 7. f. 4. (1847).

Venezuela.

B. M.

Genus VIII. **ANTHOCHARIS** *Boisd.**Boisd. Sp. Gen. I. 556. (1836).**PONTIA* *Fab., Ochs., &c.**PIERIS* *Latr., Godt., &c.**GANORIS* *Dalman.**SYNCHLOË, EUCHLOË, APHRODITE, Hübn.*

HEAD rather small, clothed with long hairs.

Eyes round, rather large, and prominent.

Labiul Palpi longer than the head. Basal joint subcylindrical, more or less curved at the base : second joint subcylindrical ; or elongate, ovate : third joint about one third the length of the second, slender, subcylindrical, pointed ; or obovate, pointed.

Antennæ rather short, terminating in an ovate compressed club, sometimes rather elongate.

THORAX moderately stout, clothed with long fine hair.

Anterior Wings subtriangular, rounded externally, or falcate. Subcostal nervule four or five branched. First discoidal nervule united for some distance beyond the cell to the subcostal nervule. Lower disco-cellular nervule rather long, curved.

Posterior Wings obovate, the abdominal channel sometimes not much developed. Precostal nervure simple. Discoidal nervure appearing to be a third subcostal nervule.

Legs rather slender. Claws very deeply bifid. Paronychia lanceolate, not so long as the claws. Pulvillus jointed, generally as long as, or longer than, the claws. The basal joint sometimes slender and very long.

ABDOMEN rather elongate, often nearly as long as the abdominal margin of the wings, slender.

LARVA slender, tapering considerably towards each extremity, pubescent.

PUPA elongate, navicular, much arched, very pointed at each extremity, slightly keeled down the back ; the segments of the abdomen not movable.

Anthocharis is easily distinguished from Pieris by its palpi, which have the last joint very short, and also by the very different form of the pupa.

The habits of this genus much resemble those of Pieris, but the flight of the European species is stronger and more rapid.

The LARVÆ, as far as known, live on various cruciferous plants, and are more slender than those of the Pieridæ.

The PUPÆ are remarkable for their elongate form, pointed at each extremity, and differ from those of Pieris in not being tuberculate at the sides, and in having the abdominal segments immovable.

April, 1847.

Q

The European species belong to a very natural section, divisible into two groups, distinguished at once by the different colouring of the upper surface in the males. In one group, of which our *Anthocharis Cardamines* is the type, the apex of the anterior wings is marked in the males with a large orange spot; and these species have the wings more rounded than those in which the spot is wanting. This group is represented in N. America by *Anthocharis Genutia*, though it does not exactly coincide in structure with them. The other group, common to the southern parts of Europe, and Northern Africa especially the mountainous districts, which wants the apical orange spot, has, like the former, the under surface of the posterior wings varied with green and white, but the white mostly has a pearly or silvery hue. One species of this section occurs in the Rocky Mountains. These all have the subcostal nervure five-branched, two nervules being thrown off before the end of the cell.

One species placed in this genus is found in Chili, but differs so much from the others, that I doubt whether it would not be better to found a separate genus upon it; but, as I have only had an opportunity of examining a single specimen, I have hesitated to do so. It has the subcostal nervure of the anterior wings five-branched, and has a short upper disco-cellular nervule, in this respect resembling the genus *Hebomoia*.

The remaining species of the genus belong to the warmer parts of Asia and Africa, being most numerous apparently on the confines of the Red Sea. They are delicate insects of great beauty, always of a white or pale yellow colour, with more or less of black at the apex of the wing, where the males, and mostly the females also, are marked with a spot of some beautiful shade of orange, red, or crimson, and in one species of an opalescent violet. The females sometimes are clouded with dusky markings. The subcostal nervule is four-branched.

ANTHOCHARIS Boisd.

Section I. *Palpi with last joint cylindric, more than one third the length of second? Anterior Wings with a short upper disco-cellular nervule; the subcostal nervure five-branched.*

EROESSA.

1. *ANTH. CHILENSIS* Boisd. *Sp. Gén.* i. 566. n. 11. (1836).
Pi. Ch. Guérin, *Voy. de la Coquille, Ins.* t. 15.
f. 1. (1826).
Chili.

Section II. *Palpi with the second joint nearly cylindric; the third joint acicular, not more than one third the length of the second. Upper disco-cellular nervule of Anterior Wing wanting.*

ANTHOCHARIS.

† *Subcostal nervure of Anterior Wings terminating in five nervules.*

2. *ANTH. TAGIS* Boisd. *Sp. Gén.* i. 560. n. 4. (1836).
P. Ta. Hübn. *Europ. Schmett. Pap.* f. 565, 566.
(1806-27).
P. Belemida Hübn. *Europ. Schmett. Pap.* f. 929,
930. (1806-27).
Pi. Bellezina Boisd. *Ind. Méth.* 1st ed. 9.
(1829).
Spain, S. France. B. M.
3. *ANTH. BELEMIA* Boisd. *Sp. Gén.* i. 557. n. 1. (1836).
P. Bel. Esper, *Schmett. t.* 90. cont. 65. f. 1.
(1777-1805).
P. Bel. Hübn. *Europ. Schmett. Pap.* f. 412, 413.
(1806-27).
Synchloë Bel. Hübn. *Verz. bek. Schmett.* 94.
(1816).
Pi. Bel. *Godt. Enc. M.* ix. 127. n. 26. (1819).
Var. P. Glaucæ. Hübn. *Europ. Schmett. Pap.* f.
546, 547. (1806-27).

Synchloë Gl. Hübn. *Verz. bek. Schmett.* 94.
(1816).

Pi. Gl. *Godt. Enc. M.* ix. 127. n. 27. (1819).
Anth. Gl. Boisd. *Sp. Gén.* i. 558. n. 2. (1836).
S. Europe, N. Africa. B. M.

4. *ANTH. BELIA* Boisd. *Sp. Gén.* i. 559. n. 3. (1836).
P. Bel. *Cram. t.* 397. f. A. B. (1782).
Fab. Ent. Syst. iii. i. 206. n. 615. (1793).
Hübn. *Europ. Schmett. Pap.* f. 417, 418.
(1806-27).
Euchloë Bel. Hübn. *Verz. bek. Schmett.* 94.
(1816).
Pi. Bel. *Godt. Enc. M.* ix. 126. n. 24. (1819).
Var. P. Ausonia Hübn. *Europ. Schmett. Pap.* f.
682, 683. (1806-27).
Euchloë Aus. Hübn. *Verz. bek. Schmett.* 94.
(1816).
Pi. Aus. *Godt. Enc. M.* ix. 127. n. 25. (1819).
Anth. Aus. Boisd. *Sp. Gén.* i. 561. n. 5. (1836).
S. France, Spain, Asia Minor, N. Africa. B. M.

5. *ANTH. SIMPLONIA* Boisd. *Sp. Gén.* i. 562. n. 6.
Pi. *Simplonia* Boisd. *Icon. Hist.* t. 5. f. 3, 4.
(1833).
P. Ausonia Hübn. *Europ. Schmett. Pap.* f. 582,
583. (1806-27).
P. Marchandæ Hübn. *Europ. Schmett. Pap.* 936,
937. (1806-27).
Anth. *Belie* var?
Alps, Pyrenees. B. M.
6. *ANTH. CRËUSA* E. Doubleday, *List of Lep. Ins. Brit. Mus.*
App. (1847).
Doubleday & Hewitson t. 7. f. 1 (1847).
Rocky Mountains, North America.

7. ANTH. CHARLONIA *Donzel, Ann. Soc. Ent. de France*, xi. 197. t. 8. f. 1. (1842).
N. Africa.
8. ANTH. EUPHENO *Boisd. Sp. Gén.* i. 562. n. 7. (1836).
P. Euph. *Linn. Syst. Nat.* ii. 725. n. 88. (1767).
Fab. Ent. Syst. iii. i. 206. n. 644. (1793).
Hübner, Europ. Schmett. Pap. f. 421-23. 630, 631. (1806-27).
Euchloë Euph. *Hübner, Verz. bek. Schmett.* 94. (1816).
Pi. Euph. *Godt. Enc. M.* ix. 126. n. 23. (1819).
♀ P. Belia *Linn. Syst. Nat.* ii. 761. n. 84. (1767).
S. Europe. B. M.
9. ANTH. DOUEI *Pierret, Ann. Soc. Ent. de France*, v. 367. t. 9. A. f. 1, 2. (1836).
Algiers. B. M.
10. ANTH. DAMONE, *Boisd. Sp. Gén.* i. 564. n. 8. (1836).
Herrick-Schaeffer, Pap. f. 196-9. (1844).
Var. Anth. Grunerii *Fricvaldszky*.
Sicily. B. M.
11. ANTH. CARDAMINES *Boisd. Sp. Gén.* i. 564. n. 9. (1836).
P. Card. *Linn. Syst. Nat.* ii. n. 85. (1767).
Fab. Ent. Syst. iii. i. 193. n. 600. (1793).
Hübner, Europ. Schmett. Pap. f. 419-25. (1806-27).
Euchloë Card. *Hübner, Verz. bek. Schmett.* 94. (1816).
Pi. Card. *Godt. Enc. M.* ix. 125. n. 22. (1819).
Europe, Asia Minor. B. M.
- †† Subcostal nervure of Anterior Wings terminating in four nervules. The first and second nervule thrown off before the end of the cell.
12. ANTH. GENUZIA *Boisd. Sp. Gén.* i. 565. n. 10. (1836).
P. Gen. *Fab. Ent. Syst.* iii. i. 193. n. 601. (1793).
Pi. Gen. *Godt. Enc. M.* ix. 168. n. 185. (1819).
♀ Pi. Lherminieri *Godt. Enc. M.* ix. 164. n. 64. (1819).
Mancipium Vorax *Midea Hübner, Samml. Exot. Schmett.* (1806-27).
Euchloë Mi. *Hübner, Verz. bek. Schmett.* 94. (1816).
United States. B. M.
- Section III. Palpi with the second joint elongate, oval; the third obovate, rather acuminate, one third the length of the second. Anterior Wings without an upper disco-cellular nervule. Subcostal nervure four-branched; the first and second nervule thrown off before the end of the cell.
- CALLOSUNE.
13. ANTH. SUBFASCIATA *Boisd. Sp. Gén.* i. 567. n. 12. (1836).
Teracolus subf. *Swainson, Zool. Ill.* 1st ser. t. 115. (1833).
S. Africa.
14. ANTH. EVANTHE *Boisd. Sp. Gén.* i. 567. n. 13. (1836).
Madagascar. B. M.
15. ANTH. EUCHARIS *Boisd. Sp. Gén.* i. 568. n. 14. (1836).
P. Euch. *Fab. Syst. Ent.* 472. n. 127. (1775).
Pi. Euch. *Godt. Enc. M.* ix. 124. n. 19. (1819).
P. Aurora *Cram.* t. 299. f. A—D. (1780).
Pi. Titea *Godt. Enc. M.* ix. 125. n. 21. (1819).
Euchloë Coëncos *Hübner, Verz. bek. Schmett.* 94. (1816).
India. B. M.
16. ANTH. EVARNE *Boisd. Sp. Gén.* i. 569. n. 15. (1836).
Klug-Ehrenb. Symb. Phys. t. 6. f. 1-4. (1829-45).
Arabia, Senegal. B. M.
17. ANTH. DANAË *Boisd. Sp. Gén.* i. 570. n. 16. (1836).
P. Dan. *Fab. Syst. Ent.* 476. n. 144. (1775).
Pi. Dan. *Godt. Enc. M.* ix. 124. n. 20. (1819).
P. Eborea *Cram.* t. 352. f. C—F. (1782).
Aphrodite Eb. *Hübner, Verz. bek. Schmett.* 94. (1816).
Bengal, S. Africa. B. M.
18. ANTH. EUPOMPE *Boisd. Sp. Gén.* i. 571. n. 17. (1836).
Klug-Ehrenb. Symb. Phys. t. 6. f. 11-14. (1829-45).
Senegal, Senaar, Arabia. B. M.
19. ANTH. ANTEVIPPE *Boisd. Sp. Gén.* i. 572. n. 18 and t. 2. C. f. 3. (1836).
Senegal. B. M.
20. ANTH. ANTIGONE *Boisd. Sp. Gén.* i. 572. n. 19. (1836).
W. Africa.
21. ANTH. EVIPPE ♂ *Boisd. Sp. Gén.* i. 573. n. 20. (1836).
♂ P. Ev. *Linn. Syst. Nat.* ii. 762. n. 87. (1767).
♂ *Clerck, Icones*, t. 40. f. 5. (1764).
♂ *Cram.* t. 91. f. F. G. (1775).
Aphrodite Ev. *Hübner, Verz. bek. Schmett.* 94. (1816).
♂ Pi. Ev. *Godt. Enc. M.* ix. 122. n. 10. (1819).
♀ P. Arethusa *Drury.* ii. t. 19. f. 5, 6. (17).
♀ Anth. Ar. *Boisd. Sp. Gén.* i. 582. n. 35. (1836).
♀ Pi. Amyris *Godt. Enc. M.* ix. 123. n. 14. (1819).
♀ Pi. Evippe ♀ *Godt. Enc. M.* ix. *Suppl. et Err.* 805. (1823).
W. Africa. B. M.
22. ANTH. ACHINE *Boisd. Sp. Gén.* i. 574. n. 21. (1836).
P. Ach. *Cram.* t. 338. f. E. F. (1782).
Pi. Ach. *Godt. Enc. M.* ix. 122. n. 13. (1819).
Aphrodite Ach. *Hübner, Samml. Exot. Schmett.* (1806-27).
S. Africa. B. M.
23. ANTH. OMPHALE *Boisd. Sp. Gén.* i. 574. n. 22. (1836).
Pi. Omph. *Godt. Enc. M.* ix. 122. n. 12. (1819).
W. Africa. B. M.
24. ANTH. THEOGONE *Boisd. Sp. Gén.* i. 575. n. 23. (1836).
S. Africa. B. M. ?
25. ANTH. ETRIDA *Boisd. Sp. Gén.* i. 576. n. 24. (1836).
Pegu, Madras.
26. ANTH. PHLEGETONIA *Boisd. Sp. Gén.* i. 576. n. 25. (1836).
Senegal.

27. ANTH. DELPHINE *Boisd. Sp. Gén. i. 577. n. 28. (1836).*
S. Africa. B. M.
28. ANTH. EIONE *Boisd. Sp. Gén. i. 578. n. 29. (1836).*
W. Africa.
29. ANTH. DAIRA *Boisd. Sp. Gén. i. 579. n. 30. (1836).*
Pont. Da. *Klug-Ehrenb. Symb. Phys. t. 8. f. 1-4.*
(1829-45).
Arabia. B. M.
30. ANTH. EVAGORE *Boisd. Sp. Gén. i. 579. n. 31. (1836).*
Klug-Ehrenb. Symb. Phys. t. 8. f. 5, 6.
(1829-45).
Arabia.
31. ANTH. EPHYA *Boisd. Sp. Gén. i. 580. n. 32. (1836).*
Pi. Eph. *Klug-Ehrenb. Symb. Phys. t. 6. f. 9-10.*
(1829-45).
Arabia.
32. ANTH. LIAGORE *Boisd. Sp. Gén. i. 580. n. 33. (1836).*
Klug-Ehrenb. Symb. Phys. t. 6. f. 5-8. (1829-45).
Arabia. B. M.
33. ANTH. EULIMENE *Boisd. Sp. Gén. i. 581. n. 34. (1836).*
Klug-Ehrenb. Symb. Phys. Ins. t. 7. f. 1-4.
(1829-45).
Arabia.
34. ANTH. CEBRENE *Boisd. Sp. Gén. i. 583. n. 37. (1836).*
P. *Arethusa Cram. t. 210. f. E. F. (1780).*
Sierra Leone.
35. ANTH. OMPHALE *Boisd. Sp. Gén. i. 584. n. 37. (1836).*
W. Africa. B. M.
36. ANTH. IONE *Lucas, Léop. Exot. t. 37. f. 4. (1835).*
Pi. Io. *Godt. Enc. M. ix. 140. n. 74. (1819).*
Boisd. Sp. Gén. i. 515. n. 11. (1836).
Senegal, Pt. Natal. B. M.

I have given names to the sections in the preceding list, because I have no doubt that at some future time they will be adopted as generic divisions. In fact, when following Dr. Boisduval in separating the following genus from this, I can hardly feel justified in leaving his genus *Anthocharis* undivided. The differences in the form of the palpi, and the neuration of the wings, are not so great between *Idmais* and the third section of *Anthocharis*, as between the three sections of the latter genus.

If Swainson's figure of the wing of *Anthocharis subfasciata* be correct, it ought to constitute another section: but, as hardly one of the outline figures of wings in the *Zoological Illustrations* is correct, I have not ventured to trust to his plate.

Genus IX. **IDMAIS** *Boisd.**Boisd. Sp. Gén.* i. 584. (1836).*PIERIS* Latr., *Godt.**PONTIA* Horsf., *Klug.**COLOTIS* Hübn.**HEAD** rather broad, clothed with scales.*Eyes* round, moderately prominent.*Labial Palpi* scaly and hairy. First joint subcylindrical, curved, slightly compressed; second joint swollen in the middle, truncate at the apex, equal to the first; third joint oval, two fifths of the length of the second.*Antennæ* short, terminating in a short, compressed, ovoid club.**THORAX** rather stout.*Anterior Wings* subtriangular. Costal nervure four-branched. First discoidal nervule united to the subcostal for a short space beyond the cell.*Posterior Wings* obovate. Discoidal nervure appearing to be a third subcostal nervule. Discocellular nervule nearly atrophied.*Legs* slender. Claws deeply bifid. Paronychial subtriangular, shorter than the claws. Pulvillus jointed, slender, as long as the claws.**ABDOMEN** slender, not so long as the abdominal margin of the posterior wings.*LARVA* and *PUPA* unknown.

All the species of *Idmais* have a peculiar facies; owing partly to the texture of the wings, less delicate than in *Anthocharis*, more so than in *Thestias*; and partly to the fulvous or brick-red colour in the wings of all the species as yet known.

The countries bordering on the Red Sea appear to be the part of the globe where this genus is most abundant, but it occurs also in Southern and Western Africa, and in the southern parts of the continent of India.

IDMAIS *Boisd.*

- | | |
|--|---|
| <p>1. IDM. CHRYSNOME <i>Boisd. Sp. Gén.</i> i. 585. n. 1. (1836).
 <i>Pont. Chry. Klug-Ehrenb. Symb. Phys. Ins.</i> t. 7.
 f. 9-11. (1829-45).
 Arabia, Congo. B. M.</p> | <p>4. IDM. CALAIS <i>Boisd. Sp. Gén.</i> i. 587. n. 4. (1836).
 <i>P. Cal. Cram.</i> t. 53. C. D. t. 351. f. A-D.
 (1782).
 <i>P. Amata Fab. Ent. Syst.</i> III. i. 202. n. 633.
 (1793).
 <i>Pi. Am. Godt. Enc. M.</i> ix. 131. n. 39. (1816).
 ♀ <i>P. Cipræa Fab. Ent. Syst.</i> III. i. 202. n. 634.
 (1793).
 India, S. Africa. B. M.</p> |
| <p>2. IDM. FAUSTA <i>Boisd. Sp. Gén.</i> i. 586. n. 2. (1836).
 <i>Oliv. Voy. en Syrie</i>, t. 33. f. 4. (1801-7).
 <i>Pi. Fau. Godt. Enc. M.</i> ix. 132. n. 41. (1819).
 Syria, Arabia.</p> | <p>5. IDM. DYNAMENE <i>Boisd. Sp. Gén.</i> i. 588. n. 5. (1836).
 <i>Pont. Dy. Klug-Ehrenb. Symb. Phys. Ins.</i> t. 7.
 f. 5-6. (1829-45).
 Arabia.</p> |
| <p>3. IDM. PHISADIA <i>Boisd. Sp. Gén.</i> i. 587. n. 3. (1836).
 <i>Pi. Ph. Godt. Enc. M.</i> ix. 132. n. 40. (1819).
 <i>Pont. Arne Klug-Ehrenb. Symb. Phys. Ins.</i> t. 7.
 f. 1-4. (1829-45).
 Arabia, Senegal. B. M.</p> | |

April, 1847.

R

Genus X. **THESTIAS** *Boisd.**Boisd. Sp. Gén. i. 590. (1836).**IXIAS Hübn. Verz. bek. Schmett. 95. (1816).***PIERIS Latr., Godt.**PONTIA Horsfield.***HEAD** rather broad, clothed with hairs and scales.*Eyes* round, prominent.*Labial Palpi* projecting slightly beyond the forehead, hairy. Basal joint elongate, cylindrical, very much curved, truncate at the apex; second joint about one third the length of the first, elongate obovate, truncate at the base; third joint oval, very small, about one fourth the length, and one third the breadth, of the second.*Antennæ* of moderate length, terminating gradually in a compressed club.**THORAX** rather stout, clothed with rather long, delicate hairs.*Anterior Wings* subtriangular, the costa slightly rounded. Subcostal nervure four-branched. First subcostal nervule thrown off considerably, beyond the middle of the cell; second much nearer to the end of the cell than to the first; third at two thirds the distance between the second and the apex. First discoidal nervule united for a considerable distance to the subcostal nervure. Middle disco-cellular nervule about half as long as the lower.*Posterior Wings* somewhat obovate, the outer margin but little rounded, abdominal channel very distinct; cell broad. Discoidal nervure appearing to be a third median nervule.*Legs* slender. *Tarsi* very spiny. *Paronychias* broad, nearly as long as the claws. *Pulvillus* jointed, quite as long as the claws, the last joint broad.**ABDOMEN** moderately stout, not so long as the abdominal margin of the wings.*LARVA* and *PUPA* resembling those of *Anthocharis*.

Thestias differs from *Anthocharis* in the form of its palpi, in its more gradually clavate antennæ, its more robust wings, and its broader paronychias. It is closely allied, however, to the last section of the latter genus, which it much resembles in the distribution of the colours.

The *LARVA* and *PUPA* differ but little from those of *Anthocharis*; but, I believe, no description of them has yet been published. My only knowledge of them is from a paper read to the Entomological Society, but not yet published.

The genus is peculiar to the South of Asia, and its islands.

* This name being so near that of *Ixia*, employed in botany, cannot be retained.

THESTIAS *Boisd.*1. TH. ÆNIPPE *Boisd. Sp. Gén. i. 591. n. 1. (1836).*

P. Æn. *Cram. t. 105. f. C. D. t. 229. f. B. C.*
(1776-80).

Fab. Ent. Syst. III. i. 204. n. 639. (1793).

Ixias Æn. Hübn. Verz. bek. Schmett. 95. (1816).

Pi. Æn. Godt. Enc. M. ix. 120. n. 6. (1816).

India.

B. M.

2. TH. MARIAMNE *Boisd. Sp. Gén. i. 592. n. 2. (1836).*

P. Mar. *Cram. t. 217. f. C—E. (1780).*

Ixias Mar. Hübn. Verz. bek. Schmett. 95.
(1816).

Pi. Mar. Godt. Enc. M. ix. 120. n. 4. (1819).

P. Sesia Fab. Spec. Ins. II. 47. n. 206. (1787).

Ixias Bebryce Hübn. Verz. bek. Schmett. 95.
(1816).

India.

B. M.

3. TH. PYRENE *Boisd. Sp. Gén. i. 593. n. 3. (1836).*

P. Py. *Linn. Syst. Nat. II. 762. n. 86. (1767).*

Cram. t. 125. f. A—C. (1776).

Ixias Py. Hübn. Verz. bek. Schmett. 95. (1816).

Ixias Anexibia Hübn. Verz. bek. Schmett. 95.
(1816).

Pi. Pyr. Godt. Enc. M. ix. 120. n. 5. (1819).

P. Rhexia Fab. Mant. Ins. II. 23. n. 238.
(1787).

China, India.

B. M.

4. TH. BALICE *Boisd. Sp. Gén. i. 593. n. 4. (1836).*

Java.

5. TH. VENILIA *Boisd. Sp. Gén. i. 594. n. 5. (1836).*

Pi. Ven. Godt. Enc. M. ix. 121. n. 7.
(1819).

♀ P. Ænippe *Cram. t. 157. f. C. D. (1776).*

Java, Timor.

B. M.

Genus XI. **HEBOMOIA** *Hüb.**Hüb. Verz. bek. Schmett.* 95. (1816).*IPHILAS Boisd. Sp. Gén.* I. 695. (1836).*PIERIS Godt.**COLIAS Horsfield.*

HEAD rather broad, hairy. The forehead with a projecting tuft of hair on each side, below the base of the antennæ.

Eyes somewhat oval, not remarkably prominent.

Labial Palpi scaly, longer than the head. The basal joint subcylindric, curved; second not quite so long as the first, oval, concave internally, convex externally; third joint minute, rounded, placed on the inner side of the second joint, a little below the apex.

Antennæ of moderate length, rather stout, thickening gradually to the apex, which is truncate.

THORAX stout, clothed with long fine hairs.

Anterior Wings subtriangular; the costa rounded, the inner margin in the males slightly sinuate. Subcostal nervure four-branched; the first and second nervule thrown off near together, considerably beyond the middle of the cell; the third very near to the apex. Upper disco-cellular nervule short, directed forwards and slightly downwards, forming an acute angle with the middle disco-cellular, which is slightly curved. Lower disco-cellular nervule suddenly bent outwards, at about half its length; rather more than twice the length of the upper. Submedian nervure curved upwards about the middle of its course. Internal nervule very delicate, short; directed forwards, so as to terminate in the submedian nervure, instead of on the inner margin of the wing.

Posterior Wings obovate, the abdominal channel ample. Precostal nervure simple. Discoidal nervure appearing to be a third subcostal.

Legs rather slender. Tarsi spiny. Claws stout. Paronychial broad, lunate; quite as long as the claws, which they almost conceal. Pulvillus jointed, as long as the claws.

ABDOMEN elongate, rather large.

LARVA stout, subcylindrical, tapering towards each extremity; the whole upper surface covered with minute tubercles.

PUPA much arched, not tuberculate, tapering gradually to a point at each extremity.

This genus, of which as yet we know but two species, is easily known from any of the preceding, by its large size, the gradually thickening antennæ, the peculiar form of the palpi, and the presence of the upper disco-cellular nervule. The white or yellow colour of the wings, with a broad red patch near the apex; the minute terminal joints of the

palpi; and the form of the pupa, indicate an affinity to *Anthocharis*: its antennæ, and the form of the larva, point out an equal one to *Callidryas*.

The LARVA of *Hebomoia Glaucippe*, according to Dr. Horsfield, feeds on a species of *Capparis*. This species is common throughout the western part of the Indian Archipelago, throughout the continent of India, and in China. *Hebomoia Leucippe* appears to be confined to Amboyna; and, as is the case with most of the *Lepidoptera* from that island, is only to be met with in old collections, or in those which have been enriched by specimens collected during the last century.

I have felt myself, after much consideration, bound to adopt Hübner's generic name, notwithstanding the insufficiency of the characters he has given, because he limits his genus precisely to the two species of which twenty years afterwards Dr. Boisduval formed his genus *Iphias*, a name I would gladly retain, did not the inflexible law of priority forbid me.

HEBOMOIA Hübner.

1. HEB. LEUCIPPE Hübner. *Verz. bek. Schmett.* 96. (1816).

P. Leu. *Cram.* t. 36. f. A—C. (1775).

Fab. Ent. Syst. III. i. 198. n. 617. (1793).

Pi. Leu. *Godt. Enc. M.* IX. 119. n. 1. (1819).

Iph. Leu. *Boisd. Sp. Gén.* I. 596. n. 2. (1836).

Doubleday & Hewitson, t. 8. f. 1. (1847).

Amboyna.

2. HEB. GLAUCIPPE Hübner. *Verz. bek. Schmett.* 96. (1816).

P. Gl. *Linn. Syst. Nat.* II. 761. n. 89. (1767).

Fab. Ent. Syst. III. i. 198. n. 618. (1793).

Cram. t. 164. f. A—C. (1776).

Pi. Gl. *Godt. Enc. M.* IX. 119. n. 2. (1819).

Iph. Gl. *Boisd. Sp. Gén.* I. 596. n. 1. (1836).

India, China, Java.

B. M.

Genus XII. **ERONIA.***ERONIA* Hübn., Boisd.*MYLOTHRIS*, *ACRÆA*, Hübn.*PIERIS* Godt., Boisd. &c.*CALLIDRYAS* Boisd.

HEAD rather broad, densely hairy in front; the hairs sometimes very long.

Eyes prominent, oval.

Maxillæ very long.

Labial Palpi rather short, densely clothed with scales, and in front with hair. Basal joints elongate, subcylindric, compressed internally, curved; second joint about one third the length of the first, oval, or nearly round, concave internally, convex externally; third joint minute, rounded, placed at the apex of the second.

Antennæ of moderate length, terminating gradually in an obovate compressed club.

THORAX rather stout, clothed sometimes densely with fine hairs.

Anterior Wings subtriangular, sometimes rather elongate, the costa rounded. Subcostal nervure five-branched; the first and second nervules thrown off near together, considerably beyond the middle of the cell; the third more distant from the cell than the apex; the fourth about equidistant from the third, and from the apex. First discoidal nervule not united to the subcostal beyond the cell. Upper disco-cellular nervule wanting; middle disco-cellular not one third the length of the lower. Internal nervure very delicate, short, directed forwards, so as to enter the submedian nervure.

Posterior Wings obovate, the outer margin sometimes slightly dentate, the abdominal margin forming a distinct channel. Precostal nervure simple. Discoidal nervure appearing to be a third subcostal.

ABDOMEN of moderate size, about three fourths the length of the abdominal margin of the posterior wings.

LARVA and *PUPA* unknown.

The only species hitherto placed in this genus is the one figured by Hübner under the name of *Eronia Cleodora*; but six species included by Dr. Boisduval in the genus *Pieris*, and one species placed by him, provisionally, in the genus *Callidryas*, undoubtedly belong to it. All agree in the structure of the antennæ, in having the subcostal nervure five-branched; the palpi with the first joint one third the length of the second; this oval or rounded, convex externally, concave internally; the third joint extremely minute. To these must be added an undescribed species for which

Dr. Boisduval proposes the name of *Dryas Leda*, considering it the type of a new genus. It differs, however, from *Eronia Argia* only in colour and the rather more delicate texture of its wings.

There are six distinct sections in the genus, as far as regards colour and the outline of the wings. *Eronia Cleodora* and *Eronia Idotea* have both pairs of wings bordered above with fuscous, below with beautiful shades of brown, with a satiny lustre; the posterior wings have the outer margin sinuate, almost dentate.

Eronia Argia and *Eronia Thalassina* have the anterior wings more pointed at the apex, less broadly bordered with black, especially towards the anal angle; the posterior wings in the males not bordered with black, and the apex only of the anterior wings below clouded with satiny brown.

Eronia Pharis has the wings nearly as round as the genus *Pontia*, and of as delicate a texture; the apex of the anterior just touched above with black, below varied with brown; the posterior wings above immaculate, below sometimes nearly immaculate, at others varied with large clouds of satiny brown and silvery white.

Of *Eronia Leda* I have only seen the specimen in the extensive collection of Mr. H. G. Harrington. It has much the form of *Eronia Buquetii*; is of a pale sulphur-yellow above, with the apex of the anterior wings fulvescent, the margin itself and six spots before the apex ferruginous. Below; the apex of the anterior wings is broadly rufescent, marked with three silvery spots encircled with ferruginous, corresponding in place with the first, third, and fourth of the upper surface. The posterior wings are sprinkled with numerous rufous clouds, and have beyond the cell a series of six silvery spots encircled with ferruginous.

Eronia Buquetii has precisely the dull white upper surface, the slight black tip to the anterior wings, and the shining greenish white under surface of the posterior wings marked with a sub-ocellated silvery spot, which distinguish some species of *Callidryas*, as *Callidryas Minna*; but these are the only points of resemblance. In the form of the antennæ and palpi, and in the neurulation of the wings, it exactly coincides with *Eronia Cleodora*; in the form of the wings, more nearly with *Eronia Argia*. These species are all African.

Eronia Valeria and *Eronia Iobæa* have very much the appearance of some species of *Danaïdæ*. Their wings are more elongate; whitish, greenish, or yellowish, bordered with black externally, and along the nervures. The former of these is Indian, the latter Australian.

ERONIA Hübn.

1. ER. VALERIA.

P. Val. *Cram.* t. 85. f. A. (1775).

✓ Manc. Vorax Val. *Hüb. Samml. Exot. Schmett.* (1806-27).

Acræa Val. *Hüb. Verz. bek. Schmett.* 93. (1816).

Pi. Val. *Godt. Enc. M.* ix. 154. n. 126. (1819).

Pi. Hippiæ *Fab. Ent. Syst.* iii. i. 59. n. 185. (1793).

♀ Danaïdæ Anais *Bougainville, Voy. de la Thétis*, t. 44. f. 2. (1837).

♀ P. Indicia E. *Doubleday, List of Lep. Ins. of Brit. Mus.* (1845).

♀ Var. P. Philomela *Fab. Ent. Syst.* iii. i. 57. n. 179. (1793); and in Banksian Cabinet.

N. India, Java, Burmah. B. M.

2. ER. IOBÆA.

Pi. Io. *Boisd. Voy. de l'Astrol. Ins.* t. 2. f. 5. (1832).

Boisd. Sp. Gén. i. 445. n. 10. (1836).

Australia.

3. ER. CLEODORA *Hüb. Samml. Exot. Schmett.* (1806-27).

Boisd. Sp. Gén. i. 605. n. 1.

S. Africa. B. M.

4. ER. IDOTEA.

Pi. Id. *Boisd. Sp. Gén.* i. 441. n. 5. (1836).

♀ Var. P. Poppæa *Donovan, Nat. Rep.* ii. t. 54. f. 2. (1824).

W. Africa. B. M.

5. ER. PHARIS.

Pi. Ph. *Boisd. Sp. Gén.* i. 443. n. 7. (1836).

Var. P. Chione *Doubleday, in Ann. Nat.* xiv. 421. (1842).

W. Africa. B. M.

6. ER. LEDA.

Dryas Le. *Boisd. in litteris* (Mar. 9. 1847).

Pt. Natal.

7. ER. THALASSINA.

Pi. Tha. *Boisd. Sp. Gén.* i. 443. n. 8. (1836).

W. Africa. B. M.

8. ER. ARGIA.

P. Arg. *Fab. Syst. Ent.* 470. n. 118. (1775).

Mylothris Arg. *Hüb. Verz. bek. Schmett.* 91. (1816).

Pi. Arg. *Godt. Enc. M.* ix. 140. n. 77. (1819).

Boisd. Sp. Gén. i. 442. n. 6. (1836).

P. Cassiopeia *Cram.* t. 210. f. A. (1780).

W. Africa. B. M.

9. ER. BUQUETH.

Callidryas Buq. *Boisd. Sp. Gén.* i. 607. n. 1. (1836).

W. Africa. B. M.

Genus XIII. **CALLIDRYAS** *Boisd.**Boisd. et Léconte. Icon. Lép. et Chen. Am. Sept. 73. (1829).**COLIAS* *Godt., Horsfield.**CATOPSILIA, MURTIA, PHŒBIS, COLOTIS, Hübner.*

HEAD of moderate size, hairy.

Eyes round, prominent.

Labial Palpi longer than the head; the first and second joints, clothed with scales and hairs; the third with short appressed scales. First joint subcylindric, compressed internally; the second about two thirds the length of the first, oval, concave internally; third joint mostly round or oval, sometimes elongate in the females, always much smaller than the second.

Antennæ rather short, gradually thickening from a little beyond the middle into a somewhat oval club, not truncate at the apex.

THORAX not remarkably stout, clothed rather sparingly with hair.

Anterior Wings subtriangular. Subcostal nervure four-branched; the first nervule thrown off beyond the middle; the second a little before the end of the cell; the third nearer to the cell than to the apex. First discoidal nervule united to the subcostal for only a short distance beyond the cell. Internal nervure short, running into the submedian.

Posterior Wings subtriangular, rounded. Discoidal nervure appearing to be a third subcostal. Abdominal channel ample.

Legs rather slender; the posterior tarsi elongate. Claws stout, deeply bifid. Paronychiae broad, thick, villous, rounded at the apex, equal to the claws. Pulvillus jointed, longer than the claws, the last joints broad.

ABDOMEN moderately stout, not equal in length to the abdominal margin of the wing.

LARVA smooth, cylindrical, tapering to each extremity.

PUPA much arched, tapering to each extremity, smooth.

Callidryas differs from *Eronia* in its four-branched subcostal nervure; from *Gonepteryx* in having more elongate antennæ, not truncate at the apex. The wings are never angular or falcate, as in *Gonepteryx*; but one species has the anal angle prolonged into a kind of tail, as in *Salamis* and *Amathusia*. This is the only instance yet known where such a structure occurs in this family.

The *LARVÆ* of the species whose metamorphoses are known are mostly green or yellow, with a pale lateral stripe; the surface more or less granulated or shagreened, the granulations sometimes black. Their food appears most commonly to be some species of *Cassia*; *Callidryas Neleis*, according to M. Poey, feeds on *Poinciana pulcherrima*.

The *PUPÆ* are more or less navicular, with the thoracic segments much swollen; are considerably arched, never tuberculated.

The PERFECT INSECTS appear in a few days after the change from the larva to the pupa state. They are rather powerful and rapid in flight, are fond of settling on flowers, and the muddy banks of rivers and ponds. Sometimes they congregate in countless myriads, forming vast yellow clouds. One of these clouds was seen by Sir Robert Schomburgk on the 10th of October, 1838, when ascending the Essequibo, and continued crossing the course of the river for nine hours and a half, during which time the boat had ascended nine miles. We have, therefore, a cloud nine miles in width, and of such length, that, notwithstanding the rapidity of flight of the insects composing it, it was nine hours and a half in crossing the river. It seems almost beyond our powers to compute the millions of which it must have consisted.

The predominating colour of the wings in most of the species is yellow or orange; a few are of a chalky white above, and of a greenish white below. The females differ very much from the males in colour; and often, in the same species, they vary so much as to have been considered quite distinct from one another, and from the males. Most of the species have a silvery spot, surrounded with ferruginous, on the disc of the posterior wings below, in this respect resembling the genus *Colias*.

The males of nearly all the species have the outer margin of the anterior wings covered above with scales of a very different structure from those of the rest of the wing. Sometimes this border is narrow, sometimes it occupies the whole outer half of the wings. The scales here are broader, curved, less closely placed, and, independently of their curvature, are less closely appressed than on the basal part and the disc of the wing. Hence this part has a dull chalky surface, and appears slightly elevated.

In addition to this peculiarity the males often have an oval or rounded spot, composed of scales of a very remarkable structure, situated on the upper surface of the posterior wings, between the costal and subcostal nervures, near their origin; and sometimes a corresponding spot on the lower surface of the anterior wings, between the median and submedian nervures, near the base. Sometimes this spot is accompanied by a tuft of delicate hairs. In the genera *Nathalis*, *Gonepteryx*, and *Colias*, a similar spot is found in the males of some species. Dr. Boisduval speaks of it as "un sac glanduleux;" but there is no sac, nor apparently any glandular structure. Its peculiar texture is due solely to the form and structure of the scales, and to their being less closely appressed to the wing than usual.

The Geographical Range of this genus extends throughout India and China, the islands of the Indian Ocean, Australia, Tropical Africa, and America from Ohio to Chili. About half the species belong to the New World, where they have a far wider range to the north than in the Old World.

CALLIDRYAS *Boisd.*

- | | |
|--|---|
| <p>1. CALL. FLORELLA <i>Boisd. Sp. Gén. i. 608. n. 2. (1836).</i>
 <i>P. Fl. Fab. Syst. Ent. 479. n. 179. (1775).</i>
 <i>Donovan, Nat. Rep. t. 90. (1825).</i>
 <i>Colias Pyrene Swainson, Zool. Ill. 1st ser. t. 20. (1820).</i>
 Senegal, Gold Coast. B. M.</p> | <p>5. CALL. MINNA <i>Boisd. Sp. Gén. i. 612. n. 6. (1836).</i>
 <i>Mancipium fugax Minna Hübn. Samml. Exot. Schmelt. (1806-27).</i>
 <i>Murtia Minna Hübn. Verz. bek. Schmelt. 98. (1816).</i>
 India. B. M.</p> |
| <p>2. CALL. THISOURELLA <i>Boisd. Sp. Gén. i. 609. n. 3. (1836).</i>
 Bengal.</p> | <p>6. CALL. HYBLEA <i>Boisd. Sp. Gén. i. 612. n. 7. (1836).</i>
 W. Africa.</p> |
| <p>3. CALL. PHILIPPINA <i>Boisd. Sp. Gén. i. 609. n. 4. (1836).</i>
 <i>P. Ph. Cram. t. 361. f. C. D. (1782).</i>
 <i>Colias Ph. Hübn. Verz. bek. Schmelt. 99. (1816).</i>
 <i>Godt. Enc. M. ix. 96. n. 22. (1819).</i>
 India. B. M.</p> | <p>7. CALL. EUBULE.
 ♀ <i>P. Eub. Linn. Syst. Nat. ii. 764. n. 102. (1767).</i>
 ♀ <i>Cram. t. 120. f. E. F. (1776).</i>
 ♀ <i>Fab. Ent. Syst. 477. n. 151. (1775).</i>
 ♂ ♀ <i>Sm. Abb. Lep. Ins. of Georgia, i. 654. (1793).</i>
 ♀ <i>Phœbis Eubule Hübn. Verz. bek. Schmelt. 98. (1816).</i>
 ♂ ♀ <i>Call. Marcellina Boisd. Sp. Gén. i. 615. n. 9. (1836).</i>
 <i>P. Sennæ Linn. Syst. Nat. ii. 764. n. 103. (1767)?</i>
 United States, Jamaica. B. M.</p> |
| <p>4. CALL. PYRANTHE <i>Boisd. Sp. Gén. i. 611. n. 5. (1836).</i>
 <i>P. Pyr. Linn. Syst. Nat. ii. 763. n. 98. (1767).</i>
 <i>Col. Pyr. Godt. Enc. M. ix. 97. n. 24. (1819).</i>
 <i>P. Chryseis Drury, i. t. 12. f. 3, 4. (1770).</i>
 <i>P. Gnoma Fab. Syst. Ent. App. 828. n. 151, 152. (1775).</i>
 <i>P. Nephthe Fab. Ent. Syst. iii. i. 190. n. 588. (1793).</i>
 China, India. B. M.</p> | |
| <p>May, 1847.</p> | <p>T</p> |

8. CALL. MARCELLINA.

- ♂ P. Marc. *Cram.* t. 163. f. A--C. (1776).
Fab. Ent. Syst. III. i. 209. n. 654. (1793).
 Call. Eubule *Boisd. Sp. Gén.* I. 613. n. 8. (1836).
 Venezuela, Guiana, Brazil, Bolivia. B. M.

9. CALL. DRYA *Boisd. Sp. Gén.* I. 616. n. 10. (1836).

- P. Dr. *Fab. Ent. Syst.* 478. n. 153. ? (1775).
 Col. Dr. *Godt. Enc. M.* IX. 92. n. 10. (1819).
 ♀ Phœbis Eubule *Hüb. Samml. Exot. Schmett.*
 (1806-27).
 St. Domingo, Guadeloupe, &c.

10. CALL. CASTALIA.

- P. Cast. *Fab. Ent. Syst.* III. i. 188. n. 560.
 (1793), et *Mus. Banks.*
 Call. Rhadia *Boisd. Sp. Gén.* I. 617. n. 11.
 (1836).
 Senegal, Sierra Leone, Ashanti, Mauritius. B. M.

11. CALL. PHILEA *Boisd. Sp. Gén.* I. 619. n. 13. (1836).

- ♂ P. Phi. *Linn. Syst. Nat.* II. 764. n. 104. (1767).
 ♂ *Fab. Ent. Syst.* III. i. 212. n. 662. (1793).
 ♂ *Cram.* t. 173. f. E. F. (1776).
 ♂ Col. Corday *Hüb. Verz. bek. Schm.* 99. (1816).
 ♂ Col. Phi. *Godt. Enc. M.* IX. 91. n. 8. (1819).
 ♂ *Mancipium fugax* Argante ♀ *Hüb. Samml. Exot. Schmett.* (1806-27).
 ♀ P. Aricia *Cram.* t. 94. f. A. B. (1775).
 ♀ P. Melanippe *Cram.* t. 361. f. E. F. (1782).
 ♀ P. Larra *Fab. Ent. Syst. Suppl.* v. 428. n. 653,
 654. (1793).
 ♀ Col. Lolia *Godt. Enc. M.* IX. 94. n. 15. (1819).
 Venezuela, Brazil, Bolivia. B. M.

12. CALL. THALESTRIS *Boisd. Sp. Gén.* I. 621. n. 14. (1836).

- Col. Thalestris *Hüb. Samml. Exot. Schmett.*
 (1806-27).
 Cuba, Haiti. B. M.

13. CALL. ARGANTE *Boisd. Sp. Gén.* I. 622. n. 15. (1836).

- ♂ P. Arg. *Fab. Syst. Ent.* 470. n. 106. (1775).
 ♂ Col. Arg. *Godt. Enc. M.* IX. 92. n. 11. (1819).
 ♂ Manc. f. Arg. ♂ *Hüb. Samml. Exot. Schmett.*
 (1806-27).
 ♂ P. Hersilia *Cram.* t. 173. f. C. D. (1776).
 ♀ P. Cypris *Cram.* t. 99. f. E. F. (1775).
 ♀ Col. Cnidia *Godt. Enc. M.* IX. 93. n. 14. (1819).
 Var. Call. Agarithe *Boisd. Sp. Gén.* I. 623. n. 16.
 (1836).
 Mexico, Venezuela, Ecuador, Bolivia, Brazil. B. M.

14. CALL. CYPRIS *Boisd. Sp. Gén.* I. 623. n. 17. (1836).

- P. Cy. *Fab. Syst. Ent.* III. i. 212. n. 663. (1793).
 Phœbis Cy. *Hüb. Verz. bek. Schmett.* 98. (1816).
 Colias Cy. *Godt. Enc. M.* IX. 91. n. 6. (1819).
 Colias Neocypris *Hüb. Samml. Exot. Schmett.*
 (1806-27).
 Venezuela, Brazil. B. M.

15. CALL. TRITE *Boisd. Sp. Gén.* I. 624. n. 18. (1836).

- P. Tr. *Linn. Syst. Nat.* II. 763. n. 97. (1767).
Cram. t. 141. f. C. D. (1776).
Fab. Ent. Syst. III. i. 205. n. 642. (1793).

Catopsilia Tr. *Hüb. Verz. bek. Schmett.* 98.
 (1816).

Colias Tr. *Godt. Enc. M.* IX. 98. n. 29. (1819).
 Guiana, Venezuela, Brazil. B. M.

16. CALL. N. SP.

Oajaca. B. M.

17. CALL. CROCALE *Boisd. Sp. Gén.* I. 625. n. 19. (1836).

- P. Cr. *Cram.* t. 55. f. C. D. (1775).
 Catopsilia Cro. *Hüb. Verz. bek. Schmett.* 98.
 (1816).
 Colias Jugurtha var *Godt. Enc. M.* IX. 95. n. 21.
 (1819).
 Call. Endeer *Boisd. Voy. de l'Astrolabe, Ent.* t. 2.
 f. 3, 4. (1832).
 Moluccas ?, Moulmein. B. M.

18. CALL. HILARIA *Boisd. Sp. Gén.* I. 626. n. 20. (1836).

- P. Hil. *Cram.* t. 339. f. A. B. (1782).
 Catopsilia Hil. *Hüb. Verz. bek. Schmett.* 98.
 (1816).
 Col. Hil. *Godt. Enc. M.* IX. 97. n. 25. (1819).
 P. Titania *Fab. Ent. Syst.* v. 28. n. 655, 656.
 (1793).
 ♀ P. Catilla *Cram.* t. 229. f. D. E. (1781).
Fab. Ent. Syst. III. i. 209. n. 656. (1793).
 Colias Cat. *Godt. Enc. M.* IX. 95. n. 20. (1819).
 Var. ♀ P. Pomona *Fab. Ent. Syst.* III. i. 213.
 n. 665. (1793).
 N. India, Bengal, Burmah, Java. B. M.

19. CALL. ALCMEONE *Boisd. Sp. Gén.* I. 627. n. 21. (1836).

- P. Alc. *Cram.* t. 141. f. E. ? (1776).
Fab. Ent. Syst. III. i. 196. n. 611. (1793).
 Catopsilia Alc. *Hüb. Verz. bek. Schmett.* 98.
 (1816).
 Colias Alc. *Godt. Enc. M.* IX. 97. n. 27. (1819).
 Var. ♀ P. Jugurtha *Cram.* t. 187. f. E. F. ? (1777).
 Java, N. India, Bengal, Madras, &c.

20. CALL. EVADNE *Boisd. Sp. Gén.* I. 628. n. 22. (1836).

- ♀ Colias Ev. *Godt. Enc. M.* IX. 98. n. 28. (1819).
 P. Alcmeone *Cram.* t. 141. f. E. ? (1776).
 ♀ P. Statira *Cram.* t. 120. f. C. D. ? (1776).
 Guiana, Venezuela. B. M.

21. CALL. NELEIS *Boisd. Sp. Gén.* I. 629. n. 23. (1836).

Cuba, Jamaica. B. M.

22. CALL. GODARTIANA.

♀ Colias God. *Swainson, Zool. Ill.* 1st ser. t. 34.
 (1820).

♂ ♀ Call. Orbis *Poey, Lép. de Cuba.* (1832).

♂ ♀ *Boisd. Sp. Gén.* I. 630. n. 24. (1836).
 Cuba.

23. CALL. SCYLLA *Boisd. Sp. Gén.* I. 631. n. 25. (1836).

- P. Sc. *Linn. Syst. Nat.* II. 763. n. 95. (1767).
Fab. Ent. Syst. III. i. 201. n. 630. (1793).
Cram. t. 12. f. C. D. (1775).
 Colias Sc. *Hüb. Verz. bek. Schmett.* 99. (1816).
Godt. Enc. M. IX. 95. n. 19. (1819).
 India, China, Java.

24. CALL. GORGOPHONE *Boisd. Sp. Gén.* I. 632. n. 26. (1836).

Doubleday & Hewitson, t. 9. f. 2. (1847).
 N. W. Australia. B. M.

Genus XIV. **GONEPTERYX** *Leach.**Leach, Edin. Enc. ix. 128. (1810).**RHODOCERA Boisduval, Sp. Gen. i. 597. (1836).**COLIAS Fab., Latr., Hübn., Godt. &c.**PIERIS Schrank.**GANORIS Dalman.**ANTEOS Hübn.**AMYNTHIA Swainson.**GONIAPTERYX Westwood.*

HEAD broad, densely clothed with erect hairs.

Eyes round, rather prominent.

Labial Palpi longer than the head, clothed with short scales. The first joint curved, compressed internally; second joint at least half as long as the first, subcylindric, tapering, or elongate-oval, compressed internally; third joint minute, rounded or oval, placed a little below the apex of the second.

Antennæ short, stout, mostly channeled below, gradually thickened towards the apex, which is truncate.

THORAX stout, clothed with fine hair.

Anterior Wings subtriangular, mostly falcate at the apex; the costa much curved near the base. The costal nervure stout; subcostal four-branched; its first nervule thrown off about the middle of the cell, the second just before the end of the cell, the third about midway between the end of the cell and the apex of the wing. First discoidal nervule united to the subcostal for some distance beyond the cell, middle disco-cellular less than half the length of the lower. Submedian nervure curved downwards near the base. Internal nervure short, running into the submedian.

Posterior Wings mostly angular, sometimes obovate. Precostal nervule simple, mostly merely rudimentary. Discoidal nervure appearing to be a third subcostal nervule. Abdominal channel very distinct and ample.

Legs rather short. Claws deeply bifid. Paronychia about as long as the claws. Pulvillus sometimes wanting.

ABDOMEN rather stout, not so long as the abdominal margin of the posterior wings.

LARVA tapering considerably at both extremities, thinly covered with fine hair; the back and sides shagreened.

PUPA very pointed at both extremities, arched; thoracic segments swollen.

Gonepteryx may be known from *Callidryas* by the form of its antennæ, and from *Colias* by its claws, which always have paronychialia. The typical species are also easily known by their falcate anterior, and angled posterior, wings. Some of the species are amongst the largest of the family, in fact only the genus *Hebomoia* equals them in size. The colour of all of them is yellow, with more or less of orange and black markings.

The *LARVÆ* of our European species live chiefly, if not entirely, on different species of *Rhamnus*. They are rather elongate, tapering to each extremity, slightly hairy, covered above and at the sides with very minute tubercles, green, with a pale lateral stripe. They are to be found in the summer months, in England, on *Rhamnus catharticus* and *R. Frangula*; but it is possible that they feed on some other shrubs, as the perfect insects are common in situations where these shrubs are rare, and scarcely to be found.

The *PUPÆ* are green, with some ferruginous spots at the sides; much curved, and, as it were, humpbacked; pointed at both extremities.

The PERFECT INSECTS appear in about fourteen days, continue on the wing during the autumn months, pass the winter in lethargy, to reappear with the first mild sunshiny day of spring, or even of the last winter month. In the autumn they frequent the flowers of our gardens, hedge-rows, and open woods, but in spring scarcely visit the few flowers that are open at the time of its appearance, and are almost constantly on the wing, with a rapid unsteady flight. The females having deposited their eggs soon perish, but a few worn and shattered males are to be seen almost to the time of the appearance of their progeny.

The exotic species differ materially from the European, and perhaps the time will come when, their metamorphosis being known, it will be found necessary to divide them into three or four genera. In this case, our own species might retain the name of *Gonepteryx*; the American species that of *Rhodocera*, or with more justice that of *Amyntia*; and a new generic name would be required for *Gonepteryx Verhuellii*. The last has already been indicated as a distinct genus by Dr. Boisduval, under the name of *Dereas*.

The species found in the New World agree in having the paronychialia broad, as long as the claws, and of a more solid texture than usual. Their palpi nearly resemble those of *Callidryas*. *Gonepteryx Leachiana* and *Gonepteryx Lyside* differ from the other species in having the posterior wings rounded; the latter differs also in having the last joint of the palpi more elongate than in the other American species, and the antennæ more abruptly clavate.

Gonepteryx Rhamni has the palpi rather elongate; the second joint subcylindric, tapering at the apex; the third ovate. The claws are rather long; the pulvillus appears to be wanting; and the paronychialia are slender, fringed with hair, shorter than the claw.

Gonepteryx Lycorias and *Gonepteryx Verhuellii*, which I yet suspect will prove to be the sexes of one species, differ from *Gonepteryx Rhamni* in having the claws furnished with a distinct pulvillus, in their much slenderer feet and antennæ. The former species, or the male if there be only one species, has the posterior wings rounded, the latter angular, but as in the American species, with angled wings, it is the third median nervule which terminates in this angle, whilst in our European species it is the second.

Considerable doubts yet existing as to the specific identity of *Gonepteryx Rhamni* and *Gonepteryx Cleopatra*, I have thought it advisable to leave them as separate species, until naturalists who have the means of deciding become more unanimous on the subject; though I certainly lean to Dr. Boisduval's opinion of their identity.

There is a character worthy of notice in certain species of this genus, which also is met with in some species of *Papilio*, *Pieris*, and *Charaxes*. The costa of the anterior wings is toothed very minutely throughout nearly its whole length, like a very fine saw; a structure represented in the figures of *Papilio Lenæus* and *Pieris Thestylis*.

GONEPTERYX Leach.

1. GON. LEACHIANA *Doubleday and Hewitson*, t. 8. f. 4. (1847).
Colias Lea. *Godt. Enc. M.* ix. 91. n. 7. (1819).
Swainson, *Zool. Ill.* 1st ser. t. 6. (1820).
Rhod. Lea. Boisd. Sp. Gén. i. 559. n. 1. (1836).
Mancipium fidelis Mœnippe *Hüb. Samml. Exot.*
Schmett. (1806-27).
Brazil (especially the Northern Provinces), Bolivia.
B. M.
2. GON. CLORINDE.
Col. Clor. Godt. Enc. M. ix. *Suppl.* 813. n. 1, 2.
(1823).
Rhod. Clor. Boisd. Sp. Gén. i. 599. n. 2.
(1836).
Amynthia Swainsoniana *Swainson*, *Zool. Ill.* 2d
ser. t. 65. (1832).
Colias Godarti *Perty, Del. An. Art.* t. 29. f. 4.
4. a. (1833).
Mexico, Venezuela, N. Brazil. B. M.
3. GON. LACORDAIREI.
Rh. Lac. Boisd. Sp. Gén. i. 600. n. 3. (1836).
Mexico. B. M.
4. GON. MÆRULA.
P. Mær. Fab. Syst. Ent. 479. n. 157. (1775).
Anteos Mær. Hüb. Verz. bek. Schmett. 99.
(1816).
Col. Mær. Godt. Enc. M. ix. 89. n. 1. (1819).
Rhod. Mær. Boisd. Sp. Gén. i. 600. n. 4.
(1836).
P. Eclipsis *Cram.* t. 129. f. A. B. (1776).
Florida?, Jamaica, Venezuela. B. M.
5. GON. GUENEANA.
Rhod. Guen. Boisd. Sp. Gén. i. 601. n. 5.
(1836).
Mexico.
6. GON. LYSIDE.
Col. Lys. Godt. Enc. M. ix. 98. n. 30. (1819).
Rhod. Lys. Boisd. Sp. Gén. i. 603. n. 7. (1836).
Haiti, Jamaica, Venezuela. B. M.
7. GON. LYCORIAS.
Rhod. Ly. ♂ E. Doubleday, in *Gray's Zool. Misc.*
77. (1842).
Silhet.
8. GON. VERHUELLII *Doubleday and Hewitson*, t. 8. f. 3.
(1847).
Col. Verh. Van der Hoeven, Tijdschrift voor Nat.
Ges. v. t. 8. f. 3, 4. (1838).
Rhod. Lycorias ♀ E. Doubleday, in *Gray's Zool.*
Misc. 77. (1842).
China, N. India. B. M.
9. GON. NEPALENSIS.
Gon. Rhamni G. R. Gray, Lep. Ins. of Nepaul,
t. 5. f. 1. (1831).
Nepaul. B. M.
10. GON. RHAMNI *Leach, Edin. Enc.* ix. 128. (1810).
Steph. Ill. Haust. i. 12. (1827).
P. Rh. Linn. Syst. Nat. ii. 765. n. 165.
(1767).
Fab. Ent. Syst. iii. i. 211. n. 661. (1793).
Lewin, t. 31. f. 1-3. (1795).
Anteos Rh. Hüb. Verz. bek. Schmett. 99.
(1816).
Col. Rh. Godt. Enc. M. ix. 89. n. 2. (1819).
Rhod. Rh. Boisd. Sp. Gén. i. 603. n. 6. (1836).
Goniapteryx Rh. Westwood, in *Humphrey's Brit.*
Butterflies, 12. (1841).
Northern and Central Europe. B. M.
11. GON. CLEOPATRA.
P. Cl. Linn. Syst. Nat. ii. 765. n. 105. (1767).
Cram. t. 131. f. E. (1776).
Fab. Ent. Syst. iii. i. 213. n. 667. (1793).
Hüb. Europ. Schmett. Pap. f. 445, 446.
(1805?).
Anteos Cl. Hüb. Verz. bek. Schmett. 99.
(1816).
Col. Cl. Godt. Enc. M. ix. 90. n. 3. (1819).
Rhod. Rhamni var. Boisd. Sp. Gén. i. 603. n. 6.
(1836).
Var. Anteos Cleobule Hüb. Zut. f. 455, 456.
(1825).
S. Europe, Asia Minor, N. Africa.
Canaries (var. *Cleobule*). B. M.

Note. *P. Eclipsis* *Linn. Syst. Nat.* ii. 765. n. 107. (1767), of which specimens are in the Linnean and Banksian Cabinets, is only *Gon. Rhamni* artificially spotted, as was remarked by *Fabricius (Ent. Syst.* iii. i. 212.).

Genus XV. **COLIAS** *Boisd.**Boisd. Sp. Gén. i. 633. (1836).**COLIAS* *Fab., Latr., Ochs., Godt., Steph. &c.**PIERIS* *Schranck, Latr.**GANORIS* *Dalman.**ZERENE, COLOTIS, Hübn.*

HEAD moderately broad, clothed with rather long hairs.

Eyes oval, prominent.

Labial Palpi longer than the head; clothed with scales, and in front with appressed hairs. First joint curved; second cylindric, about equal in length to the first; third joint minute.

Antennæ short, rather stout, gradually thickening to the apex, which is truncate.

THORAX stout; clothed, in front densely, with fine hair.

Anterior Wings subtriangular; the apex sometimes, though rarely, acuminate, or almost falcate; the costa sometimes slightly sinuate. Costal nervure very stout. Subcostal four-branched: its first nervule thrown off about the middle of the cell; the second, at, or near to, the end of the cell; the third, much nearer to the apex than to the end of the cell. First discoidal nervule united to the subcostal for a considerable distance beyond the cell. Lower disco-cellular nervule about twice the length of the middle disco-cellular.

Posterior Wings obovate, or subtriangular, with the angles rounded. Discoidal nervure appearing to be a third subcostal nervule.

Legs moderately stout. *Tarsi* rather long, very spiny. *Claws* but little curved, deeply bifid, without paronychial or pulvilli.

ABDOMEN of moderate size, not equal in length to the inner margin of the posterior wings.

LARVA subcylindric, but little smaller at the extremities, slightly pubescent.

PUPA not arched, gibbous; the head abruptly pointed, the abdomen tapering gradually to a point, the back keeled.

Colias is distinguished from the other genera of this family, except *Nathalis*, by the absence of paronychial. From that genus it is at once known by the totally different structure of its palpi and antennæ.

The prevalent colour of all the species is yellow or orange, sometimes verging to white, sometimes, as in the most northern species, to a greenish hue. The bright orange species generally have a beautiful violet, or pale purple, gloss in certain lights. This is particularly the case in *Colias Lesbia*. This species, a native of the extreme south of South America, is only known to me by the specimens in the Banksian Cabinet, perhaps the only ones in any collection.

whatever. These specimens, though much injured, offer on an orange ground, in certain lights, the most beautiful rose-coloured and violet purple reflections that can be imagined. Donovan has vainly attempted to give one of these colours in his figure; but the brilliancy of colouring which the specimens must have exhibited, when recent, cannot be approached by the pencil. The outer margin of the anterior wings, in nearly all the species, is black; often marked with yellow spots in the females, and sometimes also in the males. The extremity of the cell is generally marked with a black spot on the anterior wings, with an orange or yellow one on the posterior, both often pupiled with white below. As in *Gonepteryx*, the antennæ are of a red hue. White varieties of the females are not rare.

The LARVÆ, which taper less at the extremities than those of most of the genera of this family, are green with yellow lateral stripes, and sometimes are dotted with black. They feed on various papilionaceous plants, especially those of the genera *Medicago* and *Trifolium*.

The PUPÆ are not arched, and have the head abruptly pointed. They are generally green, with yellow lateral lines.

The PERFECT INSECTS appear in temperate climates in the summer and autumn months, a few specimens probably hibernate. In Europe, Col. *Edusa* and Col. *Hyale* are sometimes found in the early spring months, and this is the case in the North of the United States with Col. *Philodice*. In the delightful climate of East Florida, specimens, mostly much worn, of Col. *Cæsonia* may be met with throughout the winter months, many of these faded ones remaining alive until the appearance of the new brood in May.

This genus is met with in almost every part of the world except Australia, the Indian Archipelago, and perhaps Central Africa. In Asia it is found from Siberia to the Southern parts of India; in Europe it is found in Lapland; in Africa it occurs from Egypt and Abyssinia, to the Canary Islands, and again at the Cape of Good Hope; and in America from Boothia Felix to Tierra del Fuego. It is, however, very much confined to the mountains in the intertropical countries. In the mountains of Europe some species are found almost up to the regions of perpetual snow.

The species with which I am acquainted all fly with great rapidity, especially when disturbed. They frequent fields of clover and lucerne, or open meadows and the outskirts of woods, and other places where leguminous plants abound, consequently they are not unfrequent in mountain pastures. The North American species are extremely fond of alighting on moist sand or mud. By the sides of ponds and brooks, throughout the Northern and Middle States, and on the large mud holes not very rare in the roads of Ohio and Illinois, I have seen them assembled literally by hundreds. In the Northern States it is only *Colias Philodice* which occurs; but in the Middle and Western States the assemblage is composed also of *Colias Cæsonia*, *Callidryas Marcellina*, *Terias Nicippe*, and *Ter. Lisa*. These assemblies are so closely packed that rows of forty or fifty individuals may be seen, their wings closed over their backs, their sides actually touching one another. Sometimes the group is augmented by a few noble specimens of *Papilio Turnus*, *P. Troilus*, *P. Philenor*, and *P. Asterias*, with the addition of some large *Fritillaries*, and perhaps that beautiful little Blue, *Lycæna Comyntas*. These companies, when thus met, are very reluctant to disperse, and are rarely disturbed by a mere passer by. When they do all rise together, the sight is beautiful in the extreme.

There is a passage relating to one species of this genus, in Mr. Charles Darwin's valuable *Researches in Geology and Natural History*, so interesting that I cannot resist copying it:—

“One evening, when we were about ten miles from the Bay of San Blas, vast numbers of butterflies, in bands or flocks of countless myriads, extended as far as the eye could range. Even by the aid of a glass it was not possible to see a space free from butterflies. The seamen called out that it was snowing butterflies, and such in fact was the appearance. More species than one were present; but the main parts belonged to a kind very similar to, but not identical with, the common English *Colias Edusa*. . . . The day had been fine and calm, and the one previous to it equally so, with light and variable airs. Hence, we cannot suppose that the insects were blown off the land; but we must conclude that they voluntarily took flight. . . . Before sunset a strong breeze sprung up from the north, and this must have been the cause of tens of thousands of the butterflies and other insects having perished.”

The species referred to is *Colias Pyrrothea*, specimens of which, presented by Mr. Darwin, are now in the collection of the British Museum.

Colias Edusa and *Colias Hyale* are both insects of very irregular appearance in England, especially the latter, which is generally extremely rare, but has occasionally occurred in considerable abundance.

Some American species differ considerably from the rest of the genus in the form of the anterior wings, which are acuminate and almost falcate.

The species in this genus are so closely allied that it is very difficult to say whether all those considered as such are so in reality. On the other hand, it may be regarded as doubtful if, in some of the species supposed to be common to the Old and New Worlds, there may not sometimes be two species confounded together.

COLIAS Boisd.

1. COL. PHILIPPA *Doubleday & Hewitson*, t. 9 f. 3. (1847).
P. Ph. *Fab. Ent. Syst.* III. i. 211. n. 660. (1793).
Bolivia. B. M.
2. COL. CÆSONIA *Godt. Enc. M.* ix. 98. n. 31. (1819).
Boisd. Sp. Gén. I. 635. n. 1. (1836).
P. Cæs. *Stoll*, t. 41. f. 2. 2 B. (1791).
United States, Mexico, West Indies, Ecuador.
B. M.
3. COL. N. SP.
Venezuela. B. M.
4. COL. THISOA *Ménétrières, Cat. Rais.* 244. n. 1164.
Boisd. Sp. Gén. I. 636. n. 2. (1836).
"Alpes du Schadach."
5. COL. ELECTRA *Godt. Enc. M.* ix. 102. n. 59. (1819).
Boisd. Sp. Gén. I. 637. n. 8. (1836).
P. El. *Linn. Syst. Nat.* II. 764. n. 101. (1767).
Var. ♀ P. Paleno *Cram.* t. 340. f. A. B. (1782).
S. Africa. B. M.
6. COL. MYRMIDONE *Ochs. Schmett. von Europa*, IV. ii. 32. (1816).
Godt. Enc. M. ix. 103. n. 41. (1819).
Boisd. Sp. Gén. I. 637. n. 4. (1836).
P. Myr. *Esper, Schmett.* t. 75. f. 1, 2. (1777-1805).
Hübner, Europ. Schmett. Pap. f. 432, 433. (1805).
Hungary, S. Russia. B. M.
7. COL. EDUSA *Ochs. Schmett. von Europa*, IV. ii. 32. (1816).
Godt. Enc. M. ix. 101. n. 38. (1819).
Boisd. Sp. Gén. I. 638. n. 5. (1836).
P. Ed. *Fab. Ent. Syst.* III. i. 206. n. 643. (1793).
Hübner, Europ. Schmett. Pap. f. 429-431. (1805?).
Europe, N. and Central Asia, N. Africa, N. America.
B. M.
8. COL. N. SP.
Rocky Mountains. B. M.
9. COL. HECLA *Lefebvre, Ann. Soc. Ent. de France*, v. 383. t. 9. f. 3-6. (1836).
Lapland, Iceland. B. M.
10. COL. BOOTHII *Curtis, in Ross's Sec. Voy.* t. A. f. 3-5. (1837).
Var. Col. Chione *Curtis, in Ross's Sec. Voy.* t. A. f. 6. (1837).
Arctic America. B. M.
11. COL. AURORA *Ochs. Schmett. von Europa*, IV. ii. 32. (1816).
Godt. Enc. M. ix. 103. n. 40. (1819).
Boisd. Sp. Gén. I. 641. n. 8. (1836).
P. Aur. *Fab. Ent. Syst.* III. i. 208. n. 650. (1793).
Hübner, Europ. Schmett. Pap. f. 544, 545. (1805?).
Eastern Russia.
12. COL. LESBIA *Boisd. Sp. Gén.* I. 640. n. 6. (1836).
P. Les. *Fab. Ent. Syst.* 477. n. 149. (1775).
Donovan, Nat. Rep. t. 50. (1824).
Patagonia.
13. COL. PYRROTHEA *Boisd. Sp. Gén.* I. 640. n. 7. (1836).
Colotis Pyr. *Hübner, Samml. Exot. Schmett.* (1806-27).
Buenos Ayres. B. M.
14. COL. VAUTIERII.
♀ Col. Vaut. *Guérin, Voy. de la Coquille, Ent.* t. 15. f. 2. (1829).
♀ *Boisd. Sp. Gén.* I. 649. n. 17. (1836).
♂ Colias Rutilans *Boisd. Sp. Gén.* I. 642. n. 9. t. 3 C. f. 3. (1836).
Chili. B. M.
15. COL. DIMERA *Boisd. MSS.*
Doubleday & Hewitson, t. 9. f. 4. (1847).
16. COL. CHRYSOTHEME *Ochs. Schmett. von Europa*, IV. ii. 32. (1816).
Godt. Enc. M. ix. 103. n. 42. (1819).
Boisd. Icon. Hist. t. 9. f. 34. (1832).
Boisd. Sp. Gén. I. 643. n. 10. (1836).
P. Chrys. *Schneider, Syst. Besch.* 66. n. 13. (1787).
Hübner, Europ. Schmett. Pap. f. 426-428.
Eastern Europe, N. America from Hudson's Bay to Louisiana. B. M.
17. COL. PHILODICE *Godt. Enc. M.* ix. 100. n. 35. (1819).
Boisd. Sp. Gén. I. 647. n. 15. (1836).
Eurymus Ph. *Swainson, Zool. Ill.* 2d ser. t. 60. (1830).
Eur. Europome *Swainson, Zool. Ill.* 2d ser. t. 70. (1830).
Zerene Anthyale *Hübner, Zut.* f. 307, 308. (1823).
Var. P. Paleno ♂ *Cram.* t. 14. f. F. G. (1775).
Col. Dorippe *Godt. Enc. M.* ix. 101. n. 36. (1819).
Nova Scotia, United States. B. M.
18. COL. NERIENE *Fischer, Entomog. Imp. Ross.* t. 11. f. 3, 4. (1820-22).
Boisd. Sp. Gén. I. 646. n. 13. (1836).
Herrick-Schaffer, f. 30-2. (1844).
Eastern Russia, N. India. B. M.

19. COL. PALÆNO *Ochs. Schmett. von Europa*, iv. ii. 32. (1816).
Godt. Enc. M. ix. 101. n. 37. (1819).
Boisd. Sp. Gén. i. 645. n. 12. (1836).
P. Pa. Linn. Syst. Nat. ii. 764. n. 99. (1767).
Fab. Ent. Syst. iii. i. 237. n. 648. (1793).
P. Europome Esper, Schmett. Pap. t. 42. *Suppl.*
 18. f. 1, 2. (1777-1805).
Hübner. Europ. Schmett. Pap. t. 115. f. 1-4.
 (1805?).
 Var. *P. Philonome Hübner. Europ. Schmett. Pap.*
 f. 602, 603. (1805)
 Sweden, Alps, Pyrenees, Hudson's Bay. B. M.
20. COL. PELIDNE *Boisd. Icon. Hist.* t. 8. f. 1-3. (1833).
Boisd. Sp. Gén. i. 644. n. 11. (1836).
 Iceland, Kamtschatka, Labrador. B. M.
21. COL. NASTES *Boisd. Icones Hist.* t. 8. f. 4-5. (1836).
Boisd. Sp. Gén. i. 648. n. 16. (1836).
 Iceland, Lapland, Labrador.
22. COL. PHICOMONE *Ochs. Schmett. von Europa*, iv. ii. 32.
 (1816).
Godt. Enc. M. ix. 100. n. 34. (1819).
Boisd. Sp. Gén. i. 649. n. 18. (1836).
P. Ph. Esper, Schmett. t. 36. cont. 6. f. 1, 2.
 (1777-1805).
Hübner. Europ. Schmett. Pap. f. 436, 437.
 (1805?).
 Alps, Siberia, Labrador. B. M.
23. COL. HYALE *Ochs. Schmett. von Europa*, iv. 32. (1816).
Godt. Enc. M. ix. 33. n. 99. (1819).
Boisd. Sp. Gén. i. 650. n. 19. (1836).
P. Hy. Linn. Syst. Nat. ii. 764. n. 100. ?
 (1767).
Fab. Ent. Syst. iii. i. 207. n. 649. ? (1793).
Pieris Hy. Latr. Gén. Crust. et Ins. xiv. 113.
 (1805).
P. Palæno Hübner. Europ. Schmett. Pap. f. 438.
 439. (1805?).
 Europe, Central India. B. M.

Note. I have retained the Fabrician name, "Philippa," for the insect figured (t. 9. f. 3.), because the Fabrician description applies more exactly to that than to *P. Cæsonia* of Stoll. It is just possible that Nos. 1, 2, and 3., in this list, may prove to be varieties of one species; but there is so much difference both in form and colour, that I have hesitated to consider them as such.

Colias Chrysotheme and *C. Myrmidone* of Stephens's *Illustrations* are only varieties of *Colias Edusa*. *Colias Europome* of English authors is only *Col. Philodice*, often introduced into old British cabinets in place of *Colias Hyale*.

Genus XVI. **TERIAS** *Swainson*.*Swainson, Zool. Ill.* 1st series, t. 22. (1820).*Boisd. Sp. Gén.* I. 651. (1836).*XANTHIDIA Boisd. & Léconte, Icon. Lép. Am. Sept.* 48. (1828).*PONTIA Fab.**PIERIS Latr., Godt.**COLIAS Latr., Godt.**LEPTOSIA, EUREMA, ABAËIS, Hübn.*

HEAD small, clothed with short hairs.

Eyes round, rather prominent.

Labial Palpi rather short, projecting but little beyond the forehead; densely clothed with short round scales at the sides, with longer ones in front. First joint slightly curved, broadest at the base, slightly compressed at the sides; second joint scarcely one third the length of the first, oval; third joint minute, oval, clothed with very small scales, almost hidden beneath the scales of the second joint.

Antennæ rather short, moderately stout, gradually incrassated beyond the middle; the apex rounded.

THORAX slender, hairy.

Anterior Wings subtriangular, generally rounded at the apex, rarely acuminate; the costa much curved at the shoulder; the inner margin slightly emarginate. Costal nervure rather stout. Subcostal nervure four-branched: the first nervule thrown off about the middle of the cell; the second just before the end of the cell; the third nearer to the apex than to the end of the cell. Upper disco-cellular nervule wanting; middle disco-cellular rather shorter than the lower. Upper discoidal nervule united for a greater or less distance to the median nervule. Internal nervule wanting.

Posterior Wings mostly broadly obovate, or rounded, sometimes angular. Precostal nervule nearly atrophied. Discoidal nervule sometimes appearing to be a third submedian, at others thrown off exactly where the subcostal nervure branches, sometimes above that point. Disco-cellular nervule much curved. Abdominal fold broad.

Feet slender. Tarsi long, very spiny. Claws deeply bifid; the outer tooth mostly more slender and acute than the inner. Paronychial as long as, or longer than, the claws; sometimes broad, nearly covering the claw, sometimes narrow, lanceolate; fringed with delicate hairs. Pulvillus jointed, very broad at the end; about equal in length to the claws.

ABDOMEN slender, arched, not quite so long as the abdominal margin of the posterior wings.

LARVA long, slender, linear, scarcely tapering towards either extremity.

PUPA smooth; keeled along the back, navicular, somewhat compressed laterally, not tuberculate at the sides; the head very pointed.

This genus was founded by Mr. Swainson in the first series of his *Zoological Illustrations*, *Papilio Hecabe* of Linné being considered to be the type. Eight years afterwards, Dr. Boisduval, in his work on the Lepidoptera of North America, characterised it under the name of *Xanthidia*; but, I believe, at that time it was his opinion that the white species of the genus as it now stands, such as *Terias Albula*, *T. Mana*, &c., should form a distinct genus for which he adopted in his manuscripts the name *Leucidia*, but in the *Spécies Générale* he abandoned this division, and adopted Mr. Swainson's name for the genus, on the ground of priority.

The species of which the genus is now composed were scattered by Godart throughout his genera *Pieris* and *Colias*. From *Pieris*, as that genus is now defined, they differ in the structure of the palpi, which are scaly, and have the third joint minute, and also in their gradually thickening antennæ, and from *Colias* they are easily known by their having pulvilli and paronychæ. There is much resemblance between some of the species and the last section of *Anthocharis*, but the antennæ and the want of the red apical patch of the anterior wings are obvious distinctions.

Three species differ considerably from the rest of the genus, but I have not ventured to separate them, because of my inability to procure sufficient specimens for dissection.

The first of these is *Terias Egnatia*, an insect originally considered by Dr. Boisduval as a *Pieris*, to which genus it seems more closely related by the structure of its antennæ than to *Terias*. Of this insect I have only had an opportunity of examining the specimens in the collection of the British Museum, and consequently have been unable to dissect them. This has also been the case with *Terias Brepheos*.

Of *Terias Elvina* I have been able to examine one mutilated specimen, and am unable to give so detailed a description as would be required for a generic character. The feet do not differ materially from those of *Terias Gratiola* and its allies, but the neurulation of the wings is peculiar, and will, I think, render it needful ultimately to exclude this species from the present genus, and to found a new one in which probably *Terias Brepheos* will also have to be placed. The subcostal of the anterior wing throws off its first nervule at about three fourths the length of the cell; a second nervule about as far beyond the cell as its first is distant from the end of the cell; and divides at a short distance into two nervules, the lower of which I believe to be the first discoidal nervule, united for a greater distance than usual to the subcostal. The cell is closed by a curved nervule, which must probably be considered as the middle disco-cellular, and by a lower disco-cellular slightly curved at its origin, directed obliquely downwards and outwards, until it reaches the third median nervule. At the point of junction of the two disco-cellular nervules arises a distinct discoidal nervule, which I imagine to be the second discoidal nervule. The posterior wings do not differ materially from those of *Terias Gratiola*, the discoidal nervule being thrown off before the division of the subcostal nervule. The shoulder is remarkably prominent in the males. An accurate figure of the wings will be found in the third plate, illustrative of the generic characters, a comparison of which with the outlines of that of *Terias Gratiola* will point out the difference in structure more easily than the longest description. It is possible that the nervule which I consider as the first discoidal is in reality the fourth subcostal, and that the first discoidal has become atrophied. Should *Terias Elvina* and *T. Brepheos* be ultimately considered to constitute a distinct genus, as I feel confident will be the case, I would suggest the adoption of Dr. Boisduval's name, *Leucidia*, for it.

The other species of the genus differ but little amongst themselves in structure. There is some difference in the neurulation of the posterior wings, as in some species the discoidal nervule is thrown off above the point at which the subcostal nervule divides, at others immediately at this point, and sometimes it appears to be a third subcostal nervule. These wings are often angular, sometimes almost enough so to be called tailed. The paronychæ also differ in their width, being much slenderer and more widely fringed with hair, in some of the white species, than in most of the yellow ones.

The prevailing colours of the genus are various shades of orange, yellow, and white; the outer margin of the anterior almost always, and of the posterior very frequently, bordered with black. The sexes often differ considerably in

colour. This is particularly the case in those species the males of which, like *Terias Elathea*, have a black vitta, margined with orange along the inner margin. This vitta is generally wanting in the females, the orange is always wanting.

The LARVÆ are more linear, and taper less towards the extremities, than is commonly the case in this family. They are mostly green, with a pale lateral stripe, and appear to feed chiefly, if not exclusively, on Leguminosæ.

The PUPÆ in many respects resemble those of *Anthocharis*, being more navicular than those of *Colias* and *Callidryas*.

The PERFECT INSECTS frequent the neighbourhood of woods, and occasionally open meadows and gardens. In the United States, especially the Southern and Western States, *Terias Nicippe* is very abundant in open plains near the forests, and in the states of Ohio and Illinois, I have seen it flying in profusion over the fields of clover, in company with *Colias Philodice* and *C. Cæsonia*. Its flight more resembles that of these insects than of its congeners. *Terias Lisa* and *T. Delia* in the United States, and *T. Albula* in Cayenne, are insects of weak flight, frequenting the skirts of woods, and even occurring in the gardens of towns.

Terias Elvina and *T. Brepheos* are confined to the thick virgin forests of Guiana and Brazil, where they fly very slowly, and near to the ground.

This genus occurs throughout all the tropical and subtropical parts of the globe, extending in the Old World further from the equator in the southern hemisphere than in the northern, and having a greater range to the north in the New World than in the Old, three species occurring in the United States as far north as Virginia, whilst, I believe, no species has as yet been found even in the parts of Asia and Africa bordering upon the Mediterranean. The range of some of the species is very great; and as they are subject to great local variations, and as the distinctions which separate the truly distinct species are often very slight, the genus is one of the most difficult amongst the Diurnal Lepidoptera. The following list must therefore be regarded as only an attempt to elucidate the species. Many single specimens of apparently distinct species exist in the collection of the British Museum, but in a genus like this, no one ought to found a species on a single specimen.

TERIAS Swainson.

- | | |
|--|---|
| <p>1. TER. NICIPPE <i>Boisd. Sp. Gén. i. 653. n. 1. (1836).</i>
 <i>P. Nic. Cram. t. 210. f. C. D. (1780).</i>
 <i>Fab. Ent. Syst. III. i. 208. n. 651. (1793).</i>
 <i>Abaeis Nic. Hübn. Verz. bek. Schmett. 97. (1816).</i>
 <i>Col. Nic. Godt. Enc. M. ix. 103. n. 43. (1819).</i>
 <i>Xanth. Nic. Boisd. et Lecomte, Icon. Lép. Am. Sept. t. 20. f. 1-5. (1827).</i>
 United States (Middle and Southern States), Mexico.
 B. M.</p> | <p>7. TER. DEVA.
 <i>P. Agave Fab. Ent. Syst. III. i. 193. n. 599. (1793).</i>
 <i>Donovan, Nat. Rep. t. 6. f. 2. (1823).</i>
 <i>Pi. Ag. Godt. Enc. M. ix. 135. n. 52. (1819).</i>
 Brazil. B. M.</p> |
| <p>2. TER. PROTERPIA <i>Boisd. Sp. Gén. i. 654. n. 2. (1836).</i>
 <i>P. Prot. Fab. Syst. Ent. 478. n. 152. (1775).</i>
 <i>Col. Prot. Godt. Enc. M. ix. 91. n. 5. (1819).</i>
 Jamaica, Haiti, Mexico, Venezuela. B. M.</p> | <p>8. TER. TENELLA <i>Boisd. Sp. Gén. i. 657. n. 6. (1836).</i>
 <i>Manc. fugax Nise ♂ Hübn. Samml. Exot. Schmett. (1806-27).</i>
 <i>Pi. Nedá Godt. Enc. M. ix. 135. n. 54. ? (1819).</i>
 Brazil. B. M.</p> |
| <p>3. TER. MEXICANA <i>Boisd. Sp. Gén. i. 655. n. 5. t. 3 C. f. 1. (1836).</i>
 Mexico. B. M.</p> | <p>9. TER. NISE.
 <i>P. Ni. Cram. t. 20. f. K. L. (1775).</i>
 <i>Manc. fugax Ni. Hübn. Samml. Exot. Schmett. (1806-27).</i>
 <i>Eurema Ni. Hübn. Verz. bek. Schmett. 96. (1816).</i>
 Guiana, Venezuela. B. M.</p> |
| <p>4. TER. GRATIOSA <i>Boisd. MSS.</i>
 <i>Doubleday & Hewitson, t. 9. f. 5. (1847).</i>
 Venezuela. B. M.</p> | <p>10. TER. VENUSTA <i>Boisd. Sp. Gén. i. 658. n. 8. (1836).</i>
 Jamaica, Colombia.</p> |
| <p>5. TER. ECTRIVA.
 Quito. B. M.</p> | <p>11. TER. GENTILIS <i>Boisd. Sp. Gén. i. 658. n. 9. (1836).</i>
 Brazil, Colombia. B. M.</p> |
| <p>6. TER. ARBELA <i>Boisd. Sp. Gén. i. 656. n. 4. (1836).</i>
 <i>Eurema Arb. Hübn. Zut. f. 641, 642. (182).</i>
 Brazil. B. M.</p> | <p>12. TER. LEUCE <i>Boisd. Sp. Gén. i. 659. n. 10. (1836).</i>
 Uruguay. B. M.</p> |

13. TER. MIDEA *Boisd. Sp. Gén. i. 659. n. 11. (1836).*
Ménétriés, Nouv. Mem. Soc. Imp. Nat. Mosc. III. t. 11. f. 6. (1834).
Haiti.
14. TER. SMILAX *Boisd. Sp. Gén. i. 660. n. 12. (1836).*
P. Sm. Donovan, Ins. of New Holland (1805).
Australia. B. M.
15. TER. HERLA *Boisd. Sp. Gén. i. 660. n. 13. (1836).*
Pieris Her. McLay, in King's Survey of Australia, App. 460. n. 141. (1827).
Australia. B. M.
16. TER. STYGMA *Boisd. Sp. Gén. i. 661. n. 14. (1836).*
Peru.
17. TER. STYGMULA *Boisd. Sp. Gén. i. 661. n. 15. (1836).*
Cuba. B. M.
18. TER. LISA *Boisd. Sp. Gén. i. 661. n. 16. (1836).*
Xanthidia Li. Boisd. et Lecomte, Icon. Léop. Am. Sept. t. 19. f. 4-5. (1827).
Picris Smilax Godt. Enc. M. ix. 136. n. 56. (1819).
United States (middle and southern states), Jamaica. B. M.
19. TER. EUTERPE.
Col. Eut. Ménétriés, Nouv. Mem. Soc. Imp. Mosc. III. t. 11. f. 4. (1834).
Pi. Thymetus Godt. Enc. M. ix. Suppl. 814. n. 56, 57. (1823).
Ter. Thy. Boisd. Sp. Gén. i. 662. n. 17. (1836).
Haiti. B. M.
20. TER. DELIA *Boisd. Sp. Gén. i. 663. n. 18. (1836).*
P. De. Cram. t. 273. f. A. (1780).
Xanthidia De. Boisd. et Lecomte, Icon. Léop. Am. Sept. t. 18. (1827).
Pieris Daira Godt. Enc. M. ix. 137. n. 59. (1816).
United States (Southern States). B. M.
21. TER. ELATHEA *Boisd. Sp. Gén. i. 664. n. 19. (1836).*
P. El. Cram. t. 99. f. C. D. (1776).
Fab. Ent. Syst. III. i. 196. n. 610. (1793).
Pieris El. Godt. Enc. M. ix. 136. n. 58. (1819).
Honduras, Venezuela, Guiana, Brazil, Jamaica, Haiti. B. M.
22. TER. JUCUNDA *Boisd. Sp. Gén. i. 665. n. 20. (1836).*
Xanthidia Juc. Boisd. et Lecomte, Icon. Léop. Am. Sept. t. 19. f. 1-3. (1827).
United States (southern states). B. M.
23. TER. DINA *Boisd. Sp. Gén. i. 666. n. 21. (1836).*
Poey, Cent. Léop. de Cuba. (18).
Cuba.
24. TER. WESTWOODII *Boisd. Sp. Gén. i. 666. n. 22. (1836).*
Mexico. B. M.
25. TER. HYONA *Boisd. Sp. Gén. i. 667. n. 23. (1836).*
Col. Hy. Ménétriés, Nouv. Mem. Soc. Imp. de Mosc. III. t. 11. f. 5. (1834).
Haiti.
26. TER. PYRO *Boisd. Sp. Gén. i. 667. n. 24. (1836).*
Pi. Py. Godt. Enc. M. ix. 137. n. 60. (1819).
Antilles? S. America?
27. TER. HARINA *Horsf. Desc. Cat. Lep. E. I. C. 137. n. 62. (1829).*
Java, N. India. B. M.
28. TER. TILAHIA *Horsf. Desc. Cat. Lep. E. I. C. 136. n. 62. (1829).*
Java, Borneo. B. M.
29. TER. HECABE *Swainson, Zool. Ill. 1st ser. t. 22. (1820).*
Boisd. Sp. Gén. i. 669. n. 27. (1836).
P. Hec. Linn. Syst. Nat. II. 763. n. 96. (1767).
Fab. Ent. Syst. III. i. 192. n. 598. (1793).
Cram. t. 124. f. B. C. (1776).
Pi. Hec. Godt. Enc. M. ix. 134. n. 51. (1819).
Var. ♀ Terias Sari Horsf. Desc. Cat. Lep. E. I. C. 136. n. 61. (1829).
N. India, Bengal, Ceylon, Java, China. B. M.
30. TER. BRENDA *Doubleday & Hewitson, t. 9. f. 6. (1847).*
Sierra Leone, Ashanti. B. M.
31. TER. SUAVA *Boisd. Sp. Gén. i. 670. n. 28. (1836).*
Bengal. B. M.
32. TER. FLORICOLA *Boisd. Sp. Gén. i. 671. n. 29. (1836).*
Xanth. Fl. Boisd. Faun. Ent. de Madagascar, 21. (1833).
Mauritius, Bourbon.
33. TER. DESJARDINII *Boisd. Sp. Gén. i. 671. n. 30. (1836).*
Xanthidia Desj. Boisd. Faun. Ent. de Madagascar, t. 2. f. 6. (1833).
Madagascar.
34. TER. SENEGALENSIS *Boisd. Sp. Gén. i. 672. n. 31. (1836).*
Senegal. B. M.
35. TER. BLANDA *Boisd. Sp. Gén. i. 672. n. 32. (1836).*
Batavia. B. M.
36. TER. PLEIONE *Boisd. Sp. Gén. i. 672. n. 33. (1836).*
Pontia Plei Klug-Ehren. Symb. Phys. t. 8. f. 7, 8. (1829-45).
Arabia Felix.
37. TER. RAHEL *Boisd. Sp. Gén. i. 673. n. 34. (1834).*
P. Ra. Fab. Ent. Syst. III. i. 204. n. 637. (1836).
W. Africa. B. M.
38. TER. CANDIDA *Boisd. Sp. Gén. i. 673. n. 35. (1836).*
P. Candida Cram. t. 331. f. A. (1782).
- *Var. Xanthidia Puella Boisd. Voy. de l'Astrolabe, Ent. t. 2. f. 8. (1833).*
♀ Colias Sagaritis De Haan, MSS.
Amboina, Celebes, N. India.
39. TER. LAETA *Boisd. Sp. Gén. i. 674. n. 36. (1836).*
Bengal. B. M.
40. TER. DRONA *Horsf. Desc. Cat. Lep. E. I. C. t. 1. f. 13. (1829).*
Boisd. Sp. Gén. i. 675. n. 37. (1836).
Java.

41. TER. BRIGITTA *Boisd. Sp. Gén. i.* 676. n. 38. (1836).
P. Brig. Cram. t. 331. f. B. C. (1782).
Pi. Brig. Godt. Enc. M. ix. 195. n. 53. (1836).
 Senegal.
42. TER. PULCHELLA *Boisd. Sp. Gén. i.* 677. n. 39. (1836).
Xanthidia Pul. Boisd. Faune Ent. de Madagascar,
t. 2. f. 7. (1833).
 Madagascar. B. M.
43. TER. MESSALINA *Boisd. Sp. Gén. i.* 679. n. 43. (1836).
P. Mess. Fab. Ent. Syst. iii. i. 204. n. 638.
 (1836).
 S. America?
44. TER. MUSA *Boisd. Sp. Gén. i.* 679. n. 45. (1836).
P. Mu. Fab. Ent. Syst. iii. i. 195. n. 607.
 (1793).
Pi. Mu. Godt. Enc. M. ix. 137. n. 62. (1819).
 West Indies?
45. TER. GNATHENE *Boisd. Sp. Gén. i.* 680. n. 46. (1836).
 Yucatan.
46. TER. BULÆA *Boisd. Sp. Gén. i.* 681. n. 48. (1836).
 Yucatan, Honduras. B. M.
47. TER. PHIALE *Boisd. Sp. Gén. i.* 681. n. 48. (1836).
P. Ph. Cram. t. 27. f. F. (1775).
Pi. Ph. Godt. Enc. M. ix. 137. n. 61. (1819).
 Guiana.
48. TER. AGAVE.
P. Ag. Cram. t. 20. f. H. I. (1775).
- Pi. Phiale Godt. Enc. M. ix.* 137. n. 61.
 (1819).
Ter. Mana Boisd. Sp. Gén. i. 681. n. 49.
 (1836).
 Guiana. B. M.
49. TER. ALBULA *Boisd. Sp. Gén. i.* 682. n. 50. (1836).
P. Alb. Cram. t. 27. f. E. (1775).
Pi. Alb. Godt. Enc. M. ix. 138. n. 65. (1819).
Manc. fug. Nise ♀ Hübn. Samml. Exot. Schmett.
 (1806-27).
 Guiana, Brazil. B. M.
50. TER. SINOË *Boisd. Sp. Gén. i.* 683. n. 51. (1836).
Pi. Sin. Godt. Enc. M. ix. 138. n. 66. (1819).
 Brazil. B. M.
51. TER. ? ELVINA.
Ter. Elv. Swainson, Zool. Ill. 1st ser. t. 22.
 (1820).
Boisd. Sp. Gén. i. 683. n. 52. (1836).
 Brazil (especially the northern parts). B. M.
52. TER. ? BREPHOS.
Ter. Br. Boisd. Sp. Gén. i. 684. n. 53. (1836).
Manc. Vor. Br. Hübn. Samml. Exot. Schmett.
 (1806-27).
 Guiana. B. M.
53. TER. ? EGNATIA *Boisd. Sp. Gén. i.* 678. n. 42. (1836).
Pi. Egn. Godt. Enc. M. ix. 138. n. 63. (1836).
Pi. Cirrha Boisd. Voy. de l'Astrolabe, t. 2. f. 7.
 (1832).
 Amboyna, Celebes, N. W. Australia. B. M.

Note. *P. Charmione Fab.*, *P. Eloreia Fab.*, and *P. Vanessa Fab.* do not belong to this genus, in which they have been placed. The first is a moth of a genus allied to *Leptosoma*, the second a *Polyommatus*, the third one of the *Erycinidæ*.

P. Libythea Fab. Ent. Syst. Suppl. 427. n. 598, 599. belongs probably to this genus; but if East Indian, cannot be identical with *P. Nise Cram.*, to which *Fabricius* refers.

P. Thymetus Fab. is a *Melitæa*, not, as was supposed by *Godart* and *Boisduval*, a species of this genus.

Family III. AGERONIDÆ.

Genus **AGERONIA** Hübn.

Hübn. Verz. bek. Schmett. 41. (1816).

PERIDROMIA, AMPHICHLORA Boisd. Blanch.

NYMPHALIS Godt.

HEAD rather broad.

Eyes oval, prominent.

Maxillæ long, rather robust.

Labial Palpi approximating, ascending, double the length of the head; basal joints short, curved, clothed with scales and at the base with a tuft of hair; second joint three times the length of the first, cylindric; third joint about as long as the first, elongate, oval.

Antennæ of moderate length, enlarging near the apex into a very gradually thickening club.

THORAX robust.

Anterior Wings triangular, the anterior margin rounded, the posterior sometimes rounded, sometimes emarginate; the inner margin in the male occasionally dilated. Costal nervure much dilated for the greater part of its length, reaching the costa a little before the middle. Subcostal nervure very slender at its origin, enlarging towards the end of the cell, five-branched, its first nervule thrown off a little before the end of the cell; the second immediately afterwards, sometimes almost from the same point, the nervure here bent downwards until it joins the upper disco-cellular, then again bent, so as to be directed forwards and slightly upwards; the third nervule thrown off much nearer to the cell than to the fourth nervule, this last at a point about equally distant from the cell and the apex; cell rather short. Upper disco-cellular short, stout; middle disco-cellular stout, sometimes shorter than, sometimes about equal to, the upper; lower disco-cellular slender, directed obliquely inwards for more than half its length, then curved and tending outwards, striking the median nervure before the origin of its second nervule. Median and submedian nervules swollen at their origin. Internal nervure wanting.

Posterior Wings subtriangular, the margins rounded, the anterior margin sometimes slightly emarginate; the abdominal fold ample, completely enclosing the abdomen below. Precostal nervule sometimes branched. Discoidal nervure appearing to be a third subcostal nervule. Disco-cellular slender, curved at its termination, united to the third median nervule near its origin.

Anterior Legs imperfect; the femur, tibia, and tarsus nearly equal in length, the tibia sometimes shortest in the males; tarsus of the male clothed with long hairs, subcylindric, rather pointed

at the apex, only composed of one single joint; the claw entirely wanting; tarsus of the female scaly, five-jointed, the basal joint very long, with a stout long spine on each side at the apex; the others very short, spiny at the sides, all, except the last, with a long stout spine on each side near the apex, and a bunch of long hairs near the base; fifth joint small, pointed. *Middle and posterior Legs* robust, with the femora, tibiæ, and tarsi about equal in length; the tibiæ with a row of spines on each side below, the apical ones but little longer than the others; tarsi spiny below, the first joint longer than the others combined, second, third, and fourth progressively shorter; fifth about equal to the second. Claws simple, stout, curved. Paronychial broad at the base, divided into two lacinia, of which the outer is longer than the inner, and mostly nearly as long as the claw, the inner slenderer curved inwards over the base of the pulvillus. Pulvillus jointed, the basal joint narrower than the second, membranaceous; the second joint broad, corneous, the two combined about equal in length to the claws.

ABDOMEN short, not very stout.

LARVA unknown?

PUPA braced, slender, the head with two ear-like tubercles.

The present family, consisting of only one genus, I have not ventured to characterize it. Possibly other species may be found having a braced pupa, the anterior feet imperfect, and the palpi distinctly triarticulate and convergent, but which may want some characters of less importance, as the pulvillus and paronychial. At present it is impossible to say what characters are those of the family, what are purely generic.

The genus *Ageronia* seems to have little in common with the preceding family except its braced pupa. To *Euploea* it is much more nearly allied, especially in the form of the anterior feet, and of the claws of the other pairs. One section of it has another point of resemblance in the expanded inner margin of the anterior wing of the male. But from *Euploea* it is easily known by the difference in colouring, by its long convergent palpi, and the peculiar bend of the subcostal nervule of the anterior wings at the end of the cell.

Of the *LARVÆ* we know nothing. That figured by Madame Merian as the larva of *Ageronia Feronia* evidently belongs to one of the *Morphidæ*.

The *PUPA* of *Ageronia Feronia* is described by M. Lacordaire as being "longue d'une pousse, assez svelte, et présentant un masque très bizarre à sa partie antérieure, avec deux longues oreillettes dirigées en avant. Sa couleur est d'un vert olive foncé, et comme velouté, avec une raie jaune longitudinal sur chacun de ses cotés." He states that he several times found the pupa fixed to the wall of a house, attached like that of a *Papilio* by a transverse thread. Unfortunately he never met with the larva.

The PERFECT INSECT has a short rapid flight, and constantly alights on trunks of trees. All the species whose history are known, produce in flying a sound which I have heard compared by a good observer, to the rustling of a piece of parchment, to which also M. Lacordaire compares it.

In his paper on the *Diurnal Lepidoptera of Guiana*, published in the second volume of the *Annals of the Entomological Society of France*, he remarks that the species of this genus "présentent le phénomène, unique dans l'ordre, de produire en volant un bruit pareil à celui d'un parchemin très sec qu'on froisserait entre les mains."

Mr. Darwin, in his *Researches in Geology and Natural History*, has the following passage in regard to one species of this genus.

"I was much surprised at the habits of *Papilio Feronia*. This butterfly is not uncommon, and generally frequents the orange groves. Although a high flyer, yet it very frequently alights on the trunks of trees. On these occasions its head is invariably placed downwards; and its wings are expanded in an horizontal plane, instead of being folded vertically, as is commonly the case. This is the only butterfly I have ever seen that uses its legs for running. Not being aware of this fact, the insect more than once, as I cautiously approached with my forceps, shuffled on one side

just as the instrument was on the point of closing, and thus escaped. But a far more singular fact, is the power which this insect possesses of making a noise. Several times when a pair, probably male and female, were chasing each other in an irregular course, they passed within a few yards of me, and I distinctly heard a clicking noise, similar to that produced by a toothed wheel passing under a spring catch. The noise was continued at short intervals, and could be distinguished at about twenty yards' distance. I cannot form a conjecture how it is produced; but I am certain there is no error in the observation."

After having carefully examined every species of the genus which has been recorded as producing this noise, I can discover no structure which seems intended to produce it. All of them offer one peculiarity. Immediately above the costal nervure, quite at its origin, on the under side of the wing is a small round cavity, smooth inside, covered with a very delicate membrane, stretched across it like the parchment of a kettle-drum, which the cavity resembles in shape. Another peculiarity occurs in the swollen part of the costal nervule, in *Ageronia Arethusa*. This part of the nervule is divided by numerous transverse membranaceous diaphragms, placed obliquely so as to present, when the nervure is rendered transparent, the appearance of a screw, with a very loose worm, enclosed in the nervure. I cannot imagine any connexion between either of these peculiarities in structure and the sound produced by the insect.

Having recently observed in some species of the Fabrician genus *Glaucopis*, a structure almost identical with the drum of the Cicadae, and having found a similar structure in *Hecastesia Thyridion*, which is known to produce a sound, I have carefully examined the base of the abdomen in all the species of the present genus, but there is no trace of any drum, or cavity. From the examinations of dried specimens, I hope for no further results; but as I expect shortly to receive specimens preserved in spirits, I shall be able more carefully to dissect them, and the results will be given in the introductory chapter.

This genus is peculiar to the tropical parts of America, and most of the species have a wide range both of latitude and longitude.

AGERONIA Hübn.

- | | |
|---|---|
| <p>1. AG. EPINOME.
 <i>Amphichlora</i> Ep. <i>Boisd. MSS.</i>
 Brazil. B. M.?</p> | <p>7. AG. AMPHIINOME Hübn. <i>Verz. bek. Schmett.</i> 42. (1816).
 <i>P. Amph. Linn. Syst. Nat.</i> ii. 779. n. 176.
 (1767).
 <i>Cram.</i> t. 54. f. E. F. (1775).
 <i>Fab. Ent. Syst.</i> iii. i. 131. n. 404. (1793).
 <i>Nymphalis Amph. Godt. Enc. M.</i> ix. 427. n.
 246. (1819).
 Venezuela, Guiana, Brazil. B. M.</p> |
| <p>2. AG. ÆNOË.
 <i>Amphichlora</i> Æn. <i>Boisd. MSS.</i>
 Peru.</p> | <p>8. AG. CHLOË Hübn. <i>Samml. Exot. Schmett.</i> (1806-27).
 <i>P. Chl. Stoll,</i> t. 5. f. 1, 1. a. (1791).
 <i>Nymphalis Ch. Godt. Enc. M.</i> ix. 429. n. 249.
 (1819).
 Honduras, Brazil, New Granada. B. M.</p> |
| <p>3. AG. AMPHICHLÖ.
 <i>Amphichlora</i> Amp. <i>Boisd. MSS.</i>
 Guayaquil. B. M.</p> | <p>9. AG. ARETHUSA.
 ♂ <i>P. Ar. Cram.</i> t. 77. f. E. F. (1775).
 ♂ <i>Fab. Ent. Syst.</i> iii. i. 42. n. 130. (1793).
 ♂ ♀ <i>Nymphalis Ar. Godt. Enc. M.</i> ix. 427. n. 245.
 (1819).
 ♀ ♂ <i>Peridromia Ar. Boisd. Sp. Gén.</i> i. t. 7. C. f. 5.
 (1836).
 ♀ <i>P. Laodamia Cram.</i> t. 130. f. A. (1776).
 ♀ <i>Ag. La. Hübn. Verz. bek. Schmett.</i> 42. (1816).
 <i>Hübn. Samml. Exot. Schmett.</i> (1806-27).
 Mexico, Venezuela, Guiana, Brazil, Bolivia.
 B. M.</p> |
| <p>4. AG. FERENTINA.
 <i>Nymphalis</i> Fer. <i>Godt. Enc. M.</i> ix. 428. n. 248.
 (1819).
 <i>P. Feronia</i> Var. <i>Cram.</i> t. 362. f. A. B.
 <i>Ag. Februa Hübn. Samml. Exot. Schmett.</i> (1806-
 27).
 Venezuela, Brazil. B. M.</p> | <p>10. AG. ARETE <i>Doubleday & Hewitson,</i> t. 10. f. 2, 3. (1847).
 <i>Peridromia Ar. Boisd. MSS.</i>
 Mexico? Brazil. B. M.</p> |
| <p>5. AG. FORNAX Hübn. <i>Samml. Exot. Schmett.</i> (1806-27).
 <i>Doubleday & Hewitson,</i> t. 10. f. 1. (1847).
 Mexico, Venezuela, Brazil. B. M.</p> | |
| <p>6. AG. FERONIA Hübn. <i>Verz. bek. Schmett.</i> 42. (1816).
 <i>P. Fer. Linn. Syst. Nat.</i> ii. 770. n. 140.
 (1767).
 <i>Cram.</i> t. 192. f. E. F. (1779).
 <i>Fab. Ent. Syst.</i> iii. i. 226. n. 710. (1793).
 <i>Nymphalis</i> Fer. <i>Godt. Enc. M.</i> ix. 428. n. 247.
 (1819).
 Mexico, Venezuela, Brazil. B. M.</p> | |

Family IV. DANAIDÆ.

HEAD round.

Eyes oval, prominent.

Labial Palpi divergent, ascending, scarcely rising above the forehead, distinctly triarticulate; the basal joint short, stout, curved; second double the length of the first, subcylindric, slightly curved, rounded at each extremity; third minute, about one-fifth the length of the second, obovate, slightly pointed.

Antennæ gradually clavate.

THORAX moderately stout.

Anterior Wings elongate, the cell closed. The subcostal nervure always five-branched; its first nervule thrown off before the end of the cell, generally distant, at its origin, about one-fourth the length of the cell from the disco-cellular nervule; second thrown off at the end of the cell, or very little before; the third rather more distant from the second than from the fourth; fourth about midway between the first and the apex. Upper disco-cellular nervule very short, or altogether wanting; middle and lower about equal in length. Internal nervure slender, running into the submedian.

Posterior Wings obovate, the cell closed; the discoidal nervure always appearing to be a third subcostal nervule. Abdominal fold mostly ample.

Legs, except the anterior, rather stout and long. Anterior legs imperfect; varying in the sexes. Middle and posterior pairs with the tibiæ spiny; the spurs not strikingly developed; the tarsi with the basal joint long; second, third, and fourth progressively shorter; fifth longer than the second; all spiny at the side below. Claws simple.

ABDOMEN rather slender, nearly as long as the abdominal margin of the posterior wing.

LARVA stout, cylindrical, smaller towards the head, furnished on one or more of the anterior segments, with a pair of long, slender, flexible, fleshy tentacula, not retractile, and with a similar, but often shorter, pair on the penultimate segment.

PUPA suspended, short, smooth, somewhat ovate, contracted near the middle.

The Danaidæ may be known from the Heliconidæ by their shorter antennæ, their mostly shorter and more angular wings, and by their palpi, which scarcely rise above the forehead.

The neuration of the wings is nearly the same in the three genera of which the family is composed. The palpi differ but little, and in two genera the antennæ only vary in length. There is however no difficulty in discriminating the genera. Danais is known by its simple claws, without paronychial or pulvilli, Euploea has claws furnished with paronychial and pulvilli, but its antennæ are more clavate than those of Hestia, which has similar claws, and the anterior tarsi of the females are clavate and spined, whilst in Hestia they are subcylindrical and not spined.

All have the costal and subcostal nervures of the anterior wing rather widely separated; sometimes the first nervure of the latter anastomoses with the former.

The LARVÆ, as far as known, have long, flexible, but not retractile tentacula on the anterior and on the penultimate segments.

The PUPÆ are suspended, smooth, more or less ovate, often very beautifully coloured and gilded.

Of the species which compose the family nearly all belong to the Old World, especially to the islands of the Indian Archipelago and the Pacific Ocean. Danais, under one of its forms, occurs in the New World from Canada to the extreme south of Brazil, and perhaps still further south. No species of Euploea or Ilestia has yet been found there.

Euploea and Danais were considered by Fabricius and Latreille to constitute but one genus, to which the former gave the name of Euploea, the latter, originally, that of Danaida, which he afterwards changed to Danaus, and then, in the *Encyclopédie Méthodique*, to Danais. In Mr. MacLeay's Appendix to King's *Survey of Australia*, he proposes to limit the name Danais to those species which "have no pouches to the lower wings of the males;" by which he appears to mean those which I include in the genus Euploea. Dr. Boisduval has, on the contrary, retained the name Danais for those species of which the males have a pouch, or a spot of peculiar structure on the posterior wings. Latreille proposed his genus Danaida in 1805, with Danais Plexippus for the type, two years before the publication of the outline of the *Systema Glossatorum* of Fabricius, in Illiger's Magazine. I have, therefore, followed Dr. Boisduval in retaining Latreille's name for the species, congeneric with his type, and that of Fabricius for the remaining species of the genus.

Genus I. **EUPLŒA** *Boisd.**Boisd. Faune de l'Océanie, 93. (1832).**EUPLŒA* *Fab. Horsf.**DANAUS* *Latr.**DANAIS* *Godt.**TERPSICHOIS, CRAFTIA, SALPINX, DIDONIS, Hübn.**DANAIS, M^cLeay, King's Survey of Australia, II. 461. (1827.)*

Antennæ rather more than half as long as the whole length of the body, gradually clavate.

Anterior Legs with the femur and tibia about equal in length; the tarsus shorter, of the male cylindric, rather tapering to a point at the extremity; indistinctly biarticulate; second joint about one third the length of the first, both clothed with scales and hairs; of the female, clavate, quadriarticulate; the first joint longer than the rest combined, much broadest at the apex, where it has a stout spine on each side; second and third short, furnished with a tuft of hair on each side near the base, and a spine at the apex; the fourth joint minute, furnished with a tuft of hairs.

Middle and Posterior Legs strong, the claws rather stout, curved. The paronychial divided into two laciniae; the outer elongate, lanceolate, hairy, as long as the claw; the inner not quite equal in length to the outer, more hairy, elongate, lanceolate, the apex curving inward over the base of the pulvillus. Pulvillus not so long as the claws, jointed; the second joint broad, corneous.

Euplœa differs from *Danaus* in having a very distinctly developed pulvillus and paronychial to the hinder feet, and the antennæ generally rather longer. From *Hestia* it differs in having the antennæ more distinctly clavate, and the anterior feet of the female of a different form.

The species of which it is composed are generally insects of rather large size, of a dark fuscous brown or black, spotted or streaked with white and light blue, and often having especially in the males brilliant blue reflections on the upper surface. The thorax (especially below) and the head are always dotted with white. The anterior wings are triangular, sometimes elongate, the anterior margin rounded, the outer sometimes rounded, sometimes sinuate, slightly emarginate, the inner slightly emarginate in the females, in the males mostly rounded, produced so as to cover a considerable space of the posterior wings, a structure carried to the greatest extent in *Euplœa Treitschkei*, figured on our eleventh plate. Sometimes the males have one or more short vittæ on the inner margin of the anterior wing, composed of scales of a paler colour and rather different form, and differently placed, so as to have a dull somewhat chalky appearance. The posterior wings are somewhat obovate, the inner margin much shorter than the anterior, the abdominal fold ample. The portion which in the males is covered by the projecting inner margin of the hind wings is often clothed with scales of a very singular form. They are elongate, hair-like, rather broader at the base, terminating in an oval expansion, giving them very much the form of the antennæ of most species of *Pieris*. In other species the scales on this portion differ chiefly in size from those of the other parts of the wing. The sexes of this group differ sometimes materially in the colour of the posterior wings, those of the males are of a nearly uniform dark colour, but those of the females are streaked longitudinally with white, giving them a strong resemblance to some species of the next genus.

The LARVA of Euploea Midamus figured by Dr. Horsfield is nearly cylindrical, rather slenderer towards the head, armed anteriorly with three pairs of elongate tentacula, and a similar pair on the penultimate segment. These tentacula are flesh-coloured at the base for about one third their length, black beyond. The larva itself is ringed with white and flesh colour, and more narrowly with black; the sides have a series of yellow patches marked with black dots.

The PUPA is ovate, the abdomen broad, the thorax constricted, especially behind. It is of a golden coppery colour, with black markings.

The PERFECT INSECTS occur throughout the warmer parts of Asia and Australia, the islands of the Indian Archipelago and of the Pacific Ocean. They are particularly numerous in the most eastern of the Asiatic islands, and in the Polynesian groups. No species is found in the New World, or in Europe, and I am not sure that any species is found on the continent of Africa, though one occurs in Mauritius and one in Bourbon.

EUPLOEA Boisd.

1. EUP. EUNICE Boisd. *Faune de l'Océanie*, 94. (1832).
Danaïs Eun. *Godt. Enc. M.* ix. 177. n. 2. (1819).
? *Limnas mutabilis* Nemertes *Hüb. Samml. Exot. Schmett.* (1806-27).
Salpinx Nem. *Hüb. Verz. bek. Schmett.* 17. (1816).
Java. B. M.
2. EUP. DARCHIA.
Danaïs Dar. *M^cLeay, King's Survey of Australia*, ii. App. 462. (1827).
Australia.
3. EUP. DUFRESNII.
Danaïs Duf. *Godt. Enc. M.* ix. *Suppl.* 815. n. 12, 13. (1819).
Philippines.
4. EUP. HISME Boisd. *Faune de l'Océanie*, 95. (1832).
New Guinea. B. M.
5. EUP. TREITSCHKEI Boisd. *Faune de l'Océanie*, 98. (1832).
Doubleday & Hewitson, t. 11. f. 2. (1847).
New Ireland. B. M.
6. EUP. AGLICIDE Boisd. *Faune de l'Océanie*, 96. (1832).
Rawack.
7. EUP. DUPONCHELI Boisd. *Faune de l'Océanie*, 97. (1832).
New Guinea.
8. EUP. HERBSTII Boisd. *Faune de l'Océanie*, 95. (1832).
New Guinea.
9. EUP. ELEUSINE.
P. El. *Cram.* t. 266. f. D. (1780).
Terpsichrois El. *Hüb. Verz. bek. Schmett.* 16. (1816).
Danaïs El. *Godt. Enc. M.* ix. 177. n. 3. (1819).
Java. B. M.
10. EUP. MAZARES.
Salpinx Eleusine *Hüb. Samml. Exot. Schmett.* (1806-27).
Java. B. M.
July, 1847.
11. EUP. MIDAMUS.
P. Mid. *Linn. Syst. Nat.* ii. 756. n. 108. (1767).
Fab. Ent. Syst. iii. i. 39. n. 116. (1793)
Terpsichrois Mid. *Hüb. Verz. bek. Schmett.* 16. (1816).
Danaïs Mid. *Godt. Enc. M.* ix. 179. n. 12. (1819).
P. Mulciber *Cram.* t. 127. f. C. D. (1776).
♀ P. Claudius *Fab. Ent. Syst.* iii. i. 40. n. 119. (1793).
♀ P. Basilissa *Cram.* t. 266. f. C. (1780).
♀ Danaïs Claudia *Godt. Enc. M.* ix. 180. n. 15. (1819).
Java, N. India, Penang. B. M.
12. EUP. PROTHOË.
Danaïs Pr. *Godt. Enc. M.* ix. 177. n. 1. (1816).
P. Midamus *Cram.* t. 266. f. A. B. (1780).
? Terpsichrois Alea *Hüb. Verz. bek. Schmett.* 16. (1816).
Eup. Payettæ *Zinken-Sommer*, in *Nova Acta Acad. Nat. Curios.* xv. 189. (1831).
Penang, Java. B. M.
13. EUP. CALLITHOË Boisd. *Faune de l'Océanie*, 93. (1832).
New Guinea.
14. EUP. SUPERBA.
P. sup. *Herbst.* t. 119, 120. (1783-95).
Danaïs Alopia *Godt. Enc. M.* ix. 177. n. 4. (1819).
Limnas mutabilis Midamis *Hüb. Samml. Exot. Schmett.* (1806-27).
China, N. India. B. M.
15. EUP. CHLOË Guérin, in *Delessert, Souvenirs d'un Voy. dans l'Inde*, App. 72. (1843).
Pulo Penang, N. India. B. M.
16. EUP. ALCATHOË Boisd. *Faune de l'Océanie*, 99. (1832).
Danaïs Alc. *Godt. Enc. M.* ix. 178. n. 5. (1819).
Amboyna, Java.

17. EUP. MELINA *Boisd. Faune de l'Océanie*, 98. (1832).
Dan. Mel. *Godt. Enc. M.* ix. 179. n. 9. (1819).
New Guinea.
18. EUP. CLIMENA.
P. Cl. *Cram. t.* 389. f. E. F. (1782).
Crastia Cl. *Hüb. Verz. bek. Schmett.* 16. (1816).
Danais Algea *Godt. Enc. M.* ix. 178. n. 8.
(1819).
Amboyana.
19. EUP. DRYASIS.
P. Dry. *Fab. Ent. Syst.* iii. i. 39. n. 117.
(1793).
Indian Islands?
20. EUP. AMYMONA.
Dan. Am. *Godt. Enc. M.* ix. 179. n. 10.
(1819).
Amboyana.
21. EUP. POLITA *Erichs. in Nova Acta Acad. Cur.* xvi. t. 40.
f. 6. (1834).
Philippines.
22. EUP. MEGILLA *Erichs. in Nova Acta Acad. Curios.* xvi.
t. 40. f. 7. (1834).
Philippines.
23. EUP. RHADAMANTHUS.
♂ P. Rh. *Fab. Ent. Syst.* iii. i. 42. n. 127. (1793).
♂ Danais Alcicide *Godt. Enc. M.* ix. 181. n. 13.
(1819).
♂ Terpsichrois Thoosa *Hüb. Samml. Exot. Schmett.*
(1806-27).
♂ Danais Rhadamia *Godt. Enc. M.* ix. 180. n. 14.
(1819).
♀ P. Diocletianus *Fab. Ent. Syst.* iii. i. 40. n. 118.
(1793).
♀ Danais Diocletianus *Godt. Enc. M.* ix. 181. n.
16. (1819).
N. India, Penang, Singapore. B. M.
24. EUP. BAUDINIANA.
Danais Baud. *Godt. Enc. M.* ix. 181. n. 17.
(1819).
Timor.
25. EUP. SYLVESTER.
P. Syl. *Fab. Ent. Syst.* iii. i. 41. n. 124. (1793).
Australia?
26. EUP. TULLIOLUS.
P. Tul. *Fab. Ent. Syst.* iii. i. 41. n. 123.
(1793).
Australia. B. M.
27. EUP. LAPEYROUSEI *Boisd. Faune de l'Océanie*, 97. (1832).
Bourou.
28. EUP. DUFRESNII.
Danais Duf. *Godt. Enc. M.* ix. 815. n. 12, 13.
(1819).
Philippines.
29. EUP. GAMELIA.
Salpinx Gam. *Hüb. Samml. Exot. Schmett.*
(1806-27).
Eup. Faber Zinken-Sommer, in *Nova Acta Acad.*
Curios. xv. t. 16. f. 18, 19. (1831).
Java. B. M.
30. EUP. GOUDOTII *Boisd. Faune Ent. de Madag.* t. 3. f. 2.
(1833).
Mauritius. B. M.
31. EUP. CORE.
P. Co. *Cram. t.* 266. f. E. F. (1780).
Crastia Co. *Hüb. Verz. bek. Schmett.* 16.
(1816).
P. Corus *Fab. Ent. Syst.* iii. i. 41. n. 122.
(1793).
Danais Coreta *Godt. Enc. M.* ix. 182. n. 22.
(1819).
N. India. B. M.
32. EUP. CORINNA.
Danais Cor. *M^cLeay, in King's Survey of Au-*
stralia, ii. App. 462. (1827).
Australia.
33. EUP. SWAINSONI.
Dan. Sw. *Godt. Enc. M.* ix. 815. n. 16, 17.
(1823).
India.
34. EUP. PELOR *Doubleday & Hewitson*, t. 11. f. 1. (1847).
N. W. Australia. B. M.
35. EUP. OROPE *Boisd. Faune de l'Océanie*, 100. (1832).
Boisd. Sp. Gén. i. t. 11. f. 9. (1836).
Timor? Taiti.
36. EUP. ELEUTHO *Boisd. Faune de l'Océanie*, 100. (1832).
Dan. El. *Freycinet, Voy.* t. 83. f. 2. (1815).
Godt. Enc. M. ix. 815. n. 17, 18. (1823).
Taiti, Navigator's Islands. B. M.
37. EUP. EUPHONE *Boisd. Faune de Madag.* t. 3. f. 1. (1833).
P. Eup. *Fab. Ent. Syst. Suppl.* v. 423. n. 184,
185. (1793).
Mauritius. B. M.
38. EUP. DESJARDINSII.
Danaida Desj. *Guérin, Icon. du Règne Anim.*
texte, ii. 474.
Island of Rodriguez.

Note. The British Museum possesses several species which possibly are described, but which I have been unable to identify. The published descriptions of many species are so imperfect, and the insects themselves so variable, that without a reference to the original specimens identification is nearly impossible.

Genus II. **DANAIS.***Euplœa* Fab.*Danaïda*, *Danaus*, or *Danaïs*, Latr.*Danaïs* Godt., Boisd. &c.*Amauris*, *Hestia*, *Euplœa*, *Anosia*, Hübn.

Antennæ about one half the length of the body, gradually but distinctly clavate.

Anterior Legs with the femora and tibiæ about equal in length; the tarsi shorter. Tarsi of the males sometimes obscurely two-jointed; the basal joint subcylindric, rather stoutest at the apex; the second joint about one fourth the length of the first, more or less pointed; sometimes without any indication of joints, subcylindric, tapering towards the base and apex. Tarsi of the females four-jointed, the last often indistinct; all except the last with a stout spine on each side at the apex.

Middle and Posterior Legs with the tarsi very spiny; the claws long, slightly curved; the pulvilli and paronychchia obsolete.

LARVA subcylindrical, tapering towards the head; furnished on the third and last segments, and sometimes on the sixth, with long, fleshy, not retractile tentacula.

PUPA suspended, ovate, contracted about the middle; the abdomen very short.

Danaïs is at once known from *Euplœa* by the apparent want of pulvilli and paronychchia; from *Hestia* by this character and its distinctly clavate antennæ. A very minute examination of the claws in a recent state, or after soaking them in water if the specimen be a dried one, will show the rudiments of both paronychchia and pulvilli quite at the base of the claw, but so small, as almost to justify their being described as wanting. They are most visible in the species nearest to *Hestia*.

The genus is divisible into four distinct groups, easily distinguishable in general by the form and markings of the wings, independently of slight structural differences. The first of these has hitherto been confounded with *Euplœa*, which genus it resembles in its dark colour, and seems to replace in Africa, to which continent it is confined. The males have a patch of peculiarly formed and closely placed scales situated on the submedian nervure of the posterior wings, not far from the anal angle.

The second group is more widely dispersed, occurring in the warm latitudes of every part of the globe. The species of which it is composed are mostly of a fulvous colour bordered with black; this border often very broad at the apex, and spotted with white; the nervures and nervules also are often black. The posterior wings are sometimes fuscous, and longitudinally streaked with white. One species, *Danaïs affinis*, differs much in colouring from the general character of the group; being fuscous, with the disc of both wings more or less white, the apex and outer margin being spotted with the same colour. This group has the sexual spot on the first median nervule. Both in the Old and New Worlds the species have a wide range. *Danaïs Chrysippus* occurs from Naples to the Cape of Good Hope, and eastward to China. *Danaïs Archippus* is found throughout America, from Canada to Rio Janeiro.

A third group is almost peculiar to the East, being found throughout China, the continent of India, the Indian Islands, and Australia. They are generally of a dark colour, streaked longitudinally between the nervures and nervules with white or greenish, sometimes the posterior wings are bordered with fulvous. There is a considerable difference in the form of the wings in the different species of this group, some being much more elongate than others.

The sexual spot is placed upon the first median nervule or submedian nervure, and sometimes assumes the form of a distinct pouch, the opening being on the upper surface of the wing; the bottom being, in dried specimens at least, filled with a brown powder. One species of this group, *Danais Limniace*, is found in Africa as well as Asia and Australia; though the African specimens vary slightly from the Indian ones, as will be seen by comparing the accompanying figure with an Indian or Australian specimen.

The fourth group has hitherto been confounded with the next genus, which it closely resembles in the form, texture, and colouring of the wings, and to which it has another resemblance in the absence of the sexual spot on the posterior wings. Like some species of the preceding group, and like the genus *Hestia*, it has the first subcostal nervule anastomosing with the costal nervure. It is curious to trace, in the different species of the preceding group, the gradual approximation of the first subcostal nervure to the costal nervule. First we find each bent considerably in opposite directions, the angles approximating, but separated by a distinct space; next we find the angles almost if not quite touching; then we find them in *Danais Melissa* and other species, and in the present group, united so as to give the appearance of the subcostal nervule actually crossing the costal. Like most species of *Hestia*, this group has the wings somewhat diaphanous, white; the outer margin, nervures, nervules, two or more vittæ in the cell, and a series of dots between the nervules sometimes coalescing, all fuscous: but, notwithstanding these points of resemblance, it may always be known from *Hestia* at first sight by its distinctly clavate antennæ, and on closer examination by its claws devoid of paronychialia or pulvilli. I am not aware of its occurrence beyond the islands of the Indian Archipelago, and the southernmost promontories and peninsulas of India.

The males of the first group have the anterior tibiæ and tarsi covered with closely appressed scales; those of the second with long, hair-like, not appressed scales; those of the third and fourth with short scales, and they are also fringed with thinly scattered long hairs.

The LARVÆ of the first and fourth groups are as yet unknown. Those of the other groups are mostly white, tinged with green or purple, marked with transverse bands or narrow rings of black, the space between them often marked with yellow dots. Stoll's figure of the larva of *Danais Eresimus* represents the colours as more blended and equally distributed than they are in *Danais Archippus*, *Danais Limniace*, &c. Those of *Danais Juventa* and *Danais Plexippus* are black, dotted with white in the former, spotted along the sides with yellow in the latter. The tentacula in both are red at the base. As far as known, all the species feed on *Asclepiadææ*.

The PUPÆ are commonly of a beautiful transparent green, spotted with black, and banded and spotted with gold, sometimes altogether of the most brilliant golden colour. That of *Danais Plexippus* is represented by Dr. Horsfield as flesh-coloured, spotted with gold, and marked on the first abdominal segment with a gold band bordered anteriorly with black.

The PERFECT INSECTS generally appear within fifteen days after the change from the larva to the pupa state. They are insects of slow, but tolerably powerful, flight, often sailing high in the air with their wings expanded. I have frequently seen *Danais Archippus* cross the Ohio and Mississippi, where these streams are more than a mile in breadth. Both this species and its more southern ally, *Danais Berenice*, are fond of alighting on flowers, especially those of the *Asclepiadææ*. In the evening and in cloudy weather they are found resting on the stems of herbaceous plants. They never are to be found in the thick part of the woods, but are common in the open spaces of the forests, and prefer meadows and plantations. *Danais Archippus* is abundant even in the largest towns of the Middle and Northern States. M. Lacordaire's account of the habits of *Danais Eresimus* in Cayenne is very similar. It is found exclusively in the open plantations, sometimes many hundreds may be found together. The Australian variety of *Danais Limniace*, described by Mr. W. S. MacLeay under the name of *Euplœa hamata*, was found by Captain King in countless myriads on the northern coast of Australia, and is probably the species which Captain Cook saw in far greater profusion in the neighbourhood of Thirsty Sound, on the twenty-ninth of May, 1770, when he found a space of three or four acres covered by millions of them on the wing, and every twig and branch loaded with almost equal numbers at rest. This insect is stated by Mr. Hope, in the *Transactions of the Entomological Society* (III. 143. 149.), to be used for food by the natives of Australia, and he gives Mr. MacLeay as his authority for the fact. But, as at the same time he gives *Euplœa hamata* as the scientific name of the Bugong Moth, I imagine that, forgetting that the genus *Euplœa* of Fabricius is a genus of Butterflies, he has been misled, by a hasty reference to Mr. Bennett's *Wanderings*, into the supposition that *Euplœa hamata* and the Bugong Moth are identical.

I may here refer to two passages in Herrera, where flights of butterflies are mentioned, which did not occur to me

when mentioning the flight seen by Sir R. Schomburgh, where they would have been more properly noticed, as probably they were some species of *Callidryas*. The one occurs in the fourteenth chapter of the second book of the first decade, where he mentions that one day in June, 1494, there came to the ships of Columbus, then off the coast of Cuba, innumerable butterflies, so numerous that they obscured the sky, and continued passing until night, when a sudden storm of rain destroyed them. The second passage is in the nineteenth chapter of the second book of the third decade, where he is relating the various prodigies which preceded the fall of the Aztec empire. Amongst these wonders is recorded a prodigious flight of butterflies and locusts (*mariposas y langostas*), which continued flying from the east towards the west, and caused great astonishment to the natives, who had never before seen the like. Had the cloud been altogether composed of locusts, it would have been a far more complete augury of what was coming from the east. I find no mention of this occurrence in the chapter on the various preternatural events which took place previously to the conquest of Mexico, commonly placed at the end of Bernal Diaz de Castillo's *Historia Verdadera*, in which the old soldier details numerous showers of toads and similar wonders; but I have a faint recollection of some passage of the kind in his history, on which I cannot now put my hand.

DANAIS.

†

1. DAN. PHÆDON *Godt. Enc. M.* ix. 183. n. 26. (1819).
P. Ph. Fab. Ent. Syst. Suppl. v. 423. n. 184, 185. (1793).
Euplœa Ph. Boisd. Faune Ent. de Madag. t. 3. f. 3. (1833).
Mauritius. B. M.
2. DAN. ECHERIA.
P. Ech. Stoll. t. 29. f. 1, 1 a. (1790).
Amauris Ech. Hübn. Verz. bek. Schmett. 14. (1816).
Dan. Vaillantiana Godt. Enc. M. ix. 183. n. 25. (1819).
S. Africa. B. M.
3. DAN. EGIALEA.
P. Eg. Cram. t. 192. f. D. (1777).
Amauris Eg. Hübn. Verz. bek. Schmett. 14. (1816).
P. Damocles Fab. Ent. Syst. iii. i. 41. n. 121. (1793).
Danaïs Dam. Godt. Enc. M. ix. 182. n. 23. (1819).
“*Euplœa Niavius*” *Doubleday & Hewitson*, t. 11. f. 3. (1847).
W. Africa. B. M.
4. DAN. NIAVIUS *Godt. Enc. M.* ix. 182. n. 22. (1819).
P. Ni. Linn. Syst. Nat. ii. 766. n. 109. (1767).
Cram. t. 2. f. F. G. (1775).
Fab. Ent. Syst. iii. i. 40. n. 120. (1793).
Amauris Ni. Hübn. Verz. bek. Schmett. 14. (1816).
W. Africa. B. M.

† †

5. DAN. GILIPPUS *Godt. Enc. M.* ix. 186. n. 34. (1819).
Boisd. Sp. Gén. i. t. 24. f. 2. (1837).
July, 1847.

- P. Gil. Cram.* t. 26. f. C. D. (1775).
Fab. Ent. Syst. iii. i. 52. n. 159. (1793).
Limnas ferruginea vincetoxici Hübn. Samml. Exot. Schmett. (1806–27).
Anosia vinc. Hübn. Verz. bek. Schmett. 16. (1816).
Brazil. B. M.
6. DAN. BERENICE *Boisd. et Lecomte, Icon. Lép. et Chen. Am. Sept.* t. 39. (1827).
P. Ber. Cram. t. 205. f. E. F. (1780).
P. Eriippus Fab. Ent. Syst. iii. i. 49. n. 152. (1793).
Dan. Erip. Godt. Enc. M. ix. 186. n. 33. (1819).
Anosia Erippe Hübn. Verz. bek. Schmett. 16. (1816).
P. Gilippus Smith-Abb. Lep. Ins. of Georgia, i. t. 7. (1797).
Georgia, Florida, Mexico. B. M.
7. DAN. CLEOTHERA *Godt. Enc. M.* ix. 185. n. 31. (1819).
Doubleday & Hewitson, t. 12. f. 2. (1847).
Haiti, Honduras, Venezuela. B. M.
8. DAN. ERESIMUS *Godt. Enc. M.* ix. 185. n. 30. (1819).
P. Eres. Cram. t. 175. f. G. H. (1777).
Fab. Ent. Syst. iii. i. 51. n. 157. (1793).
Anosia Eresima Hübn. Verz. bek. Schmett. 16. (1816).
Brazil. B. M.
9. DAN. CLEOPHILE *Godt. Enc. M.* ix. 185. n. 32. (1819).
Doubleday & Hewitson, t. 12. f. 3. (1847).
Haiti, Jamaica. B. M.
10. DAN. ERIPPUS.
P. Er. Cram. t. 3. f. A. B. (1775).
P. Plex. Cram. t. 206. f. E. F. (1780).
P. Arch. Fab. Ent. Syst. iii. i. 49. n. 150. (1793).
Smith-Abb. Lep. Ins. of Georgia, i. t. 7. (1797).

- Anosia Arch. *Hüb. Verz. bek. Schmett.* 16. (1816).
 Dan. Arch. *Godt. Enc. M.* ix. 184. n. 28. (1819).
 Anosia Megalippe *Hüb. Samml. Exot. Schmett.* (1806-27).
 Brazil, Mexico, United States, Canada. B. M.
11. DAN. NERIPPE *Boisd. MSS.*
 Brazil.
12. DAN. PLEXAURE *Godt. Enc. M.* ix. 184. n. 29. (1819).
 Brazil.
13. DAN. PETILIA *Godt. Enc. M.* ix. 189. n. 41. (1819).
 P. Pet. *Stoll*, t. 28. f. 3. (1790).
 Australia (generally). B. M.
14. DAN. CHRYSIPPUS *Godt. Enc. M.* ix. 187. n. 38. (1819).
 P. Chry. *Linn. Syst. Nat.* ii. 767. n. 119. (1767).
Cram. t. 118. f. B. C. (1777).
Fab. Ent. Syst. iii. i. 50. n. 154. (1793).
 Euplœa Chrys. *Hüb. Verz. bek. Schmett.* 15. (1816).
 S. Europe, Africa (generally), India, China, Java. B. M.
15. DAN. ALCIPPUS *Godt. Enc. M.* ix. 188. n. 9. (1819).
 P. Alc. *Cram.* t. 127. f. E. F. (1777).
Fab. Ent. Syst. iii. i. 50. n. 155. (1793).
 Eupl. Alc. *Hüb. Verz. bek. Schmett.* 15. (1816).
 Præc. var.?
 Sierra Leone, Ashanti. B. M.
16. DAN. PLEXIPPUS *Godt. Enc. M.* ix. 186. n. 35. (1819).
 P. Plex. *Linn. Syst. Nat.* ii. 767. n. 117. (1767).
Fab. Ent. Syst. iii. i. 49. n. 151. (1793).
 Euplœa Plex. *Hüb. Verz. bek. Schmett.* 15. (1816).
 P. Genuia *Cram.* t. 206. f. C. D. (1780).
 N. India, China. B. M.
17. DAN. PHILENE *Godt. Enc. M.* ix. 187. n. 37. (1819).
 P. Phi. *Cram.* t. 375. f. A. B. (1782).
 Euplœa Phi. *Hüb. Verz. bek. Schmett.* 15. (1816).
 Java, Amboyna. B. M.
18. DAN. ARTENICE *Godt. Enc. M.* ix. 187. n. 36. (1816).
 P. Art. *Cram.* t. 375. f. C. D. (1782).
 Euplœa Art. *Hüb. Verz. bek. Schmett.* 15. (1816).
 Java. B. M.
19. DAN. HEGESIPPUS *Godt. Enc. M.* ix. 189. n. 42. (1819).
 P. Heg. *Cram.* t. 180. f. A. (1779).
Fab. Ent. Syst. iii. i. 52. n. 160. (1793).
 Euplœa Heg. *Hüb. Verz. bek. Schmett.* 15. (1816).
 Var. P. Melanippus *Cram.* t. 127. f. A. B. (1777).
 Sumatra, Java. B. M.
20. DAN. AFFINIS *Godt. Enc. M.* ix. 182. n. 21. (1819).
 P. af. *Fab. Ent. Syst.* iii. i. 58. n. 181.
 Euplœa Chionippe *Hüb. Samml. Exot. Schmett.* (1806-27).
 Dan. Cecilia *Bougainville, Voyage de la Corvette Thétis*, t. 44. f. 1, 1 bis (1837).
 Australia. B. M.
21. DAN. LOTIS *Godt. Enc. M.* ix. 189. n. 44. (1819).
 P. Lo. *Cram.* t. 230. f. D. E. (1780).
 Hestia Thoë *Hüb. Verz. bek. Schmett.* 15. (1816).
 Dan. Edmondi *Bougainville, Voy. de la Corvette Thétis*, t. 44. f. 3, 3 bis (1837).
 Amboyna, Borneo. B. M.
- † † †
 *
22. DAN. AGLEA.
 P. Ag. *Cram.* t. 377. f. E. (1782).
 Dan. similis *Godt. Enc. M.* ix. 190. n. 46. (1819).
 Java, Moulmein. B. M.
23. DAN. AZEMA *Boisd. MSS.*
 Java.
24. DAN. SOBRINA *Boisd. Faune de l'Océanie*, 9. 104. (1832).
 New Guinea.
25. DAN. GRAMMICA.
 Euplœa Gram. *Boisd. Sp. Gén.* i. t. 11. f. 10. (1836).
 Java. B. M.
26. DAN. LIXA *Boisd.*
 Nepaul.
27. DAN. CLEONA *Godt. Enc. M.* ix. 190. n. 47. (1819).
 P. Cl. *Cram.* t. 377. f. F. (1782).
 Var. Euplœa Philomela *Zinken-Sommer*, in *Nova Acta Acad. Curios.* xv. t. 16. f. 17. (1831).
 Java, N. India. B. M.
28. DAN. MELISSA *Godt. Enc. M.* ix. 192. n. 50. (1819).
 P. Mel. *Cram.* t. 377. f. C. D. (1782).
 N. India, Singapore. B. M.
29. DAN. MEGANIRA *Godt. Enc. M.* ix. 192. n. 51. (1819).
 Java.
30. DAN. SIMILIS.
 P. sim. *Linn. Syst. Nat.* i. 479. n. 128. (1758).
Linn. Syst. Nat. ii. 782. n. 193. (1767).
Clerck, Icon. t. 16. f. 3. (1764).
 P. Aventina *Cram.* t. 59. f. F. (1775).
 Danaïs Av. *Godt. Enc. M.* ix. 191. n. 48. (1819).
 China, Madjico Sima. B. M.

31. DAN. LIMNIAE *Godt. Enc. M. ix. 191. n. 49. (1819).*
Doubleday & Hewitson, t. 12. f. 1. (var. Petiverana) (1819).
P. Limn. Cram. t. 59. f. C. D. (1775).
P. similis Fab. Ent. Syst. III. i. 58. n. 180. (1793).
Euplœa hamata M^cLeay, King's Survey of Australia, II. App. 461. (1827).
Var. Dan. Petiverana Boisd. MSS.
N. India, Penang, N. W. Australia, Africa (var. Petiverana). B. M.
32. DAN. ISMARE *Godt. Enc. M. ix. 190. n. 45. (1819).*
P. Is. Cram. t. 279. f. E. F. (1780).
Hestia Is. Hübn. Verz. bek. Schmett. 15. (1816).
Amboyna.
33. DAN. DAULIS *Boisd.*
Celebes.
34. DAN. JUVENTA *Godt. Enc. M. ix. 193. n. 54. (1816).*
P. Juv. Cram. t. 188. f. B. (1780).
Hestia Juv. Hübn. Verz. bek. Schmett. 15. (1816).
Java. B. M.
- * *
35. DAN. TYTIA *Doubleday & Hewitson, t. 12. f. 4. (1847).*
Euplœa Tyt. G. R. Gray, Lep. Ins. of Nepaul (1831).
N. India. B. M.
36. DAN. MELANEUS *Godt. Enc. M. ix. 192. n. 53. (1819).*
Cram. t. 30. f. D. (1775).
Hestia Ephyre Hübn. Verz. bek. Schmett. 15. (1816).
Java, China, Penang. B. M.
37. DAN. ALBATA.
Euplœa alb. Zinken-Sommer, in Nova Acta Acad. Curios. xv. t. 16. f. 16. (1831).
Java. B. M.
- † † † †
38. DAN. GAURA.
Idæa Ga. Horsf. Desc. Cat. Lep. Ins. E. I. C. t. 6. f. 1. (1829).
Java. B. M.
39. DAN. DAOS.
Idæa Da. Boisd. Sp. Gén. I. t. 24. f. 3. (1836).
Singapore. B. M.

Note. *P. Erix Fab. Syst. Ent. Suppl. v. 423. n. 180, 181. (1793)* probably is a variety of *Danais Limniace* or some allied species, notwithstanding he gives Cayenne as its habitat, which is probably an error.

Linné and Fabricius have both made great confusion in regard to their *P. Plexippus*, by describing the Asiatic species for which this name is retained, and referring to figures of Catesby and others, which belong to the North American *Danais Archippus*. Linné's remark, "*alæ primores fascia alba*," clearly proves that he intended the Asiatic insect, though he gives America as its habitat. Subsequently (*Mus. Lud. Utr. 262.*) he says, "*meus e China*," and the description there is of the Asiatic species.

Hübner (*Verz. bek. Schmett. 15.*) places together as one species, under the name of *Hestia similis*, the true *P. similis* of Linné, as well as *Danais Limniace*, *D. Aglea*, and *D. Cleona*, all very distinct species.

Genus III. **HESTIA.***HESTIA* Hübn.*IDEA* Fab., Latr., Godt., Boisd., &c.

Antennæ more than half the length of the body, slender, almost filiform, scarcely thickened at the apex.

Anterior Wings ample, elongate, somewhat oval; the outer margin sometimes sinuate, especially in the males. Costal nervure and first subcostal nervule anastomosing. Upper disco-cellular nervule short but distinct.

Posterior Wings elongate, obovate; the abdominal fold almost wanting in the males, distinct in the females.

Anterior Legs clothed with scales. The femur and tibia of about equal length. The tarsus of the males about one third the length of the tibia, cylindrical, tapering towards the apex, sometimes showing indications of being four-jointed, sometimes constricted near the base, without any signs of articulations. Tarsus of the females clavate, four-jointed; each joint, except the fourth, armed at the apex with a spine on each side.

Middle and Posterior Legs of moderate length. Tarsi long, with the last joint dilated. Claws curved, rather short. Paronychia with the outer lacinia strap-shaped, longer than the claw; inner lanceolate, more than half as long as the claw. Pulvillus jointed, nearly as long as the claw; the second joint broad, corneous.

LARVA and *PUPA* unknown.

Hestia is so remarkable a genus, both in its form and colouring, that the species contained in it cannot be confounded at the most casual glance with those of any other, except it be the last species of *Danais*, but these will be easily distinguished by their very different antennæ and claws. All the species are insects of large size, with semi-transparent whitish or fuscous wings of rather delicate texture; with the nervules, and mostly numerous spots on or between the nervures and nervules, and on the outer margin, and sometimes the margin itself, black.

Of their habits little is known, but probably they much resemble those of the *Danaides*. Mr. A. Adams, to whom we owe many interesting observations on natural history made during the last voyage of H. M. S. *Samarang*, informs me that *Hestia Leuconoe*, which he captured in the *Madjico Sima* group, flies slowly over the tops of the bushes, and is not difficult to take.

I have adopted the name *Hestia* from Hübner, though he includes under that name many species not properly belonging to this genus, in preference to using a name given by Linné as a specific name to the oldest known species.

I am indebted to Dr. Boisduval for the loan of his specimen of *Hestia D'Urvillei*, the rarest and most striking species of the genus.

HESTIA Hübn.

- | | |
|--|--|
| <p>1. HEST. LYNCEUS Hübn. <i>Verz. bek. Schmett.</i> 15. (1816).
 P. Ly. <i>Drury</i>, II. t. 7. f. 1. (1773).
 P. Idea <i>Stoll</i>, t. 42. f. 1. (1791).
 Idea Lyn. <i>Godt. Enc. M.</i> ix. 195. n. 2. (1819).
 "Hestia Idea var." <i>Doubleday & Hewitson</i>, t. 13.
 f. 1. (1847).
 Java, Penang, Madagascar? B. M.</p> <p>2. HEST. CORYTHOË <i>Boisd. MSS.</i>
 Amboyna.</p> <p>3. HEST. HYBLÆA <i>Boisd. MSS.</i>
 Sumatra.</p> <p>4. HEST. LEUCONOE <i>Erichs. Nova Acta Acad. Curios.</i> xvi. 283.
 (1834).
 <i>Doubleday & Hewitson</i>, t. 13. f. 2. (1847).
 Manilla, Madjico Sima. B. M.</p> <p>5. HEST. FUMANA <i>Boisd.</i>
 Sumatra. B. M.</p> | <p>6. HEST. AZA <i>Boisd. Faune de la Océanie</i>, 107. (1832).
 Bourou.</p> <p>7. HEST. IDEA Hübn. <i>Verz. bek. Schmett.</i> 15. (1816).
 P. Id. <i>Linn. Syst. Nat.</i> II. 758. n. 73.
 (1767).
 <i>Fab. Ent. Syst.</i> III. i. 185. n. 573. (1793).
 <i>Cram.</i> t. 193. f. A. B. (1779).
 Idea Agelia <i>Godt. Enc. M.</i> ix. 195. n. 1.
 (1819).
 Amboyna. B. M.</p> <p>8. HEST. BLANCHARDII <i>Marchal, Rev. Cuvier.</i> 169. (1845).
 Borneo.</p> <p>9. HEST. D'URVILLEI <i>Boisd. Faune de l'Océanie</i>, 107. (1832).
 <i>Doubleday & Hewitson</i>, t. 13. f. 3. (1847).
 New Guinea. B. M.</p> |
|--|--|

* * I regret exceedingly that an error in the lettering of two of the plates of this family has passed unobserved; *Danaïs Ægialea* being named "*Euplœa Niavius*," and the dark variety of the male of *Hestia Lynceus* being named "*Hestia Idea var.*" The greatest care will be taken to prevent the recurrence of such inaccuracies.

Family V. HELICONIDÆ.

HEAD broad.

Eyes large, prominent.

Labial Palpi widely separated at the base, not convergent, ascending, longer than the head, distinctly triarticulate: the second joint longest, furnished above, near the apex, with a tuft of hair; third joint small.

Antennæ elongate, gradually clavate.

THORAX rather slender.

Anterior Wings elongate, mostly much rounded externally, very rarely subtriangular. Cell always closed.

Posterior Wings much shorter than the anterior, transversely elongate, oval, without any channel for the reception of the abdomen. Cell always closed.

Anterior Legs imperfect, sometimes much more developed in the females than in the males.

Middle and Posterior Legs mostly rather small. Claws simple with paronychial pulvilli.

ABDOMEN elongate, slender, sometimes slightly clavate, as long as, or longer than, the abdominal margin of the posterior wings.

LARVÆ as yet undescribed.

PUPA smooth, suspended by the tail.

Though they are not easily distinguished as a group by any one character, the Heliconidæ can be recognised at first sight by many peculiarities. Their long gradually clavate antennæ; their palpi widely separated at the base, and not convergent; their elongate anterior wings almost always rounded externally; their narrow posterior wings with the costal margin almost double the length of the abdominal, this latter without any fold to form a channel for the reception of the abdomen; and their elongate abdomen, always equal to, and mostly extending beyond, the wings, serve to discriminate them from all other groups. It is true that some species of *Leptalis* come very near to them in outline and in colour, but these may always be known by their perfect anterior feet and bifid claws; although, from the great development of the anterior feet in the females of those Heliconians which most nearly resemble *Leptalis Vocula* and *L. Methymna* in colouring, it requires the microscope to detect these characters.

The antennæ, palpi, anterior wings, and middle and posterior legs do not strikingly differ in structure in the different genera; but the neuration of the posterior wings varies much, even in the sexes of some species, and the structure of the anterior feet would almost serve to divide the family into two sections. In one of these the anterior feet in both sexes very much resemble those of the preceding family; in the other group the males have the tibia and tarsus represented only by a small ovate knob, more like the last joint of a palpus than the ordinary form of imperfect anterior tibiæ and tarsi, and the females mostly have the whole leg much more developed than is usual in any of the families of butterflies with suspended pupæ, except the Libytheidæ.

Although this group is one of the most abundant in all the tropical parts of America, both in species and individuals, its larvæ are as yet entirely unknown, and I have only rather doubtful information as to the pupa, which I believe to resemble that of *Danaïdæ*. The figures of Madame Merian cannot be depended on; and Stoll's figure of the larva of *Stalactis Euterpe*, which is commonly referred to as an example of the larva of this family, even if accurate, does not

exemplify it, as *Stalachtis* does not belong to this family but to the *Erycinidæ*. It is possible that the larva figured by Stoll as that of *Leptalis Amphione* may be that of some species of this family, rather than of a *Danais*. Of the habits of the perfect insect, most that has yet been published is contained in the following passage from M. Lacordaire's Memoir in the *Annals of the Entomological Society of France*, to which I have so often already referred. I shall quote it at length here to save repetition under the different genera.

"I now come to the genus *Heliconia*, one of the most beautiful amongst the *Lepidoptera*, and peculiar to America. Cayenne possesses a great number of species, and in this respect more resembles Surinam than Brazil. Surinam appears to be the especial country of certain groups, of which the species become more common as we approach that colony. Such are the *Heliconidæ*, with white spots on a black or bluish ground, as *Hecate*, *Sappho*, *Antiocha*, which only live in the forests. Of these I have only seen one species, which begins to appear on the river Sinnamary, and becomes more plentiful as we advance from the side of the Maroni. Its flight is free, easy, and it does not rise high. These species form a first group.

"A second, equally natural, comprises the species with red or yellow spots on the superior wings, and no radiating marks on the inferior, as *Melpomene*, *Callicopis*, *Sara*, *Thamar*, &c. These are the most common of all. They only live in the neighbourhood of habitations, have a bold undulating flight, rarely proceeding in a direct course, nevertheless they are easily captured.

"Others with yellow or red spots on the anterior wings, and red or fulvous rays on the posterior, such as *Doris*, *Erato*, *Cynisca*, *Aæde*, *Andremona*, will form a third group. All these are much more rare than the preceding, and are found only in the woods, not in the virgin forest, but in the woods near habitations. They rise but little above the ground, and fly rapidly in a direct course, partly with a sailing (planant), partly with a bounding (voltigeant) flight. *H. Ricini*, which differs in colour, has the same habits.

"A fourth group, more numerous than the preceding, may comprise the species where the yellow predominates, mixed with black, as *Eva*, *Pasinuntia* (which Godart has erroneously confounded in one species), *Egina*, *Numata*, *Polymnia*, &c. The greater part of these are tolerably common, and with some exceptions only frequent the woods. Those with very narrow wings and elongate abdomen have an unequal jumping flight, and alight often in great numbers on flowers, when they are easily taken. Others with less elongate anterior wings, and the abdomen extending but little beyond the posterior wings, have on the contrary a rapid unequal flight. They are often seen to rise suddenly into the air, and then immediately descend, without ever sailing with the wings expanded. This movement, which they commonly perform whenever the collector has disturbed them, renders them difficult to capture.

"The species with more or less transparent wings, such as *Nisæa*, *Flora*, *Ægle*, which have for their analogues in Brazil, *Diaphana*, *Gazoria*, &c., constitute a fifth group. They remain constantly in the deepest forests amongst the bushes, where they fly slowly two or three feet from the ground, alighting every minute on the leaves. They are almost always found united in little societies, more or less numerous. *H. Psidii*, which rivals in size the largest species of the genus, has the same habits. It is common in Cayenne."

I am indebted to Mr. Gosse, the author of a most interesting volume on the birds of Jamaica, for the following memorandum in regard to *Heliconia Charitonia* :—

"Passing along a rocky footpath on a steep wooded mountain side in the parish of St. Elizabeth, about the end of August, 1845, my attention was attracted, just before sunset, by a swarm of these butterflies in a sort of rocky recess, overhung by trees and creepers. They were about twenty in number, and were dancing to and fro, exactly in the manner of gnats, or as the *Hepioli* play at the side of a wood. After watching them awhile, I noticed that some of them were resting with closed wings at the extremities of one or two depending vines. One after another fluttered from the group of dancers to the reposing squadron, and alighted close to the others, so that at length, when only about two or three of the fliers were left, the rest were collected in groups of half a dozen each, so close together that each group might have been grasped in the hand. When once one had alighted it did not in general fly again, but a new comer, fluttering at the group, seeking to find a place sometimes disturbed one recently settled, when the wings were thrown open, and one or two flew up again. As there were no leaves on the hanging stalks, the appearance presented by these beautiful butterflies, so crowded together, their long erect wings pointing in different directions, was not a little curious. I was told by persons residing near, that every evening they thus assembled, and that I had not seen a third part of the numbers often collected in that spot."

I am informed by Mr. D. Dyson that *Heliconia Melpomene* and *Ithomia Iphianassa* assemble in groups in the same manner, in which they resemble the genus *Calepteryx*, their analogues in the *Neuroptera*.

It is peculiarly interesting to observe this similarity in the habits of insects of different orders, but resembling one another in external form.

The Heliconidæ, with the exception of the genus *Hamadryas*, are entirely confined to the New World, and almost to the tropical parts of it. *Heliconia Charitonia* has been found in the southern parts of East Florida, and probably some species occur to the south of the tropic of Capricorn, thus extending the range slightly beyond both tropics. Though thus truly tropical, they are found to a considerable elevation on the mountains and high table lands. The true Heliconiæ seem mostly to prefer the low country or the first slopes of the mountains to an elevation of about 2000 feet. In this genus some of the species have a wide range of latitude, as *Heliconia Melpomene* and *H. Charitonia*, which are found many degrees on both sides the equator. Other species have a more limited range, especially those with radiating red or crimson lines on the posterior wings. Some of these species were found in great abundance at the mouth of the Amazons by Mr. J. P. G. Smith. These species are rarely seen in the collections sent from Rio, and in Mr. Dyson's collections from Venezuela I found but one specimen; but in Mr. Smith's collection from the mouth of the Amazons, by far the most extensive and interesting I have ever seen from Northern Brazil, these species predominated. It is to the kindness of this gentleman that the British Museum is indebted for nearly every specimen of this group which it possesses. From M. Lacordaire's remarks these species appear to be rare in Cayenne, probably their true country is the valley of the Amazons.

The delicate *Ithomiæ* are found from the level of the sea to full 8000 feet above it, and are almost equally numerous in every part of America within the tropics, unless it be Peru, and the more southern parts of the Pacific coast. On the other hand *Olyras* and *Athesis* seem confined to the country westward of the Orinoco, perhaps almost to the mountains of Venezuela. The second section of *Tithorea* appears to inhabit a still more western region, whilst the first section belongs more peculiarly to the West Indies, and the north-eastern parts of South America. But our knowledge is as yet too scanty to permit of our speaking positively on such points. All we can say is, that as yet we only know that such an insect occurs in such a place or places, and whilst we carefully register every fact that comes to our knowledge, await the time when we, or those who follow us, may venture to generalise.

Although I have placed the genus *Hamadryas* provisionally in this family, I am by no means sure that this is its true place. The only perfect specimen of this genus which I have seen is one lent to me by Dr. Boisduval, and consequently I have been unable to bestow upon it the minute examination requisite to decide upon its exact position. Unlike all the other genera of this family, it is found in the Old World, occurring in the most eastern islands of the Indian Archipelago and the Polynesian groups.

Genus I. **TITHOREA.***HELICONIA* Latr., Godt. &c.*MECHANITIS* Fabr.*MELINÆA* Hübn.**HEAD** broad.*Eyes* prominent, round, in some species covered with hairs.*Maxillæ* of moderate length, rather fully developed.*Labial Palpi* clothed with scales, and externally with long hairs; the tuft of hairs near the apex of the second joint rather small. First joint curved, subcylindric; second joint at least one half longer than the first, subcylindric, very slightly curved, truncate at the apex, almost mucronate; third joint short, not one half so long as the first, cylindric, tapering to the apex.*Antennæ* very elongate, the lower side with three distinct grooves extending nearly their whole length; the club slender; articulations very distinct.**THORAX** moderately stout.*Anterior Wings* rather broad, subtriangular. First subcostal nervule thrown off before the end of the cell, being distant from it about one fourth of the length of the cell; the second thrown off at, or a little before, the end of the cell; the third about equally distant from the second and fourth; the fourth rather nearer to the third than to the apex. Upper disco-cellular nervule wanting, middle disco-cellular nervule directed obliquely inwards, about two thirds as long as the lower, which is slightly curved and directed obliquely outwards, reaching the third median nervule at a point where it makes a considerable angle. Internal nervule running into the submedian.*Posterior Wings* obovate. Costal and subcostal nervures united for a short distance from their origin, then widely separated; the precostal nervule thrown off at the point where they divide. Discoidal nervule united by a short upper disco-cellular nervule to the subcostal nervule at the point where it divides, or to the second subcostal nervule immediately after its origin. Lower disco-cellular about three times the length of the upper, directed obliquely outwards, uniting with the third median nervule at some distance from its origin.*Anterior Legs* of the male clothed with scales and long hairs; the femur not quite so long as the tibia; tarsus about one fourth or one fifth the length of the tibia, subcylindric, tapering at each extremity, indistinctly two-jointed, the second joint much shorter than the first. *Anterior Legs* of the female clothed with scales; the femur and tibia about equal in length, the latter smooth; tarsus about two thirds the length of the tibia, clavate, five-jointed; the first joint equal in length to the rest combined, widening to the apex; second about one third the length of the

first; third and fourth shorter, the latter shortest; the fifth nearly as long as the second, the apex with a small blunt appendage, representing the claw; first, second, and third joints with a stout spine on each side at the apex.

Middle and Posterior Legs rather elongate, tibiæ spiny, the spurs distinct; tarsi long, spiny all round; claws short, curved, deeply grooved below. Paronychia broad at the base, the outer lacinia longer than the claw, narrow, strap-shaped, hairy; inner one broad, triangular. Pulvillus jointed, nearly as long as the claws, the second joint broad.

ABDOMEN elongate, scarcely if at all longer than the abdominal margin of the posterior wings.

LARVA and *PUPA* unknown.

Tithorea may be known from Heliconia by its more elongate and less distinctly clavate antennæ, by its broader and more angular wings, and by the neuration of its posterior wings. The males of the species composing the first section, which have many points of resemblance with Euploea, have on the inner margin of the anterior wings below, and on the anterior margin of the posterior wings above, a space covered with small polished scales, giving the surface a silvery or selenitic lustre. They have also on the upper surface of the posterior wings, near the margin, a spot of peculiarly formed scales covered by a tuft of long appressed hairs. Those of the second section have two of these sexual marks on each wing.

The genus is divisible into two very distinct groups, one of which apparently is peculiar to the more western parts of the north of South America, the other to Northern Brazil, Venezuela, and the West Indian Islands.

TITHOREA.

Section I. *Eyes hairy, tibiæ of middle and posterior legs much longer than the femora.*

1. TITH. HUMBOLDTH.

Hel. Hum. Latreille, in *Humb. et Bonp. Obs. Zool. et Anat. Comp.* t. 18. f. 1, 2. (1811-19).

Godt. Enc. M. ix. 224. n. 64. (1819).

New Granada. B. M.

2. TITH. BONPLANDI *Doubleday & Hewitson*, t. 14. f. 1. (1847).

Hel. Bonp. Guérin, *Icon. du Règne Anim.* texte, II. 472. (1829-44).

New Granada. B. M.

3. TITH. PAVONII *Boisd. MSS.*

Guayaquil. B. M.

Section II. *Eyes smooth, tibiæ of middle and anterior legs not much longer than the femora.*

4. TITH. IRENE.

P. Ir. Drury, III. t. 38. f. 1. (1782).

Fab. Syst. Ent. III. i. 165. n. 510. (1793).

Melinæa Ir. Hübner, *Verz. bek. Schmett.* (1816).

Hel. ? Ir. Godt. Enc. M. ix. 225. n. 60. (1819).

Jamaica. B. M.

5. TITH. MEGARA *Doubleday & Hewitson*, t. 14. f. 2. (1847).

Hel. Meg. Godt. Enc. M. ix. 223. n. 59. (1819).

Para, Antilles. B. M.

6. TITH. TYRO.

Hel. Ty. Klug MSS.

Venezuela. B. M.

Note. P. Harmonia Cram. t. 190. f. C., which both Fabricius and Godart consider to be identical with the P. Mneme of Linné, appears rather to belong to this genus than to Mechanitis, and may be a variety of Tith. Megara; but as Cramer only figures the under surface, and as that differs from all the varieties of Tith. Megara which I have seen, I have not ventured to adopt Cramer's name instead of Godart's. Cramer's insect certainly is not Mechanitis Mneme.

Genus II. **HELICONIA.**

HELICONIA Latr., Godt. &c.

MECHANITIS Fab.

MECHANITIS, *EUEIDES*, *MELINÆA*, *MIGONITIS*, *SUNIAS*, *APOSTRAPHIA*,
PHLOGRIS, *SICYONIA*, *AJANTIS*, *Hübner*.

HEAD broad.

Eyes oval, very prominent.

Maxillæ rather fully developed.

Labial Palpi rising considerably above the forehead, scaly, with elongate thinly scattered hairs in front; the basal joint curved, subcylindric; second fully twice as long as the first, subcylindric, rather broader at the apex; third joint obovate, pointed, small, about one fourth the length of the second.

Antennæ elongate, about equal to the whole length of the body, gradually but distinctly clavate; the articulations rather indistinct.

THORAX moderately stout.

Anterior Wings elongate; the anterior margin rounded, about double the length of the outer; this mostly much rounded, sometimes slightly sinuate about the middle; inner margin longer than the outer, often slightly sinuate. Subcostal nervure with the nervules thrown off at nearly equal distances, the first about one fifth of the length of the cell from the end thereof, the second a little beyond the end of the cell. Upper disco-cellular nervule very short; middle disco-cellular directed obliquely inwards, shorter than the lower, which is directed obliquely outwards, striking the third median nervule at a point where it is bent at an oblique angle. Submedian nervure describing a considerable curve soon after its origin. Internal nervure wanting.

Posterior Wings more or less obovate, the costal about one half longer than the abdominal margin.

Precostal nervure simple. Costal nervure rather widely separated from the subcostal, terminating at the outer angle. Discoidal nervure appearing to be a third subcostal nervule. Cell obovate, short, not much exceeding one third the length of the wing.

Anterior Legs of the male scaly and hairy; femur and tibia nearly equal, smooth, sometimes compressed and dilated; tarsus about one half the length of the tibia, subcylindric, slightly pointed at the apex, mostly somewhat compressed, apparently only one-jointed. *Anterior Legs* of the female more developed; the femora and tibiæ about equal, clothed with scales and long rather thinly scattered hairs; the tibia mostly slightly dilated at the apex: tarsus about one half the length

of the tibia, five-jointed; the first longer than the rest combined, subcylindric, largest at the apex, which has a stout spine on each side; second, third, and fourth joints short, broad, mostly very spiny below, with lateral tufts of stiff hairs, and a stout spine on each side at the apex; fifth joint tapering towards the apex, where it is furnished with a curved claw-like process.

Middle and Posterior Legs moderately long. Tibiæ longer than the femora, more or less spiny, with the spurs distinct. Tarsi longer than the tibiæ, spiny, the spines below placed in four regular rows; the first joint very long, sometimes more than equal to the rest combined; second, third, and fourth progressively shorter; fifth about equal to the second. Claws curved. Paronychial bilacinate; the outer lacinia often less membranaceous, and more solid than usual, pointed, about equal in length to the claw; inner membranaceous, sometimes very short, almost triangular, sometimes more elongate, strap-shaped. Pulvilli as long as the claws, jointed, the last joint nearly round.

ABDOMEN somewhat clavate, elongate, mostly extending considerably beyond the wings.

LARVA and *PUPA* unknown.

The *Heliconiæ* offer several very distinct types of colouring, and some considerable variations in the form of the anterior wings. As a genus, however, they are easily recognisable, with the exception of a few species which resemble some species of *Mechanitis*. These may be always distinguished by the form of the cell of the posterior wings, and the situation of the discoidal nervure. The anterior feet in the males also offer an excellent character, the tibiæ and tarsi in *Mechanitis* being only represented by a small knob. I have not observed any tufts of long hairs on the anterior margin of the posterior wings in the males, as in *Tithorea* and *Mechanitis*.

Some of the species are rather difficult to discriminate, as they are much subject to variation, and appear sometimes to hybridise. The prevalent variation in colour arises from the black ground colour invading and sometimes obliterating the yellow or red markings, especially on the posterior wings. In some species the yellow is not unfrequently replaced by a fulvous colour. This is particularly the case in those species which resemble *Mechanitis*.

This genus has a Geographical Range extending slightly beyond both tropics; it is most numerous near the equator, and in general they prefer the lower tracts of country up to about two or three thousand feet above the level of the sea.

HELICONIA.

- | | |
|---|---|
| <p>1. <i>HEL. ATTHIS</i> Doubleday & Hewitson, t. 14. f. 3. (1847).
Guayaquil. B. M.</p> <p>2. <i>HEL. ELVIRA</i>.
Guayaquil. B. M.</p> <p>3. <i>HEL. CHARITONIA</i> Godt. Enc. M. ix. 210. n. 22. (1819).
P. Ch. Linn. Syst. Nat. ii. 757. n. 65. (1767).
Fab. Ent. Syst. iii. i. 170. n. 528. (1793).
Cram. t. 191. f. F. (1777).
Apostrophia Ch. Hübn. Verz. bek. Schmett. 13.
(1816).
Jamaica, Honduras, Venezuela. B. M.</p> <p>4. <i>HEL. ARANEA</i> Godt. Enc. M. ix. 209. n. 19. (1819).
P. Ar. Fab. Ent. Syst. iii. i. 168. n. 519.
(1793).
Jones, Icones, ii. t. 26. f. 1. (ined.).
Brazil. B. M.</p> | <p>5. <i>HEL. ANTIOCHA</i> Godt. Enc. M. ix. 203. n. 4. (1819).
P. Ant. Linn. Syst. Nat. ii. add. 1068. n. 12.
(1767).
Fab. Ent. Syst. iii. i. 173. n. 538. (1793).
Cram. t. 38. f. E. F. (1775).
Ajantis Ant. Hübn. Verz. bek. Schmett. 14.
(1816).
Brazil, Guiana, Venezuela. B. M.</p> <p>6. <i>HEL. LEUCE</i>.
Ajantis Sappho Hübn. Samml. Exot. Schmett.
(1806-27).
Brazil. B. M.</p> <p>7. <i>HEL. SAPPHO</i> Godt. Enc. M. ix. 203. n. 2. (1819).
P. Sap. Drury, iii. t. 38. f. 4. (1782).
Fab. Ent. Syst. iii. i. 165. n. 511. (1793).
Jamaica. B. M.</p> |
|---|---|

8. *HEL. CYDNO* Doubleday & Hewitson, t. 15. f. 3. (1847).
St^a, Fé de Bogotá. B. M.
9. *HEL. CYRRIA* Godt. Enc. M. ix. 203. n. 3. (1819).
Quito ?, Guayaquil ? B. M.
10. *HEL. CELIA*.
Guayaquil. B. M.
11. *HEL. CLYTIA*.
P. Cly. Cram. t. 66. f. C. (1775).
? P. Sara Fab. Ent. Syst. III. i. 167. n. 518. (1793).
Sicyonia Sa. Hübn. Verz. bek. Schmett. 13. (1816).
Hel. Sa. var. Godt. Enc. M. ix. 204. n. 5. (1819).
Brazil, Guiana. B. M.
12. *HEL. RHEA*.
P. Rh. Cram. t. 54. f. C. D. (1775).
? P. Sara Fab. Ent. Syst. III. i. 167. n. 518. (1793).
Hel. Sa. Godt. Enc. M. ix. 204. n. 5. (1819).
Nereis cærulea Thamar Hübn. Samml. Exot. Schmett. (1806-27).
Sicyonia Tha. Hübn. Verz. bek. Schmett. 13. (1816).
Brazil, Guiana. B. M.
13. *HEL. APSEUDES*.
Sicyonia Aps. Hübn. Verz. bek. Schmett. 13. (1816).
Hübn. Zut. f. 141, 142. (1818).
Venezuela. B. M.
14. *HEL. CLYSONYMA* Latr. in Humb. et Bonpl. Obs. de Zool. et d'Anat. Comp. t. 42. f. 1, 2. (1811-19).
Godt. Enc. M. ix. 210. n. 21. (1819).
New Granada. B. M.
15. *HEL. RICINI* Godt. Enc. M. ix. 209. n. 20. (1819).
P. Ric. Linn. Syst. Nat. II. 756. n. 63. (1767).
Cram. t. 378. f. A. B. (1782).
Fab. Mant. Ins. II. 14. n. 139. (1787).
Apostrophia Ric. Hübn. Verz. bek. Schmett. 13. (1816).
Demerara, Venezuela. B. M.
16. *HEL. HORTENSIA* Guérin, Icon. du Règne Anim. III. 469. (1827-44).
Doubleday and Hewitson, t. 15. f. 1. (1847).
New Granada. B. M.
17. *HEL. LUCIA* Godt. Enc. M. ix. 208. n. 16. (1819).
Cram. t. 350. f. E. F. (1782).
Sunias Lu. Hübn. Verz. bek. Schmett. 12. (1847).
Guiana.
18. *HEL. PETIVERANA* Boisd. MSS.
P. mexicanus, nigricans, &c. Petiver, Gazophylacium, t. 4. f. 2. (1702-11).
Mexico, Honduras. B. M.
August, 1847
19. *HEL. MELPOMENE* Godt. Enc. M. ix. 208. n. 15. (1819).
P. Mel. Linn. Syst. Nat. II. 758. n. 71. (1767).
Fab. Ent. Syst. III. i. 171. n. 529. (1793).
Cram. t. 191. f. C. (1777).
Phlogris Mel. Hübn. Samml. Exot. Schmett. (1806-27).
Sunias Mel. Hübn. Verz. bek. Schmett. 12. (1816).
Santa Lucia, Guiana. B. M.
20. *HEL. PHYLLIS* Godt. Enc. M. ix. 208. n. 17. (1819).
P. Phy. Fab. Syst. Ent. 463. n. 86. (1775).
Sunias Phyllis Hübn. Samml. Exot. Schmett. (1806).
P. Roxane Cram. t. 45. f. E. F. (1775).
Brazil, Venezuela. B. M.
21. *HEL. TELESIPHE* Doubleday & Hewitson, t. 15. f. 2. (1847).
Bolivia. B. M.
22. *HEL. CALLICOPIS* Godt. Enc. M. ix. 207. n. 14. (1819).
P. Call. Cram. t. 190. f. E. F. (1777).
Sunias Call. Hübn. Verz. bek. Schmett. 12. (1816).
Guiana, Venezuela. B. M.
23. *HEL. MARINETTA*.
Cayenne. B. M.
24. *HEL. ERYTHRÆA* Godt. Enc. M. ix. 206. n. 10. (1819).
P. Eryth. Cram. t. 189. f. A. (1777).
Fab. Ent. Syst. III. i. 179. n. 556. (1793).
Migonitis Eryth. Hübn. Verz. bek. Schmett. 12. (1816).
Guiana, New Granada. B. M.
25. *HEL. THELXIOPE*.
Nereis festiva Thelx. Hübn. Samml. Exot. Schmett. (1806-27).
N. Brazil. B. M.
26. *HEL. DORIMENA*.
Bolivia. B. M.
27. *HEL. ANACTORIE* Doubleday & Hewitson, t. 15. f. 4. (1847).
Bolivia. B. M.
28. *HEL. EROXENA*.
Bolivia. B. M.
29. *HEL. VESTA*.
P. Ves. Cram. t. 119. f. A. (1777).
Nereis festiva Ves. Hübn. Samml. Exot. Schmett. (1806-27).
Hel. Cynisca Godt. Enc. M. ix. 205. n. 8. (1819).
? P. Erato Fab. Ent. Syst. III. i. 179. n. 557. (1793).
N. Brazil. B. M.
30. *HEL. ÆEDE*.
Migonitis Ææ. Hübn. Zut. f. 129, 130. (1818).
N. Brazil. B. M.

31. *HEL. ANDREMONA* *Godt. Enc. M.* ix. 206. n. 9. (1809).
P. And. Cram. t. 297. f. A. (1780).
Migonitis And. Hübn. Verz. bek. Schmett. 12.
 (1816).
Var. P. Udalrica Cram. t. 297. f. B. (1782).
Migonitis Ulrica Hübn. Verz. bek. Schmett. 12.
 (1816).
 Guiana. B. M.
32. *HEL. BURNEYI.*
Migonitis Bur. Hübn. Zut. f. 401, 402. (1825).
 N. Brazil. B. M.
33. *HEL. EGERIA.*
P. Eg. Cram. t. 34. f. B. C. (1775).
Hel. Ergatis Godt. Enc. M. ix. 207. n. 12.
 (1819).
 N. Brazil. B. M.
34. *HEL. CYBELE.*
P. Cy. Cram. t. 188. f. A. (1777).
 Guiana.
35. *HEL. ERATO* *Godt. Enc. M.* ix. 205. n. 7. (1819).
P. Er. Linn. Mus. Lud. Ultr. 231. (1764).
Clerck. Icon. t. 40. f. 1. (1764).
P. Ricini ♂ Fab. Syst. Ent. 461. n. 81. (1775).
P. Amathusia Cram. t. 177. f. F. (1777).
Nereis festiva Delila Hübn. Samml. Exot.
Schmett. (1806-27).
 Guiana, Venezuela. B. M.
36. *HEL. DORIS* *Godt. Enc. M.* ix. 204. n. 6. (1819).
P. Do. Linn. Mant. 536. (1771).
? Cram. t. 337. f. C. (1782).
Fab. Ent. Syst. III. i. 166. n. 513. (1793).
Sicyonia Do. Hübn. Verz. bek. Schmett. 13.
 (1816).
P. Ricini ♀ Fab. Ent. Syst. III. i. 167. n. 517.
 (1793).
P. Quirina Cram. t. 65. f. A. B. (1775).
 Guiana, Bolivia, Para. B. M.
37. *HEL. PASITHOË.*
P. Pas. Cram. t. 17. f. A. B. (1775).
P. Hecale Fab. Mant. Ins. 254. (1787).
Hel. Hec. Godt. Enc. M. ix. 203. n. 1. (1819).
 Guiana. B. M.
38. *HEL. CLAUDINA.*
 Guayaquil. B. M.
39. *HEL. NUMATA* *Godt. Enc. M.* ix. 217. n. 44. (1819).
P. Num. Cram. t. 297. f. C. D. (1782).
 Seq. var. ?
 Guiana. B. M.
40. *HEL. SYLVANA* *Godt. Enc. M.* ix. 215. n. 40. (1819).
P. Sylvana Cram. t. 364. f. C. D. (1782).
 Guiana. B. M.
41. *HEL. CLARA* *Godt. Enc. M.* ix. 217. n. 43. (1819).
P. Cl. Fab. Ent. Syst. III. i. 161. n. 499.
 (1793).
Jones, Icones, II. t. 9. (ined.)
 Guiana. B. M.
42. *HEL. NERINA.*
 N. Brazil. B. M.
43. *HEL. EUCOMA.*
Eueides Eu. Hübn. Zut. f. 577, 578. (1825).
 Venezuela, N. Brazil. B. M.
44. *HEL. TELCHINIA* *Doubleday & Hewitson, t. 14. f. 4.*
 (1847).
 Venezuela. B. M.
45. *HEL. ARISTIONA.*
 Bolivia. B. M.
46. *HEL. PHAËNA.*
 Venezuela. B. M.
47. *HEL. EUCRATE.*
Mechanitis Euc. Hübn. Samml. Exot. Schmett.
 (1806-27).
Hel. Narcæa Godt. Enc. M. ix. 217. n. 44.
 (1819).
 Guiana, Brazil. B. M.
48. *HEL. ETHRA* *Godt. Enc. M.* ix. 221. n. 56. (1819).
Eueides Eth. Hübn. Zut. f. 553, 554. (1825).
 Brazil. B. M.
49. *HEL. ZERBINETTA.*
 Bolivia. B. M.
50. *HEL. ? LYCASTE.*
Hel. Lyc. Godt. Enc. M. ix. 221. n. 54. (1819).
P. Lyc. Fab. Ent. Syst. III. i. 161. n. 497.
 (1775).
 Guiana. B. M.
51. *HEL. ? CORNELIA.*
Hel. Cor. Guérin, Icon. du Règne Anim. III.
 472. (1829-44).
 Bolivia.
52. *HEL. ? ELISA.*
Hel. El. Guérin, Icon. du Règne Anim. III. 472.
 (1829-44).
 Bolivia.

Genus III. LYCOREA.

*HELICONIA Latr., Godt. &c.**EUEIDES Hübn.*

HEAD broad.

Eyes nearly round, prominent.

Maxillæ of moderate length.

Labial Palpi rising considerably above the forehead, scaly, the first and second joints furnished in front with long hair. First joint short, curved; second joint more than double the length of the first, subcylindric, rather tapering towards the apex, slightly compressed internally; third joint not much more than one fourth the length of the second, slenderer, subcylindric, tapering towards the extremity.

Antennæ not quite two thirds as long as the body, gradually clavate; the club stout, rounded at the apex; the articulations distinct, with three slight channels below.

THORAX robust.

Anterior Wings subtriangular, rounded at the apex, anterior and outer margin rounded, inner margin nearly straight. Costal nervure terminating about the middle of the costa. Subcostal nervure emitting its first and second nervules before the end of the cell, the former being distant therefrom about one fourth the length of the cell, the latter not one twelfth; third subcostal nervule arising at a point about equally distant from the origin of the second and fourth, the fourth at a point about equidistant from the third and from the apex. Upper disco-cellular nervule wanting. The first discoidal nervule just touching the subcostal nervule, which is slightly thickened at that point. Middle disco-cellular nervule curved inwards. Lower disco-cellular nervule longer than the middle, directed obliquely outwards, reaching the third median nervule at a point where it makes an obtuse angle; its upper half nearly atrophied. Submedian nervure terminating exactly at the inner angle. Internal nervule almost atrophied, running into the submedian.

Posterior Wings obovate, the outer margin slightly sinuate. Precostal nervure bifid. Costal nervure short, not reaching beyond the middle of the costa, united to the subcostal as far as the point where the precostal is thrown off. Discoidal nervule about equidistant from the second subcostal and the third median nervules, united to the former by an upper disco-cellular nervule directed obliquely outwards, and to the latter by a nervule thrown off from it at nearly a right angle, then bent obliquely outwards, forming at the point of junction an acute angle with the upper disco-cellular nervule.

Anterior Legs of the male very small, scaly; the femur and tarsus hairy; the tibia rather longer than the femur; the tarsus about one half the length of the tibia, cylindric, rounded or slightly pointed at the apex, one-jointed. *Anterior Legs* of the female more elongate, stouter; the femur longer than the tibia: the tarsus club-shaped, about three fourths the length of the tibia, four-jointed; the basal joint five or six times the length of the others combined, club-shaped, compressed; second, third, and fourth very short, transverse; first, second, and third joints with a stout spine on each side at the apex; second, third, and fourth joints with a tuft of stiff converging hairs on each side at the base, each tuft lying close upon the spine of the preceding joint.

Middle and Posterior Legs moderately stout. Tibiæ rather longer than the femora, spiny, the spines small, apical spurs distinct. Tarsi about as long as the tibiæ, spiny below, the spines placed rather irregularly, but somewhat in four rows; basal joints elongate, longer than the rest combined; second to fifth short, the last rather longer than the others; all broadest at the apex. Claws curved, deeply grooved below. Paronychial bilacinate, almost corneous; outer lacinia narrow, pointed, as long as the claw; inner subtriangular, about half as long as the outer. Pulvillus two-jointed; the last joint broad, narrowed at its base.

ABDOMEN elongate, extending beyond the wings, narrowest at the base.

This genus may be known from *Heliconia* by its much shorter and more clavate antennæ, its broader anterior wings, the different neuration of both these and the posterior wings, and the difference in the structure of the anterior feet in both sexes. The males have a large tuft of hair on each side of the last segment of the abdomen, capable of being in a great measure retracted within the abdomen.

The few species which compose it are, with the exception of *Tithorea Humboldtii* and *T. Bonplandi*, the largest and most robust of the *Heliconidæ*. They are subject to considerable variations in colour; and I am by no means sure that all of even this small number of nominal species are in reality distinct. The genus occurs from Haiti to the South of Brazil, but I am not aware of its having been met with in Jamaica or the smaller West Indian Islands, except St^a. Lucia. It seems to be most common within eight or ten degrees on each side of the equator.

LYCOREA.

1. *LYC. PASINUNTIA*.

- P. Pas. *Cram.* t. 316. f. A. B. C. (1782).
 ? P. Eva *Fab. Ent. Syst.* III. i. 162. n. 501.
 (1793).
 Hel. Eva *Godt. Enc. M.* ix. 222. n. 57.
 (1819).
 Brazil, Guiana. B. M.

2. *LYC. CERES*.

- P. Ce. *Cram.* t. 90. f. A. (1775).
 Hel. Eva *Godt. Enc. M.* ix. 222. n. 57. (1819).
 Brazil, Guiana. B. M.

3. *LYC. HALIA*.

- Eucides Ha. *Hübner. Samml. Exot. Schmett.*
 (1806-27).
 Guiana. B. M.

4. *LYC. ATERGATIS* Doubleday & Hewitson, t. 16. f. 1. (1847).

Venezuela. B. M.

5. *LYC. CLEOBÆA*.

- Heliconia* Cl. *Godt. Enc. M.* ix. 222. n. 58.
 (1819).
 W. Indies.

Genus IV. OLYRAS.

HEAD not so broad as the thorax.

Eyes moderately prominent, nearly round.

Maxillæ long, rather slender.

Labial Palpi rising distinctly above the forehead, scaly, and in front densely hairy. First joint subcylindric, slightly curved; second joint one third longer than the first, subcylindric, smaller towards the apex, the tuft of hair near the apex not large; third joint about one fourth the length of the second, ovate, slightly pointed, clothed with scales.

Antennæ about three fourths the length of the abdomen, very gradually incrassated towards the apex; the last joint smaller, pointed.

THORAX rather stout.

Anterior Wings opaque, with diaphanous markings, elongate, subtriangular; the outer margin about one half, the inner about two thirds, the length of the anterior margin; the anterior and outer margins slightly rounded; the inner in the male rather deeply emarginate towards the anal angle, less deeply in the females. Costal nervure extending nearly to the middle of the anterior margin. Subcostal nervules thrown off at nearly equal distances; the first before the end of the cell; the second a little beyond it; the fourth about equally distant from the third and from the apex. Upper disco-cellular nervule wanting. First discoidal nervule just touching the subcostal nervure. Middle disco-cellular directed obliquely inwards; the lower obliquely outwards, about equal in length to the upper, joining the third median nervule at a point where it is bent at nearly a right angle. Internal nervure running directly into the submedian nervule.

Posterior Wings opaque; of the male nearly orbicular, the anterior margin straight as far as the end of the costal nervure, where there is a slight notch; of the female obovate, the anterior margin almost straight for about two thirds of its length from the base. Precostal nervure simple. Costal nervure extending about two thirds the length of the wing. Subcostal nervure separating from the costal a little before the origin of the precostal; its first nervule reaching the costa just before the outer angle; second nervule bent at almost a right angle immediately after its origin, attaining the outer margin just below the apex. Upper disco-cellular directed obliquely inwards. Discoidal nervule continued for some distance into the cell, beyond the point where it unites with the upper disco-cellular, bent at a considerable angle, where it is joined by the short, straight, lower disco-cellular, which unites with the third median nervule at a point where it is bent at an obtuse angle.

Anterior Legs of the male moderately stout, the tibia and tarsus clothed with scales and thinly placed spreading hairs. Tibia about one third longer than the femur. Tarsus about one third the length of the tibia, somewhat fusiform, tapering each way from the middle. *Anterior Legs* of the female much longer than those of the male. Tibia slender, rather longer than the femur. Tarsus about half as long as the tibia, five-jointed; the basal joint cylindric, longer than the rest combined; second, third, and fourth short, transverse, nearly equal; the fourth smallest; fifth much smaller, truncate; first, second, and third joints with a spine on each side at the apex; second, third, and fourth with a tuft of stiff hairs on each side at the base, resting on the spine of the preceding segment.

Middle and Posterior Legs with the femora, tibiæ, and tarsi of about equal length. Tibiæ spiny, the spurs small. Tarsi very spiny all round, the spines at the sides longest, not placed in rows beneath; first joint not so long as the rest combined; second about two fifths the length of the first; third about three fourths the length of the second; fourth one half the length of the second; fifth but little longer than the fourth. Claws curved. Paronychia bilacinate; the outer lacinia not so long as the claw; inner short, broad, subtriangular. Pulvillus jointed, about as long as the claws.

ABDOMEN considerably longer than the inner margin of the posterior wings, slightly clavate.

LARVA and *PUPA* unknown.

Olyras may readily be known from Lycorea by its longer antennæ, and the very different neuration of its posterior wings, and other less conspicuous characters. It is much more nearly allied to the following genus, and I have hesitated for some time as to whether it would not be more advisable to consider Olyras and Athesis as sections of the same genus. The very distinct facies, and several marked though minor differences in structure, have led me to separate them. The males have a space on the anterior margin of the posterior wings covered above with minute scales, possessing a selenitic lustre, and furnished with a long patch of very long delicate hairs.

Olyras Crathis was met with by Mr. Dyson in the mountains of Venezuela, up to about eight thousand feet elevation, in the month of August; and in the lower country near La Guayra in December.

OLYRAS.

1. OL. CRATHIS *Doubleday & Hewitson*, t. 16. f. 2. (1847).
Venezuela.

B. M.

Genus V. **ATHESIS.**

HEAD broad.

Eyes large, prominent, nearly round.

Maxillæ elongate, rather stout.

Labial Palpi small, rising but little above the forehead; basal joint about five sevenths the length of the second, subcylindric, curved; second joint subcylindric, tapering towards the apex, densely clothed behind, as is the first, with very long scales, in front with shorter scales and a few short hairs; third joint not more than one fifth the length of the second, scaly, not hairy, ovate.

Antennæ elongate, nearly as long as the whole body, very gradually clavate; the articulations distinct, with two well defined channels below; the apical joints rather smaller than those which precede them.

THORAX moderately stout.

Anterior Wings diaphanous, with opaque markings, elongate; the outer margin about one half, the inner about two thirds, the length of the anterior margin; anterior and outer margins rounded, the inner slightly emarginate. Costal nervure extending to the middle of the costa. First subcostal nervule thrown off before the end of the cell; second at about an equal distance beyond it; third nearer to the second than the second is to the first, about equally distant from the fourth and from the end of the cell; fourth nearer to the apex than to the third. Upper disco-cellular nervule wanting, the first discoidal nervule just touching the subcostal nervure, both being a little thickened at the point of meeting. Middle disco-cellular nervule about two thirds the length of the lower, directed obliquely inwards. Lower disco-cellular directed obliquely outwards, joining the third median nervule at a point where it is bent at nearly a right angle. Internal nervure distinct, running into the submedian.

Posterior Wings diaphanous, transversely elongate, obovate; anterior margin nearly straight for about two thirds of its length, then curving very suddenly downwards in the males, less so in the females. Precostal nervure bifid. Costal nervure reaching the anterior margin at a point beyond the sudden curvature of that margin in the males, not extending so far in the females. Subcostal united to the costal nervure as far as the origin of the precostal; its first nervule terminating at the outer angle; its second, soon after its origin, bent at almost a right angle in the males, at a less angle in the females. Upper disco-cellular nervule about one third the length of the lower, directed obliquely inwards. Discoidal

nervure continued for some distance into the cell. Lower disco-cellular nervule very slightly curved, directed very little outwards, joining the third submedian nervule where it is bent at a slight angle.

Anterior Legs of the males slender, clothed with scales, and long, delicate, loosely scattered hairs. Tibia about one third longer than the femur, nearly cylindric. Tarsus one-jointed, about one fourth the length of the tibia, nearly cylindric, a little enlarged beyond the middle, the apex tapering almost to a point. *Anterior Legs* of the females stouter. Tibia not quite so long as the femur, smooth. Tarsus about one half the length of the tibia, five-jointed; the basal joint nearly cylindric, not quite twice as long as the rest combined, slightly spiny beyond the middle, the apex with a stout spine on each side; second and third shorter, nearly as broad as long, spiny below, with a stout spine on each side at the apex, and a bunch of stiff hairs on each side at the base; fourth joint narrower than the third, spiny, with a bunch of stiff hairs on each side at the base; fifth joint small, tapering, mucronate at the apex.

Middle and Posterior Legs rather elongate. The tibiæ longer than the femora, very spiny, the spurs distinct. Tarsi nearly as long as the tibiæ, very spiny all round, the spines not placed in rows below; first joint quite as long as the rest combined; second, third, and fourth progressively shorter; the fourth only two thirds the length of the fifth, which is equal in length to the third, and broader than the preceding joints. Claws curved, grooved below. Paronychia bilacinate; the outer lacinia not quite equal in length to the claw, strap-shaped, fringed with hairs especially at the apex; inner lacinia nearly triangular, shorter than the claws. Pulvillus jointed, not equal in length to the claw.

ABDOMEN elongate, clavate, much longer than the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

This genus appears to be confined to Venezuela, where it occurs chiefly in the warmer regions, though sometimes it is found on the higher country, to an elevation of six thousand feet. The only species known to me, is the one figured; and the only specimens I have seen of it are those taken by Mr. D. Dyson, who informs me that it is an insect of very slow flight. The males have a patch of long delicate hairs on the costa of the posterior wings above.

ATHESIS.

1. *ATH. CLEARISTA* Doubleday & Hewitson, t. 16. f. 3. (1847).
Venezuela.

B. M.

Genus VI. **EUTRESIS.**

HEAD rather broad.

Eyes oval, not remarkably prominent.

Maxillæ extending beyond the middle of the thorax.

Labial Palpi rather slender, scarcely rising above the forehead; all the joints scaly and hairy.

First joint subcylindric, curved; second joint about one third longer than the first, subcylindric, smaller towards the apex, the dorsal tuft not very large; third joint much slenderer, tapering, about one third of the length of the second.

Antennæ fully three fourths as long as the body, insensibly enlarged into an elongate club; the terminal joints more distinctly separated; the last obtusely pointed.

THORAX short, moderately stout.

Anterior Wings opaque, with slightly diaphanous markings, elongate, subtriangular; the anterior margin slightly curved; outer margin rounded, fully three fifths the length of the anterior; inner margin slightly emarginate, equal in length to the outer. Costal nervure extending beyond the middle of the wing. Subcostal nervure emitting its first nervule about the middle of its course, considerably before the end of the cell; the second about at an equal distance beyond the cell; the third at a less distance from the second than the space between the latter and end of the cell; the fourth not so near to the second as this to the third. Upper disco-cellular nervule very short. Middle disco-cellular directed inwards for three fourths of its length, then suddenly bent outwards, the angle presenting a short trace of the discoidal nervure. Lower disco-cellular not quite so long as the upper, slightly sinuous, directed obliquely outwards, reaching the third median nervule, where the latter makes a considerable angle. Internal nervule short, running into the submedian.

Posterior Wings opaque, almost obovate; the anterior margin slightly produced into a shoulder at the base; the cell scarcely one half the length of the wing. Precostal nervure simple. Costal nervure attaining the costa beyond the middle. Upper disco-cellular nervule arising from the second subcostal close to its origin, directed obliquely inwards. Lower disco-cellular arising from the discoidal nervure a little before the point where this nervure is joined by the upper disco-cellular, directed immediately downwards to the third submedian nervule which is bent at an obtuse angle at the point of contact. Discoidal nervure extending considerably into the cell.

Anterior Legs of the male with the femur and tibia nearly equal, the latter slightly longer than the former, subcylindric, both clothed with scales and a few long scattered hairs. Tarsus

one-jointed, fusiform, one fourth the length of the tibia, clothed with scales and numerous long delicate hairs. *Anterior Legs* of the female more elongate, the femur and tibia of equal length, the latter subcylindric. Tarsus more than half the length of the tibia, distinctly five-jointed; the basal joint cylindric, longer than the rest combined; second and third about equal; fourth rather smaller; fifth small, terminated by a short membranaceous appendage; first, second, third, and fourth joints, each with a pair of stout spines at the apex, on each of which rests a tuft of hairs arising from the base of the following joints.

Middle and Posterior Legs with the tibiæ barely as long as the femora, spiny, the spurs distinct. Tarsi longer than the tibiæ, spiny, the spines not placed in rows, those above slender, weak, those at the sides and below longer and stouter, especially the lateral ones; first joint not equal in length to the rest combined; second and third of nearly equal length, about one third the length of the first; fourth much shorter; fifth longer than the fourth, and broader. Claws strong, curved, grooved below. Paronychia bilacinate; the outer lacinia as long as the claw, strap-shaped; inner lacinia broader than, and nearly as long as, the inner, subtriangular. Pulvillus jointed, nearly as long as the claws.

ABDOMEN elongate, clavate, longer than the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

This genus is almost too closely allied to the two preceding genera, but there is so much difference in the neururation of the wings, in the structure of the palpi, of the anterior tarsi of the males, and of the paronychia of the middle and posterior feet, as well as in some minor characters, that I have thought it most advisable to separate it from them. The palpi are shorter, smaller, and less hairy than in *Olyras*; the anterior tarsi of the males are shorter than those of either *Olyras* or *Athesis*; the paronychia and the neururation of the wings are different from both these genera.

From *Ituna* it is at once known by its much longer antennæ.

The only species I have yet seen was brought from Venezuela by Mr. Dyson, who informs me that it occurs in the same localities as *Olyras Crathis*.

EUTRESIS.

1. EUT. *HYPEREIA* Doubleday & Hewitson, *tab. suppl.*

Genus VII. ITUNA.

HELICONIA Latr., Godt.

MECHANITIS Fab.

THYRIDIA Hübn.

HEAD broad.

Eyes nearly round, very prominent.*Maxillæ* short, not extending much beyond the middle of the thorax.*Labial Palpi* rising considerably above the forehead. First and second joints densely clothed with short scales, and in front with long hair-like scales and hairs; the first curved, subcylindric; the second more than twice the length of the first, subcylindric, rather smaller towards the apex; third joint much more slender, about one third the length of the first, subcylindric, with the apex pointed, scaly, and furnished with a few long hairs at the base.*Antennæ* scarcely more than half as long as the body; the club subcylindric, tapering, rounded at the apex, not more than one fourth the whole length of the antennæ; the joints more distinct and shorter than the preceding ones, slightly channeled below.

THORAX stout, rather elongate.

Anterior Wings diaphanous, with opaque markings; elongate; the anterior margin nearly straight; the apex rounded, somewhat truncate; outer margin a little more than half the length of the anterior, rounded, slightly emarginate near the anal angle; inner margin nearly straight in both sexes. Costal nervure extending beyond the middle of the costa. Subcostal nervules thrown off at about equal distances; the first a little before the middle of the wing; the second just before the end of the cell; the fourth rather nearer to the third than to the apex. Upper disco-cellular nervule wanting; the first discoidal nervule just touching the subcostal nervure. Middle disco-cellular much curved, shorter than the lower, the latter running obliquely outwards to the third median nervule, which forms a considerable angle at the point of junction. Internal nervule very slender and short, running into the submedian.*Posterior Wings* with the anterior and inner margins produced at the base, both nearly straight, the latter rather more than half the length of the former; outer margin curved, sinuate-dentate, more than three fourths the length of the anterior. Precostal nervure stout, bifid. Costal nervure reaching the costa about its middle. Second subcostal nervule slightly bent at the point where it is joined by the upper disco-cellular. Cell about two fifths the length of the wing. Upper shorter than the lower disco-cellular nervule, both slightly curved inwards, directed immediately across the wing; the lower united to the submedian nervure, before the

origin of its second nervule. Discoidal nervure not extending into the cell. Third submedian nervule curved, not angularly bent.

Anterior Legs of the male small, scaly; femur and tibia nearly equal in length. Tarsus one-jointed, less than one third the length of the tibia, fusiform, more obtuse at the base, very pointed at the apex. *Anterior Legs* of the female rather longer and stouter than those of the male. Tarsus but little shorter than the tibia, clavate, indistinctly four-jointed; all the joints except the fourth with a stout spine on each side at the apex; the base of all, except the first, with tuft of stiff hairs resting on these spines; first joint more than four times the length of the rest combined, clavate, obliquely truncate at the apex; second and third transverse; fourth smaller, nearly quadrate.

Middle and Posterior Legs with the tibiæ scarcely equal in length to the femora, spiny within, the spurs strong. Tarsi about equal in length to the tibiæ, spiny, the spines somewhat arranged in lines below and at the sides; the first joint equal to the rest combined; second and third about of equal length; fourth much shorter, broadest at the apex; fifth elongate-oval, slightly truncate at the apex, as long as the third and fourth combined, broader than the other joints. Claws rather short, curved, grooved below. Paronychial bilacinate; the outer lacinia as long as the claw, strap-shaped; inner nearly triangular. Pulvillus jointed, not so long as the claw.

ABDOMEN clavate, extending but little beyond the inner margin of the wings.

LARVA and *PUPA* unknown.

Its diaphanous wings with black markings give to this genus so much the external appearance of the two following genera, that even Hübner united them in one group. It is, however, too well marked to allow of its being confounded with either *Methona* or *Thyridia*. Its short antennæ, and the structure of the anterior feet in the females, seem to point out an affinity to *Lycorea*; but in the neuration of the posterior wings it differs remarkably from that genus. From *Methona* it may be known by the structure of the anterior feet in both sexes, and by some differences in the neuration of the wings. *Thyridia* being one of those genera which have the anterior tibiæ and tarsi of the males reduced to a simple knob, and having a very different neuration of the posterior wings and much longer antennæ, is readily distinguished from it.

I am not quite sure that I am correct in placing *Heliconia Lamyra* of Latreille in this genus, having only seen one specimen, and that without antennæ, I have, however, little doubt that this is its correct position, and that it forms a connecting link between this and the preceding genus.

Ituna seems confined to the equatorial parts of South America.

ITUNA.

1. *IT. LAMYRA*.

Hel. Lam. *Latr. in Humb. et Bonpl. Obs. de Zool. et d'Anat. Comp.* t. 41. f. 7, 8. (1811-16).

Godt. Enc. M. ix. 224. n. 62. (1819).

Peru.

2. *IT. PHENARETE* Doubleday & Hewitson, t. 17. f. 1. (1847).

Bolivia.

B. M.

3. *IT. ILIONE*.

P. Il. *Cram.* t. 26. f. G. H. (1775).

Thyridia Il. *Hübner. Verz. bek. Schmett.* 9. (1816).

Heliconia Il. *Godt. Enc. M.* ix. 212. n. 26. (1819).

Brazil?, Guiana.

B. M.

Genus VIII. METHONA.

THYRIDIA Hübn.

HEAD rather broad.

Eyes oval, prominent.

Maxillæ rather slender, extending to about the middle of the thorax.

Labial Palpi rising above the forehead, scaly; the scales in front of the first joint elongate. First joint subcylindric, curved, about two thirds the length of the second; second joint subcylindric, slightly curved, obliquely truncate at the apex, which is slightly tapered; third joint about one seventh the length of the second, obovate, pointed.

Antennæ elongate, about three fourths the length of the body, slender, terminating in a short gradually thickened club, about one fifth the length of the antennæ; the joints of which it is composed more distinct than those preceding the club, the last pointed.

THORAX moderately stout.

Anterior Wings diaphanous, with opaque markings, elongate; the anterior margin slightly curved; the apex subtruncate; the outer margin one half the length of the anterior, slightly emarginate near the anal angle; inner margin rather longer than the outer. Costal nervure extending more than two thirds the length of the wing. First subcostal nervule thrown off about the middle of the wing, anastomosing with the costal nervure opposite to the end of the cell; the second at some distance beyond the cell; the third much nearer to the fourth than to the second. Upper disco-cellular nervule wanting. First discoidal nervule just touching the subcostal nervure. Middle disco-cellular nervule directed obliquely inwards; shorter than the lower, which is directed obliquely outwards, and united to the third median nervule, where it forms an obtuse angle. Submedian nervure much curved at its origin. Internal nervure short, running into the submedian.

Posterior Wings subovate; the cell extending nearly to the middle of the wings. Precostal nervule simple, directed outwards. Costal and subcostal nervures united for some distance beyond the point where the precostal is thrown off, separating rather widely, and then approximating; the second nervule of the latter bent a short distance from its origin, where it is joined by the upper disco-cellular. Upper and lower disco-cellular nervules both nearly straight, directed very slightly outwards; the lower one longer than the upper. Third median nervule bent at an obtuse angle, where it is joined by the lower disco-cellular. Discoidal nervure not extending into the cell.

Anterior Legs of the male scaly. Tibia about three fourths the length of the femur. Tarsus not more than one sixth the length of the tibia, subconical, obtuse. *Anterior Legs* of the female with the femur rather longer than the tibia. Tarsus about half as long as the tibia; the first joint twice as long as the remainder combined, thickened towards the apex, slightly spiny; second, third, and fourth joints transverse, each with a tuft of stiff hairs at the base on each side, resting on the spine at the apex of the preceding joints, the tuft least distinct on the second joint; fifth joint subquadrate, with three long setæ above, before the apex, and at the apex, with two membranaceous strap-shaped appendages, united at the base, resembling in structure the paronychialia of the other tarsi.

Middle and Posterior Legs with the femora and tibiæ about equal, the latter slightly longer than the former, very spiny, the spurs scarcely differing from the other spines. Tarsi rather shorter than the tibiæ, very spiny, the spines on each side arranged in a regular series; first joint elongate; second and third nearly equal, each about one third the length of the first; fourth shorter; fifth equal to the third. Claws much curved, grooved below. Paronychialia with the outer lacinia strap-shaped, obliquely truncate at the apex, longer than the claw; the inner lacinia short, subtriangular. Pulvillus jointed, hardly so long as the claw.

ABDOMEN elongate, clavate, extending considerably beyond the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

The remarkable structure of the anterior legs in both sexes is sufficient, without any other characters, to separate this genus from both *Ituna* and *Thyridia*, to one of which genera I had at one time considered the only species known to me might be referred. Subsequent opportunities of more careful investigation having convinced me of my mistake, I have thought it most advisable to give the generic characters of this genus as well as *Eutresis* in their proper place, although the figures of the species on which they are founded must be deferred to the supplementary plates, which will be given to illustrate those forms which may be discovered during the progress of the work, too late for insertion in systematic order.

The only species with which I am acquainted inhabits Brazil.

METHONA.

1. METH. THEMISTO.

Thyridia Them. *Hübner, Zutr.* f. 163, 164. (1818).
Brazil.

B. M.

Genus IX. **THYRIDIA.**

THYRIDIA, OLERIA, *Hüb.*

HELICONIA *Latr., Godt., &c.*

MECHANITIS *Fab.*

HEAD rather small, about half the width of the thorax.

Eyes round, nearly semiglobular.

Maxillæ moderately long, rather slender.

Labial Palpi projecting considerably beyond the forehead. First joint short, subcylindric, curved, clothed, as is also the second, with scales, and in front with a few shortish hairs; second joint more than twice the length of the first, subcylindric, curved slightly, tapering towards the apex, which is obliquely truncate; third joint not so long as the first, slender, fusiform, scaly.

Antennæ rather more than half the length of the body, slender for about two thirds of their length, with the joints elongate, then gradually thickening into an elongate club, the joints of which are shorter, and mostly slightly grooved below, the apical one being pointed.

THORAX moderately stout.

Anterior Wings very elongate; the outer margin one half the length of the anterior, rounded, not emarginate near the anal angle; the posterior margin about two thirds the length of the anterior, slightly sinuate, emarginate, especially in the males; apex of the wing much rounded. Costal nervure extending two thirds the length of the wing. Subcostal nervure emitting its first nervule at a short distance from the end of the cell; its second at, or a little beyond, it; its third at about an equal distance from the second, and from the fourth, which is thrown off about midway between the third and the apex. Cell two thirds the length of the wing. Upper disco-cellular nervule very short, or altogether wanting. Middle disco-cellular directed obliquely inwards, longer than the lower, which is directed obliquely outwards. Discoidal nervule extending considerably into the cell. Third submedian nervule bent at a considerable angle, where it is joined by the lower disco-cellular. Internal nervure running into the submedian, which is curved near its origin.

Posterior Wings subovate, the anterior about double the length of the inner margin. Precoastal nervure simple. Costal united to the subcostal nervure, nearly to the point where the precoastal is thrown off, extending a little beyond the middle of the wing. Upper disco-cellular nervule connected with the second median nervule immediately beyond its origin, directed

obliquely inwards to the discoidal nervure, which extends considerably into the cell, and is bent downwards after its anastomosis with the upper disco-cellular, and again bent, almost at a right angle, where it anastomoses with the short lower disco-cellular. Third submedian nervule bent at a considerable angle, where it is joined by the lower disco-cellular.

Anterior Legs of the males very short. Tibia and tarsus only represented by a small knob.

Anterior Legs of the females with the femora and tibiæ nearly equal in length. The tarsi shorter, four-jointed; the basal joint long, cylindric; second joint about one third the length of the first, cylindric; third joint less than one fourth the length of the first, cylindric, armed at the apex with two strong spines; fourth joint very short, subquadrate, furnished at the base with two tufts of stiff converging hairs, which overlie the spines of the preceding joints.

Middle and Posterior Legs with the tibiæ and tarsi about equal in length, the femora rather shorter. Tibiæ spiny, the spurs short. Tarsi very spiny, the lateral spines longest, those of the upper and under surface not disposed in regular rows. First joint long, equal to the rest combined, nearly cylindrical, as is the second, which is only about one third the length of the first; third and fourth joints progressively shorter, broader than the preceding, somewhat ovate, or sub-cordate; fifth rather longer than the fourth, elongate, oval. Claws rather small, curved, grooved below. Paronychia bilacinate; the outer lacinia slender, almost linear, about equal in length to the claw; inner lacinia short, broad, subtriangular. Pulvilli jointed, as long as the claw.

ABDOMEN much longer than the inner margin of the posterior wings, clavate.

LARVA and *PUPA* unknown.

Thyridia closely resembles the two preceding genera in form and external appearance. It has the same elongate, mostly semitransparent wings, with a black border and black transverse markings; the same distinctly clavate antennæ, whitish at the apex, and the clavate, elongate abdomen. It differs from both in the important characters of the anterior legs in both sexes; and also in the more rounded outer margin, not emarginate near the anal angle.

The Larva of Thyridia Psidii is stated by Madame Merian to be smooth and green, and to feed on the guava; but not the slightest confidence is to be placed in her figure, which more probably represents that of some one of the Noctuidæ.

This genus occurs in Brazil, Guiana, and Venezuela. Like the five preceding genera, it is very limited in the number of species, but possibly, when the countries bordering on the Orinoco and the Amazons are more fully investigated, other species will occur.

THYRIDIA.

1. THY. PSIDII Hübner. Verz. bek. Schmett. 9. (1816).

P. Psi. Linn. Syst. Nat. 11. 756. n. 64.

Fab. Ent. Syst. 111. i. 169. n. 525.

Cram. t. 257. f. F.

Hel. Psi. Godt. Enc. M. ix. 211. n. 25.

Guiana, Brazil.

B. M.

2. THY. ÆDESIA Doubleday & Hewitson, t. 16. f. 4. (1816).

Venezuela.

B. M.

Genus X. **DIRCENNA.***CERATINIA*, *OLERIA*, *Hübner*.*HELICONIA* *Godt.*

HEAD broad; the forehead and face clothed with long hairs.

Eyes oval, prominent.

Maxillæ moderately stout, about as long as the thorax.

Labial Palpi scarcely rising above the forehead, rather stout, scaly, and, in front especially, clothed with long hair, the dorsal tuft distinct. First joint stout, subcylindric, rather thickest at the base, curved, fully two thirds the length of the second, which is nearly cylindric, very slightly curved; the apex obliquely truncate, slightly rounded internally; third joint elongate, at least two fifths the length of the second, broadest at the base, where it is rounded, tapering towards the apex.

Antennæ rather more than two thirds the length of the body, gradually enlarging into an elongate club; the basal joints elongate, those of the club shorter and more distinct; the last rather pointed.

THORAX rather stout.

Anterior Wings diaphanous, elongate, triangular, rounded at the apex; the anterior margin rounded, nearly twice the length of the outer, which is very nearly straight between the first discoidal nervule and the anal angle; inner margin very little longer than the outer, rather deeply emarginate in the males, less so in the females. Costal nervure terminating nearly opposite the end of the cell. Subcostal nervure emitting its first nervule at some distance before the end of the cell; the second about at an equal distance beyond the cell; the third about equally distant from the second and fourth; the latter terminating nearly at the apex; the fifth at a short distance below the apex. Upper disco-cellular nervule wanting. Middle disco-cellular directed obliquely inwards; the lower one sinuous, directed obliquely outwards. Third median nervule bent at an obtuse angle, where it is joined by the lower discoidal nervule. Internal nervure slender, running into the submedian.

Posterior Wings diaphanous, obovate; the anterior margin in the males nearly straight at the base. Precoastal nervule mostly simple, curved backwards. Costal and subcostal nervures united as far as the origin of the precoastal, running nearly parallel and close to one another, the latter dividing into its two nervules not far from the outer angle; the first nervule being the shorter, and reaching the costa nearer to the termination of the costal nervure than to the outer angle;

the second nervule terminating at, or a little before, the outer angle. Upper disco-cellular nervule in the males much curved, arising from the point where the subcostal nervule divides, directed inwards, and then curved downwards to meet the discoidal nervule, which makes an angle at the point of junction, and, extending into the cell, is again bent where it is joined by the straight lower disco-cellular, which runs directly downwards to the third median nervule. This last is bent at an obtuse angle at the point of union. Upper disco-cellular nervule in the females straight, directed downwards and slightly inwards.

Anterior Legs of the male very small. Tibia and tarsus represented by an obovate knob, showing indications of being two-jointed. *Anterior Legs* of the female with the tibia not quite so long as the femur, nearly cylindric, slightly thickest at the extremities. Tarsus about five eighths the length of the tibia, nearly cylindric; the first joint one half longer than the rest combined, cylindric; second equal in length to the remainder, cylindric, rather broadest at the apex; third and fourth about of equal length, the former obliquely truncate, the latter rounded at the apex; fifth minute, scarcely one fiftieth of the whole length of the tarsus; second and third joints with a pair of small spines at the apex, each covered by a tuft of hairs at the base of the following joint.

Middle and Posterior Legs rather robust. Tibiæ rather longer than the femora, very spiny; the spurs not very much longer than the other spines. Tarsi longer than the tibiæ; all the joints of equal thickness, and nearly cylindrical, very spiny; the spines long and stout, placed in rather regular series below, the lateral ones not much longer than the others; first joint nearly one half longer than the rest combined; second joint about two sevenths the length of the first; third and fifth each two thirds the length of second; fourth joint about two thirds the length of the third. Claws strong, curved, grooved below. Paronychia with the exterior lacinia longer than the claw, strap-shaped, very slender; inner lacinia much shorter, broad, subtriangular. Pulvillus jointed, broad, about equal to the claws.

ABDOMEN elongate, clavate, extending considerably beyond the posterior wings.

LARVA and *PUPA* unknown.

The species on which this genus may be considered to be founded, namely *Dircenna Iambe* and *Dir. Klugii*, are easily known from *Ithomia* by their more triangular wings, the anterior margin of which is much longer in proportion to the others than in that genus. They differ too in their larger and more hairy palpi, the joints of which have not the same relative length as in *Ithomia*. In the anterior feet of the male we find the knob representing the tibiæ and tarsi showing faint indications of a division into two parts, and in those of the female a structure differing very much from that of any *Ithomia* except *Ith. Melphis* and *Ith. Cæno*.

Were we able to limit the genus to these two species it would be easily defined, but many species exist, though few are described, which partake more or less of the characters of the next genus, especially in the form of the wings.

I had hoped to have been able to subject all or most of these species to a rigorous examination, which might have led to some modifications of the generic character; but I have not been able to obtain enough specimens of both sexes for dissection, and consequently this portion of my labours is less perfect than I could have wished. I can only hope, before the close of this work, to have the power to supply its present deficiencies.

This genus presents a sexual variation in the neurulation of the posterior wings, a circumstance never, I believe,

hitherto noticed in the Lepidoptera; and, in addition to this difference, the males have a tuft of long silky hairs on the anterior margin of the posterior wings.

This genus appears to be most numerous in the equatorial parts of South America and in Mexico; its range southward, however, is extensive, probably as far as Rio de Janeiro.

DIRCENNA.

1. DIR. IAMBE *Doubleday & Hewitson*, t. 17. f. 2. (1847).
Venezuela. B. M.
2. DIR. KLUGII.
Mexico. B. M.
3. DIR. ? LENEAE.
P. Le. *Cram.* t. 231. f. D. (1782).
Ceratinia Le. *Hübner. Verz. bek. Schmett.* 10. (1816).
Heliconia Melanida var. *Godt. Enc. M.* ix. 215. n. 39. (1819).
Guiana. B. M.
4. DIR. ? MELANIDA.
P. Mel. *Cram.* t. 231. f. F. (1782).
Ceratinia Mel. *Hübner. Verz. bek. Schmett.* 10. (1816).
Hel. Mel. *Godt. Enc. M.* ix. 215. n. 39. (1819).
Guiana. B. M.
5. DIR. ? DERO.
Oleria De. *Hübner. Zut.* f. 243, 244. (1823).
Brazil. B. M.

Genus XI. **ITHOMIA.**

HELICONIA *Latr., Godt. &c.*

MECHANITIS *Fab.*

HYMENTIS, ITHOMIA, OLERIA, AERIA, CERATINIA, *Hübner.*

HEAD rather broad.

Eyes round, prominent.

Maxillæ slender, about as long as the thorax.

Labial Palpi slender, not rising above the forehead, clothed with scales, and, in front especially, with short scattered hairs; the dorsal tuft distinct. Basal joint subcylindric, slightly curved, about two fifths the length of the second, which is less robust, and tapers more or less to the apex, where it is rounded; third joint small, oval, obovate, or nearly globular, about one sixth the length of the second.

Antennæ equal in length to three fourths of the length of the body, very gradually incrassated towards the apex; the articulations at the same time becoming gradually shorter and more distinct, without any regular grooves below.

THORAX rather small, oval, or nearly round; the prothorax rather more distinct than usual.

Anterior Wings somewhat subtriangular, elongate, the apex much rounded; anterior margin more or less rounded; inner margin distinctly emarginate, about two thirds the length of the anterior; outer margin much rounded, sometimes nearly equal in length to the inner, sometimes to about two thirds thereof. Costal nervure reaching the costa nearly opposite to, or slightly beyond, the end of the cell. Subcostal nervure throwing off its first branch shortly before the end of the cell; its second sometimes at about an equal, sometimes at a less, distance beyond it; the third about midway between the second and fourth, though rather nearer to the former than to the latter, which is about equally distant from the third and from the apex; fifth subcostal nervure terminating on the outer margin considerably below the apex. Upper disco-cellular nervure entirely wanting, or so short as to be barely visible. Upper discoidal nervure generally just touching the subcostal nervure. Middle disco-cellular mostly directed obliquely inwards, about equal to, or longer than, the lower, which is directed obliquely outwards, anastomosing with the third submedian nervure at a point where it is abruptly bent at an obtuse angle. Second submedian nervure distant from the first. Submedian nervure closely approximating and nearly parallel to the third submedian nervure. Internal nervure short, running into the submedian.

Posterior Wings elongate; the anterior nearly thrice the length of the inner margin. Cell extending beyond the middle of the wing. Costal and subcostal nervures closely approximating to one another and to the anterior margin. Lower disco-cellular nervule always making nearly a right angle with the third median nervule.

Anterior Legs in the male very short; the tibia and tarsus only represented by a simple ovate knob, not showing any signs of articulation. *Anterior Legs* of the female rather long; the tibia not quite so long as the femur, both slender. Tarsi with the basal joint long; the second, third, and fourth generally transverse, mostly all armed with a spine at the apex; fifth joint, when present, small, pointed.

Middle and Posterior Legs mostly rather slender; the tibiae equal in length to the femora, spiny; the spines short and not very numerous, the spurs small. Tarsi longer than the tibiae, spiny; the spines at the sides longer and more regularly placed than those of either the upper or under surface. First joint longer than the rest combined; second nearly cylindric, equal to the third and fourth combined, these two and the fifth rather broader and slightly depressed; the fourth much the shortest, rather broader at the apex than at the base; fifth elongate, oval. Claws rather short, curved, grooved below. Paronychia with the outer lacinia slender, lanceolate, almost linear, not quite so long as the claws; the inner lacinia very short, rounded. Pulvillus jointed, nearly as long as the claws.

ABDOMEN elongate, extending considerably beyond the posterior wings, slender, slightly clavate.

LARVA and *PUPA* unknown.

The genus *Ithomia*, as here defined, contains insects of very different external appearance, and I have on that account felt much hesitation in uniting them together. It is only after long and repeated examinations of both sexes of a majority of the species known to me, that I have resolved to include them under one generic group, subdividing them into sections or subgenera, and giving names to these, as in some previous genera.

The principal reason which has induced me to follow this course is the fact that the most important differences of structure, except in two species, are confined to one sex, the fore feet of the females being the parts that offer the chief variations in structure.

Whilst the anterior tibiae and tarsi of the males are represented only by a simple more or less ovate knob, possibly answering to the tibia only, the females have them much developed. In general, the tarsus, taken as a whole, is slightly clavate; the first joint much longer than the rest combined; the three following transverse, much broader than the first; the fifth if present, very minute. The apex of the first, second, and third joints is generally furnished with a pair of stout spines, each pair covered more or less by a tuft of hair at the base of the following joint. Sometimes, I believe, the spines are wanting on the basal joint. In *Ithomia Iphianassa* the tibia is very slender, slightly thickened at the apex; the tarsus has the first joint extremely long, cylindrical; the second and third very short, twice as broad as the first, furnished at the apex with long spines; the fourth very short, nearly as broad, not spinigerous; the fifth much smaller, but very distinct, obovate, slightly emarginate below. *Ithomia Cæno*, which, like *Ith. Melphis*, is distinguished from the rest of the genus by having the second subcostal nervule thrown off exactly at the end of the cell, differs materially in the structure of these tarsi from the other species of the genus which I have examined, and in this respect comes near to *Dircenna*. They are four-jointed: the first joint is cylindric, rather smaller than the slightly clavate apex of the tibia, it has no apical spines but several slender short ones scattered along it, its length is not quite one half more than that of the rest combined; the second, third, and fourth, likewise, are nearly cylindric, none of them transverse; the third more than two thirds, the fourth more than half, the length of the second, the former is obliquely truncate, the latter rounded at the apex; the second and third have a pair of moderately long spines at the apex. *Ithomia Melphis*, also, has the tarsi, as a whole, cylindrical, but five-jointed;

the second joint very short, though not transverse; the third transverse; the fourth extremely short, obliquely truncate at the apex; the fifth very small, about as long as the fourth, with the apex slightly truncate, furnished with a small membranaceous appendage. The apex of the first joint has a pair of very slender spines; the second and third joints having the usual stout spines.

In *Ithomia Indola*, rather an aberrant species, the first joint is long, nearly cylindric, armed at the apex, as is also the second, with a pair of stout spines; the second, third, and fourth joints have a tuft of strong hairs near the base, largest on the fourth joint. These hairs arise, each from a proportionally large circular depression, which give the part of the joint where they have their origin a somewhat honeycombed appearance. The fifth joint is very small, narrowest at the apex, where it is truncate. This species offers a slight difference in the claws of the middle and posterior feet, which have the inner lacinia of the paronychial longer than in most of the other species. Other variations may possibly be found to occur.

The posterior wings offer some variations in structure, which are worthy of notice here, though they will be discussed more fully elsewhere. In the section to which I have applied Hübner's name *Hymenitis*, the median nervure traverses the wing much nearer to the anterior margin than usual; consequently, as the cell is tolerably wide, the whole of the nervures of the upper half of the wing are thrust together close to the anterior margin, the result of which is, that, when the wings are expanded naturally, the posterior margin of the anterior wings covers the costal and subcostal nervures entirely, and almost or quite hides the discoidal nervure. Sometimes the discoidal nervure and lower disco-cellular nervure are atrophied previously to reaching the point where otherwise they would anastomose. In one section, the course of the median nervure being rather lower, the discoidal nervure is considerably removed from the anterior margin and becomes very conspicuous, the cell being closed by the two disco-cellular nervures, which form a straight line.

In another section this character is found in the females: but the males have the cell much longer; closed by the upper disco-cellular nervure, which runs very obliquely inwards to the discoidal nervure; by the lower disco-cellular nervure, which has nearly the same position as in the females; and by that portion of the discoidal nervure which intervenes between the point where the upper disco-cellular anastomoses with it above, and that where the lower disco-cellular anastomoses with it below.

Lastly, many species have a structure similar to that just described, not in the males only, but in both sexes.

A large proportion of the species of this genus have the wings more or less diaphanous, the nervures and margin being black or fuscous. This transparency is not owing to the absence of scales, nor to their being deciduous as in the *Sesiæ*, but to their extreme slenderness, and rather wide dispersion. Their form in the diaphanous parts of the wings varies much, but commonly they are so deeply cleft and so slender as to resemble two hairs united at the base. Of the other species, by far the greatest number have the wings fulvous, varied with black and yellow markings, as in the genus *Mechanitis*, and amongst the last species of *Heliconiæ*. The males have on the anterior margin of the posterior wings a tuft of long silky hairs, generally lying closely appressed, but which often in dried specimens are elevated. It is difficult to conceive that the insect can have the power of elevating and depressing them at pleasure. These tufts of hair have their origin between the costal and subcostal nervures, and the portions of the wing whence they arise, and which they cover, are generally of a different texture from the rest. In some species there is a thick, oval, corneous plate placed about the middle of the costa, depressed below the level of the wing, so as to form a cavity above, lined with very minute scales, and receiving the tuft of hairs. This plate is sometimes quite devoid of scales below.

The Geographical Range of this genus extends over the whole intertropical part of America, and one species is reported to have been found in Virginia, but this undoubtedly is an error. I believe the southern part of East Florida to be its northernmost limit, though even of that there is no very clear evidence.

Insects of rather delicate structure, the greater portion of the species prefer the shade of thick woods, frequenting the spots where a gleam of sunshine has penetrated the foliage, and cast an uncertain light over the brushwood. In these spots some of the species assemble in little groups on the ends of the branches, in the same manner as *Heliconia Charitonia*. Mr. Dyson informs me that this is particularly the case with *Ithomia Iphianassa*. This species, as well as *Ithomia Chloris*, *Ith. Cæno*, *Ith. Agnosia*, *Ith. Oalea*, and *Ith. Phemonoe*, is common in Venezuela in the warmer country, up to about two thousand feet of elevation. *Ithomia Dercetis*, which is an insect of rather faster flight, is found at an elevation of eight thousand feet, and even in this cool region prefers the shade of the forests.

The following List of Species is very unsatisfactory, as not one half of the species existing in collections have been described. Some few species have obtained manuscript names, chiefly from dealers; but no authority can be attached to them, the more so as I have seen different names applied by the same person to the same species.

ITHOMIA.

Section I. HYMENITIS.

Wings transparent, the posterior with the nervules of the anterior portion of the wing running close to the costa; the discoidal nervule, or the second subcostal sometimes wanting. The lower disco-cellular directed immediately across the wing. The median nervure much nearer to the costa than to the outer margin, its nervules widely separated.

1. ITH. TELESTO *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Mexico. B. M.
2. ITH. ILDICA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Mexico. B. M.
3. ITH. MELISSA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Honduras. B. M.
4. ITH. DERCETIS *Doubleday & Hewitson, t. 18. f. 6.* (1847).
Venezuela. B. M.
5. ITH. DIAPHANA.
P. diaph. *Drury, n. t. 7. f. 3.* (1773).
Fab. Ent. Syst. III. i. 184. n. 570. (1793).
Cram. t. 231. f. C. (1782).
Hymenitis diaph. *Hübner, Verz. bek. Schmett. 8.*
(1816).
? Hel. diaph. *Godt. Enc. M. ix. 213. n. 32.*
(1819).
Jamaica. B. M.
6. ITH. ANDRONISCA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Venezuela. B. M.
7. ITH. OLYMPUSA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Pernambuco. B. M.
8. ITH. COMNENA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
St. Catherine's, Brazil. B. M.
9. ITH. ARICIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.
10. ITH. CYMO *Hübner, Verz. bek. Schmett. 9.* (1816).
Nereis vitrea Cymo *Hübner, Samml. Exot.*
Schmett. (1806-27).
Para. B. M.
11. ITH. NEOBULE *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Venezuela. B. M.
12. ITH. BATRIS *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.
13. ITH. HYALINA.
P. hy. *Fab. Ent. Syst. III. i. 185. n. 571.*
(1793).
Jones, Icones, n. t. 32. f. 1. (ined.).
Hel. hy. *Godt. Enc. M. ix. 214. n. 36.* (1819).
Brazil? B. M.
December, 1847.
14. ITH. ERINNA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Bolivia. B. M.
15. ITH. NEIS *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Bolivia. B. M.
16. ITH. OCALEA *Doubleday & Hewitson, t. 18. f. 4.* (1847).
Venezuela, Brazil.
17. ITH. MYRSE *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.

Section II. ITHOMIA.

Wings transparent, or, more rarely, semitransparent; the posterior with the lower disco-cellular directed immediately across the wing, anastomosing with the discoidal nervure opposite to, or a little before, the anastomosis of the upper disco-cellular. The median nervure more removed from the costa; its nervules less distant from one another than in the preceding section.

18. ITH. SENA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Bolivia. B. M.
19. ITH. TISSA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
New Granada. B. M.
20. ITH. TIPHUSA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Caraccas. B. M.
21. ITH. HIPPODAMIA.
? P. Hippodamia *Fab. Ent. Syst. III. i. 165. n. 509.* (1793).
? Heliconia Hip. *Godt. Enc. M. ix. 212. n. 27.*
(1819).
Brazil. B. M.
22. ITH. VIPSANIA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Brazil. B. M.
23. ITH. ATILLA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Mexico. B. M.
24. ITH. ASTRÆA.
P. Astr. *Cram. t. 22. f. D.* (1775).
Oleria Astr. *Hübner, Verz. bek. Schmett. 9.*
(1816).
Hel. Astr. *Godt. Enc. M. ix. 214. n. 33.*
(1819).
Brazil.
25. ITH. CLIO.
P. Cl. *Cram. t. 257. f. D. E.* (1781).
Oleria Cl. *Hübner, Verz. bek. Schmett. 9.* (1816).
P. Ægle *Fab. Ent. Syst. III. i. 170. n. 527.*
(1795).
Hel. Æg. *Godt. Enc. M. ix. 213. n. 30.* (1819).
Guiana, Brazil.
26. ITH. FLORA.
P. Fl. *Cram. t. 257. f. B. C.* (1781).
Oleria Fl. *Hübner, Verz. bek. Schmett. 9.* (1816).
Hel. Fl. *Godt. Enc. M. ix. 213. n. 31.* (1819).
Surinam.

27. ITH. CÆNINA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.
28. ITH. CLANIS *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.
29. ITH. PHEMONOË *Doubleday & Hewitson, t. 18. f. 5.* (1847)
Venezuela. B. M.
30. ITH. CISSEIS *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.
31. ITH. ILICE *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.
32. ITH. MYLITTA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Venezuela. B. M.
33. ITH. NESIS *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Bolivia. B. M.
34. ITH. DRYMO *Hüb. Verz. bek. Schmett. 9.* (1816).
P. diaphana Cram. t. 315. f. D. E. (1782).
Brazil. B. M.
35. ITH. AGNOSIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.
36. ITH. NERONIA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Brazil. B. M.
37. ITH. THEODORA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Bolivia. B. M.
38. ITH. PLANCINA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Bolivia. B. M.
39. ITH. PHORONIS *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
? Brazil. B. M.
40. ITH. CHARILLO *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
New Granada? B. M.
41. ITH. CYMOTHOË *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Caraccas. B. M.
42. ITH. CLUSIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Mexico. B. M.
43. ITH. BARSENE *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Bolivia. B. M.
44. ITH. ABROTA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.
45. ITH. CALCHINIA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Bolivia. B. M.
46. ITH. EPIMETHIS *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Venezuela. B. M.
47. ITH. CHLORIS *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.
48. ITH. OBSCURATA.
P. obs. Fab. Ent. Syst. III. i. 185. n. 572.
Jones, Icones, t. 32. f. 2.
Hel. obs. Godt. Enc. M. IX. 214. n. 37.
Guiana?
49. ITH. ACACALLIS *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Guayaquil? B. M.
50. ITH. FALCIDIA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Venezuela. B. M.
51. ITH. ATIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.
52. ITH. EURITEA *Hüb. Verz. bek. Schmett. 9.* (1816).
P. Eur. Cram. t. 280. f. C. (1781).
Hel. Eudema Godt. Enc. M. IX. 214. n. 34.
(1819).
Brazil. B. M.
53. ITH. HYMENÆA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Venezuela, Brazil. B. M.
54. ITH. SAO.
Hymenitis Sao Hüb. Zut. f. 123-4.
Brazil. B. M.?
55. ITH. POLYDORA *Cat. of Lep. Ins. of Brit. Mus. App.*
(1847).
Mexico. B. M.
56. ITH. ACTE *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Honduras. B. M.
57. ITH. LETHÆA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.
58. ITH. FALCIDIA *Cat. of Lep. Ins. of Brit. Mus. App.*
Venezuela. B. M.
59. ITH. ESO *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
St. Catherine's, Brazil. B. M.
60. ITH. ÆGIMIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
(1847).
Brazil. B. M.
61. ITH. PANIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.

Section III. AERIA.

Wings opaque, or slightly diaphanous, the posterior with the lower disco cellular directed obliquely outwards, anastomosing with the discoidal nervure considerably before the anastomosis of the upper disco-cellular.

62. ITH. INDOLA.
? Nereis vitrea Ægle Hüb. Samml. Exot. Schmett.
(1806-16).
Venezuela. B. M.

63. ITH. EURIMEDIA.

P. Eur. *Cram.* t. 126. f. C. D. (1777).Hel. Eur. *Godt. Enc. M.* ix. 211. n. 24. (1818).Aeria *Ægle Hübn. Verz. bek. Schmett.* 9. (1816).

Guiana, Brazil. B. M.

64. ITH. AGNA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).

Venezuela. B. M.

65. ITH. AGNODIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).

Bahia. B. M.

Section IV. CERATINIA.

Wings opaque, semitransparent, the posterior ones of the males with the upper disco-cellular directed very obliquely inwards, united to the second submedian nervule; lower disco-cellular also directed obliquely inwards, anastomosing with the discoidal nervule before the anastomosis of the upper disco-cellular: of the female with the upper and lower disco-cellular directed almost transversely across the wing, in the same line, both anastomosing with the discoidal nervule at the same point.

66. ITH. ? MELPHIS.

Hel. Mel. *Godt. Enc. M.* ix. 218. n. 48. (1819).

Antilles?, Brazil. B. M.

67. ITH. ? CÆNO *Doubleday & Hewitson*, t. 18. f. 2. (1847).

Venezuela. B. M.

68. ITH. NISE.

P. Ni. *Cram.* t. 231. f. E. (1782).Hel. Ni. *Godt. Enc. M.* ix. 215. n. 38. (1819).

Guiana.

69. ITH. SELENE.

P. Sel. *Cram.* t. 315. f. F. G. (1782).

Guiana.

70. ITH. NESO.

Nereis vitrea Ne. *Hübner. Samml. Exot. Schmett.* (1806-27).

Guiana. B. M.

71. ITH. IPHIANASSA *Doubleday & Hewitson*, t. 18. f. 3. (1847).

Venezuela. B. M.

72. ITH. HERSILIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).

Cayenne. B. M.

73. ITH. LEPRIEURII.

Hel. Lepri. *Feisth. Ann. Soc. Ent. de France*, iv. t. 18. f. 1. (1835).

Guiana.

74. ITH. NINONIA.

Nereis vitrea Nin. *Hübner. Samml. Exot. Schmett.* (1806-16).Ceratinia Nin. *Hübner. Verz. bek. Schmett.* 10. (1816).

Guiana?

75. ITH. ANYTA.

Mechanitis Melphis *Hübner. Zut.* f. 687, 688. (1825).

Brazil. B. M.

76. ITH. LAPHRIA.

Mechanitis Melphis *Hübner. Zut.* f. 759, 760. (1825)?

Brazil. B. M.

77. ITH. DAËTA.

Heliconia Da. *Boisd. Sp. Gén.* i. t. 11. f. 7. (1836).

Venezuela. B. M.

78. ITH. LARANDA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).

Mexico. B. M.

79. ITH. PEROË *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).

Venezuela. B. M.

80. ITH. NYDIA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).

Venezuela. B. M.

81. ITH. ALISSA *Cat. of Lep. Ins. of Brit. Mus. App.* (1847).

Venezuela. B. M.

Note.—The whole of the species in this list will very shortly be described. In addition to the above, the following species probably belong to this genus, but I have not been able to identify them with any specimens I have seen:—

HEL. CYRENE *Latr. in Humb. et Bonpl. Obs. de Zool. et**d'Anat. Comp.* t. 25. f. 5, 6. (181).*Godt. Enc. M.* ix. 212. n. 29. (1819).

Peru.

HEL. ZELIA *Guérin, Icon. du Règne Anim. texte*, ii. 470.

(1844).

Bolivia.

HEL. ANETTA *Guérin, Icon. du Règne Anim. texte*, ii. 470.

(1844).

Mexico.

HEL. VICTORINA *Guérin, Icon. du Règne Anim. texte*, ii. 470.

(1840).

Bolivia.

HEL. COTYTTO *Guérin, Icon. du Règne Anim. texte*, ii. 471.

(1844).

Mexico.

HEL. SYLPHIS *Guérin, Icon. du Règne Anim. texte*, ii. 471.

(1844).

Genus XII. MECHANITIS.

MECHANITIS Fab., Hübner.*HELICONIA* Latr., Godt.

EURIDES, MELINÆA, Hübner.

HEAD of moderate size, scaly; the scales on the forehead long, erect.

Eyes prominent, slightly oval.

Maxillæ double the length of the thorax.

Labial Palpi slender, rising above the forehead, scaly, with an elongate dorsal tuft. First joint subcylindric, much curved, two fifths the length of the second, which is slenderer, especially at the apex, subcylindric, slightly compressed; third joint elongate, slender, cylindric, acuminate at the apex, one half the length of the first joint.

Antennæ more than two thirds the length of the body, very gradually clavate; the joints of the club much shorter than those of the basal parts, mostly marked with two grooves below; the apical joint pointed.

THORAX oval, rather small.

Anterior Wings subtriangular, very elongate, more so in the males than in the females; anterior margin slightly rounded, generally twice as long as the outer margin, which in the males is nearly straight except at the apex, in the females rather more rounded; inner margin in the males scarcely longer than the outer, in the females about one fourth longer. Costal nervure extending beyond the cell. Subcostal throwing off its first nervule a short distance before the end of the cell; its second a little beyond, or at the end of the cell; the third midway between the second and the fourth, this midway between the third and the apex; the fifth reaching the outer margin a little below the apex. Upper disco-cellular nervule wanting. First discoidal nervule sometimes only just touching the subcostal nervure, sometimes united to it for a short space. Middle disco-cellular directed very obliquely inwards and downwards, shorter than the lower, which is directed obliquely outwards to the angular bend of the third median nervule. First and second median nervules widely separated. Internal nervule very slender, running into the submedian nervule.

Posterior Wings elongate, obovate. Precostal nervule simple. Costal and subcostal nervules running parallel and close to one another, nearly to the outer angle in the males, more divergent in the females, or united in one nervure as far as the middle of the wing, then diverging; the costal being very short. Discoidal nervule appearing to be a fourth submedian nervule.

Anterior Legs of the male exceedingly minute; the tarsus and tibia represented by a small ovate knob. *Anterior Legs* of the female with the femur rather longer than the tibia, which is nearly cylindric, but rather thickened at the apex. Tarsus but little more than half the length of the tibia, in general of uniform size to the last joint; its first joint about double the length of the rest combined; the second short, about one fifth as long as the first; the third rather shorter; all furnished with delicate scattered spines; the last only with a pair of stout spines at the apex, covered by a tuft of hairs on the lower surface of the small, very short, obliquely truncate fourth joint: sometimes rather clavate; the basal joint about double the length of the rest combined; the second and third thicker, nearly equal in length, both being about one fifth the length of the first; these three joints each with a pair of strong spines at the apex, covered by a tuft of hairs on the succeeding joint; fourth joint very short, transverse; fifth almost anchylosed with the fourth, conical, mucronate at the apex.

Middle and Posterior Legs tolerably stout. Tibiæ much longer than the femora, very spiny; the spurs distinct. Tarsi about as long as the femora, spiny; the spines at the sides very closely placed, and longer than the rest. Basal joint about equal to the rest combined; second rather more than one third the length of the first; third about two thirds the length of the second, all these nearly cylindric; fourth short, rather flattened, widest at the apex; fifth oval, elongate, equal in length to the third, rather flattened. Claws small, much curved, grooved below. Paronychial with the outer lacinia almost as long as the claw, slender, strap-shaped; the inner lacinia shorter, subtriangular. Pulvillus jointed, about equal in length to the claws.

ABDOMEN clavate, very elongate, extending far beyond the posterior wings.

LARVA and *PUPA* unknown.

Mechanitis differs from all the preceding genera in the structure of the posterior wings, the median nervure of which appears to be four-branched, the discoidal nervure being united to its third nervule in such a manner as to seem to form a fourth; a structure precisely analogous to that of the anterior wings of the Papilionidæ. In addition to this character, there are others which also serve to discriminate it from its nearest neighbour Ithomia, some species of which much resemble it in colour; these are, the different proportions of the wings, of the joints of the palpi, and of the tarsi, the anterior ones in the females especially, and the somewhat different antennæ,

The most remarkable peculiarity in the genus is the sexual variation in the neuration of the anterior portion of the posterior wings, the aberration from the normal structure occurring in the females, a circumstance so extremely rare, as to have led me at first to doubt the entire correctness of my observations. Careful and repeated examinations of a vast number of specimens of both sexes of many species have satisfactorily proved the fact, that all the specimens which have the costal and subcostal nervures united in one as far as the middle of the wing are females; and this structure never occurs in the males, in which these two nervures, though sometimes running nearly parallel, and but little distant, are still perfectly separated from one another from the point where the precostal is thrown off. In one section both sexes have the nervures separated from this point.

The structure of the anterior tarsi differs in the two groups into which this latter section is divisible, but only in the females. In the one group, as in the first section, they are equal in thickness throughout, and only the third joint bears the usual strong apical spines; in the other, the second, third, and fourth joints are rather broader than the first, and the first, second, and third joints all have the apical spines.

The predominant character of the colouring in this genus is the same as in the last group of the true Heliconiæ, and there are some instances in which the markings are almost identical. The two genera, however, can never be confounded by any one who pays attention to the neuration of the posterior wings.

This genus ranges from the southern parts of Mexico to the South of Brazil. The species are not numerous, and appear to be rather local. Many of them are subject to variation in the colour of the posterior wings, and these variations, in some species, seem to depend on locality.

MECHANITIS.

Section I. *Costal nervure, in the males reaching nearly to the apex of the wing, separating from the subcostal at the point at which the precostal is thrown off: in the females, united to the subcostal as far as the middle of its course, then diverging, terminating about the middle of the costa.*

1. MECH. *LYSIMNIA* Hübn. *Verz. bek. Schmett.* 11. (1816).
Hübn. *Zut. f.* 187, 188. (1818).
P. Lys. *Fab. Ent. Syst.* III. i. 161. n. 498. (1795).
Hel. *Lysimene* Godt. *Enc. M.* IX. 218. n. 46. (1819).
Brazil, especially the southern parts. B. M.
2. MECH. *NESSE* Hübn. *Samml. Exot. Schmett.* (1806-27).
N. Brazil. B. M.
3. MECH. *BAUCIS* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.
4. MECH. *LYSIDICE* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Venezuela. B. M.
5. MECH. *ZILLAH* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Honduras. B. M.
6. MECH. *ANAH* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Guiana. B. M.

Section II. *Costal and subcostal nervures separate in both sexes from the point where the precostal is thrown off; the former in the males extending nearly to the outer angle, in the females terminating about the middle of the costa.*

7. MECH. *ZARINA* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Bolivia. B. M.
8. MECH. *MNEME*.
P. Mn. *Linn. Syst. Nat.* II. 756. n. 59. (1767).
Fab. Ent. Syst. III. i. 160. n. 196. (1793).
Cram. t. 190. f. C. (1780).
Eueides Mn. *Hübn. Verz. bek. Schmett.* 11. (1816).
Hel. Mn. *Godt. Enc. M.* IX. 221. n. 55. (1819).
Guiana. B. M.

9. MECH. *LILIS* Doubleday & Hewitson, t. 17. f. 4. (1847).
Venezuela. B. M.
10. MECH. *DIDYMA* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.
11. MECH. *BALEA* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Honduras. B. M.
12. MECH. *SATEVIS* Doubleday & Hewitson, t. 17. f. 31. (1847).
Bolivia. B. M.
13. MECH. *HISPULLA* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.
14. MECH. *EGINA*.
P. Eg. *Cram. t.* 191. f. D. (1778).
Fab. Ent. Syst. III. i. 162. n. 500. (1795).
Hel. Eg. *Godt. Enc. M.* IX. 216. n. 41. (1819).
Guiana, N. Brazil. B. M.
15. MECH. *POLYMNIA* Hübn. *Verz. bek. Schmett.* 11. (1816).
P. Pol. *Linn. Syst. Nat.* II. 755. n. 58. (1767).
Fab. Ent. Syst. III. i. 164. n. 508. (1795).
Cram. t. 191. f. E. (1780).
Hel. *Polym. Godt. Enc. M.* IX. 219. n. 50. (1819).
? P. *Mopsa* *Linn. Syst. Nat.* II. 756. n. 59. (1767).
Guiana, Brazil.
16. MECH. *GAZORIA*.
Hel. *Gaz. Godt. Enc. M.* IX. 214. n. 35. (1819).
P. *Euritea* *Drury, III. t.* 13. f. 5, 6. (1782).
Brazil.
17. MECH. *FRANCESCA* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.
18. MECH. *EDOCIA* Cat. of *Lep. Ins. of Brit. Mus. App.* (1847).
Brazil. B. M.

Genus XIII. SAIS.

SAIS *Hüb.*HELICONIA *Latr., Godt.*MECHANITIS *Fab.*

HEAD small, covered with scales only.

Eyes prominent, nearly round.

Maxillæ longer than the thorax.

Labial Palpi very small, scarcely rising above the forehead, scaly; dorsal tuft very slender. First joint stoutest, thickest at the base, much curved, about three fourths the length of the second, which is curved, subcylindric, compressed, tapered towards the apex; third joint somewhat pyriform, rather pointed at the apex, about one tenth the length of the second.

Antennæ more than three fourths the length of the body, very slender, thickening insensibly towards the apex, where the articulations are but little thicker than at the base.

THORAX nearly round.

Anterior Wings elongate, subtriangular; the anterior margin slightly curved, twice the length of the outer, which is rounded; inner margin about four fifths the length of the anterior, more or less emarginate. Costal nervure terminating beyond the end of the cell. Subcostal nervure emitting its first nervule a short distance before the end of the cell; its second about at an equal distance beyond it; its third about midway between the second and fourth; this last rather further from the apex than from the third; the fifth nervule reaching the outer margin a short distance before the apex. Upper disco-cellular nervule wanting; middle disco-cellular directed obliquely inwards; the lower one obliquely outwards, uniting with the third median nervule, which is bent at an obtuse angle at the point of junction. Internal nervule slender, running into the submedian nervure.

Posterior Wings elongate, obovate; the anterior margin nearly straight towards the base, especially in the males. Precostal nervure bifid, the inner branch directed immediately to the base of the wing, the other outwards, not curved. Costal and subcostal nervures united to the origin of the precostal, thence running close and almost parallel to one another for their whole length (closer together in the males than in the females), the former terminating on the costa, not far from the apex. First subcostal nervule straight, terminating at the apex; second subcostal nervule in the males thrown off from the nervure at a right angle, then bent outwards at nearly the same angle, where it is joined by the upper disco-cellular nervule. In the females the

disco-cellular nervure divides into two straight nervules at the point where it is joined by the upper disco-cellular, which is directed almost perpendicularly downwards, instead of very obliquely inwards, as it is in the males. Discoidal nervule appearing to be a fourth median nervule.

Anterior Legs of the male very small; the tibia and tarsus represented only by a small obovate knob. *Anterior Legs* of the female with the femur and tibia nearly equal, the latter nearly cylindric, slightly thickened at the apex. Tarsus about one half the length of the tibia. First joint cylindric, longer than the rest combined, with a small spine on each side, a little before the apex; second and third joints thicker than the first; the second scarcely one third, the third scarcely one fourth its length, both armed at the apex with a stout spine on each side; fourth joint rather shorter than, and not so thick as, the third, furnished at the base with a tuft of stiff hairs, covering the spine of the preceding joint; fifth joint small, pointed, about as long as the third.

Middle and Posterior Legs rather slender and elongate. Tibiæ longer than the femora, slender, spiny; the spines not placed very closely, slender; spurs distinct, but not remarkably so, from the other spines. Tarsi not quite so long as the tibiæ, spiny, the spines at the sides longest. First joint cylindric, about one fifth longer than the rest combined; second joint cylindric, less than one third the length of the first; third cylindric, about one fifth the length of the first, equal to the fifth, which is broader, and elongate oval; fourth joint short, broadest at the apex, less than one sixth the length of the first. Claws rather small, much curved, grooved below. Paronychia bilacinate; the outer lacinia linear, not so long as the claw; the inner shorter, broader towards the apex.

ABDOMEN elongate, slightly clavate, considerably longer than the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

In Sais, the variation from the normal structure of the posterior wings is more marked than in any previous genus, for not only does the discoidal nervure in the males appear to be a fourth median nervule, but the second subcostal is united to this in such a manner that it seems to be as much a fifth branch of the branch of the median nervule, as the second of the subcostal.

Other differences from the preceding genera will be found in the structure of the antennæ, the proportions of the palpi, and in the legs.

The anterior legs of the males have here sunk to their lowest point of developement. In Sais Rosalia they are only one twenty-fifth part of an inch in length, or about one sixteenth of the length of the middle and posterior legs. It is interesting to observe that this lowest degradation of structure in the anterior legs takes place in the same genus which offers the greatest aberration from the normal structure of the posterior wings. The anterior legs of the female are quite as much developed as in any of the preceding genera of this family; when denuded of their scales, they appear covered with delicate, satiny, closely appressed hairs.

In the small number of species belonging to this genus which I have seen, the wings are more or less transparent; the posterior pair in the males have the usual tuft of hair on the upper surface near the anterior margin.

This genus seems to be nearly confined to the low wooded country drained by the Orinoco, the Amazons, and the intermediate rivers.

SAIS.

1. SA. ROSALIA.	3. SA. N. SP.	B. M.
P. Ros. <i>Cram.</i> t. 246. f. B. (1781). <i>Fab. Ent. Syst.</i> III. i. 172. n. 533. (1793). Hel. Ros. <i>Godt. Enc. M.</i> IX. 220. n. 52. (1819). Guiana.	Guiana.	
2. SA. CYRIANASSA <i>Doubleday & Hewitson</i> , t. 18. f. 1. (1847). Para. B. M.	4. SA. N. SP. Guiana.	B. M.

I am uncertain in what genera to place the following species, with which I am unacquainted.

- HELICONIA OLYMPIA *Godt. Enc. M.* IX. 218. n. 47. (1819).
P. Olym. *Fab. Ent. Syst.* III. i. 166. n. 514. (1793).
S. America.
- HELICONIA ETHILLA *Godt. Enc. M.* IX. 219. n. 49. (1819).
Antilles.
- HELICONIA EUCLEA *Godt. Enc. M.* IX. 220. n. 53. (1819).
Antilles.
- HELICONIA ISMENIUS *Latr. in Humb. et Bonpl. Obs. de Zool. et d'Anat. Comp.* t. 41. f. 56.
Godt. Enc. M. IX. 223. n. 61. (1819).
Peru.

The following species, described by Godart under the genus *Heliconia*, do not belong to this family.

- Heliconia Thalestris* *Godt. Enc. M.* IX. 206. n. 11. is *Eueides Thales*.
Heliconia Braselis *Godt. Enc. M.* IX. 207. n. 13. is *Euterpe Bellona*.
Heliconia Langsdorfii *Godt. Enc. M.* IX. 209. n. 18. (1819) is *Eresia Langsdorfii*.
Heliconia? *Thallo* *Godt. Enc. M.* IX. 211. n. 23. is a species of *Gynautocera*.
Heliconia? *Aspasia* *Godt. Enc. M.* IX. 212. n. 28. is probably a *Danaus*, allied to *D. Cleona*, if it be not that insect.
Heliconia Belladonna *Godt. Enc. M.* IX. 224. n. 63. is *Pieris Belladonna*.
Heliconia Calliope, *H. Euterpe*, *H. Susanna*, *H. Phlegia*, of Godart, which he considered would ultimately form a new genus, belong to the *Erycinidæ*, and form, with one or two other species, the genus *Stalactis* *Hübner, Verz. bek. Schmett.* 27. (1816), or *Nerias* *Boisd. Sp. Gén.* (1836).

Genus XIV. **HAMADRYAS** *Boisd.**Boisd. Voy. de l'Astrolabe, Ent. 91. (1832).*AERIA, STALACTIS, *Hübner.*HELICONIA *Godt.*

HEAD rather broad, densely scaly.

Eyes oval, large, prominent.

Maxillæ longer than the thorax.

Labial Palpi projecting considerably beyond the head, rather stout. The basal and second joints densely clothed with scales, the latter about double the length of the former, its dorsal surface furnished with long hair-like scales; third joint short, smaller-pointed than the second, clothed with short scales, and furnished at the base posteriorly with a tuft of hair-like scales.

Antennæ fully three fourths the length of the body, gradually thickening to a very elongate club, the joints of which are very short and distinct.

THORAX oval, rather stout; the prothorax very distinct.

Anterior Wings subtriangular; the anterior and outer margins rounded, the latter about three fifths the length of the former; inner margin very slightly emarginate, fully three fourths the length of the outer. Costal nervure terminating nearly opposite the end of the cell. Subcostal throwing off its first nervule at about three fourths the length of the cell; its second a little before the end of the cell; its third about at an equal distance from the second and fourth, the latter nearer the apex than to the third nervule; fifth nervule terminating on the outer margin, not much below the apex. Upper disco-cellular nervule very short; middle curved; lower about equal to the middle, directed outwards and downwards to the third median nervule, which makes an obtuse angle at the point of junction. First and second median nervules widely separated. Internal nervule wanting?

Posterior Wings obovate; the anterior margin nearly straight from the base beyond the middle. Precostal nervule simple. Costal nervure describing a considerable curve where it separates from the subcostal. Subcostal dividing considerably before the middle of the wing. Cell short. Upper disco-cellular nervule arising from the second subcostal nervule, not far from its origin; both this and the lower one, which is nearly double its length, straight, directed obliquely outwards. Third median nervule slightly bent where the lower disco-cellular nervule joins it. Abdominal margin produced at the base so as partially to cover the basal segments of the abdomen below.

Anterior Legs of the female considerably developed. Tibia longer than the femur. Tarsus rather thickened, apparently furnished below with three pairs of spines.

Middle and Posterior Legs rather stout; the femora of the middle pair at least longer than the tibiæ, these latter very spiny; the spurs not very long. Tarsi about as long as the tibiæ, densely covered with spines. First joint much the longest; second to fourth progressively shorter; fifth longer than the third. Claws small, curved. Paronychia bilaciniate. Pulvillus very broad.

ABDOMEN scarcely extending beyond the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

I regret being only able to give so indifferent a generic character for this most interesting genus. Its rarity however is so great, that it is only known to me by the original specimen in the Banksian Cabinet; an imperfect specimen in the British Museum, probably as old as the Banksian one; and the individual here figured, a beautiful specimen belonging to Dr. Boisduval, to whose kindness I am indebted for the means of giving a good figure, and tolerably exact generic character.

Without specimens of both sexes to dissect, it is impossible satisfactorily to lay down the characters of a genus; and therefore, though I have examined Dr. Boisduval's specimen as closely as was consistent with its safety, much is wanting to render the definitions given above complete, and all that relates to the structure of the feet must be taken with caution. I believe that the anterior feet of the female much resemble those of some *Ithomiæ*, what those of the male may be I cannot say. The claws of the posterior feet seem to have bilaciniate paronychia; the outer lacinia not quite equal in length to the claws, the inner longer than usual, very hairy.

Its close alliance to the *Heliconidæ* cannot be doubted, and I can see no plausible ground for excluding it from this family, except its different habitat. Whilst all the other *Heliconidæ* are confined to the New World, this genus is stated to occur in the extreme east of the Indian archipelago, in the islands of the Pacific, and in New Zealand: thus it is the only Old World genus of the family. Analogous facts are met with in botany, as, for instance, the occurrence of a *Fuchsia* in New Zealand. It is interesting to find an otherwise purely American group of plants and of butterflies represented by one solitary species in that remote island.

HAMADRYAS *Boisd.*

1. HAM. ZOILUS *Boisd. Voy. de l'Astrolabe*, 91. (1832).
P. Zo. Fab. Ent. Syst. III. i. 42. n. 128. (1795).
Nymph. Zo. Godt. Enc. M. IX. 398. n. 165. (1819).
Nymph. Nais Guérin, Voy. de la Coquille, t. 15. f. 3. (1827).
Stalactis Nedusia Hübn. Zut. f. 799, 800. (1825).
 New Zealand and Polynesia. *♂ / ♀*. B. M.
2. HAM. ASSARICUS.
P. Ass. Cram. t. 363. f. A. B. (1782).
Aeria Ass. Hübn. Verz. bek. Schmett. 10. (1816).
Heliconia Ass. Godt. Enc. M. Suppl. 816. n. 22, 23. (1823).
 Amboyne.

NOTE.

BEFORE dismissing this family, it will not be useless to direct our attention for a moment to the sexual variations in the Neuration of the Posterior Wings in some of the genera, especially as they afford much light on the homologies of the nervures and nervules. As far as my observations extend, these variations occur in no other family of the Diurnal Lepidoptera, and in this family are confined to that group in which there exists the greatest sexual difference in the development of the anterior legs.

In the normal, or at least most common, structure in the Diurnal Lepidoptera, we find the discoidal nervure becoming, as it were, a third subcostal nervule; and as such it has always been regarded by the few authors who have paid attention to the structure of the wings in this order. This is the prevalent character in the first genera of Heliconidæ, though, as we approach those genera in which the anterior legs of the male are least developed, we find a slight change, thus approaching some of the Ithomiæ.

In these the cell is closed by two distinct disco-cellulars, both crossing the wing nearly at right angles to a line drawn from the base to the apex; the subcostal nervure evidently only two-branched, the discoidal nervure often extending considerably into the cell, where it becomes gradually atrophied. But in the males of many Ithomiæ we find the upper disco-cellular nervule directed very obliquely inwards and downwards; the second subcostal nervule, at its origin, directed downwards, then bent outwards at a right angle. The cell is much longer than in the females, owing to the obliquity of the upper disco-cellular, which unites with the second subcostal nervule at the point where it is bent at a right angle.

Numerous smaller variations occur in the different species of this genus, as will be seen by a reference to the sectional characters given, which, however, must not be taken too strictly, but as indicating the general type of structure in the section, for almost every species exhibits some small variation.

We will now pass to the next genus, *Mechanitis*, in which the lower disco-cellular nervule appears to be a continuation of the median nervule, the exact course of which it follows, and thus the discoidal nervure appears a fourth median nervure. The discoidal nervure is remarkably bent above the point where it anastomoses with the lower disco-cellular, and again at its union with the upper disco-cellular. This structure is found in both sexes, and also in the females of the next genus, *Sais*. But here the males offer a new character, of which the extreme type is shown in *Sais Cyrianassa*. In these, the upper disco-cellular nervule, as well as the lower, is apparently a continuation of the median nervule, and thus there appear to be five median nervules, the second subcostal being bent at its origin, so as to give to its basal portion the appearance of a short disco-cellular, and thus the subcostal nervure appears to be simple.

We, therefore, can trace the discoidal nervure and disco-cellular nervules, first occupying in the females their normal position, normal as regards the whole order, whilst in the males of the same species there is a change in the position of the upper disco-cellular; thence in both males and females of one genus, and in the females of the next, presenting us with changes in the position of the lower disco-cellular and the discoidal: lastly, still further changed in the males only.

This gradual change in the position of the discoidal nervure is very interesting, from its explaining fully the supposed anomaly of the anterior wings of the Papilionidæ, which have been considered by all writers but myself to have a four-branched median nervure. The anterior wings of *Papilio*, the posterior wings of *Mechanitis*, of many species of *Leptalis*, and of the females of *Sais*, exactly agree in this apparent anomaly; and the anterior wings of some species of *Leptalis* have much the same structure as those of *Parnassius*. The resemblance in the neuration of the posterior wings in some species of *Leptalis*, with those of some of the Heliconidæ, is remarkable from its occurring in those species which approach most nearly to the Heliconidæ in form and colour, and seems to prove considerable affinity between the two groups.

The generic character of *Ituna* requires a slight alteration; the lower disco-cellular nervule of the posterior wing being sometimes united to the third submedian nervule shortly beyond its origin.

Family VI. ACRÆIDÆ.

Genus I. **ACRÆA** *Fab., Latr., Godt., &c.*

Fab. Syst. Gloss. (ined.).

ACTINOTE, PELLENIS, *Hübner*.

HEAD rather small, scaly, but little if at all hairy.

Eyes oval or rounded, prominent.

Maxillæ longer than the thorax.

Labial Palpi divergent, ascending, rising considerably above the forehead. Basal joint short, hairy; second joint elongate, mostly much swollen, hairy, the hairs often very thinly scattered; third joint very short, especially in those species which have the second joint most swollen.

Antennæ scarcely more than half the whole length of the body, rather abruptly clavate; the club compact, obtuse at the apex, the joints composing it not more distinct than those of the other portion of the antennæ.

THORAX oval, generally rather elongate; the prothorax very distinct.

Anterior Wings opaque, or partially or wholly diaphanous, subtriangular, elongate; the apex more or less rounded; the anterior margin but little arched; outer margin seldom much more than half the length of the anterior, sometimes nearly straight, except towards the apex, sometimes rounded; inner margin nearly straight. Costal nervure extending considerably beyond the middle of the anterior margin. Subcostal nervure invariably five-branched; its first nervule thrown off at or near to the end of the cell, the second always considerably beyond the cell. Cell seldom more than half the length of the wing. Upper disco-cellular very short, or entirely wanting. Internal nervure wanting.

Posterior Wings obovate; the anterior margin nearly straight; the outer margin much rounded; the inner about equal in length to the outer, slightly embracing the base of the abdomen. Cell always closed, narrow, sometimes very short, rarely half the length of the wing. Discoidal nervure sometimes appearing to be a third subcostal nervule; sometimes united to the subcostal nervure, or to its second nervule, by a distinct upper disco-cellular. Lower disco-cellular always united to the third median nervule, often very close to its origin.

Anterior Legs of the males with the femur mostly longer than the tibiæ. Tibiæ nearly cylindric; smooth, or very slightly spiny; longer than the tarsus. Tarsus cylindrical, or slightly fusiform; sometimes one-jointed, sometimes showing indications of four or five joints. *Anterior Legs* of

the females with the tarsus four or five-jointed; each joint, except the fifth when present, armed at the apex with a short pair of spines, sometimes covered by a bunch of stiff hairs arising from the base of the following joints. First joint generally about as long as the rest combined; the second, third, and fourth progressively shorter, generally very obliquely truncate at the apex; fifth, when present, always very minute, barely distinguishable.

Middle and Posterior Legs rather short, with the tibiæ and femora about equal in length. Tarsi rather shorter. Tibiæ spiny, especially towards the apex; nearly cylindrical. Tarsi spiny, the spines much longest at the sides; the first joint more than equal to the two following combined, nearly cylindric; second and third rather flattened, elongate ovate, the second slightly longer than the third; fourth joint shorter than the third; fifth rather longer than the second. Claws without paronychia or pulvilli; broad at the base, where there is a large lobe, then suddenly narrowed, tapering to a very acute point, often much bent, especially the outer claw in the males, which is much shorter than the inner in many species.

ABDOMEN elongate, clavate, much arched; the last segment in the female often furnished with a corneous appendage.

LARVA cylindric, spiny.

PUPA suspended, slender, angular.

The single genus of which this family is composed may be readily distinguished from the two preceding families by the short abruptly clavate antennæ; and from the Nymphalidæ by its posterior wings, the inner margins of which do not form a channel to receive the abdomen.

The peculiar structure of the claws in some species, especially in the males, the semi-transparent wings which, like those of *Doritis*, are what the French call *gaufrées*, the abdominal pouch or plate in many females, indicate a connexion with, or an analogy to, the aberrant Papilionidæ; the form of the antennæ and palpi, and of the larvæ, shows an undoubted affinity to the Argynnina; whilst the neurulation and form of the wings, and the structure of the abdomen, exhibit an equally evident alliance to the Heliconidæ.

There are some variations in structure which will serve to divide the genus into sections, but all the species have the same short, rather abruptly clavate, antennæ; the palpi divergent, with the basal and apical joints very short, and the middle joint swollen; the cell of both wings always closed; the posterior wings without any channel for the reception of the abdomen; the claws of the middle and posterior feet without pulvilli or paronychia. These claws are mostly broad at the base, then suddenly narrowed and terminating in an acute point; the inner claw, especially of the males, being mostly much shorter and more curved than the outer.

The LARVÆ bear a great resemblance to those of *Argynnis*, being cylindrical and spiny; the spines long and set with little whorls of hairs, or slender spines. Those of *Acræa Terpsichore* are of a purplish black colour, with numerous irregularly formed white spots, disposed in rows, three on each side; each segment bears four spines, one on each side, two near together on the back; these spines are black, except at the base, which is yellow, the black part is set with whorls of slender spines or stout hairs. That of *Acræa Viola* is brown, with numerous spines resembling those of the larva of *Acræa Vesta*. Its food is said to be some species of *Viola* and *Borago*. The PUPA is white, with black lines down the wing-cases, a black vitta dotted with yellow on the lower side of the abdominal segments, and a black line on each side. The skin of a larva of an African species preserved in the Linnean Cabinet, which probably belongs to *Acræa Zetes*, much resembles Dr. Horsfield's figure of that of *Acræa Terpsichore*.

Stoll represents the larva of *Acræa Thalia* as thickly covered with blackish spines fringed with brown hairs. It is brown, with a black dorsal stripe, and is said to feed on the shrubby cotton. The PUPA is represented as stouter than that of *Acræa Viola*, white, with some black lines, and a dorsal series of five black spines.

The PERFECT INSECTS, as has been already remarked, bear a very close resemblance, in many respects, to the Heliconidæ. Like them they frequent the open parts of woods, and even the more shaded parts, where only here and there a ray of sunshine, that has stolen through the dense foliage of the trees, plays on the scanty undergrowth of low shrubs or herbage. Their flight is rather slow and feeble, and the South American species are fond of reposing, in little groups, on spots of moist earth, or by the banks of streams.

The species of the first section mostly have the basal part of the wings opaque, the apical portion transparent or sub-diaphanous; the colour of the opaque parts is generally some shade of red. Below, all the wings are spotted with more or less quadrate or rounded black spots. *Acræa Andromache* has the wings diaphanous to the base, the outer margin of the posterior wings being opaque. The sexes do not differ materially in colour.

Some of the species of the second section offer great sexual differences of colour, the males having broad discoidal fulvous markings on a fuscous ground, which are replaced in the female by white marks, more or less similar in form. From the resemblance of some species of this genus to certain Diademæ, there has arisen great confusion in the nomenclature. In the Banksian Cabinet, the species marked P. Gea by Fabricius is the *Acræa Gea* of the following list of species. Beside it is a specimen of the P. Hirce of Drury, to whose figure Fabricius, in the *Entomologia Systematica*, refers as a synonyme of his P. Gea. This insect is a Diadema, the male of Linné's P. Euryta. Notwithstanding Clerck's accurate figure, Linné's insect has been confounded by subsequent writers with the females of two species of the present genus, which have actually been figured by Cramer as the male and female of one species under the name of P. Euryta. Nothing can more clearly show the necessity of attending to minute characters than these errors, all of which might have been avoided by a very slight attention to the structure of the wings, and of the claws of the middle and posterior feet, and to the sexual characters as indicated by the anterior tarsi.

The species of the third section have the anterior wings fuscous above, sometimes marked on the inner margin with fulvous or red; the posterior wings mostly traversed by a band of the same colour, and the outer margin often has a series of fulvous dots. Below, the colours are paler, and the base of the posterior wings is always marked with numerous black spots, a character, in fact, common to all the Old World species. In some species the wings are slightly diaphanous.

The prevalent colouring of the fourth section is fulvous, the outer margin bordered with black; the base and disc spotted with the same colour. The black border of the posterior wings is often marked with a series of fulvous or pale spots.

The only species of the fifth or purely Asiatic section yet known is of a pale fulvous or yellowish hue, the nervures and nervules, and the outer margin, more or less broadly fuscous, the latter with a series of pale spots; the disc of the anterior wings with from one to five black spots.

The sixth or American section offers two distinct types of colouring, one of which much resembles that of the preceding section, though the posterior wings are sometimes entirely black above. In all the species of this group the posterior wings below have the nervules and the folds between them of a deeper colour than the rest of the wing; which is also the case in *Acræa Hylonome*, a species in some respects more resembling *Acræa Ozomene* and *Acræa Nelea*. These two remarkable insects have the upper surface black richly glossed, with the base of the posterior wings below yellowish in both species, and that of the anterior wings in the former marked above with a crimson, below with a yellow, spot.

The most interesting character offered by this genus is the abdominal plate or pouch of the females, which I have observed in species of all the sections, but not constantly, even on females of the same species. Probably this appendage is deciduous, as it certainly is in *Parnassius*. The form varies in the different species; it is most developed in the species of the first section, which most resemble *Parnassius*. The combination of this character with a structure of the claws otherwise peculiar to *Parnassius* and its immediate allies is well worthy of attention.

The Geographical Range of this genus extends over the whole Torrid Zone, except, perhaps, the Polynesian Islands, and the southern sub-tropical parts of both the Old and New Worlds: but Africa is decidedly its metropolis; for thirty-five species are already described from that continent and its islands, and many more are known though undescribed. Here they exactly supply the place of the Heliconidæ in the New World. Australia has one species, of an African type. Asia has two species; one of African character, the other peculiar to that continent and its islands. America has eight described species, and several undescribed, all differing in form and colour from any Old World group.

ACRÆA.

Section I. *HYALITES*.

Labial Palpi with the second joint considerably swollen, but little scaly. Outer margin of the Anterior Wings rounded: first subcostal nervule thrown off beyond the end of the cell. Discoidal nervule of the Posterior Wings separating from the second subcostal, close to its origin: cell about half the length of the wing.

† *Wings partly transparent, or sub-diaphanous.*

1. *ACR. HORTA* *Fab. Syst. Gloss. (ined.), Godt. Enc. M. ix. 231. n. 1. (1819).*
P. Hor. Linn. Syst. ii. 755. n. 54. (1767).
Fab. Ent. Syst. iii. i. 159. n. 491. (1793).
Cram. t. 298. f. F. G. (1781).
Telchinia Hor. Hüb. Verz. bek. Schmett. 27. (1816).
 S. and W. Africa. B. M.
2. *ACR. DICE.*
P. Di. Drury, iii. t. 18. f. 3, 4. (1782).
P. Quirina Fab. Ent. Syst. iii. i. 159. n. 492. (1793).
Ac. Quir. Godt. Enc. M. ix. 231. n. 2. (1819).
 S. and W. Africa. B. M.
3. *ACR. OBEIRA* *Boisd. MSS.*
 Madagascar. B. M.
4. *ACR. ZENOBIA* *Guérin MSS.*
 Madagascar. B. M.
5. *ACR. RANAVALONA* *Boisd. Faune Ent. de Mad. t. 6. f. 3—5. (1833).*
 Madagascar. B. M.
6. *ACR. IGATI* *Boisd. Faune Ent. de Mad. t. 4. f. 3. & t. 5. f. 3. (1833).*
 Madagascar.
7. *ACR. HOVA* *Boisd. Faune Ent. de Mad. t. 4. f. 1, 2. (1833).*
 Madagascar.
8. *ACR. NEOBULE* *Doubleday & Hewitson, t. 19. f. 3. (1847).*
 Congo. B. M.
9. *ACR. MAHELA* *Boisd. Faune Ent. de Mad. t. 6. f. 1. (1833).*
 Madagascar.
10. *ACR. CAMENA* *Godt. Enc. M. ix. 234. n. 14. (1819).*
P. Cam. Drury, ii. t. 7. f. 2. (1773).
Fab. Ent. Syst. iii. i. 173. n. 539. (1793).
P. Murcia Fab. Ent. Syst. iii. i. 177. n. 549. (1793).
Ac. Mur. Godt. Enc. M. ix. 235. n. 15. (1819).
 W. Africa. B. M.

11. *ACR. ANDROMACHE.*

P. Andr. Fab. Ent. Syst. iii. i. 182. n. 564. (1793).
Ac. Entoria Godt. Enc. M. ix. 231. n. 3. (1819).
 Australia. B. M.

† † *Wings opaque.*

12. *ACR. LYCIA* *Godt. Enc. M. ix. 239. n. 30. (1819).*

Doubleday & Hewitson, t. 19. f. 2. var. fulva (1847).
P. Ly. Fab. Ent. Syst. iii. i. 176. n. 546. (1793).
 W. Africa. Congo, S. Africa (var. *fulva*). B. M.

Section II. *PLANEMA.*

Labial Palpi with the second joint not remarkably swollen, densely clothed with scales. Outer margin of the Anterior Wings rounded. Discoidal nervule of the Posterior Wings thrown off from the second subcostal, close to its origin: cell short, not half the length of the wing.

† *First subcostal nervule thrown off before the end of the cell.*

13. *ACR. LYCOA* *Godt. Enc. M. ix. 239. n. 27. (1819).*
 W. Africa. B. M.
14. *ACR. IODUTTA.*
P. Jod. Fab. Ent. Syst. iii. 175. n. 554. (1793).
Jones, Icones, ii. t. 36. f. 3, 4. (ined.).
Acr. Gea ♀ Godt. Enc. M. ix. 238. n. 26. (1819).
 Ashanti. B. M.
15. *ACR. CARMENTIS* *Doubleday & Hewitson, t. 19. f. 1. (1847).*
Feminae Præcis var. ?
 Ashanti. B. M.
- † † *Anterior Wings with the first subcostal nervule thrown off beyond the end of the cell.*
16. *ACR. GEA.*
♂ P. Gea Fab. Spec. Ins. ii. 32. n. 136. (1781).
♂ Acr. Gea ♂ Godt. Enc. M. ix. 238. n. 26. (1819).
♂ P. Epæa Cram. t. 230. f. B. C. (1782).
Actinote Ep. Hüb. Verz. bek. Schmett. 27. (1816).
♀ P. Timandra Jones, Icones, ii. 25. f. 2. (ined.).
 Sierra Leone, Congo. B. M.
17. *ACR. EURYTA.*
♀ P. Eur. ♀ Cram. t. 233. f. B. (1782).
♀ Acr. Euryta ♀ Godt. Enc. M. ix. 238. n. 25. (1819).

♂ P. Macaria *Fab. Ent. Syst.* III. i. 174. n. 540. (1793).

Acr. Mac. *Godt. Enc. M.* IX. 237. n. 23. (1819).
Sierra Leone. B. M.

18. Acr. UMBRA *Godt. Enc. M.* IX. 256. n. 20. (1819).

♂ P. Um. *Drury*, III. t. 18. f. 1, 2. (1782).

Fab. Ent. Syst. III. i. 172. n. 535. (1793).

♂ P. Euryta ♂ *Cram.* t. 233. f. A. (1782).

Actinote *Eur. Hüb. Verz. bek. Schmett.* 27. (1816).

W. Africa. B. M.

Section III. GNESIA.

Labial Palpi with the second joint considerably swollen, not scaly in front. Anterior Wings of the males with the outer margin slightly emarginate. Cell of Posterior Wings half the length of the wing: discoidal nervure separating from the second subcostal soon after its origin.

19. Acr. MEDEA.

P. Med. *Cram.* t. 81. f. C. D. (1775).

P. Pasiphaë *Fab. Ent. Syst.* III. i. 176. n. 548. (1793).

Acr. Pas. *Godt. Enc. M.* IX. 236. n. 18. (1819).

Telchinia Saronis *Hüb. Verz. bek. Schmett.* 27. (1816).

W. Africa.

20. Acr. MENIPPE.

P. Men. *Drury*, III. t. 13. f. 3. (1782).

Telchinia Mycenæa *Hüb. Verz. bek. Schmett.* 27. (1816).

W. Africa. B. M.

21. Acr. PERSEPHONE *Godt. Enc. M.* IX. 234. n. 12. (1819).

P. Pers. *Fab. Ent. Syst.* III. i. 174. n. 542. (1793).

W. Africa. B. M.

22. Acr. ZETES.

P. Ze. *Linn. Syst. Nat.* II. 766. n. 110. (1767).

Clerck, Icones, t. 43. f. 1. (1764).

Telchinia Zetis *Hüb. Verz. bek. Schmett.* 27. (1819).

Ac. Zethea *Godt. Enc. M.* IX. 236. n. 21. (1819).

West Africa. B. M.

23. Acr. EGINA.

P. Eg. *Cram.* t. 39. f. F. G. (1775).

Ac. Zidora *Godt. Enc. M.* IX. 237. n. 22. (1819).

W. Africa. B. M.

24. Acr. PERENNA *Doubleday & Hewitson*, t. 19. f. 4. (1847).

Ashanti. B. M.

25. Ac. CIRCEIS *Westwood in Drury*, edit. 2. III. 26. (1837).

♂ P. Cir. *Drury*, III. t. 18. f. 5, 6. (1782).

July, 1848.

♂ P. Mandane *Fab.* III. i. t. 183. n. 565. (1793).

♂ Ac. Man. *Godt. Enc. M.* IX. 239. n. 29. (1819).

♀ P. Parrhasia *Fab. Ent. Syst.* III. i. 175. n. 545. (1793).

Acr. Par. *Godt. Enc. M.* IX. 234. n. 31. (1819).

W. Africa. B. M.

Section IV. TELCHINIA.

Labial Palpi with the second joint swollen considerably, clothed in front with scales. Outer margin of the Anterior Wings rounded in both sexes. Discoidal nervure of the Posterior Wings sometimes thrown off from the subcostal nervure, sometimes from its second nervule near its origin.

26. Acr. CEPHEUS.

P. Ceph. *Linn. Mus. Lud. Ulr.* 252. n. 71. (1764).

Clerck, Icones, 43. f. 4. (1764).

P. Horta var β. *Linn. Syst. Nat.* II. 755. n. 54. (1767).

Acr. Zosteria *Godt. Enc. M.* IX. 232. n. 6. (1819).

Angola. B. M.?

27. Acr. HYPATIA *Godt. Enc. M.* 232. n. 5. (1819).

P. Hyp. *Drury*, III. t. 13. f. 1, 2. (1777).

Fab. Ent. Syst. III. i. 163. n. 504. (1793).

Var. P. Cæcilia *Fab. Ent. Syst.* III. i. 177. n. 16. (1793).

Acr. Cæ. *Godt. Enc. M.* IX. 177. n. 550. (1819).

P. Artemissa *Stoll*, t. 25. f. 4. 4. D. (1789).

Telchinia Bendis *Hüb. Verz. bek. Schmett.* 29. (1816).

W. Africa. B. M.

28. Acr. MANJACA *Boisd. Faune Ent. de Mad.* t. 4. f. 6. (1833).

Madagascar. B. M.

29. Acr. SERENA *Godt. Enc. M.* IX. 232. n. 7. (1819).

P. Ser. *Fab. Ent. Syst.* III. i. 164. n. 507. (1793).

Telchinia Ser. *Hüb. Verz. bek. Schmett.* 27. (1816).

P. Eponina *Cram.* t. 268. f. A—D. (1782).

W. Africa. B. M.

30. Acr. CYNTHIA *Godt. Enc. M.* IX. 234. n. 13. (1819).

♀ P. Cyn. *Drury*, III. t. 37. f. 5, 6. (1782).

♀ P. Bonasia *Fab. Ent. Syst.* III. i. 177. n. 551. (1793).

♀ Acr. Bon. *Godt. Enc. M.* IX. 238. n. 24. (1819).

Sierra Leone. B. M.

31. ACR. ZITJA *Boisd. Faune Ent. de Mad.* t. 4. f. 4, 5. (1833).
Madagascar. B. M.
32. ACR. RAHIRA *Boisd. Faune Ent. de Madag.* t. 5. f. 4, 5. (1833).
Madagascar? S. Africa. B. M.
33. ACR. SGAZINI *Boisd. Faune Ent. de Mad.* t. 6. f. 2. (1832).
Madagascar.
34. ACR. PUNCTATISSIMA *Boisd. Faune Ent. de Mad.* t. 6. f. 6, 7. (1833).
Madagascar.
35. ACR. RAKELI *Boisd. Faune Ent. de Mad.* t. 5. f. 1, 2. (1833).
Madagascar.
36. ACR. VIOLE *Godt. Enc. M.* ix. 231. n. 4. (1819).
P. Vi. *Fab. Ent. Syst.* iii. i. 164. n. 505. (1793).
P. *Cephea Cram.* t. 298. f. D. E. (1782).
Telchinia *Ceph. Hübn. Verz. bek. Schmett.* 27. (1816).
India. B. M.

Section V. PAREBA.

Labial Palpi small, the second joint but little swollen, scaly and hairy. First subcostal nervule of the Anterior Wings thrown off at the end of the cell. Discoidal nervure of the Posterior Wings thrown off from the subcostal nervure, considerably before it divides.

37. ACR. VESTA *Godt. Enc. M.* ix. 233. n. 9. (1819).
P. Ves. *Fab. Ent. Syst.* iii. i. 163. n. 503. (1793).
P. *Terpsichore Cram.* t. 228. f. A—C. (1782).
Telchinia *Issoria Hübn. Verz. bek. Schmett.* 27. (1816).
Var. ACR. anomala *Kollar in Hugel's Kaschmir, App.* (1845).
China, India. B. M.

Section VI. ACTINOTE.

Labial Palpi scaly and hairy, the second joint not remarkably swollen. Anterior Wings with the first subcostal nervule thrown off before the end of the cell. Posterior wings with the discoidal nervure thrown off from the second subcostal nervule soon after its origin.

†

38. ACR. THALIA *Godt. Enc. M.* ix. 240. n. 33. (1819).
P. Th. *Linn. Syst. Nat.* ii. 757. n. 67. (1767).
Clerck, Icon. t. 43. f. 2. (1764).
Fab. Ent. Syst. iii. i. 171. n. 532. (1793).
Actinote Thalia *Hüb. Verz. bek. Schmett.* 27. (1816).
P. *Pyrrha Fab. Ent. Syst.* iii. i. 176. n. 547. (1793).
? Actinote Pellenea *Hüb. Samml. Exot. Schmett.* (1806-27).
Brazil, Guiana. B. M.
39. ACR. ANTEAS *Doubleday & Hewitson*, t. 18. f. 5. (1847).
Venezuela. B. M.
40. ACR. LAVERNA *Doubleday & Hewitson*, t. 18. f. 4. (1847).
Venezuela. B. M.
41. ACR. STRATONICE *Godt. Enc. M.* ix. 241. n. 34. (1819).
Obs. de Zool. et d'Anat. comp. t. 37. f. 7, 8. (1811-19).
Hel. Strat. Latr. in Humb. et Bonpl.
S. America.
42. ACR. DICE *Godt. Enc. M.* ix. 241. n. 35. (1819).
Hel. Di. Latr. Obs. de Zool. et d'Anat. comp. t. 42. f. 3, 4. (1811-19).
43. ACR. HYLONOME *Doubleday & Hewitson*, t. 18. f. 3. (1847).
Eut. Hyl. E. Doubleday, Ann. Nat. Hist. xiv. 418. (1844).
Santa Fé de Bogotá. B. M.
- † †
44. ACR. OZOMENE *Godt. Enc. M.* ix. 241. n. 36. (1819).
Doubleday & Hewitson, t. 18. f. 2. (1847).
New Granada. B. M.
45. ACR. NELEA *Godt. Enc. M.* ix. 241. n. 37. (1819).
Hel. Nel. Latr. in Humb. et Bonpl. Obs. de Zool. et d'Anat. comp. t. 36. f. 7, 8. (1811-19).
New Granada. B. M.

Note. I am unable to place in their proper order the following species, only known to me by Godart's descriptions:—

ACR. JANISCA *Godt. Enc. M.* ix. 233. n. 10. (1819).
W. Africa.

ACR. JALEMA *Godt. Enc. M.* ix. 234. n. 11. (1819).
W. Africa.

ACR. SERVONA *Godt. Enc. M.* ix. 239. n. 28. (1819).
Angola.

P. *Terpsichore Linn. Mus. Lud. Ultr.* 222. (1764) probably belongs to this genus, but I have not been able to identify it. By mistake, in the text of a preceding page, I have used this name for the P. Vesta *Fab.*, which is the P. *Terpsichore Cram.*

ACRÆA Ethosea *Godt. Enc. M.* ix. 235. n. 17. (1819) is a species of Eurytela. ACRÆA ? Ædea *Godt. Enc. M.* ix. 236. n. 19. is a species of Gynautocera, belonging to Mr. Hope's genus Heterusia. ACRÆA Cepha *Godt. Enc. M.* ix. 240. n. 23. may possibly be a Heliconian.

Family VII. NYMPHALIDÆ.

[BODY more or less robust.

HEAD of moderate size.

Eyes large, generally naked.

Labial Palpi large, generally obliquely porrected, extending considerably in front of the head, wide apart, generally clothed with scales, with the front edge broadly dilated; the basal joint generally curved, and furnished beneath with a tuft of hairs; the terminal joint small and slender.

Antennæ generally rather long, and terminated by a broad or elongated club.

THORAX large.

WINGS large, often greatly variegated in the colours, and marked beneath with ocellated spots.

Fore Wings generally more or less triangular, with the discoidal cell closed by slender disco-cellular veins: veins not dilated at the base; the postcostal vein emitting four branches, exclusive of the terminal portion of the vein, which has sometimes been regarded as a fifth branch, the first and second branches generally arising before the anterior extremity of the discoidal cell, and the third and fourth at equal distances apart between the extremity of the cell and the tip of the wing.

Hind Wings generally broadly ovate, rarely furnished in the males with tufts of hair; the outer margin often more or less deeply scalloped or dentated, the anal margin forming a deep groove for the reception of the abdomen; not furnished at the base with a prædiscoidal cell; the pre-costal vein short and arched; the discoidal cell of moderate length, generally closed by slender disco-cellular veins.

Fore Legs short, and not fitted for walking; the tibia and tarsus of the male often clothed at the sides with a fringe of fine hairs, forming a flattened brush; the tarsus consisting of a single elongated joint, obtuse at the top, and destitute of unguis; the fore legs of the female generally rather longer, with the tarsus rather dilated at the extremity, where it is more or less distinctly obliquely articulated; the articulations, as well as the tip of the tarsus, armed beneath with short spines.

Hind Legs long, with the tibiæ armed with two spurs at the tip, and the underside of the tibia and tarsus armed with rows of short spines.

Unguis simple, acute, curved; paronychial large, bifid, setose, leathery; the outer division largest; pulvillus dilated.

ABDOMEN moderate-sized or large.

CATERPILLAR long, generally cylindric, and more or less spined; not or rarely attenuated behind, and with the hinder extremity of the body generally obtuse.

CHRYSLIS elongate, generally more or less armed with angulated prominences; suspended by the tail only, hanging by the extremity of the body, and not girt across the middle.

The insects of the present family may be regarded as the pre-eminent types of that great division of butterflies in which the chrysalis is simply suspended by the tail, and not girt round the middle of the body by a slender skein of silken thread, the fore legs, also, being imperfect and unfitted for walking.

It is proper to observe that Mr. E. Doubleday had purposely delayed characterising the family until he had completed his examination in detail of the genera which he had introduced into it. His death has unfortunately left the task to me; and now that a complete revision and elaborate investigation of the characters of all the genera, not only of the Nymphalidæ, but of the Ageronidæ, Danaidæ, Heliconidæ, Acæridæ, Morphidæ, Brassolidæ, Satyridæ, Eurytelidæ, and Libytheidæ, has been made, I more strongly feel the conviction of the difficulty of drawing up characters of sufficient importance to warrant the establishment of so many primary divisions.

The Ageronidæ (p. 81.) are indeed at once distinguished by the braced condition of the chrysalis, although the characters of the imago are essentially Nymphalideous; and the Danaidæ (p. 84.) have the chrysalides very short, oval, smooth, and contracted near the middle; but the general characters of the imago are also Nymphalideous. The Heliconidæ (p. 96.) are destitute of a deep groove along the anal margin to receive the abdomen, and the pupa is smooth. The Acæridæ (p. 137.) are still more nearly allied to the typical Nymphalidæ; but the second branch of the postcostal vein is emitted beyond the discoidal cell. The unguis has a broad lobe at the base, and the anal margin of the hind wings does not form a groove for the reception of the abdomen; the larvæ, on the other hand, are cylindrical and spiny, and the chrysalis slender and angulated. As regards the succeeding families, Morphidæ (p. 332.), Brassolidæ (p. 350.), Satyridæ (p. 352.), Eurytelidæ (p. 403.), and Libytheidæ (p. 412.), I must refer to the observations which I have made on these different groups, as well as those upon the genera *Apatura*, *Nymphalis*, *Amathusia*, and *Discophora*. It would not, indeed, be difficult to draw up a table of these groups, which would have a certain air of *vraisemblance*; but I am satisfied that the characters which would necessarily be employed in such a table would be to a great extent artificial or trivial ones.

As regards the genera introduced in the following pages into this family, some of the earlier, as *Eueides*, *Colænis*, and *Eresia*, in their elongated wings approach nearly the Heliconidæ and Acæridæ: the various groups of fritillary butterflies represented in our Plates XXI., XXII., and XXIII., are especially distinguished by their very setose palpi, thus differing from the majority, in which they are squamose. Others, as the genera *Nymphalis*, *Apatura*, &c., have the body remarkably robust; and in a few genera the hind wings are produced into tails, recalling the Papilionidæ to mind. The larvæ of *Apatura*, *Nymphalis*, &c., differ so much from the cylindric spinose character of the more decided types, as to have induced the removal of those genera to the Satyridæ by writers who have considered metamorphosis as of primary importance; and lastly, some of the terminal genera approach very closely to some of the Morphidæ. We thus perceive a certain progression amongst the genera, whilst there are as strong evidences of collateral affinities, which can only be satisfactorily studied when the transformations of the exotic species are more extensively known: and here I can but congratulate Lepidopterists on the fact, that Dr. Burmeister has, within the last few weeks, returned from a zoological residence in Brazil, where he has effectively studied the metamorphoses of numerous species, which he proposes shortly to publish. — J. O. W. *July*, 1852.]

Genus I. **EUEIDES.**EUEIDES, MIGONITIS, COLÆNIS, *Hüb.*HELICONIA, CETHOSIA, ACRÆA, *Godt.*SEMELIA *Boisd. MSS.*

HEAD rather broad, scaly, the forehead with a more or less distinct tuft of hairs.

Eyes oval, prominent.

Maxillæ rather longer than the thorax.

Labial Palpi slightly divergent, porrect, scarcely ascending, projecting considerably beyond the forehead, clothed with appressed scales and scattered erect hairs; the second joint with a dorsal tuft of hairs near the apex. First joint short, much curved; second more than three times the length of the first, nearly cylindric, slightly smaller at the apex, which is rounded; third joint shorter than the first, oval, slightly pointed at the apex.

Antennæ about two thirds the length of the body, rather stout, terminating in a short obtuse club; the joints composing the club more distinct than those of the other part of the antennæ.

THORAX oval, moderately stout; the prothorax very distinct.

Anterior Wings elongate; the apex rounded, or subtruncate; the anterior margin slightly curved, about one half longer than the outer margin; inner margin slightly sinuate, equal in length to the outer. Costal nervure about equally distant from the subcostal nervure and from the anterior margin as far as the end of the cell, fully two thirds the length of the wing. Subcostal nervure five-branched, its nervules thrown off at about equal intervals; the first close to, or before the end of, the cell. Cell rather narrow, elongate, extending considerably beyond the middle of the wing. Upper disco-cellular nervule almost wanting. Middle disco-cellular curved, directed obliquely inwards. Lower disco-cellular also curved, directed obliquely outwards to the third median nervule, joining it at some distance beyond its origin, at a point where it forms a considerable curve. Internal nervure wanting.

Posterior Wings subtriangular; the anterior and outer margins much rounded, nearly of equal length; the inner margin about three fourths the length of the others, scarcely embracing the abdomen except at its base. Precostal nervule simple, curved, directed inwards. Costal nervure rather widely distant from both the costa and the subcostal nervure, terminating at the apex of the wing. Subcostal nervure dividing at about two thirds the length of the cell. Cell small. Discoidal nervure appearing to be a third subcostal nervule. Lower disco-cellular short,

directed slightly inwards, united to the third median nervule, which is bent at an obtuse angle at the point of junction.

Anterior Feet of the male with the tibia rather longer than the femur. Tarsus rather more than half the length of the tibia, one-jointed, rather compressed, tapering to a point. *Anterior Feet* of the female rather longer than those of the male; the femur rather longer than the tibia; the latter smooth, about twice the length of the tarsus. Tarsus cylindric, four-jointed. First joint nearly ten times the length of the second, third rather shorter than the second, all these with a stiff spine on each side at the apex; fourth joint minute.

Middle and Posterior Legs with the femora and tibiæ nearly equal in length, the former mostly slightly longer than the latter, the latter spiny, the spurs distinct. Tarsi equal in length to the tibiæ, very spiny above and laterally. Claws rather small, not much curved. Paronychia bifid; the outer lacinia as long as the claw, pointed, slender; inner lacinia of the same form but shorter. Pulvillus jointed, as long as the claws.

ABDOMEN about equal in length to the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

The genus *Eueides* contains insects differing materially in the colour, and slightly in the form of the wings, but all agreeing in those characters which are properly generic. In the neuration of the wings, especially in that of the posterior, they closely resemble the genus *Heliconia*, but may at once be known by their shorter and abruptly clavate antennæ. From *Acræa* they differ in the structure of the feet, and from *Colænis* in having the discoidal cell of the posterior wings closed.

Some of the species, as *Eueides Procula* and *Eueides Thales*, closely resemble some of the *Heliconiæ* in colour; others, as *Eueides Isabella*, by their fulvous brown wings longitudinally marked with black, resemble some species of *Mechanitis* and the *Lycorææ*. *Eueides Aliphera* and its allies on the other hand, in the peculiar fulvous colour and the markings of both the upper and under surface, resemble the first section of *Colænis*.

The habits of some of the species resemble those of the *Heliconiæ*, but they are insects of more rapid flight, especially *Eueides Julia* and *Eu. Aliphera*. Their geographical distribution appears to be the same, with the exception of the West Indian Islands, from which as yet I have seen no species of the present genus. Several undescribed species exist in collections.

EUEIDES.

Section I. *Anterior Wings with the first subcostal nervule thrown off at the end of the cell.*

1. EU. THALES.

P. Th. *Cram.* t. 38. f. C. D. (1775).

Fab. Ent. Syst. iii. i. 168. n. 521. (1793).

Migonitis Th. *Hüb. Verz. bek. Schmett.* 12. (1816).

Heliconia Th. *Godt. Enc. M.* ix. 206. n. 11. (1819).

Guiana.

B. M.

2. EU. PROCULA *Doubleday & Hewitson, Gen. of Lepidoptera,* t. 20. f. 1. (1847).

Venezuela.

B. M.

3. EU. VIBILIA.

Cethosia Vib. *Godt. Enc. M.* ix. 245. n. 6. (1819).

Acræa Vib. *Godt. Suppl.* 806. (1823).

Colænis Vib. *Hüb. Zut. f.* 419, 450. (1822).

Semelia Vib. *Boisd. MSS.*

E. Doubleday, List of Lep. Ins. of Brit. Mus. 64. (1845).

Brazil.

B. M.

4. EU. MEREAL.

Colænis Mer. *Hüb. Zut. f.* 201, 202. (1821).

5. EU. LYBIA.

P. Lyb. *Fab. Syst. Ent.* 460. n. 73. (1775).Colænis Lyb. *Hüb. Verz. bek. Schmett.* 32. (1816).Cethosia Lyb. *Godt. Enc.* ix. 245. n. 5. (1819).P. Hypsipyle *Cram. t.* 177. f. C. D. (1779).
Guiana, Venezuela. B. M.

6. EU. ALIPHERA.

Cethosia Al. *Godt. Enc. M.* ix. 246. n. 7. (1819).Acræa Al. *Godt. Enc. M.* ix. *Suppl.* 806. (1823).Colænis Al. *Hüb. Samml. Exot. Schmett.* (1816-27).Semelia Al. *Boisd. MSS.**E. Doubleday, List of Lep. Ins. of Brit. Mus.*
64. (1845).

Brazil, Mexico, Honduras. B. M.

Section II. *Anterior Wings with the first subcostal nervule thrown off considerably before the end of the cell; the second shortly beyond it.*7. EU. CLEOBEA *Hüb. Zutr.* f. 601, 602. (1825).

Brazil.

B. M.

8. EU. DIANASA *Hüb. Verz. bek. Schmett.* 11. (1816).Nereis fulva Di. *Hüb. Samml. Exot. Schmett.*
(1806-16).

Brazil, Guayaquil.

B. M.

9. EU. ISABELLA.

P. Is. *Cram. t.* 350. f. C. D. (1781).Hel. Is. *Godt. Enc. M.* ix. 200. n. 51. (1819).

Brazil.

B. M.

Genus II. COLÆNIS.

COLÆNIS, PANTOPORIA, METAMORPHIA, *Hüb.*CETHOSIA *Godt.*

HEAD of moderate width, scaly in front, the forehead and vertex hairy.

Eyes slightly oval, large, very prominent.

Maxillæ more than two thirds the length of the body.

Labial Palpi ascending, extending beyond the forehead, slightly convergent, clothed with appressed scales, and long erect hairs, sometimes scattered sometimes densely placed; the second joint with a distinct dorsal tuft of hair. First joint short, curved; second joint elongate, swollen beyond the middle; third joint small, elongate, scarcely one third of the length of the second.

Antennæ nearly as long as the body, terminating in a short pyriform club (compressed in the dried specimens).

THORAX rather elongate, oval, hairy; the prothorax small, but distinct.

Anterior Wings elongate; the anterior margin but little curved, the apex rounded or truncated; the outer margin slightly emarginate or sinuate-dentate; the inner sinuate. Costal nervure stout, extending considerably beyond the middle of the wing. Subcostal nervure slender at its origin, where it lies close to the costal, five-branched; its first nervule thrown off at or before the end of the cell. Cell extending but little beyond the middle of the wing. Third median nervule curving very considerably upwards, and approaching near to the second discoidal nervule, then bent downwards and outwards. Internal nervure wanting.

Posterior Wings subtriangular; the anterior and outer margins nearly of equal length, much rounded; the latter more or less sinuate-dentate; the inner much shorter, nearly straight except at the base, where it slightly embraces the abdomen. Precostal nervule simple, curved inwards. Cell open. Third median nervule curving upwards towards the discoidal nervule.

Anterior Legs of the males more or less densely clothed with hairs, especially at the sides. The femur and tibia of about equal length. The tarsus one-jointed, nearly cylindric, slightly tapering to the apex. *Anterior Legs* of the female with the femur and tibia about of equal length, the latter fringed laterally with rather long hairs. Tarsus not much more than one half the length of the tibia, five-jointed, cylindric; the first joint about as long as the rest combined; the fifth joint terminating in a strong mucronate point; all the others with a stout spine on each side at the apex, on which rests a tuft of strong hairs, at the base of the following joint, and also with two or three shorter spines below.

Middle and Posterior Legs with the femora, tibiæ, and tarsi of about equal length, the spur of the tibia of moderate length. The tarsi very spiny both above and below; the last two joints slightly depressed. Claws more or less curved, grooved below. Paronychia bilacinate, the laciniae pointed; the outer as long as the claws. Pulvillus jointed, nearly or quite as long as the claws.

ABDOMEN nearly as long as the inner margin of the posterior wings.

LARVA and PUPA unknown.

Colænis may be known from the preceding genus by the open discoidal cell of the posterior wings, and from Cethosia and Agraulis by its pulvilli and paronychialia. Few as the species are, almost each one has a different aspect, and some slight difference in character. Colænis Julia and Col. Delila, which possibly are only varieties of the same species, have the wings elongate, slightly pointed, of a more or less bright tawny colour, slightly marked with black on the margins, and more or less so at the apex. Colænis Phærusa has the wings proportionably shorter and broader, the outer margin rounded instead of slightly concave, their ground colour nearly the same as in the preceding species, but marked longitudinally with black. In Col. Euchroia the anterior wings are truncated at the apex; the colouring of the upper surface somewhat resembles that of the preceding species, but below it bears some analogy to Agraulis, though wanting the silver spots. Colænis Dido is remarkable for its elongate black wings, beautifully banded and spotted with green above, and, as it were, silvered below. There are some differences of structure in the anterior feet and in the wings, which will be found given in the sectional characters.

The Colænes are insects of rather swift flight, frequenting the outskirts of woods. They are found throughout the tropical parts of America, and it will be seen that some of the species have rather a wide geographical range. Colænis Dido is stated by M. Lacordaire to be very common in Guiana, but difficult to capture, on account of its constantly flying round the tops of the highest trees without alighting. Its flight is bold and rapid. When in repose it keeps its wings expanded, in which it differs from Colænis Julia and Col. Phærusa, which always then close them completely. The two species just mentioned are very difficult to capture, from their rapid flight and from their rarely alighting, though sometimes they may be found at rest on the stems of the tall grasses.

COLÆNIS.

Section I. *Anterior Tarsi of the male elongate, slender, cylindric, scaly, and slightly hairy. Anterior Wings rounded at the apex. First subcostal nervule thrown off at the end of the cell.*

†

1. COL. DELILA Hübn. *Verz. bek. Schmett.* 32. (1816).
P. Del. *Fab. Syst. Ent.* 510. n. 284. (1775).
Cethosia Del. *Godt. Enc. M.* ix. 244. n. 2. (1819).
P. Cillene *Cram.* t. 215. f. D. E. (1780).
Jamaica, Guiana. B. M.

2. COL. JULIA Hübn. *Verz. bek. Schmett.* 32. (1816).
P. Julia *Fab. Syst. Ent.* 509. n. 281. (1775).
Cethosia Julia *Godt. Enc. M.* ix. 244. n. 1. (1819).
P. Alcionea *Cram.* t. 215. f. A. F. G. (1780).
Jamaica?, Honduras, Venezuela, Guiana, Brazil.
B. M.

††

3. COL. PHÆRUSA
P. Phæ. *Linn. Syst. Nat.* ii. 780. n. 180. (1767).
Cram. t. 130. f. B. C. (1779).
Fab. Syst. Ent. iii. i. 134. n. 415. (1793).
Pantoporia Phæ. Hübn. *Verz. bek. Schmett.* 44. (1816).
Cethosia Phæ. *Godt. Enc. M.* ix. 246. n. 9. (1819).
Agraulis Phæ. E. *Doubleday, List of Lep. Ins. of Brit. Mus.* 65. (1845).
Honduras, Venezuela, Guiana, Brazil. B. M.
March, 1848.

Section II. *Palpi densely hairy. Anterior Tarsi of the male elongate, slender, cylindric, scaly, and slightly hairy. Anterior Wings truncate at the apex. Second subcostal nervule of the posterior wings much bent at its origin. Discoidal nervule much bent soon after its origin from the second subcostal nervule.*

4. COL. EUCHROIA *Doubleday & Hewitson, Gen. of Diurnal Lep.* t. 20. f. 3. (1847).
Venezuela, New Granada. B. M.

Section III. *Anterior Tibiæ and Tarsi of the male densely hairy, especially the tarsi, which are rather short, sub-depressed, tapering towards the apex. First subcostal nervule arising before the end of the cell, second a little beyond it.*

5. COL. DIDO.
P. Di. *Linn. Amæn. Acad.* vi. 408. n. 74. (1763).
Linn. Syst. Nat. ii. 782. n. 192. (1767).
Clerck, Icon. t. 30. f. 3, 4. (1764).
Fab. Syst. Ent. iii. i. 57. n. 177. (1793).
Cram. t. 196. f. E. F. (1779).
Metamorphia Di. Hübn. *Verz. bek. Schmett.* 43. (1816).
Cethosia Di. *Godt. Enc. M.* ix. 246. n. 8. (1819).
Agraulis Di. E. *Doubleday, List of Lep. Ins. of Brit. Mus.* 65. (1844).
Honduras? Venezuela, Guiana, Brazil. B. M.

Genus III. **CETHOSIA** *Fab.**CETHOSIA* *Fab. Syst. Gloss.* (ined.).*ALAZONIA* *Hübner*. (1816).*CETHOSIA* *Godt., Latr., &c.*

HEAD rather narrow, clothed with hair.

Eyes oval, prominent.

Maxillæ more than equal in length to the thorax.

Labial Palpi slightly divergent, ascending, rising considerably above the forehead, clothed with appressed scales. First joint stout, short, curved; second joint more than five times the length of the first, much swollen beyond the middle, smaller towards the apex, which is obliquely truncate, set in front with long erect setæ; third joint slender, elongate, oval, about equal in length to the first.

Antennæ about three fourths the length of the body, gradually clavate; the club slender, rather pointed, grooved below.

THORAX oval, not robust; the prothorax small, but distinct.

Anterior Wings triangular; the anterior margin and apex slightly rounded; outer margin sinuate-dentate, not two thirds the length of the anterior; inner margin slightly sinuate, rather longer than the outer. Costal nervure stout, not extending much beyond the middle of the wing. Subcostal nervure slender, placed very close to the costal, five-branched; its first nervule thrown off just before the end of the cell; the first and second, and the third and fourth, nervules about equally distant from one another; the third rather nearer to the second than to the fourth. Cell not quite half the length of the wing. Upper disco-cellular nervule almost wanting. Middle disco-cellular nearly straight, directed slightly inwards. Lower disco-cellular twice the length of the middle disco-cellular, directed first slightly inwards, then curving outwards, uniting to the third median nervule almost immediately beyond its origin. Internal nervure wanting.

Posterior Wings subtriangular, all the margins of about equal length; the anterior slightly, the outer much, rounded, the latter more or less deeply dentate; the inner margin forming a distinct channel for the reception of the abdomen, emarginate beyond the termination of the internal nervure.

Anterior Legs of the males with the femur and tibia of about equal length, subcylindric, slightly compressed. Tarsus one-jointed, shorter than the tibia, subcylindric, slightly compressed, rounded, or rather slenderer, towards the apex. *Anterior Legs* of the female

scarcely, if at all, longer than those of the male. Femur and tibia of about equal length, nearly cylindric, the latter slightly spiny within. Tarsus shorter than the tibia, five-jointed; the first joint nearly double the length of the rest combined, largest towards the apex; the other joints transverse, successively shorter; all the joints except the fifth armed on each side at the apex with a stout spine, covered more or less by a tuft of stiff hairs at the base of the following joint.

Middle and Posterior Legs with the tibiæ rather shorter than the femora, spiny; the spurs distinct.

Tarsi about equal in length to the tibiæ, very spiny; the spines above slender, much stronger at the sides and below, forming three well defined series along the sole of the foot. First joint equal to the rest combined; second, third, and fourth progressively shorter, and slightly thicker; fifth longer than the second, rather dilated; the spines, especially the lateral ones, longer than on the other joints. Claws elongate, grooved below, lobed at the base, acute, but little curved except at the base and apex. Paronychia and pulvilli wanting or rudimentary.

ABDOMEN subcylindric, shorter than the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Cethosia differs from the preceding genus, to which Godart united it, in the form of its middle and posterior tarsi, which somewhat resemble those of Eurycus. The antennæ have the club of different form, and the wings are proportionably much broader.

It is allied at once to Colænis, Agraulis, and Argynnis, and thus cannot be placed anywhere in a linear series without interrupting what would seem to be the natural order of the genera.

The typical species are distinguished by the great beauty of the under surface of the wings, which is generally of a buff or light red colour more or less banded with white, and marked by numerous series of short black bands and spots; the outer margins being black, marked with a deeply zigzag white line. The upper surface is of some shade of red in the males, and mostly so in the females; but in those of one or two species it is white, marked with black dots, more or less deeply bordered with black, which sometimes occupies the greater part of the anterior wing. Cethosia Leschenaultii offers above a remarkable variation from the type, being above of a deep satiny black with the outer margin of both pairs of wings bright fulvous, and might thus at a little distance be mistaken for Argynnis Diana. Cethosia Lamarekii has the upper surface black with the base orange, and the disc with beautiful blue reflections.

Of the habits of this genus we know nothing. Its geographical range extends over Southern Asia, the Asiatic Islands, and part of Australia. The species figured was taken at Sarawak by Mr. H. Low, now Colonial Secretary at Labuhan.

CETHOSIA.

1. CETH. BIBLIS.

P. Bib. *Drury*, 1. t. 4. f. 2. (1780).

Cram. t. 175. f. A. B. (1779).

Alazonia Symbiblis *Hübner. Verz. bek. Schmett.* 46. (1816).

Cethosia Biblina *Godt. Enc. M.* ix. 248. n. 12. (1819).

P. Pentheseilea *Fab. Spec. In.* II. 88. n. 390. (1787).

China? N. India.

B. M.

2. CETH. PENTHESILEA.

P. Pent. *Cram.* t. 145. f. B. C. (1776).

Cethosia Pent. *Godt. Enc. M.* ix. 248. n. 13. (1819).

China, India, Java.

B. M.

3. CETH. HYPSEA *Doubleday & Hewitson, Gen. of Diurnal Lep.* t. 20. f. 4. (1847).

Borneo.

B. M.

4. CETH. CHRYSIPPE.

P. Chr. *Fab. Ent. Syst.* III. i. 112. n. 334.
(1793).

Donovan, Ins. of New Holland (1805).

Cethosia Chrysonoe *Godt. Enc. M.* IX. 249. n.
114. (1819).

Australia.

5. CETH. CYDIPPE *Godt. Enc. M.* IX. 247. n. 10. (1819).

P. Cyd. *Linn. Amœn. Acad.* VI. 409. n. 76.
(1763).

Linn. Syst. Nat. II. 776. n. 163. (1767).

Clerck, Icon. t. 36. f. 1. (1764).

Fab. Ent. Syst. III. i. 112. n. 345. (1793).

Alazonia Cydippe *Hübner, Verz. bek. Schmett.* 47.
(1816).

P. Ino *Cram.* t. 62. f. A. B. (1775).

China.

6. CETH. CYANE *Godt. Enc. M.* IX. 247. (1819).

P. Cy. *Fab. Syst. Ent.* 503. n. 254. (1775).

Fab. Ent. Syst. III. i. 115. n. 352. (1793).

Drury, I. t. 4. f. 1. (1770).

Cram. t. 295. f. C. D. (1780).

Alazonia Symbiblis *Hübner, Verz. bek. Schmett.* 46.
(1816).

N. India, Malabar.

B. M.

7. CETH. OBSCURA *Guérin, Voyage de la Coquille*, t. 15. f. 4.
(1826).

Port Praslin.

8. CETH. LESCHENAUITH *Godt. Enc. M.* IX. *Suppl.* 816. n. 9, 10.
(1823).

Lucas, Lep. Exot. t. . f. .

Java.

9. CETH. LAMARCKII *Godt. Enc. M.* IX. 249. n. 16. (1819).

Australia.

B. M.

Note. — *Cethosia Marica* *Godt.* (P. *Marica* *Fab. Ent. Syst.* III. i. 113. n. 346.) belongs to the modern genus *Charaxes*. Not having seen the insect, I am not sure that *Cethosia obscura* *Guérin* actually belongs to this genus as now limited.

Genus IV. **AGRAULIS** *Boisd.**AGRAULIS* *Boisd. Icon. Lép. et Chen. Am. Sept. 142. (1833).**CETHOSIA*, *ARGYNNIS*, *Godt.**DIONE* *Hübner.*

HEAD of moderate width, scaly, and slightly hairy on the forehead and crown.

Eyes slightly oval, rather prominent.

Maxillæ nearly as long as the body.

Labial Palpi ascending, slightly divergent at the apex, clothed with scales, and scattered erect hairs in front, with a dorsal tuft of rather long hairs near the apex of the second joint. First joint very short, curved; second elongate, swollen, especially beyond the middle; third joint short, ovate, or oval, about one fifth or one sixth the length of the second.

Antennæ about three fourths the length of the body, terminating in an obtuse, short, somewhat pyriform club.

THORAX elongate, oval, scaly and hairy at the sides.

Anterior Wings elongate, subtriangular; the anterior margin slightly curved; the apex rounded, or subtruncate; outer and inner of nearly equal length, scarcely two thirds the length of the anterior; the former sometimes considerably emarginate, the latter very slightly so. Costal nervure stout, extending about two thirds the length of the wing. Subcostal nervure slender at its origin, five-branched; its first nervule thrown off beyond the cell; the second nearer to the third than to the first; the third nearer to the fourth than to the second. Cell less than half the length of the wing. Upper disco-cellular very short, scarcely perceptible. Middle disco-cellular curved inwards, or almost angular; the angle directed inwards. Lower disco-cellular longer than the middle, slightly curved outwards, directed obliquely outwards to the third median nervule which it joins considerably beyond its origin. Internal nervule wanting.

Posterior Wings with all the margins nearly equal; the inner being rather the shortest; the anterior margin rounded; outer margin sinuate-dentate, prolonged into a tooth at the termination of the first median nervule; internal margin embracing the abdomen. Precostal nervule simple. Cell open. Third median nervule much curved, so as to approach very closely to the discoidal nervule.

Anterior Legs of the male clothed with scales and a few slender hairs. Tibia slightly longer than the femur. Tarsus about three fourths the length of the tibia, one-jointed, cylindric.

Anterior Legs of the female scaly, not longer than those of the male. Tibia shorter than the

femur. Tarsus about two thirds the length of the tibia; first joint elongate, cylindric, slightly curved, one half longer than the rest combined; second, third, and fourth transverse, progressively shorter; all these armed at the apex on each side with a stout spine; fifth joint small, not transverse, unarmed.

Middle and Posterior Legs with the femora and tibiæ of about equal length, the latter very spiny; the spurs distinct, moderately long. Tarsi nearly as long as the tibiæ, very spiny both above and below; the lateral spines longest, those on the soles arranged in two or three rows; all the joints nearly of equal thickness, and cylindrical. Claws long, but little curved, lobed at the base, grooved below. Paronychial and pulvilli rudimentary, or entirely wanting.

ABDOMEN not so long as the inner margin of the posterior wings.

LARVA cylindric, armed with long, ciliated spines.

PUPA angular, tuberculated.

Agraulis resembles the preceding genus in the simple structure of its claws; but may be at once distinguished by its more elongate wings, which are fulvous, banded or spotted with black on both surfaces, and splashed with silver below. In many respects, especially in the form of the wings, it approaches *Colenis* more closely than the preceding genus. It is closely allied to *Argynnis* and *Cirrochroa*.

The *LARVA* of *Agraulis Vanillæ* differs but little in form from that of the European species of *Argynnis*, being cylindrical and set with numerous ciliated spines. It is brown, with darker longitudinal stripes. It feeds on various species of passion-flower, but not, I believe, on the plant after which it has been named. In East Florida I have found the larva in profusion in the spring on *Passiflora incarnata*. It changes to an angular or rather tuberculated pupa with a large prominence on the back. After seven or eight days the butterfly makes its appearance.

The flight of the PERFECT INSECT is graceful, and at times rapid; it is fond of alighting on the flowers of the *Passiflora*, and is then by no means difficult to capture. In many respects its habits resemble those of our own *Argynnis Paphia*. Its ordinary time for appearance is May and June; but I saw a very perfect specimen on the 21st of December, 1837, at the little village of Mandarin on the St. John's River, East Florida.

This species has a wide Geographical Range, extending from Georgia to the South of Brazil. The two other species of the genus appear to have a more limited one, especially *Agraulis Moneta*.

AGRAULIS.

1. AGR. JUNO.

P. Ju. *Cram.* t. 215. f. B. C. (1780).

Fab. Spec. Ins. II. 112. n. 487. (1787).

Cethosia Ju. *Godt. Enc. M.* IX. 244. n. 3. (1819).

Dione Ju. *Hübner. Verz. bek. Schmett.* 31. (1816).

Honduras, Venezuela, Guiana, Brazil. B. M.

2. AGR. VANILLÆ *Boisd. et Lecomte, Icon. Léop. et Chen. Am.*

Sept. 143. (1833).

P. Van. *Linn. Mus. Lud. Ulr.* 306. (1764).

Linn. Syst. Nat. II. 787. n. 216. (1767).

Cram. t. 212. f. A. B. (1779).

Dione Van. *Hübner. Verz. bek. Schmett.* (1816).

Agr. Van. *Godt. Enc. M.* IX. 262. n. 19. (1819).

United States (Southern States), West Indies,
Honduras, Brazil. B. M.

3. AGR. MONETA *Boisd. Spéc. Gén.* I. t. 10 f. 7. (1836).

Doubleday & Hewitson, t. 22. f. 1. (1847).

Dione Mon. *Hübner. Samml. Exot. Schmett.*
(1816-27.)

Mexico, Venezuela, New Granada. B. M.

Genus V. **CLOTHILDA** *Blanchard*.*Blanchard, Hist. Nat. des An. Art. III. 440. (1840).*ARGYNNIS *Godt. &c.*ANICIA *Hübner*.

HEAD not so broad as the thorax.

Eyes nearly round, not remarkably prominent.

Maxillæ longer than the thorax.

Labial Palpi rising considerably above the forehead, scaly; the first and second joints densely clothed in front with long hairs. First joint stout, short, curved; second joint stout, subcylindric, curved, three times as long as the first; third very slender, almost acicular, rather longer than the first.

Antennæ scarcely two thirds the length of the body, rather stout, terminating in a slightly elongate obtuse club.

THORAX rather stout; the prothorax distinct.

Anterior Wings subtriangular; the anterior margin much curved; the outer margin slightly emarginate, about two thirds the length of the anterior; inner margin nearly straight, rather longer than the outer. Costal nervure rather remote from the subcostal, not extending beyond the middle of the wing. First subcostal nervule thrown off before the end of the cell; the second also before, but close to the end of, the cell; third rather more remote from the second than that is from the first, extending nearly to the apex; fourth as far distant from the third as that is from the first. Upper disco-cellular very short; middle directed obliquely inwards; lower much longer, curved, united to the third median nervule at a point where this is bent at a considerable angle. Internal nervule wanting.

Posterior Wings obovate; the outer margin slightly sinuate, or sinuate-dentate. Precostal nervure bifid. Costal nervure bifid; the outer branch longer than the inner. Subcostal nervure separated from the costal, from the base of the wing, but lying closely parallel to it as far as the origin of the precostal. Discoidal nervure united to the second subcostal nervule, at some distance from its origin, by a distinct upper disco-cellular nervule; and to the third median nervule, close to its origin, by a lower disco-cellular, which is longer than the upper one. Third median nervule much curved. Abdominal fold ample.

Anterior Legs of the male clothed with scales, and slightly fringed with long hairs. Femur and tibia about equal in length. Tarsus shorter than the tibia, slender, nearly cylindric, slightly

pointed. *Anterior Legs* of the female with the tibia shorter than the femur. Tarsus about two thirds the length of the tibia, rather stout, and slightly clavate.

Middle and Posterior Legs with the tarsi scarcely so long as the tibiæ; the upper surface smooth, the sides with a row of stout spines, and the lower surface with two distinct series of spines, not quite so long as the lateral ones. Claws not much curved, strong, grooved below. Paronychia bilacinate; the outer slender, nearly as long as the claw; the inner short, subtriangular. Tibiæ of the middle pair of legs shorter than the femora, spiny within; those of the posterior pair also spiny externally, and slightly longer than the femora; spurs strong in both.

ABDOMEN rather slender, about two thirds the length of the inner margin of the posterior wings.

The genus Clothilda was founded by M. Em. Blanchard, upon the *Argynnis Briarea* of Godart, the *P. Pantheratus* of Martin. It may be known from all its allies by the structure of the posterior wings, which have the discoidal nervure in its normal position, connected to the second subcostal and third median nervules by distinct disco-cellular nervules. In its less swollen palpi it differs from *Argynnis* and its allies; and, as is remarked by M. Em. Blanchard, comes near to *Vanessa*.

The original type of the genus has much the colouring of *Argynnis* on both surfaces; but the other known species are of a fuscous brown, with blotches of a crimson hue on the disc, and spots of brownish yellow towards the outer margin.

The Geographical Limits of this genus are very restricted, being, as far as known, confined to the larger West Indian Islands and Mexico. *Clothilda Jægeri* differs so little from *Clo. Euryale*, that, from an inspection of the figure given by M. Ménétriés, I was led to consider it only a variety of that species, but having had an opportunity of examining it in the extensive collection of Haitian insects formed by Mr. Hearne, by far the largest from that island ever brought to Europe, I am quite convinced of its being a distinct species.

CLOTHILDA.

1. CL. PANTHERATA.

P. Panth. Martyn, Psyche, t. 12. f. 27. and t. 14. f. 35. (1797).

Anicia Numida Hübner, Samml. Exot. Schmett. (1806-27).

Argynnis Briarea Godt. Enc. M. ix. 261. n. 16. (1819).

Clot. Br. Blanchard, Anim. Art. iii. 441. (1840).

Synalpe Bri. Boisd. MSS.

Haiti, Mexico.

B. M.

2. CL. JÆGERI.

Argynnis Jæ. Ménétriés, Mém. Soc. Imp. Nat. Mosc. ix. t. 10. f. 3, 4. (1834).

Haiti.

3. CL. EURYALE Doubleday & Hewitson, t. 21. f. 4. (1847).

Argynnis Eur. Klug, Neue Schmett. t. 2. f. 1, 2. (18).

Mexico.

B. M.

Note. — Hübner's genus *Anicia* never having been characterised, I have retained the name given by Mr. E. Blanchard.

Genus VI. CIRROCHROA.

ARGYNNIS *Godt. &c.*

HEAD of moderate size, clothed with hairs.

Eyes ovate, not remarkably prominent.

Maxillæ rather slender, scarcely so long as the thorax.

Labial Palpi slightly divergent, ascending, rising above the forehead, scaly; the second joint furnished with a slight dorsal tuft, and externally with numerous erect setæ. First joint curved, very short; second joint five times as long as the first, swollen at the middle, tapering almost to a point at the apex; third joint slender, acicular, barely one seventh the length of the second.

Antennæ of moderate length, gradually thickening into a slender club, the articulations of which are not more distinct than those of the other portion of the antennæ.

THORAX moderately stout, oval, hairy.

Anterior Wings subtriangular; the anterior margin rounded; the outer margin about two thirds the length of the anterior, nearly straight, or slightly concave; inner margin rather shorter than the outer, slightly emarginate. Costal nervure not extending to the middle of the costa. Subcostal nervure emitting its first nervule shortly before its second, at the end of the cell; its third at about two thirds the distance between the cell and the apex; the fourth nearer to the third than to the apex; the third terminating at the apex. Upper disco-cellular nervule nearly wanting. Middle disco-cellular nervule curved inwards, or slightly angular. Lower disco-cellular nervule very slender, nearly straight, more than double the length of the middle disco-cellular, joining the median nervure at a short distance before the origin of its second nervule. Internal nervure wanting.

Posterior Wings obovate; the outer margin slightly sinuate; the inner emarginate near the anal angle. Precostal nervure simple, curved outwards. Discoidal nervure appearing to be a third subcostal nervule; but little curved. Discoidal cell open. Abdominal fold ample.

Anterior Legs of the male scaly, the femur and base of the tibia slightly; apex of the tibia and the tarsus thickly covered with long hairs. Tibia shorter than the femur, but longer than the tarsus, which is subcylindric, slightly pointed, one-jointed. *Anterior Legs* of the female scaly. Tibia smooth, slightly shorter than the femur. Tarsus about the length of the tibia, five-jointed; its first joint cylindric, slightly curved, smooth, about twice the length of the other joints combined; second and third joints transverse, of equal breadth, the latter rather shorter

than the former; fourth joint rather tapering; all these with a spine on each side at the apex, covered by a tuft of hairs at the base of the following joint; fifth joint narrower, tapering towards the apex, which is mucronate.

Middle and Posterior Legs with the femora, tibiæ, and tarsi nearly of equal length. Tibiæ spiny, especially towards the apex; their spurs distinct. Tarsi nearly cylindric, spiny; the spines at the sides longest, those of the lower surface arranged in two nearly regular series. First joint longer than the rest combined; second, third, and fourth progressively, though but little, shorter, all of similar form, as is the fifth, which is about equal in length to the second. Claws curved, grooved below. Paronychia bilacinate; the outer lacinia subtriangular, broader than, and about as long as, the claw; inner shorter, strap-shaped. Pulvillus jointed, as long as the claws; the second joint broad.

ABDOMEN small, scarcely half the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Cirrochroa may be known from the neighbouring genera by its gradually tapering antennæ combined with the open discoidal cell of the posterior wings. In many respects it is allied to Terinos; but the hairy eyes and abruptly clavate antennæ of Terinos are conspicuous distinctive characters. Both these genera have a singular character on the posterior wings of the males, which also occurs with a slight modification in Lachnoptera. Between the third subcostal and third median nervule, the upper surface of the wing is marked by a transverse depression, extending nearly, or quite, across the space between the nervules, causing a corresponding elevation of the lower surface, which, but for its breadth, might be mistaken for the indication of a disco-cellular nervule. In Lachnoptera, this depression is preceded by an elevation of the membrane, which causes a depression below.

The colour of the upper surface of the typical species is a yellowish fulvous, but some species have the outer margin, and others this and the base of the wings, broadly fuscous. Below, the wings are mostly of a pale yellowish fuscous with slight pearly reflections.

This genus is found in the islands of the Indian archipelago, the continent of India, and, according to Fabricius and Donovan, in Australia.

CIRROCHROA.

- | | |
|---|--|
| 1. CIRR. AORIS <i>Doubleday & Hewitson</i> , t. 21. f. 1. (1847).
N. India. B. M. | 4. CIRR. ? LAMPETIE.
P. Lamp. <i>Linn. Syst. Nat.</i> II. 775. n. 160. (1767).
<i>Fab. Ent. Syst.</i> III. i. 93. n. 290. (1793).
<i>Cram. t.</i> 349. f. A. B. (1782).
Arg. Lamp. <i>Godt. Enc. M.</i> IX. 258. n. 5. (1819).
Amboyna. |
| 2. CIRR. THAIS.
Arg. Th. E. <i>Doubleday, List of Lep. Ins. Brit. Mus.</i> (1848).
Java, Moulmein, Ceylon. B. M. | 5. CIRR. PROSOPE.
P. Pros. <i>Fab. Syst. Ent.</i> 504. n. 260. (1775).
<i>Fab. Ent. Syst.</i> III. i. 120. n. 367. (1793).
<i>Donovan, Ins. of New Holland</i> (1).
Van. ? Pros. <i>Godt. Enc. M.</i> IX. <i>Suppl.</i> 820. n. 39, 40. (1823).
Australia. |
| 3. CIRR. CLAGIA.
Arg. Cl. <i>Godt. Enc. M.</i> IX. <i>Suppl.</i> 816. n. 14, 15. (1823).
<i>Boisd. Sp. Gén.</i> I. t. 10. f. 6. (1836).
Singapore, Java. B. M. | |

Note. — *Argynnis Peria Godt. Enc. M.* IX. 259. n. 9. (1819) probably belongs to this genus, and may be a variety of either the first or second species in this list.

Genus VII. **TERINOS** *Boisd.**Boisd. Sp. Gén. I. t. 9. f. 4. (1836).*

HEAD broad, hairy.

Eyes oval, prominent, hairy.

Maxillæ scarcely so long as the thorax.

Labial Palpi porrect, ascending, rising above the forehead, scaly; the scales on the first joint long; the second joint hairy at the sides. First joint short, transverse; second four times the length of the first, subcylindric, slightly swollen in the middle, tapering towards the base, and more so towards the apex; third joint about one fifth the length of the second, slender, fusiform, the apex pointed.

Antennæ rather short, slender, abruptly clavate; the club obtuse.

THORAX moderately stout, oval, hairy.

Anterior Wings subtriangular; the anterior margin rounded; the apex somewhat truncate; outer margin sinuate, emarginate, scarcely two thirds the length of the anterior; inner margin nearly straight, about equal to the outer. Costal nervure not reaching to the middle of the costa. First and second subcostal nervules very close together, the latter thrown off exactly at the end of the cell; fourth more remote from the apex than from the end of the cell; third about equally distant from the second and fourth, terminating close to the apex. Upper disco-cellular nervule almost wanting; middle disco-cellular curved; lower longer than the middle disco-cellular, directed obliquely inwards to the median nervule, which it joins before the origin of the second nervule. Third median nervule not much curved. Internal nervure wanting.

Posterior Wings almost quadrangular; the anterior margin very slightly curved; the outer margin sinuate, produced into an angle at the termination of the third median nervule; inner margin longer than the outer, emarginate towards the anal angle. Precostal nervure simple. Subcostal nervure dividing very near to the base of the wing. Discoidal nervure appearing to be a third subcostal, bent soon after its origin. Cell open, but with a slight indication of a lower disco-cellular in a state of atrophy. Abdominal fold ample.

Anterior Legs of the male scaly, and fringed with long hairs. Tibia shorter than the femur. Tarsus shorter than the tibia, one-jointed, subcylindric, pointed. *Anterior Legs* of the female scaly, stouter than those of the male. First joint three times as long as the rest combined, cylindric, slightly curved, with a few spines below, and two stout spines at the apex, covered with a tuft of hair at the base of the next joint, as is the case also with the three following

joints. These are transverse, about of equal length; the fifth joint is rather longer than the preceding, tapering, terminated by a mucro representing the claw.

Middle and Posterior Legs with the tibiæ rather shorter than the femora, spiny; the spurs long. Tarsi rather longer than the tibiæ, spiny both above and below; the spines at the sides and below nearly in regular series. First joint as long as the rest combined; rest, to the fourth, progressively shorter; fifth rather longer than the third. Claws curved, very slightly grooved below. Paronychia bilacinate; the outer lacinia elongate, somewhat elliptical, equal to the claw; inner rather strap-shaped, short. Pulvillus jointed, as long as the claw; the second joint very broad.

ABDOMEN about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

The rare and beautiful insect which alone composes this genus is at once distinguished from its allies by its peculiar colour. The rich black of its upper surface, glossed with the most intense blue, and the curious velvety patch of hair on both wings of the males, seem to indicate but little affinity to the typical *Argynnina*. We have, however, the first appearance of this blue colour in the tint visible in certain lights on the wings of *Lachnoptera Iole*; and the males of that insect have likewise a large patch of hair on the posterior wings. Again, in the males of *Argynnis Paphia* we have the median nervule clothed with hairs, as in some species of *Papilio*. By its palpi, antennæ, and the neuration of its wings, *Terinos* evidently belongs to the group composing the genus *Argynnis* of Godart; and the little patch of orange at the anal angle of the posterior wing, as well as the markings of the under surface, are additional evidences of this. It is remarkable, however, for having the eyes covered with hair, which at once distinguishes it from its allies.

As far as my knowledge extends, this insect is confined to the Indian archipelago and the peninsula of Malacca. The specimen figured was captured at Sarawak, by my friend, Mr. Hugh Low, who informs me that in its flight and habits it resembles our *Argynnis Paphia*.

TERINOS.

1. *TER. CLARISSA* *Boisd. Sp. Gén.* 1. t. 9. f. 4. (1836).

Doubleday & Hewitson, t. 21. f. 3. (1847).

Java, Borneo, Singapore.

B. M.

Genus VIII. LACHNOPTERA.

ARGYNNIS Godt. &c.*ISSORIA* Hübn.

HEAD of moderate width, hairy.

Eyes oval, not very prominent.

Maxillæ slightly longer than the thorax.

Labial Palpi slightly divergent, ascending, rising considerably above the forehead, scaly; the second joint furnished with a dorsal tuft, and externally with numerous erect setæ. Basal joint curved, short, rather less than one fourth the length of the second; second joint gradually enlarging for about two thirds of its length, then tapering almost to a point at the apex, which is truncate; third joint slender, acicular, about one eighth the length of the second.

Antennæ of moderate length, rather abruptly clavate; the club obtuse, its articulations not more distinct than those of the other portion.

THORAX oval, moderately stout, hairy.

Anterior Wings nearly triangular; the anterior margin slightly rounded; outer margin sinuate, emarginate, about two thirds the length of the anterior; inner margin, in the males at least, rounded, equal in length to the outer. Costal nervure terminating beyond the middle of the costa. Subcostal nervure emitting its first nervule a very short space before the end of the cell; its second a short distance beyond the cell; third subcostal much more remote from the second than from the fourth, not extending to the apex; fourth about equally distant from the third and from the apex, shortly before which it terminates. Upper disco-cellular nervule almost wanting; middle disco-cellular curved inwards; lower nearly three times as long as the middle disco-cellular, very slightly curved, anastomosing with the median nervure before the origin of its second nervule. Internal nervule wanting.

Posterior Wings somewhat quadrangular; the anterior margin nearly straight; outer margin sinuate, produced into an angle at the termination of the third median nervule, the distance between this angle and the apex about equal to the length of the anterior margin; inner longer than the anterior margin, emarginate before the anal angle; the abdominal fold ample. Precoastal nervure simple, curved outwards. Cell open. Discoidal nervure appearing to be a third subcostal nervule, bent soon after its origin. Third median nervule much curved.

Anterior Legs of the male clothed with long delicate hairs. Tibia shorter than the femur. Tarsus

one-jointed, subcylindric, slightly tapering towards the apex, about two thirds the length of the tibia.

Middle and Posterior Legs rather short. Tibiæ much shorter than the femora, spiny all round; the spurs distinct, stout. Tarsi about equal in length to the femora, spiny above and below, the lateral spines, and those of the lower surface longer than those of the upper surface; the basal joint considerably longer than the rest combined; second, third, and fourth, progressively shorter; fifth elongate, oval, scarcely shorter than the second. Claws curved, compressed. Paronychialia only rudimentary. Pulvilli jointed, not so long as the claws.

ABDOMEN rather slender, about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Lachnoptera is remarkable for the peculiar patch of hair-like scales on the posterior wings of the males, the only sex I have seen. These scales resemble those met with in the males of the Hipparchiæ, and their allies, in being elongate, almost linear, slightly wider at the base, which is deeply notched; the footstalk by which they are attached to the wing being situated in the deepest part of the notch. Towards the apex they gradually taper to a slender stalk, terminating in a vane, like the tail feathers of the racket-tailed humming-birds, fringed externally. This patch of scales of peculiar form is probably here, as in the Hipparchiæ, a sexual character; but though I have seen little less than thirty males of this rare insect, I have never yet seen the female, which possibly is the *P. Thais* of Fabricius.

The short pulvillus, and the apparent want of paronychialia, are good distinctive characters for this genus.

Its Geographical Range appears to be limited to the equatorial regions of Western Africa.

LACHNOPTERA.

1. LACH. IOLE *Doubleday & Hewitson*, t. 22. f. 2. (1847).
Fab. Spec. Ins. II. 78. n. 348. (1782).
Fab. Syst. Ent. III. i. 99. n. 307. (1793).
Arg. Iole Godt. Enc. M. IX 260. n. 11. (1819).
P. Laodice Cram. t. 157. f. E. F. (1777).
Issoria Anticlea Hübn. Verz. bek. Schmett. 31. (1816).
? ♀ *P. Thais Fab. Ent. Syst.* III. i. 149. n. 456. (1793).

Note.—I have reluctantly followed Godart in adopting the Fabrician name *Iole*, instead of Cramer's which has the priority. The *P. Laodice* of Pallas being an *Argynnis*, it is well not to have the same specific name for two species, which many would consider congeneric.

Genus IX. MESSARAS.

ARGYNNIS *Godt. &c.*

HEAD rather broad, hairy.

Eyes oval, rather prominent.

Maxillæ considerably longer than the thorax.

Labial Palpi divergent, ascending, projecting considerably beyond the forehead. First joint subcylindric, slightly curved, scaly, the scales very long; second joint five times the length of the first, large, much swollen beyond the middle, tapering towards the apex, which is truncate, scaly, and in front hairy, the external hairs much the longest, dorsal tuft short; third joint slender, acicular, equal in length to the first.

Antennæ scarcely three fourths the length of the body, gradually and almost imperceptibly thickening towards the apex into a slender club, the last joint of which is pointed.

THORAX oval, moderately stout, hairy.

Anterior Wings subtriangular; the anterior margin considerably rounded; the outer about two thirds the length of the anterior margin, rounded, slightly sinuate; inner margin straight, a little longer than the outer. Costal nervure stout, terminating before the middle of the anterior margin. Subcostal nervure slender, lying close to the costal until the latter turns upward to the costa; its first nervule thrown off just before the end of the cell; its second at some distance beyond it; its third about as far from the second as this from the first; its fourth less than half way between the third and the apex, just before which it terminates. Cell short, about one third the length of the wing. Upper disco-cellular all but wanting. Middle disco-cellular much curved inwards. Outer disco-cellular very slender, almost atrophied, slightly curved, about double the length of the middle one, anastomosing with the third median nervule close to its origin.

Posterior Wings obovate; the outer margin slightly sinuate-dentate, the longest tooth being at the termination of the third median nervule. Precostal nervule simple, bent abruptly outwards. Discoidal nervure appearing to be a third subcostal nervule. Cell open. Abdominal fold ample.

Anterior Legs of the male scaly, and slightly fringed with hairs. Femur longer than the tibia, curved. Tibia also curved, nearly cylindric. Tarsus two fifths the length of the tibia, subcylindric, slightly tapering towards the apex. *Anterior Legs* of the female with the femur longer

than the tibia, fringed with hair. Tibia cylindric, scaly and hairy, spiny within towards the apex. Tarsi five-jointed; the first joint one half longer than the rest combined, spiny within, and furnished, as are the three following joints, with a spine on each side at the apex, covered by a tuft of hair at the base of the following joint; fourth and fifth joints transverse, the fifth very small.

Middle and Posterior Legs with the tibiæ quite as long as the femora, spiny externally and laterally, the lateral spines longest, spurs rather long. Tarsi longer than the tibiæ, spiny; the spines of the upper surface slender, the lateral ones the longest, those of the under surface arranged in two regular series; first joint equal in length to the rest combined; the three following joints progressively shorter; fifth elongate, ovate, equal in length to the third.

ABDOMEN rather slender, more than two thirds as long as the abdominal margin of the posterior wings.

LARVA and *PUPA* unknown.

Messaras resembles *Cirrochroa* in its scarcely clavate antennæ, whilst in most other characters it agrees very nearly with *Atella*. Its antennæ will distinguish it from all the allied genera except *Cirrochroa*, and the different structure of the subcostal nervure and nervules will, independently of other characters, separate it from that genus.

Its Geographical Range extends over the continent of India, Ceylon, parts of China, and the islands of the Indian archipelago. Of *Alcippe* I have not been able to obtain specimens for dissection, it may possibly differ slightly from the other species.

MESSARAS.

1. MESS. ERYMANTHIS.

- P. Ery. *Drury*, i. t. 15. f. 3, 4. (1770).
Fab. Ent. Syst. iii. i. 139. n. 427. (1793).
Cram. t. 238. f. F. G. (1781).
 Arg. Ery. *Godt. Enc. M.* ix. 257. n. 4. (1819).
 P. *Lampetia Cram.* t. 148. f. E. (1777)?
 China, India, Java. B. M.

2. MESS. ALCIPE.

- P. Al. *Cram.* t. 389. f. G. H. (1782).
 Arg. *Alciope Godt. Enc. M.* ix. 259. n. 8. (1819).
 Amboyna, N. India. B. M.

Genus X. ATELLA.

ARGYRONOME, ISSORIA, *Hübner*.ARGYNNIS *Godt. &c.*PHALANTA *Horsf.*

HEAD broad, hairy, the hairs on the crown long.

Eyes prominent, nearly round.

Maxillæ longer than the thorax.

Labial Palpi divergent, ascending, rising considerably above the forehead. Basal joint very short, curved; second long, broad anteriorly, very much swollen, scaly and hairy, the outer side of the anterior surface with a fringe of very long hairs, the back with a short tuft towards the apex; third joint not one seventh the length of the second, acicular, scaly.

Antennæ fully three fourths the length of the body, terminating in a short but rather gradually thickening club rounded at the apex, with its articulations more distinct than the rest.

THORAX short, rather stout, ovate, hairy.

Anterior Wings subtriangular, the apex slightly rounded; anterior margin considerably arched, one-half longer than the outer margin, which is equal, or nearly so, in length to the inner, and, like this last, slightly emarginate. Costal nervure stout, extending but little beyond the end of the cell. Subcostal nervure slender, lying close to the costal, until this latter curves upward to the costa: its first nervule arising shortly before the end of the cell; the second at rather a longer distance beyond it; the third at about one third the distance between the second and fourth; the fourth about midway between the second and the apex, terminating on the costa just above the apex. Cell short, but little more than one third the length of the wing. Upper disco-cellular nervule extremely short; middle disco-cellular curved, rather more than half the length of the lower disco-cellular, which is slightly curved, and anastomoses with the third median nervule at its origin, or shortly beyond it. Third median nervule moderately curved.

Posterior Wings obovate; the margins all nearly equal in length; the outer sinuate, sometimes prolonged into a short tail at the termination of the third median nervule. Precostal nervure simple, short, curved outwards. Costal nervure considerably curved at its origin. Upper disco-cellular nervule slender, directed almost immediately outwards; lower disco-cellular short, slightly curved, very slender, almost atrophied, uniting with the median nervule

opposite to the origin of its second nervule, or with the base of the third nervule, which is but little curved.

Anterior Legs of the male clothed with long delicate hairs. Tibia shorter than the femur, cylindric. Tarsus shorter than the tibia, nearly cylindric, tapering to a point at the apex.

Anterior Legs of the female scaly and hairy. Tibia shorter than the femur, spiny within towards the apex. Tarsus shorter than the tibia; the first joint longer than the rest combined, curved, spiny within and armed, as are the three following joints, at the apex with a stout spine covered by a tuft of hair at the base of the following joint; fourth and fifth joints transverse.

Middle and Posterior Legs with the tibiae shorter than the femora, spiny externally and laterally, the lateral spines longest; spurs long and stout. Tarsi about one fourth longer than the femora, rather densely spiny all round; the spines of the upper surface slenderest, the lateral ones the longest, those of the lower surface arranged in two regular series: first joint exactly equal to the rest combined; second, third, and fourth progressively shorter; fifth of equal length with the third. Claws rather short, curved, compressed. Paronychia bilacinate: the outer lacinia as long as, and broader than, the claw, which it quite covers; inner nearly strap-shaped, slightly tapering, very little shorter than the outer one. Pulvillus two-jointed, as long as the claw; the second joint broad.

ABDOMEN short, rather stout.

LARVA cylindrical, spiny; the spines on all the segments about equal in length.

PUPA elongate ovate, constricted, spiny.

Atella, in many respects, is too closely allied to the two preceding genera, and it is with much hesitation that I have admitted it to the rank of a genus. There is nothing more difficult in Natural History than to insure the uniformity of value of the groups into which we arrange species, and to determine the importance of variations of structure in different groups. Before the close of this work I hope to enter fully into these questions, and to review rigorously and revise carefully all the generic or minor groups which I may characterise. In this I hope to be aided by the criticisms which my labours may receive in the course of their publication, and I take this opportunity of recording my wish for the closest scrutiny of all my observations and deductions.

From the preceding genus this differs in its clavate antennæ, and from *Euptoieta* by the structure of its feet and other characters. It appears, like the four preceding genera, to be an Old World group, its range being the subtropical and tropical parts of Asia and Africa. Two species, which, however, I place here with hesitation, as in many respects they seem more allied to the preceding genus, are found in the islands of the Pacific Ocean. Having only seen the two rather imperfect specimens of one of them in the collection of the British Museum, I have not been able to examine these with sufficient care and minuteness to determine their true position. Possibly these and other Polynesian species yet to be discovered may constitute a distinct group.

The *LARVA* of *Atella Phalanta*, figured by Dr. Horsfield, is cylindric, green above, whitish below, with the head brown. Each segment bears on the back two branched spines, and those segments which have neither legs nor prolegs have also a similar spine at the side.

The *PUPA* is elongate ovate, constricted across the back; green with four red dashes on each side, marked in the middle with bluish; a double series of spines on the back of the same red colour.

No information is on record as to the habits of this genus.

ATELLA.

- | | |
|---|--|
| <p>1. AT. PHALANTA. +</p> <p>P. Phal. <i>Drury</i>, i. 21. f. 1, 2. (1770).
 <i>Fab. Ent. Syst.</i> iii. i. 149. n. 455. (1793).
 Arg. Phal. <i>Godt. Enc. M.</i> ix. 259. n. 10.
 (1819).
 P. Columbina <i>Cram.</i> t. 238. f. A. B. (1780).
 <i>Cram.</i> t. 337. f. D. E. var. (1782).
 Argyronome Col. <i>Hübner. Verz. bek. Schmett.</i> 32.
 (1816).
 N. India, China, Java. B. M.</p> <p>2. AT. EURYTIS <i>Doubleday & Hewitson</i>, t. 22. f. 3. (1847).
 P. Columbina <i>Jones, Icones</i>, v. t. 7. f. 2.
 (ined.). B. M.
 W. Africa.</p> <p>3. AT. CURRORI.
 Congo. B. M.</p> | <p>4. AT. ? GABERTI. + +</p> <p>Arg. Gab. <i>Guérin, Voy. de la Coquille</i>, t. 16. f. 3.
 (1826).
 Mel. Gab. <i>Boisd. Voy. de l'Astrolabe, Ins.</i> 116.
 (1832).
 Taiti. B. M.</p> <p>5. AT. ? EGESTINA.</p> <p>Arg. Eges. <i>Quoy & Gaimard in Freycinet's Voy.</i>
 t. 83. f. 4. (1824).
 <i>Godt. Enc. M.</i> ix. <i>Suppl.</i> 816. (1823).
 Guam.</p> <p>6. AT. EGISTA. + + +</p> <p>P. Eg. <i>Cram.</i> t. 281. f. C. D. (1780).
 Issoria Eg. <i>Hübner. Verz. bek. Schmett.</i> 31.
 (1816).
 Arg. Eg. <i>Godt. Enc. M.</i> ix. 261. n. 15. (1819).
 N. India, Java, Penang, Amboyna. B. M.</p> |
|---|--|

Genus XI. EUPTOIETA.

ARGYNNIS *Godt. &c.*

HEAD moderately wide, hairy.

Eyes nearly round, rather prominent.

Maxillæ rather longer than the thorax.

Labial Palpi ascending, slightly divergent, rising considerably above the forehead, clothed chiefly with long hair-like scales; the second joint having a distinct dorsal tuft, and in front, especially towards the outside, numerous erect setæ. Basal joint subcylindric, curved, about one fourth the length of the second; second joint long, much swollen beyond the middle, angular behind, curved in front, tapering towards the apex, which is truncate; third joint scarcely more than one sixth the length of the second, acicular, clothed with appressed scales.

Antennæ fully three fourths the length of the body, hairy at the base; terminating in a short, abrupt, somewhat pyriform club.

THORAX elongate oval, rather slender.

Anterior Wings subtriangular; the anterior margin but little curved; the outer margin two thirds the length of the anterior, slightly emarginate, as is also the inner margin, which slightly exceeds it in length. Costal nervure stout, terminating beyond the middle of the anterior margin. Subcostal nervure slender, lying close to the costal at its origin: its first nervule thrown off at the end of the cell; its second about one half more distant from the first than from the third, which is about equidistant from the second and the fourth, this last terminating a little above the apex. Upper disco-cellular nervule extremely short. Middle and lower disco-cellular nervules both much curved inwards, the latter the longer, terminating opposite the origin of the second median nervule. Third median nervule considerably curved. Internal nervule wanting.

Posterior Wings obovate; the outer margin sinuate, dentate; the inner scarcely emarginate above the anal angle. Precostal nervule simple, slightly curved outwards. Discoidal nervure arising from the second subcostal nervule, not far from its origin, at first directed rather across the wing, then bent outwards. Cell open, or closed by an almost atrophied lower disco-cellular nervule. Third median nervule considerably curved.

Anterior Legs of the male scaly; the scales mostly long, fringed slightly with hairs; the femur little curved, slightly longer than the tibia, nearly cylindric. Tarsus about three fifths as long as the tibia, subcylindric, tapering to a point, with a few scattered lateral spines. *Anterior Legs*

of the females more elongate. Femur nearly cylindric, straight. Tibia shorter than the femur, nearly cylindric, curved, slightly spiny externally towards the apex; the spines sometimes very minute and slender. Tarsus rather shorter than the tibia, five-jointed. First joint subcylindric, slenderer at the base than at the apex, which is very obliquely truncate; second short, about as wide as long, obliquely truncate at the apex; third still more obliquely truncate, its upper surface being hardly half the length of the lower; fourth shorter, scarcely visible from above, being covered by the fifth; all these, except the last, terminated by two stout spines, covered at the base by a small tuft of delicate setæ.

Middle and Posterior Legs rather elongate; the femur in the former rather shorter, in the latter rather longer, than the tibia. Tibia nearly cylindric, spiny both within and without, the spines near the apex being the longest; spurs long. Tarsi longer than the tibiæ; all the joints cylindric, spiny; the spines of the lower surface arranged in two closely approximating series, those of the lateral series but little longer than the others. First joint not quite equal in length to the rest combined; the three following joints progressively shorter; fifth not quite equal to the second and third combined. Claws long, grooved below, lobed at the base, nearly straight, except at the apex, which is slightly curved. Paronychia very small, lobed at the base; the outer lacinia slender, pointed; inner lacinia wanting.

ABDOMEN rather slender, about two thirds the length of the inner margin of the posterior wings.

LARVA elongate, each segment with two dorsal spines set with hairs.

PUPA elongate, ovate, but little angular, tuberculate, the head rounded.

Of the two species on which this genus is founded, one inhabits the United States, the other Mexico and the West Indian Islands, where they represent the preceding, purely Old World, genus. In the colouring of the upper surface they closely resemble *Atella*, but below they want the pearly colouring and ocellated spots of the posterior wings.

The *LARVA* of *Euptoieta Claudia*, as figured by Abbot, is cylindric, elongate, of a pale flesh-colour, with two longitudinal white bands on each side, the upper one marked with a series of black spots; the back has a series of red spots, and each segment bears two dorsal spines set with hairs, the two on the prothoracic segment being longest. Its food is said by Abbot to be the common passion-flower of the Southern States, *Passiflora incarnata*; but, as I have met with the insect further north than the limits of this plant, it must have some other food.

The *PUPA* is elongate ovate, scarcely at all angular; the head rounded, the back tuberculate; its colour pure silver or mother of pearl, dotted with black and gold, the tubercles being gilt.

The *PERFECT INSECT* appears in eleven days after the change to the pupa. It is an insect of rapid flight, frequenting open places, especially near rivers, delighting to sit on the dry sand, rising instantly if approached, and very difficult to capture, and, from its rapid and peculiar flight, very difficult to follow, even with the eye. I met with it from the northern bank of the Ohio to the St. John's, East Florida.

EUPTOIETA.

1. EUPT. HEGESIA.

P. Heg. *Cram.* t. 209. f. E. F. (1780).

P. Columbina *Fab. Ent. Syst.* III. i. 148. n. 453. (1793).

West Indies, Mexico.

B. M.

2. EUPT. CLAUDIA.

P. Cl. *Cram.* t. 69. f. E. F. (1775).

P. Thais *Jones, Icones*, III. t. 80. f. 1. (ined.).

Argynnis Columbina *Boisd. & Leconte, Icon. Lép. et Chen. Am. Sept.* t. 44. (1827).

United States (Middle and Southern States).

B. M.

Note.— Godart has confounded both species under the name *Argynnis Columbina*, and has followed Fabricius in citing Jones's figure, which is an African species, *Atella Eurytis Doubleday*.

Genus XII. **ARGYNNIS** Ochs.*Ochs. Schmett. von Europa*, iv. 16. (1816).*ARGYNNIS* Fab., Latr., Godt., &c.*ARGYNNIS*, BRENTHIS, ISSORIA, ACIDALIA, ARGYRONOME, Hübner.

HEAD rather broad, hairy.

Eyes nearly round, smooth.

Maxillæ extending considerably beyond the thorax.

Labial Palpi porrect, slightly ascending, divergent, projecting considerably beyond the head: the first and second joints clothed with scales and long setiform divergent hairs; the third joint with scales, and more or less appressed hairs. First joint subcylindric, curved, about one fourth the length of the second; second joint slightly curved, much swollen beyond the middle, then narrowed towards the apex, which is truncate; third joint very small, acicular, about one fourth the length of the second.

Antennæ rather short, terminating in an abrupt pyriform club.

THORAX rather stout, rounded, oval.

Anterior Wings trigonate; the anterior margin rounded; the outer about two thirds the length of the anterior margin, sometimes slightly concave, sometimes nearly straight, often rounded; inner about equal in length to the outer margin, nearly straight. Costal nervure stout, extending about three fifths of the length of the wing. Subcostal nervure slender, sometimes emitting its first and second nervules near together before the end of the cell; the third at less than half the distance between this and the apex; the fourth rather more remote from the apex than from the third, sometimes emitting its first nervule before the end of the cell, its second at about an equal distance from the first and third, its fourth nearer to the third than to the apex. Upper disco-cellular nervule very short, sometimes almost wanting; middle disco-cellular curved inwards, longer than the lower, which is nearly straight, and anastomoses with the third median nervule at some distance from its origin.

Posterior Wings obovate; the margins about equal, all rounded. Precostal nervule simple, slightly curved, directed outwards. Discoidal nervule appearing to be a third subcostal nervule. Cell closed by a slender disco-cellular, sometimes flexuous, sometimes nearly straight.

Anterior Legs of the male fringed with long delicate hairs. Tibia smooth, rather shorter than the femur. Tarsus shorter than the tibia, one-jointed, subcylindric, tapering towards the apex.

Anterior Legs of the female scaly, slightly fringed with hairs. Tibia fully as long as the femur, smooth, slenderest in the middle. Tarsus shorter than the tibia, smooth, five-jointed; the first joint twice the length of the rest combined; the second barely one fourth the length of the first; the third one half the length of the second; the fourth transverse, three fourths the length of the third; these joints all armed at the apex with a short spine on each side, not covered at the base by any bunch of hairs or setæ situated on the next joint; fifth joint smaller than the fourth, transverse, unarmed.

Middle and Posterior Legs with the femora and tibiæ of about equal length, the latter spined all round; the lateral spines much the longest; the spurs very distinct. Tarsi about as long as the tibiæ; all the joints nearly cylindric, spiny all round. First joint nearly equal to the others combined, the spines below arranged in two alternating series; second, third, and fourth joints progressively shorter; the fifth longer than the third; all these with the spines of the lower surface arranged in two regularly opposed series. Claws curved, grooved below. Paronychia bilacinate; the outer lacinia rather slender, tapering, equal to the claw; inner much shorter. Pulvillus jointed, nearly equal in length to the claw.

ABDOMEN moderate, about two thirds the length of the inner margin of the wing.

LARVA cylindric, spiny, the spines verticillate; the prothoracic segment always with at least two spines.

PUPA angular, tuberculate, the head mostly bifid.

The two sections composing this genus appear to me to be too closely allied to admit of their separation into distinct genera, as I once thought advisable. The only constant difference is in the position of the subcostal nervules; for although generally the species of the first section differ slightly in the form of the palpi from those of the second, yet this difference is not constant. Moreover, as Mr. Westwood has remarked, the form of the palpi does not appear to be a character always to be relied on in this and the following genus.

The *LARVÆ* are always spiny; the spines set round with numerous stiff hairs; the prothoracic segment always has two spines, which sometimes are longer than the others, as in *Argynnis Paphia* and *Arg. Amathusia*. The general colour is brown or fuscous, with longitudinal bands of either a darker or paler hue. The larvæ of *Argynnis Ino* and *Arg. Daphne* are bluish white, with longitudinal fuscous lines; the spines being brown. The food of most of the species consists of some species of violet, but some feed on the bramble, nettle, some *Cruciferae* and *Papilionaceæ*, and also on *Anchusa officinalis* and *Polygonum Bistorta*. Lying hid under the leaves the greater part of the day, they are difficult to find; and what is known of their history is chiefly due to the German and French entomologists, especially the former.

To a French entomologist, M. Vandouer, we owe some very interesting observations on the habits of the larva of *Argynnis Euphrosyne*. Having succeeded in obtaining some eggs of this species which were laid about the middle of May, he fed the young larvæ produced from them until the end of June, when they all fell into a state of complete torpidity, in which most of them remained until the following spring. But in August a portion of them woke up from their sleep, fed with voracity, changed their skins twice, became pupæ, and in a few days perfect insects. It was only at the end of the following February that the others commenced feeding, changed their skins twice, and after the first week in April became pupæ, from which the perfect insects appeared at the usual time. In England we rarely see the perfect insect of either *Argynnis Selene* or *Euphrosyne* in the autumn, but they are more often met with on the continent of Europe. The second appearance of several species of this genus is to be explained by this habit of the larvæ, not by their being double-brooded. It would be curious to know if the specimens disclosed from the pupæ in the autumn have any progeny, and, if so, to learn their

history. Probably it will be found that the ovaries of the females are imperfectly developed, and that they consequently never lay any eggs; or that they hibernate, and lay their eggs in the spring, as do the *Vanessæ*.

The PUPÆ are more or less angulated, constricted across the back, the head often bifid, the abdominal segments furnished with a double row of tubercles on the dorsal surface. They are generally of some shade of brown, often marked with metallic spots. The pupæ of the species composing the second section are rounder at the head, and altogether less angular than those of the first section; in this approaching the next genus.

The PERFECT INSECT generally makes its appearance about two weeks after the change to the pupa state. The prevalent colour of the upper surface, in nearly all the species, is a more or less bright fulvous orange, marked with black spots, arranged into transverse bands; and, below, the same or similar spots are repeated on a rather paler ground, mingled on the lower wings and at the apex of the upper with silvery or pearly spots, sometimes also with green; or the posterior wings are shining green, splashed with silver. In *Argynnis Idalia* the posterior wings are fuscous above with blue reflections, the base chocolate-coloured, the middle crossed by a band of white spots, beyond which is a band of fulvous ones; below they are chocolate brown, with numerous silvery spots. In the rare *Argynnis Diana* the wings above are of a rich velvety black, with purple reflections, broadly bordered with fulvous externally; whilst, below, the colouring is much paler, and there are in addition some slight silvery markings. The species of the second section commonly have the lower surface of the posterior wings much paler than the upper, the black markings of this latter reproduced in a fulvous hue below, with the addition of some silvery spots.

The males of some species, as *Argynnis Paphia*, *Arg. Adippe*, and *Arg. Sagana*, have the median nervules clothed with hairs and scales of a peculiar form, resembling those of the patch on the posterior wings of the males of *Lachnoptera Iole*. Some of these scales are so extremely slender as to seem reduced to the state of hairs, for which they may be the more easily mistaken as the tuft at the apex readily becomes detached, when it is only the very slight enlargement of the base which distinguishes them from the hairs mingled with them.

The larger species of the genus which compose the first section differ materially in their habits from those of the second section. All are partial to the open parts of woods, or to wild heaths and the skirts of mountains; but those of the first section are generally insects of stronger and bolder flight than those of the second. Their flight is rapid, and often at a considerable elevation. In Europe they frequent the flowers of the brambles and thistles; in America I found *Argynnis Daphnis* and *Arg. Idalia* abundant on the blossoms of the common red clover in fields near woods. *Argynnis Diana*, scarcely met with since the days of Cramer, I first saw in a clover field in a beautiful valley amongst the mountains of North Carolina, and subsequently captured several specimens, at an elevation of perhaps 2000 feet, on the mountains near the Warm Springs in that State. It has much the flight of our *Argynnis Aglaia*, but more rapid. It appeared to be partial to the blossoms of a species of *Apocynum*, on which plant I took all my specimens; it being impossible to follow them over the broken rocks, through the magnificent forests with which the Blue Mountains are covered.

The second section more commonly frequent the open parts of woods, are insects of slower and weaker flight, and rarely rise far from the ground. In North America, *Argynnis Myrina* and *Arg. Bellona* precisely replace our *Argynnis Euphrosyne* and *Arg. Selene*.

This genus, being a typical or at least a subtypical one, has an extensive range. It is found throughout the whole temperate parts of both the Old and New Worlds, and extends in Europe northward to its northernmost shore, and in America to Repulse Bay and still more northern regions. In America I am not aware of its occurrence within the tropics, but possibly some species may be met with in the high regions of Mexico. In Asia *Argynnis Childrenæ* and *Arg. Issæa* have a wide range over Northern India, and *Argynnis Niphe* ranges thence southward until it reaches the northern shores of Australia. No species, to my knowledge, has been yet found in Southern Africa, and only one in the southern extremity of the New World.

There is considerable difficulty in precisely discriminating some of the species of the second section. I have consequently, as a general rule, preferred following those who have had more ample means of observation than myself. The extreme northern species are those upon which it is least easy to come to a satisfactory opinion.

ARGYNNIS.

Section I. *Second joint of Palpi mostly much swollen. Second Subcostal Nervule thrown off before the end of the cell.*1. ARG. NIPHE *Godt. Enc. M. ix. 806. (1823).*♀ P. Ni. *Linn. Syst. Nat. ii. 785. n. 208. (1767).*♀ ♂ *Cram. t. 14. f. B.C. D.E. (1775).*♀ ♂ *Fab. Ent. Syst. iii. i. 142. n. 436. (1793).**Acidalia Ni. Hübn. Verz. bek. Schmett. 31. (1816).*♀ Arg. Ni. *Godt. Enc. M. ix. 261. n. 17. (1819).*♀ P. Hyperbius *Linn. Amæn. Acad. vi. 408. n. 75. (1763).*♂ P. Argyrus *Sparmann, Amæn. Acad. vii. 502. (1768).*♂ P. Argynnis, *Drury, i. t. 6. f. 2. (1770).*Arg. Tephnia, *Godt. Enc. M. ix. 262. n. 18. (1819).*

China, India. B. M.

2. ARG. LATHONIA *Ochs. Schmett. von Europa, iv. 15. (1816).**Godt. Enc. M. ix. 267. n. 26. (1819).*P. Lath. *Linn. Syst. Nat. ii. 786. n. 213. (1767).**Fab. Ent. Syst. iii. i. 146. n. 499. (1793).**Hübn. Samml. Europ. Schmett. Pap. f. 59, 60. (1806-27).**Issoria Lath. Hübn. Verz. bek. Schmett. 31. (1816).*Var. P. *Athalia Valdensis Esp. t. 115. cont. 70. f. 4. (1777-1800).*

Europe generally. B. M.

3. ARG. ISSÆA *G. R. Gray, Lep. Ins. Nepaul.*

N. India. B. M.

4. ARG. PAPHIA *Ochs. Schmett. von Europa, iv. 15. (1816).**Godt. Enc. M. ix. 267. n. 26. (1819).*P. Pa. *Linn. Syst. Nat. ii. 785. n. 209. (1767).**Fab. Ent. Syst. iii. i. 142. n. 438. (1793).**Hübn. Samml. Exot. Schmett. Pap. f. 69, 70. (1806-27).**Argyronome Pa. Hübn. Verz. bek. Schmett. 32. (1816).*Var. ♀ P. *Valesina Esper, t. 107. cont. 62. f. 1, 2. (1777-1800).*

Europe. B. M.

5. ARG. MAYA.

P. Ma. *Cram. t. 25. f. B.C. (1775).*P. Pandora *Den. & Schiff. Wien Verz. 176. (1776).*P. Cynara *Fab. Ent. Syst. iii. i. 143. n. 439. (1793).*Arg. Cy. *Godt. Enc. M. ix. 268. n. 28. (1819).**Hübn. Samml. Europ. Schmett. Pap. f. 71, 72. (1806-27).**Argyronome Pand. Hübn. Verz. bek. Schmett. 33. (1816).*

Corsica, Teneriffe. B. M.

6. ARG. CHILDRENÆ *G. R. Gray, in Gray's Zool. Misc. i. (1831).**G. R. Gray, Lep. Ins. Nepaul.*

N. India. B. M.

7. ARG. DIANA *Godt. Enc. M. ix. 257. n. 1. (1819).*P. Di. *Cram. t. 98. f. D.E. (1776).**Fab. Ent. Syst. iii. i. 145. n. 447. (1795).*

Virginia, Tennessee, N. Carolina. B. M.

8. ARG. IDALIA *Godt. Enc. M. ix. 263. n. 20. (1819).*P. Id. *Drury, i. t. 13. f. 1, 2, 3. (1770).**Cram. t. 44. f. D.G. (1775).**Fab. Ent. Syst. iii. i. 145. n. 446. (1793).*

United States (especially Middle and Northern States). B. M.

9. ARG. DAPHNIS.

P. Daph. *Cram. t. 57. f. E.F. (1775).*P. Cybele *Fab. Syst. Ent. iii. i. 145. n. 445. (1793).*Arg. Cyb. *Godt. Enc. M. ix. 263. n. 21. (1819).*

United States, Nova Scotia, Canada. B. M.

10. ARG. APHRODITE *Godt. Enc. M. ix. 264. n. 22. (1819).*P. Aph. *Fab. Mant. ii. 62. n. 590. (1787).**Fab. Syst. Ent. iii. i. 144. n. 443. (1793).*

Præc. var. Bor.?

Canada, Nova Scotia, Hudson's Bay, N. of United States. B. M.

11. ARG. ADIPPE *Ochs. Schmett. von Europa, iv. 15. (1816).**Godt. Enc. M. ix. 265. n. 24. (1819).*P. Ad. *Linn. Syst. Nat. ii. 786. n. 212. (1767).**Fab. Syst. Ent. 517. n. 313. (1775).**Fab. Ent. Syst. iii. i. 146. n. 448. (1793).**Hübn. Samml. Europ. Schmett. Pap. f. 63-4. (1806-27).**Acidalia Ad. Hübn. Verz. bek. Schmett. 31. (1816).*P. Cydippe, *Faun. Suecica, n. 1066. (1761).*P. Berecynthia *Poda, Mus. Græc. 75. ().*Var. P. *Cleodoxa Esper, t. 94. cont. 49. f. 3. (1777-1800).*

Europe generally. B. M.

12. ARG. NIOBE *Ochs. Schmett. von Europa, iv. 15. (1816).**Godt. Enc. M. ix. 266. n. 25. (1819).*P. Ni. *Linn. Syst. Nat. ii. 786. n. 215. (1767).**Fab. Ent. Syst. iii. i. 174. n. 452. (1793).**Hübn. Samml. Europ. Schmett. Pap. f. 61-2. (1806-27).*P. Pelopia *Herbst. t. 269. f. 3, 4. (1789).*Var. P. *Eris Schönherr.*P. Cydippe *Scop. Ent. Carn. 162. (1763).*

Europe generally. B. M.

13. ARG. AGLAIA Ochs. *Schmett. von Europa*, iv. 15. (18).
Godt. Enc. M. ix. 264. n. 23. (1819).
P. Agl. Linn. Syst. Nat. ii. 785. n. 211. (1767).
Fab. Ent. Syst. iii. i. 144. n. 422. (1793).
Hübner. Samml. Europ. Schmett. Pap. f. 65-6.
 (1806-27).
Acidalia Agl. Hübner. Verz. bek. Schmett. 31.
 (1816).
P. Emilia Acerbi. Voy. au Cap Nord, iii. 175.
 (1778-9).
 Europe generally. B. M.
14. ARG. CYRENE Bonelli, *Mem. della R. Acad. de Torino*, xxx.
 t. 1. f. 1. (1809).
P. Cyr. Hübner. Samml. Europ. Schmett. Pap.
 f. 822-5. (1827?).
Arg. Elisa Godt. Enc. M. ix. 817. n. 24, 25.
 (1823).
 Corsica. B. M.
15. ARG. CLARA Blanchard, in *Jacquemont, Voy. dans l'Inde*,
Ins. t. 2. f. 2. (1844).
 N. India.
16. ARG. N. SP.
 Rocky Mountains, N. America. B. M.
17. ARG. LAODICE Ochs *Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 270. n. 30. (1819).
P. La. Pallas, Reise, App. 470. (1771).
Fab. Mant. Ins. ii. 62. n. 587. (1787).
P. Cethosia Fab. Ent. Syst. iii. i. 143. n. 440.
 (1793). *Fab. Enc. 13. 67. 68*
 Eastern Europe. B. M.
18. ARG. SAGANA Doubleday & Hewitson, t. 24. f. 1. (1847).
 How Chow Fou, China. B. M.
19. ARG. DAPHNE Ochs. *Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 270. n. 31. (1819).
P. Daph. Fab. Mant. Ins. ii. 64. n. 602. (1787).
Fab. Ent. Syst. iii. i. 257. n. 798. (1793).
Hübner. Samml. Europ. Schmett. Pap. f. 4, 5, 6.
 (1806-27).
Brenthis Da. Hübner. Verz. bek. Schmett. 30.
 (1816).
P. Chloris Schneider, Syst. Besch. 191. n. 108.
 (1787).
Esper, t. 44. Suppl. 20. f. 3. (1777-1800).
 Switzerland, Germany, S. France. B. M.
20. ARG. INO Ochs. *Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 271. n. 32. (1819).
P. Ino. Herbst. Schmett. t. 274. f. 1. 4. (1789-).
Borkh, Schmett. 46. n. 19. (1788-94).
Esper, Schmett. t. 76. cont. 26. f. 1. a, b.
 (1777-1800).
P. Chloris f. Esper, t. 75. cont. 25. f. 4. (1777-
 1800).
P. Dictynna Schrank, Faun. Boic. ii. 203. n.
 1351. (1801).
Hübner. Samml. Europ. Schmett. f. 40, 41.
 (1806-27).
- Brenthis Dict. Hübner. Verz. bek. Schmett.* 30.
 (1816).
 Sweden, Germany, Switzerland, S. France. B. M.
21. ARG. POLARIS Boisd. *Icones Hist.* t. 20. f. 1-3. (18).
 Lapland, Arctic America.
22. ARG. HECATE Ochs. *Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 278. n. 45. (1819).
P. He. Fab. Mant. Ins. ii. 60. n. 578. (1780).
Fab. Ent. Syst. iii. i. 254. n. 789. (1793).
Hübner. Samml. Europ. Schmett. Pap. f. 42-4.
 (18).
Brenthis Hec. Hübner. Verz. bek. Schmett. 30.
 (1816).
 France, S. Germany, Russia. B. M.
-
- Section II. Second joint of Palpi not remarkably swollen.
 Second Subcostal Nervule thrown off beyond the end of the cell.
23. ARG. TRITONIA *Godt. Enc. M.* ix. 272. n. 36. (1819).
P. Tr. Barber, Mém. Soc. Imp. Nat. Mosc. iii.
 t. 1. f. 1, 2. (1812).
 Siberia.
24. ARG. FREIJA *Godt. Enc. M.* ix. 273. n. 37. (1819).
P. Fr. Thunb. Diss. iii. t. 5. f. 14. (1784-94).
Hübner. Samml. Europ. Schmett. t. 55, 56.
 (1806-).
P. Dia lapponica Esper, t. 97. cont. 52. f. 3.
 (1777-1800).
 Var. *Melitæa Tarquinius Curtis, App. to Ross's*
Voyage, 68. (1836).
 Sweden, Lapland, Hudson's Bay, Labrador. B. M.
25. ARG. AMATHUSIA Ochs. *Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 273. n. 39. (1819).
Hübner. Verz. bek. Schmett. 30. (1816).
P. Am. Fab. Mant. Ins. ii. 61. n. 580. (1780).
Fab. Ent. Syst. iii. i. 255. n. 791. (1793).
P. Dia. major Esper, t. 93. cont. 43. f. 2, 3.
 (1777-1800).
P. Titania Hübner. Samml. Europ. Schmett. Pap.
 f. 47-8. (1806-27).
P. Diana Hübner. Samml. Europ. Schmett. Pap. f.
 51-4. (1806-27).
 Piedmont, Switzerland, Germany, Russia. B. M.
26. ARG. CHARICLEA Ochs. *Schmett. von Europa*, iv. 114. n.
 12. (1816).
Godt. Enc. M. ix. 273. n. 38. (1819).
P. Chariclea Herbst. Schmett. t. 272. f. 5, 6.
 (1789-1800).
Schneid. Entomol. Magaz. v. 588. (1795).
 Var. *Arg. Boisdualii Sommer. Boisd. Icones*
Hist. t. 20. f. 5, 6. (1829).
 Sweden. B. M.

27. ARG. FRIGGA *Godt. Enc. M.* ix. 272. n. 34. (1819).
P. Fr. Thunberg, Diss. iii. 47. (1784-94).
Hüb. Samml. Europ. Schmett. Pap. f. 49.
 (1806-27).
 Lapland. B. M.
28. ARG. THORE *Ochs. Schmett. von Europa*, iv. iii. n. 10.
 (1816).
Arg. Thore Godt. Enc. M. ix. 272. n. 35. (1819).
P. Hüb. Samml. Europ. Schmett. Pap. f. 571—
 3. (1806-27).
 Carinthia, Lapland. B. M.
29. ARG. ARSILACHE *Treitschke*, x. i. 12. (1834).
P. Ars. Esper, t. 56. cont. 6. f. 4, 5. (1777—
 1800).
Hüb. Samml. Europ. Schmett. Pap. f. 36-7.
 (1806-27).
 Var. *P. Napæa Hüb. Samml. Europ. Schmett.*
Pap. f. 757-8. (1806-27).
 Alps. B. M.
30. ARG. PALES *Ochs. Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 275. n. 41. (1819).
P. Pa. Fab. Mant. Ins. ii. 63. n. 598. (1780).
Fab. Ent. Syst. iii. i. 257. n. 797. (1793).
Hüb. Samml. Europ. Schmett. Pap. f. 34, 35.
 617, 618. (1806-27).
P. Isis Hüb. Samml. Europ. Schmett. Pap. f.
 563-4. (1806-27).
 Alps of Austria and Switzerland. B. M.
31. ARG. DIA *Ochs. Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 274. n. 40. (1819).
P. Dia Linn. Syst. Nat. ii. 785. n. 207. (1767).
Fab. Ent. Syst. iii. i. 255. n. 792. (1793).
Hüb. Samml. Europ. Schmett. Pap. f. 31.
 (1806-27).
 Europe generally. B. M.
32. ARG. ARCTICA *Zetterstedt, Ins. Lap.* 899. (1838).
 Greenland.
33. ARG. EUPHROSYNE *Ochs. Schmett. von Europa*, iv. 15.
 (1816).
Godt. Enc. M. ix. 276. n. 42. (1819).
P. Eu. Linn. Syst. Nat. ii. 786. n. 214. (1767).
Fab. Ent. Syst. iii. i. 147. n. 450. (1793).
Hüb. Samml. Europ. Schmett. Pap. f. 28-30.
 (1806-27).
 Europe generally. B. M.
34. ARG. SELENIS *Lefevre, Ann. Soc. Ent. de France*, vi. t. 1. f.
 3, 4. (1837).
 Eastern Russia. B. M.
35. ARG. SELENE *Ochs. Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 277. n. 43. (1819).
P. Se. Denis & Schieffermüller, Wien Verz. 321.
 (1776).
Fab. Ent. Syst. iii. i. 147. n. 451. (1793).
Hüb. Samml. Europ. Schmett. Pap. t. 26,
 27. (1806-27).
 Var. *P. Thalia Esper*, t. 97. cont. 57. f. 2. (1777—
 1800).
 Europe generally. B. M.
36. ARG. MYRINA *Godt. Enc. M.* ix. 268. n. 67. (1819).
P. My. Cram. t. 189. f. B. C. (1779).
Fab. Ent. Syst. iii. i. 145. n. 444. (1793).
 Hudson's Bay, Nova Scotia, United States (N. States).
 B. M.
37. ARG. OSSIANUS *Boisd. Icon. Hist.* t. 19. f. 1—3. (1829).
P. Oss. Herbst, t. 470 f. 4, 5. (1789-1800).
Argynnis Triclaris Hüb. Samml. Exot. Schmett.
 (1806-27).
P. Aphiraphe Hüb. Samml. Europ. Schmett.
Pap. f. 734-5. (1806-27).
 N. Europe, Hudson's Bay. B. M.
38. ARG. APHIRAPHE *Ochs. Schmett. von Europa*, iv. 15. (1816).
Godt. Enc. M. ix. 277. n. 44. (1819).
P. Aph. Hüb. Samml. Europ. Schmett. Pap. f.
 23-5. (1806-27).
 Germany, Belgium. B. M.
39. ARG. BELLONA *Godt. Enc. M.* ix. 271. n. 33. (1819).
Boisd. & Lecomte, Icon. Lép. & Chen. de l'Am.
Sept. t. 45. f. 5, 6. (1829).
P. Bel. Fab. Syst. Ent. 517. n. 317. (1775).
Fab. Ent. Syst. iii. i. 148. n. 454. (1793).
 Hudson's Bay, Canada, United States (N. States).
 B. M.
40. ARG. CYTHERIS.
P. Cyth. Drury, ii. t. 4. f. 3, 4. (1773).
 Falkland Isles, Chili. B. M.

Genus XIII. **MELITÆA** *Boisd.**Boisd. Ind. Meth.* 16. (1829).*MELITÆA* *Ochs., Dup., &c.**MELITÆA*, *SCHÆNIS*, *CINCLIDIA*, *PHYCIODES*, *Hüb.**ARGYNNIS* *Godt. &c.*

HEAD rather small, clothed with hair; forehead narrow.

Eyes oval, not prominent.

Maxillæ rather longer than the thorax.

Labial Palpi divergent, porrect, slightly ascending, projecting considerably beyond the forehead; all the joints hairy. First joint stout, curved; second joint subcylindric, rather compressed, somewhat stoutest in the middle, twice the length of the first; third joint slender, almost acicular, about the same length as the first.

Antennæ short, scarcely half the length of the anterior margin of the wing, rather slender, terminating in a short, pyriform, large club.

THORAX moderately stout, elongate oval, clothed with long hairs.

Anterior Wings nearly triangular; the anterior margin scarcely, or not at all, rounded; outer margin two thirds the length of the anterior, rounded, often but slightly; inner margin nearly straight, longer than the outer. Costal nervure rather stout, scarcely extending beyond the middle of the anterior margin. Subcostal nervure slender; its first nervule thrown off before the end of the cell; its second beyond the cell, opposite, or nearly so, to the termination of the costal nervure; the third nearer to the second than to the fourth; fourth nearer to the third than to the apex. Upper disco-cellular nervule very short; middle disco-cellular curved inwards, about half the length of the lower, which is but little curved, and anastomoses with the third median nervule not far from its origin. Internal nervule wanting.

Posterior Wings obovate; the shoulder very prominent; the anterior margin nearly straight, equal in length to the inner; outer margin much rounded, but little more than half the length of the other margins. Precostal nervure simple. Discoidal nervure appearing to be a third subcostal nervule, arising from the second subcostal nervule soon after its origin. Cell open. Third median nervule but little curved. Inner margin entirely embracing the abdomen.

Anterior Legs of the male hairy and scaly; the femur and tibia of about equal length, unarmed. Tarsus smooth, subcylindric, slightly tapering at the base and apex; one-jointed, but sometimes showing slight indications of articulations; shorter than the tibia. *Anterior Legs* of the female with the tibiæ shorter than the femora, unarmed, rather stouter towards the apex. Tarsus five-jointed; the first joint cylindric, elongate, equal or more than equal to the rest

combined, mostly armed at the apex, as are the three following joints always, with a spine on each side; second joint much shorter; rest transverse; fifth sometimes very small.

Middle and Posterior Legs with the femora about equal in length to the tibiæ, rather robust. Tibiæ and tarsi densely clothed with scales, the former rather longer than the latter, smooth externally, spiny laterally and internally; the lateral spines long, the internal ones very short. Tarsi with all the joints nearly cylindric, slightly tapering to the claw, spiny laterally and below, not above; the spines on the lower surface of all the joints arranged in a double series; lateral spines long. First joint not equal to the rest combined; second joint nearly half the length of the first; third and fourth progressively shorter; fifth equal to the third. Claws curved, grooved below. Paronychial bilacinate; the outer lacinia slender, nearly strap-shaped, longer than the claw; inner lacinia about half the length of the outer, subtriangular, pointed. Pulvillus two-jointed, nearly as long as the claw.

ABDOMEN moderately stout, arched, not much shorter than the inner margin of the posterior wings.

LARVA subcylindric, rather tapering to the extremities, tuberculate; the tubercles covered with short setæ; or spiny, the spines set round with hairs.

PUPA short, obovate, not angular, tuberculate, with the head rounded; or angular, with the head bifid.

This genus is difficult to characterise in the perfect state, so as readily to distinguish it from the preceding; but there is one important distinctive character which has been pointed out by Drs. Adolph and Otto Speyer, namely, that the tarsi of the middle and posterior pairs of legs are not spiny on the upper surface, whilst they are so invariably in *Argynnis*.

The *LARVÆ* of the European species, and some American probably, are shorter in proportion to their thickness than those of *Argynnis*, and instead of spines are furnished with short fleshy tubercles beset with short bristles. Their general colour is fuscous, with white or pale lines and spots; but those of *Melitæa Matura* and *Mel. Cynthia* are yellow, striped and otherwise marked with black. Their habits differ from those of the preceding genus, as they are all fond of sunning themselves on the herbage, like the larvæ of *Arctia villica* and *Odonestis potatoria*. When approached they curl themselves up and fall to the ground. Those of some species, when young, live in societies under tents of silk. These tents are formed over the plants on which they feed. When the food thus covered has been to a considerable extent consumed, they remove from their dwelling, and construct a fresh tent over a fresh pasture-ground. When arrived nearly to their full growth they disperse, though even afterwards they sometimes get together in little groups to undergo their metamorphosis. They are mostly, if not always, hatched from the egg in the autumn, and hybernate in a silken web, to disperse in the early spring. Their most common food is some species of *Plantago*, *Scabiosa*, *Veronica*, *Melampyrum*, or *Verbascum*; they are said, also, to feed on *Myosotis arvensis* and *Antirrhinum Linaria*. Godart states that *Melitæa Matura* feeds on the beech, broad-leaved sawall, and aspen, as well as on *Scabiosa succisa* and *Plantago lanceolata*; but I must express a doubt as to their eating the leaves of trees.

Those of the second section resemble the larvæ of the preceding genus, in being spiny; the spines furnished with whorls of smaller spines or hairs. They are proportionately stouter than those of *Argynnis*; are generally dark-coloured, with a pale lateral stripe. Stoll's figure represents that of *Melitæa Liriope* as of a violet hue, with a whitish lateral line. The larva of *Melitæa Ismeria* is represented by Abbot as of a pale yellowish hue, with a dark dorsal and lateral line and black spines. Its food is *Helianthus trachelifolius*.

The *PUPÆ* of the first section are short, scarcely angular, the head rounder than in those of the preceding genus. Those of the second are sometimes angular, with the head bifid, showing a close affinity to *Argynnis*, as in *Melitæa Liriope*, according to Stoll; sometimes of the same form as in the first section, as in *Melitæa Ismeria*, according to Abbot.

The PERFECT INSECTS have much the same habits as the species composing the second section of the preceding genus, frequenting open parts of woods and fields in their vicinity, but they often prefer more open ground. In the colour of the upper surface, the European species mostly either resemble the second section of *Argynnis*, or are chequered with black and fulvous, whence their French name of *Damiers*. The males sometimes have the fulvous colour replaced by white. The lower surface has little or no trace of the silvery markings of the preceding genus. Two American species are black above, with a few fulvous or yellow spots, whilst the under surface is beautifully chequered.

The Geographical Range of the first section appears to extend little beyond the northern temperate zone of both continents. It just passes the tropic to the south and the arctic circle to the north. The fine species of the American subsection figured is from St. Domingo, where it is very rare. I have only seen two specimens of it, one now in the cabinet of Dr. Boisduval, the other presented by him to the British Museum. The second species of this subsection seems confined to the northern parts of the United States and Canada. It is local, but is often found in vast numbers where it does occur. *Melitæa Anicia*, which is found on the Rocky Mountains, resembles the European species in habit, as do two species recently brought from California by Mr. Hartweg.

The species composing the second section differ considerably from the first in external characters, and are purely American. They are insects of less robust structure, and much feebler flight, are fond of alighting in the vicinity of water, and have a decided partiality for the banks of rivers and small streams. *Melitæa Tharos* sometimes swarms in countless thousands on Goat Island, in the midst of the Falls of Niagara.

Allied to this group are several small tropical American butterflies mostly undescribed, which, though not rare, I have been unable satisfactorily to examine. Collectors abroad are so careless in regard to the preservation of the feet of Lepidoptera, that these important organs are very commonly wanting, and it is this want that prevents me from coming to any decision on these species.

From what little opportunity I have had of examining them, I believe them to be allied to the next genus by the peculiar characters of the anterior feet of the females. Perhaps ultimately they may form a small genus about of equal value to *Messaras* or *Euptoieta*.

MELITÆA.

Section I. MELITÆA.

1. MEL. MATURNA *Ochs. Schmett. von Europa*, iv. 13. (1816).
P. Mat. Linn. Syst. Nat. ii. 784. n. 204. (1767).
Fab. Ent. Syst. iii. i. 254. n. 787. (1793).
Hübner. Samml. Europ. Schmett. Pap. f. 598-601. (1806-27).
Arg. Mat. Godt. Enc. M. ix. 287. n. 56. (1819).
P. Agrotæra Borkh. Europ. Schmett. i. 59. n. 11. (1788).
P. Cynthia Hübner. Samml. Europ. Schmett. Pap. f. 1. 2. (1806).
 E. France, Switzerland, Germany, Sweden, Lapland.
 B. M.
2. MEL. ICHNEA *Boisd. Icon. Hist.* t. 23. f. 5, 6. (1832).
 Lapland, Siberia. B. M.
3. MEL. IDUNA *Dalm.*
Zetterstedt, Fauna Lapp. 901. (1843).
P. Maturna var. Hübner. Samml. Europ. Schmett. Pap. f. 598-9. 601. and 807-8. (1806-27).
P. Cynthia var. Ochs. Schmett. von Europa, i. i. 21. (1806).
 Lapland.
4. MEL. CYNTHIA *Ochs. Schmett. von Europa*, iv. 15. (1816).
P. Cyn. Denis & Schiffermüller, Wien. Verz. 179. (1776).
Fab. Ent. Syst. iii. i. 253. n. 786. (1793).
Hübner. Samml. Europ. Schmett. Pap. f. 569, 570. 608. and 609. (1806-27).
- Arg. *Cyn. Godt. Enc. M.* ix. 286. n. 55. (1819).
P. Trivia Esper, Schmett. t. 37. Suppl. 13. f. 3. (1777-1805).
P. Mysia Hübner. Samml. Europ. Schmett. Pap. f. 1-3. (1806).
 Switzerland, S. Germany, Tyrol. B. M.
5. MEL. ORIENTALIS *Herrich-Schäffer*, f. 265, 266. (1845).
 Eastern Europe?
6. MEL. ANICIA *Doubleday & Hewitson*, t. 23. f. 2. (1847).
 Rocky Mountains, N. America. B. M.
7. MEL. ARTEMIS *Ochs. Schmett. von Europa*, iv. 15. (1816).
P. Art. Denis & Schiffermüller, Wien. Verz. 322. (1776).
Fab. Ent. Syst. iii. 255. n. 790. (1793).
Hübner. Samml. Europ. Schmett. Pap. f. 4-6. (1804).
Arg. Art. Godt. Enc. M. ix. 285. n. 54. (1819).
P. Maturna Esper, Schmett. t. 16. f. 2. (1777)
P. Lye Herbst. t. 275. f. 5, 6. (1783-1804).
Var. Arg. Desfontainesii Godt. Enc. M. ix. 278. n. 46. (1819).
Mel. Desf. Boisd. Icones Hist. t. 23. f. 1, 2. (1832).
 Europe generally. Spain, N. Africa (var. *Desfontainesii*).
8. MEL. MEROPE *Boisd. Icon. Hist.* t. 22. f. 6, 7. (1832).
P. Mer. De Prunner, Lep. Ped. 73. (1793).
 Switzerland. B. M.

9. MEL. CIXIA Ochs. *Schmett. von Europa*, iv. 13. (1816).
P. Cin. Linn. *Syst. Nat.* ii. 784. n. 205. (1767).
P. Cin. var. Fab. *Ent. Syst.* iii. i. 257. n. 779. (1793).
P. Delia Fab. *Mant. Ins.* ii. 60. n. 576. (1787).
Hüb. *Samml. Europ. Schmett. Pap.* f. 7, 8. (1806).
P. Pilosella Esper, *Schmett.* t. 47. *Suppl.* t. 23. f. 3. (1777-1805).
Europe generally. B. M.
10. MEL. ARDUINNA.
Boisd. *Ind. Meth.* 20. (1840).
P. Ard. Esper, *Schmett.* t. 87. cont. 37. f. 4. (1777-1805).
Fab. *Ent. Syst.* iii. i. 254. n. 788. (1793).
Arg. Ard. *Godt. Enc. M.* ix. 281. n. 48. (1819).
Var. P. Rhodopensis Freyer, t. 193. f. 1. (1839).
S. E. Russia. B. M.
11. MEL. PHOEBE Ochs. *Schmett. von Europa*, iv. 14. (1816).
P. Ph. Denis & Schiffermüller, *Wien. Verz.* 179. (1776).
Fab. *Ent. Syst.* iii. i. 251. n. 780. (1793).
Hüb. *Samml. Europ. Schmett. Pap.* f. 13, 14. (1806).
Arg. Ph. *Godt. Enc. M.* ix. 282. n. 50. (1819).
P. Corythalia Esper, *Schmett.* t. 61. cont. 11. f. 4, 5. (1777-1805).
P. Pædotrophos Bergstr. t. 75. f. 5, 6. (1778).
Var. M. Melanina Ch. Bonaparte.
Middle and Southern Europe. B. M.
12. MEL. ÆTHERIA Dup. *Pap. de France, Suppl.* t. 278. f. 4, 5. (1832).
P. Æth. Hüb. *Samml. Europ. Schmett. Pap.* f. 875-8. (1806-27).
S. Russia. B. M.
13. MEL. TRIVIA Ochs. *Schmett. von Europa*, iv. 13. (1816).
P. Tri. Denis & Schiffermüller *Wien. Verz.* 179. (1792).
Hüb. *Samml. Europ. Schmett. Pap.* f. 11, 12. f. 871-4. (1806-27).
P. Fascelis Esper, *Schmett.* t. 88. cont. 38. f. 5, 6. (1777-1805).
Fab. *Ent. Syst.* iii. i. 252. n. 782. (1793).
P. Iphigenia Esper, *Schmett.* t. 88. cont. 38. f. 5, 6. (1777-1805).
P. Phœbe Esper, *Schmett.* t. 38. f. 5, 6. (1777-1805).
S. Europe. B. M.
14. MEL. DIDYMA Ochs. *Schmett. von Europa*, iv. 15. (1816).
P. Did. Fab. *Mant. Ins.* ii. 106. n. 465. (1787).
Fab. *Ent. Syst.* iii. i. 250. n. 779. (1793).
Esper, *Schmett.* t. 61. cont. 11. f. 1. (1777-1805).
Arg. Did. *Godt. Enc. M.* ix. 279. n. 46. (1819).
P. Cinxia Fab. *Syst. Ent.* 514. n. 304. (1775).
Hüb. *Samml. Europ. Schmett. Pap.* f. 9, 10. (1806).
- Var. P. Athalia Fab. *Syst. Ent.* iii. i. 252. n. 783. (1793).
? P. Antigonus Herbst. t. 278. f. 5-8. (1783-1804).
France, Germany, Switzerland, Greece, S. Russia. B. M.
15. MEL. ASTERIA Treitschke, *Schmett. von Europa*, x. i. 7. (1835).
Herrich-Schäffer, t. 1. f. 3, 4. (1842).
P. Ast. Freyer, t. 181. f. 2, 3. (1836).
S. Germany.
16. MEL. DEIONE Boisd. *Ind. Meth.* 20. (1840).
P. Dei. Hüb. *Samml. Europ. Schmett. Pap.* f. 947-950. (1816).
P. Parthenie Dup. *Lép. de France, Suppl.* i. 341. (1832).
S. France.
17. MEL. PARTHENIE Ochs. *Schmett. von Europa*, iv. 14. (1816).
P. Parth. Borkh. *Rhein. Mag.* i. 272. (1793).
Arg. Parth. *Godt. Enc. M.* ix. 284. n. 52. (1819).
? P. Dictynna Fab. *Ent. Syst.* iii. i. 253. n. 785. (1793).
P. Athalia Hüb. *Samml. Europ. Schmett. Pap.* f. 19, 20. (1806).
Europe generally. B. M.
18. MEL. DICTYNNA Ochs. *Schmett. von Europa*, iv. 14. (1816).
P. Dict. Esper, *Schmett.* t. 38. *Suppl.* 24. f. 2. a, b. (1777-1805).
Arg. Dict. *Godt. Enc. M.* ix. 285. n. 53. (1819).
P. Hebe Borkh. *Rhein. Mag.* i. 272. (1793).
P. Maturna Bergstr. t. 78. f. 6, 7. (1779-80).
P. Corythalia Hüb. *Samml. Europ. Schmett. Pap.* f. 15, 16. (1806).
Europe generally. B. M.
19. MEL. ATHALIA Ochs. *Schmett. von Europa*, iv. 14. (1816).
P. Ath. Borkh. *Rhein. Mag.* i. 270. (1793).
Esper, *Schmett.* t. 47. *Suppl.* 23. f. 1. a, b. (1777-1805).
P. Maturna Fab. *Ent. Syst.* iii. i. 254. n. 787. (1793).
Hüb. *Samml. Europ. Schmett. Pap.* f. 17, 18. (1806).
P. Dictynna Lewin, t. 14. f. 5, 6. (1795).
20. MEL. PHAETON Boisd. & Lecomte. *Icon. des Lép. et Chen. de l'Am. Sept.* t. 47. f. 1, 2. (1830-42).
P. Ph. Drury, i. t. 21. f. 3, 4. (1770).
Fab. *Ent. Syst.* iii. i. 46. n. 140. (1793).
Arg. Ph. *Godt. Enc. M.* ix. 288. n. 58. (1819).
Canada, United States (Northern and Middle States). B. M.
21. MEL. CHALCEDONA Boisd. *MSS.*
Doubleday & Hewitson, t. 23. f. 1. (1847).
Haïti. B. M.

Section II. PHYCIODES.

22. MEL. ISMERIA *Boisd. & Lecomte, Icon. des Lép. et Chen. de l'Am. Sept.* t. 46. (1830).
United States (Southern States). B. M.
23. MEL. NYCTEIS *Doubleday & Hewitson, t. 23. f. 3.* (1847).
United States (Middle States). B. M.
24. MEL. THAROS *Boisd. & Lecomte, Icon. des Lép. et Chen. de l'Am. Sept.* t. 47. f. 3-5. (1830-42).
P. Th. *Drury, i.* 21. f. 5, 6. (1770).
Cram. t. 169. f. E. F. (1777).
Arg. *Tharossa Godt. Enc. M. ix.* 289. n. 61. (1819).
Hudson's Bay, Canada, Nova Scotia, United States (generally). B. M.
25. MEL. LIRIOPE.
P. Lir. *Cram. t. 1. f. C. D.* (1775).
Stoll, t. 4. f. 1. C. (1787).
Fab. Ent. Syst. iii. i. 155. n. 477. (1793).
Arg. Lir. *Godt. Enc. M. ix.* 289. n. 59. (1819).
Guiana, Para. B. M.
26. MEL. MORPHEUS.
P. Mor. *Fab. Syst. Ent.* 530. n. 370. (1775).
Fab. Ent. Syst. iii. i. 155. n. 479. (1793).
Arg. Mor. *Godt. Enc. M. ix.* 289. n. 60. (1819).
P. Cocytia *Cram. t.* 100. f. A. B. C. (1777).
Surinam. B. M. ?
27. MEL. PROCLEA *Doubleday & Hewitson, t. 23. f. 4.* (1847).
Jamaica. B. M.
28. MEL. ÆGON ?
P. Æg. *Fab. Mant. Ins. ii.* 83. n. 759. (1787).
Hesp. Æg. Fab. Ent. Syst. iii. i. 324. n. 31. (1793).
Arg. *Pygmæa Godt. Enc. M. ix.* 20. n. 63. (1819).
Erycina Ædon Godt. Enc. M. ix. 587. n. 11. (1823).
Jamaica.
29. MEL. PELOPS.
P. Pe. *Drury, i. t.* 19. f. 3, 4. (1770).
? Arg. *Pelopsa Godt. Enc. M. ix.* 290. n. 62. (1819).
Jamaica. B. M.
30. MEL. ? TELETUSA.
Arg. *Tel. Godt. Enc. M. ix. Suppl.* 817. n. 64. (1823).
Brazil. B. M.
31. MEL. ? THYMETUS.
P. Thy. *Fab. Ent. Syst. iii. i.* 56. n. 173. (1793).
Jones, Icon. vi. t. 34. f. 3. (ined.).
? Arg. *Flavia Godt. Enc. M. Suppl. ix.* 818. n. 66. (1823).
Brazil. B. M.

Note. — Melitæa Astarte *Doubleday & Hewitson, t. 23. f. 5.* is an Argynnis. I was misled by the markings of the under surface, which resemble those of the first species of the present genus. Godart's Argynnis Pelopsa seems to me, notwithstanding his reference to Drury, to be a distinct species, and may be our Mel. Proclea. His Arg. pygmæa is possibly Drury's insect, which may also be Fabricius's Hesperia Ægon, but the descriptions are very unsatisfactory, and do not enable me to venture a positive opinion.

Genus XIV. **ERESIA** *Boisd.**Boisd. Sp. Gén.* I. t. 11. f. 8. (1836).HELICONIA, ARGYNNIS, NYMPHALIS, *Godt.*MELINÆA, NEPTIS, ACCA, *Hübner.*

HEAD of moderate width, scaly.

Eyes oval, prominent.

Maxillæ slender, longer than the thorax.

Labial Palpi very divergent, ascending, rising considerably above the forehead. Basal joint short, curved, broadest at the base, clothed with loose scales and hairs; second elongate, swollen in the middle, clothed especially in front with long loose scales, and furnished on the back with a tuft of long hairs, the apex truncate; third joint slender, acicular, about two fifths the length of the second, clothed with short closely appressed scales.

Antennæ slender, short, scarcely two thirds the length of the body; the club short, abrupt, compressed.

THORAX small, oval or rounded, scaly, hairy at the sides.

Anterior Wings elongate; the anterior margin rounded at the base, thence nearly straight to the apex, which is rounded; the outer margin about one half the length of the anterior, much rounded; the inner margin scarcely emarginate, about two thirds the length of the anterior. Costal nervure stout, not extending much beyond the middle of the wing. Subcostal nervure rather remote from the costal, five-branched; its first nervule thrown off before the end of the cell; its second at more than an equal distance beyond it; the third considerably nearer to the second than to the fourth. Cell short, not extending to the middle of the wing. Upper disco-cellular very short. Middle disco-cellular short, not one half the length of the lower, curved. Lower disco-cellular curved at its origin, then directed outwards to the third median nervule, which it joins not far from its origin. Internal nervure wanting.

Posterior Wings triangular, the margins but little rounded; the outer about four fifths the length of the anterior, sometimes slightly sinuate; the inner not two thirds the length of the anterior, embracing the abdomen. Precostal nervule simple, curved outwards. Cell open. Discoidal nervure separating from the second subcostal immediately after the origin of the latter. Third median nervule nearly straight.

Anterior Legs of the male scaly, and fringed with delicate hairs. Tibia equal in length to the femur. Tarsus shorter than the tibia, nearly cylindric, showing very indistinct indications of

three or four joints. *Anterior Legs* of the female with the femur longer than the tibia, scaly, and fringed with long hairs. Tarsus about equal in length to the tibia, four-jointed. First joint elongate, cylindric, equal in length to the three following; second joint longer than the third, the apex below, sometimes with a single spine, sometimes unarmed; third joint with a stout spine below, at the apex; fourth with one on each side at the apex.

Middle and Posterior Legs with the femora and tibiæ of nearly equal length; the latter spiny, the spurs very long. Tarsi about equal in length to the tibiæ; all the joints nearly cylindric, smooth above, spiny at the sides and below, the lateral spines long. Claws curved. Paronychia bilaciniate; the laciniae pointed; the outer as long as the claws. Pulvillus jointed, about as long as the claws.

ABDOMEN nearly cylindric, considerably shorter than the inner edge of the abdomen.

LARVA and PUPA unknown.

Eresia may be known by its palpi with the last joint acicular, its rather slender abruptly clavate antennæ, its elongate anterior wings, the open discoidal cell of the posterior wings, the peculiar structure of the anterior feet, and the posterior tarsi spiny below and laterally, but not above, their joints all nearly cylindric. The elongate wings, and the peculiar colouring of some species, seem to point out an affinity to the Heliconians, whilst the genus has some of the characters of *Acræa*.

The structure of the anterior tarsus in the females is very remarkable, from the third joint always, and sometimes the second, being armed below with one stout spine, placed, not laterally, but in the middle of the sole of the foot, at the apex of the joint.

The Eresiaæ are insects of rather small size, inhabiting the tropical parts of America. One species, *Eresia Langsdorffii*, by its elongate anterior wings and its black colour varied with yellow and red, so much resembles a small Heliconian of the group comprising *Heliconia Phyllis* and its allies, as to have misled both Godart and Guérin, the latter of whom has figured it in the *Iconographie du Règne Animal*, as a type of the genus *Heliconia*. Its posterior wings with an open cell, however, readily distinguish it. *Eresia Eunice*, and one or two allied species, also resemble the *Heliconidæ* in colour and the distribution of the markings. *Eresia Carne* is of a peculiar type, and is especially remarkable for the beautiful brown clouds on the under surface of the posterior wings. *Eresia Nauplia*, and its allies, approach very nearly to some of the South American *Melitææ*, so much so, that I am in doubt whether I am correct in referring the *P. Hera* of Cramer to a species of this genus, or whether his figure really represents some species of *Melitæa* unknown to me. The specimens in the British Museum, which are here referred to Cramer's species, differ only in having the anterior wings more elongate than his figure represents them.

Of the habits of the species composing this genus little is known. They are insects of rather slow flight, and are met with both in the low and mountainous parts of America, from Mexico to the South of Brazil.

ERESIA.

- | | |
|---|---|
| 1. ER. LANGSDORFFII. | 3. ER. EUNICE |
| Hel. Langs. <i>Godt. Enc. M.</i> ix. 209. n. 18. | <i>Boisd. Sp. Gén.</i> i. t. 11. f. 8. (1836). |
| (1819). | <i>Nereis fulva</i> Eun. <i>Hübner. Samml. Exot. Schmett.</i> |
| <i>Guérin Icon. du Règne Anim. Ins.</i> t. 77. f. 4. | (1806-27). |
| (1829-44). | <i>Melinæa</i> Eun. <i>Hübner. Verz. bek. Schmett.</i> 11. |
| <i>Hübner. Zutr.</i> f. 389, 390. (1824). | (1816). |
| Brazil. | Brazil. |
| B. M. | B. M. |
| 2. ER. ERYSCIE. | 4. ER. CARNE |
| <i>Melinæa Erys. Hübner. Zutr.</i> f. 717, 718. (1827). | <i>Doubleday & Hewitson</i> , t. 20. f. 5. (1847). |
| S. America. | Venezuela. |
| B. M. | B. M. |
| | 5. ER. NAUPLIA |
| | <i>E. Doubleday, Cat. of Lep. Ins. of Brit. Mus.</i> |
| | 64. (1844). |

- P. Naup. *Linn. Mus. Lud. Utr.* 309. (1764).
Lin. Syst. Nat. II. 783. n. 197. (1767).
Clerck, Icon. t. 46. f. 1—4. (1764).
Fab. Ent. Syst. III. i. 130. n. 408. (1793).
Cram. t. 316. f. D. G. (1782).
 Neptis Naup. *Hübner. Verz. bek. Schmett.* 42.
 (1816).
 Nymph. Naup. *Godt. Enc. M.* IX. 433. n. 261.
 (1819).
 Honduras, Surinam. B. M.
6. ER. CLIO.
 ? P. Cl. *Linn. Mus. Lud. Utr.* 229. (1764).
 ? *Linn. Syst. Nat.* II. 757. n. 56. (1767).
 Honduras. B. M.
7. ER. HERA.
 ? P. Her. *Cram.* t. 253. f. G. H. (1780).
 Venezuela. B. M.
8. ER. IANTHE.
 P. Ian. *Fab. Ent. Syst.* III. i. 102. n. 315.
 (1793).
 Argynnis Ian. *Godt. Enc. M.* IX. *Suppl.* 818.
 n. 65. (1823).
 Acca Hera *Hübner. Samml. Exot. Schmett.* (1806—
 27).
 Brazil. B. M.

Note.—The insects in the Banksian Cabinet ticketed P. Clio *Linn.* are Eresia Nauplia; but, from a careful consideration of Linnæus's description in the *Mus. Lud. Utr.*, I am induced to believe them not to be his P. Clio, especially as he has so accurately described E. Nauplia elsewhere.

Genus XV. **SYNCHLOË** *Boisd. MSS.**Nymphalis Godt.**Araschnia Geyer.*

HEAD moderately wide, hairy.

Eyes round, slightly prominent.

Maxillæ slender, about two thirds the length of the body.

Labial Palpi rather elongated, slightly divergent and ascending, projecting considerably beyond the forehead; scaly, and in front hairy; the back of the second joint also hairy, but without any marked tuft. First joint curved, subcylindric, about one third the length of the second; second joint rather stoutest towards the middle, tapering thence to the apex; third joint longer than the first, slender, almost acicular, its base broader than the apex of the second joint.

Antennæ sometimes about two thirds the length of the body, terminating in an elongate oval, rather abrupt, club, rounded at the apex.

THORAX moderate, oval, clothed with scales and long hairs.

Anterior Wings subtriangular; the apex somewhat truncate; the anterior margin slightly rounded; the outer about two thirds the length of the anterior margin, rounded, sometimes slightly emarginate below the middle; the inner margin equal in length to the outer, straight, or nearly so. Costal nervure stout, extending slightly beyond the middle of the wing. Subcostal nervure more slender, lying near to the costal, throwing off its first branch before the end of the cell; its second at some distance beyond it; its third at a point nearer to the origin of its second than its fourth nervule, which last arises at about an equal distance from the third and the apex. Upper disco-cellular nervule short. Middle disco-cellular nervule curved inwards, and mostly more than half the length of the lower, which latter joins the third median nervule not far from its origin. Internal nervure wanting.

Posterior Wings obovate; the margins nearly equal; the inner margin almost straight. Precostal nervule simple, but little curved. Discoidal nervule separating from the second subcostal close to its origin. Cell open. Third median nervule but little curved.

Anterior Legs of the male clothed with scales, a few of which are long and hair-like; the femur and tibia of about equal length, smooth. Tarsus one-jointed, about half the length of the tibia, fusiform. *Anterior Legs* of the female scaly. Femur longer than the tibia. Tarsus rather shorter than the tibia, five-jointed. First joint nearly cylindric, unarmed, longer than the rest combined; second joint scarcely one fifth the length of the first, unarmed, cylindric, obliquely truncate;

third joint shorter than the second, armed below at the apex, which is very obliquely truncate, with a single stout spine; fourth joint rather shorter and stouter than the third, the apex armed with a stout spine on each side; fifth joint scarcely visible from below.

Middle and Posterior Legs with the femora and tibiæ about equal in length; the latter spiny within; the spurs long. Tarsi about equal in length to the tibiæ, scaly: the first joint nearly cylindric; the others slightly depressed, all spiny at the sides and below; the lateral spines longest; those of the lower surface not very regularly placed. First joint about one fourth longer than the rest combined; second joint less than one third the length of the first; third and fifth joints equal, considerably longer than the fourth. Claws rather short, curved, grooved below. Paronychialacinate; the outer lacinia as long, or nearly as long, as the claw, elongate, pointed; inner lacinia pointed, much shorter than the outer. Pulvillus jointed, equal in length to the claws.

ABDOMEN of moderate length.

LARVA and *PUPA* unknown.

Synchloë differs from the preceding genus in the structure of its palpi, and in other points of structure. From the following genus, to which Geyer unites it, it is at once distinguished by its eyes not being clothed with hair. One species, which, following Dr. Boisduval, I have placed provisionally in this genus, must ultimately be separated from it. It has the wings more elongate than the typical species; the anterior tarsus of the female is shorter; has the joints much stouter, the third and fourth very short, transverse, all the joints armed at the apex with a spine on each side. The prevalent colouring of the typical species is black or brown, with generally white dots near the apex and along the margins of the wings, the disc of which is mostly varied with brown spots or bands. The species figured is subject to great variation, being sometimes of an almost uniform fuscous.

The species at present known are found chiefly in Mexico, Guatemala, and the northern portion of South America. They appear to be mountain insects. Their early states are unknown.

SYNCHLOË.

- | | |
|---|--|
| <p>1. SYN. SAUNDERSII <i>Boisd. MSS.</i>; <i>Doubleday & Hewitson</i>, t. 24. f. 2. (1847).
Venezuela. B. M.</p> | <p>5. SYN. HIPPODROME.
<i>Araschnia Hip. Geyer in Hübner. Zutr. f. 863-4.</i>
(1837).
Mexico. B. M.</p> |
| <p>2. SYN. LACINIA.
<i>Araschnia Lac. Geyer in Hübner. Zutr. f. 899,</i>
900. (1837).
Mexico. B. M.</p> | <p>6. SYN. MARINA.
<i>Araschnia Mar. Geyer in Hübner. Zutr. f. 877-8.</i>
(1837).
Mexico.</p> |
| <p>3. SYN. JANAIIS <i>Boisd. MSS.</i>
<i>P. Jan. Drury, III. t. 17. f. 5, 6. (1782).</i>
<i>Nymphalis Jan. Godt. Enc. M. ix. 392. n. 146.</i>
(1819).
Mexico, Honduras. B. M.</p> | <p>7. SYN. ? BONPLANDII <i>Boisd. MSS.</i>; <i>Doubleday & Hewitson</i>,
t. 24. f. 3. (1847).
<i>Cethosia Bonp. Latr. in Humb. et Bonpl. Obs.</i>
<i>d'Hist. Nat. et d'Anat. Comp. t. 18. f. 5,</i>
6. (1811-19).
<i>Godt. Enc. M. ix. 245. n. 4. (1819).</i>
Venezuela. B. M.</p> |
| <p>4. SYN. ERODYLE <i>Boisd. MSS.</i>
Colombia. B. M.</p> | |

Note.—*P. Caletor Dalman* possibly belongs to this genus.

Genus XVI. **ARASCHNIA** *Hübner*.*Hübner, Verz. bek. Schmett.* 37. (1816).*VANESSA Fabr., Godt., Boisd., &c.*

HEAD densely clothed with long hairs; a distinct tuft of hairs outside the base of the antennæ.

Eyes oval, moderately prominent, hairy.

Maxillæ slender, scarcely so long as the thorax.

Labial Palpi porrect, slightly ascending, projecting considerably beyond the forehead, scaly, and densely clothed with long hairs in front, and also behind, except towards the base; the second joint without any dorsal tuft. First joint subcylindric, curved, about two thirds as long as the second; second joint subcylindric, rather stoutest in the middle, truncate at the apex; third joint scarcely half the length of, and slenderer than, the second, tapering to a point at the apex.

Antennæ about two thirds the length of the body, rather slender, terminating in a short pyriform club.

THORAX elongate, oval, hairy.

Anterior Wings subtriangular; the anterior margin but slightly curved; outer two thirds the length of the anterior margin, emarginate; inner longer than the outer margin, slightly sinuate, emarginate. Costal nervure stout, extending beyond the middle of the wing. Subcostal nervure slender; its first branch thrown off before the end of the cell; its second about at equal distance beyond it; its third about equidistant from the second and fourth. Upper disco-cellular scarcely existing. Lower disco-cellular wanting, yet its position faintly indicated. Third median nervule gradually curved.

Posterior Wings subtriangular, all the margins about equal in length; the anterior and outer margins curved, the latter sinuate, slightly dentate; inner margin slightly emarginate above the anal angle. Precostal nervure simple, nearly straight. Discoidal nervure separating from the second subcostal nervule soon after its origin. Cell open. Third median nervule but little curved.

Anterior Legs of the male clothed with long slender hairs. Femur and tibia slender; the latter slightly longer than the former. Tarsus shorter than the femur, one-jointed, nearly cylindric, tapering to a point at the apex. *Anterior Legs* of the female more elongate, scaly. Tibia about three fourths the length of the femur. Tarsus nearly cylindric, fully as long as the tibia, five-jointed; all the joints, except the fifth, armed at the apex with a stout spine on each side. First joint rather stoutest, one third longer than the rest combined; second about two fifths the length of the first; third one half the length of the second; fourth and fifth combined rather more than equal to the third; the fourth very obliquely truncate at the apex.

Middle and Posterior Legs with the femora slightly longer than the tibiæ; the latter and the tarsus of about equal length. Femora stout. Tibiæ nearly cylindric, spiny on each side within; the spurs long. Tarsi spiny laterally and, except the fifth joint, below; the spines of the lower surface tending towards an arrangement in a double series. First joint three fourths the length of the rest combined; second and third nearly equal; fourth very short; fifth longer than the second. Claws much curved, grooved below. Paronychialong; the outer lacinia very slender, pointed, as long as the claw; inner obtuse, much shorter than the outer. Pulvillus jointed, nearly as long as the claw.

ABDOMEN moderately stout, about three fourths the length of the inner margin of the wing.

LARVA spiny; the head with two spines longer than those of the body; the prothoracic segment unarmed.

PUPA angular, tuberculate; the head bifid.

This genus may be at once distinguished from the preceding by its hairy eyes, and from the following genera by the position of the subcostal nervules.

As yet it contains only one species, remarkable for the variations in the colours of the upper surface of its wings, which have caused it to be divided into three nominal species. The typical specimens, which are the *P. Prorsa* of the *Systema Naturæ*, have the wings, above, fuscous black, with a transverse series of white spots on the disc, and a submarginal, slender, undulated, brown line. These are common throughout central Europe in the months of July and August. The most aberrant specimens are the *P. Levana* of Linné. These have the upper surface of the wings fuscous at the base, reticulated with yellowish lines; thence to the outer margin fulvous, spotted with black; and marked with three large yellowish spots near the anterior, and two small white ones near the outer, margin. This variety appears only in the spring, and is less common than the typical one. Intermediate between these is a much rarer variety, sometimes found in the autumn months, and known by the name of *Porima*. The under surface of the wings in these varieties is not strikingly different in its markings, though offering some differences bearing relation to the colouring of the upper surface. It is of a more or less ferruginous brown, with the nervures, nervules, many transverse lines, a broad transverse band, and some submarginal spots, of a yellowish white; in addition to which markings, the posterior wings have a submarginal series of pale blue spots.

These varieties evidently depend on the season of the year at which the perfect insect makes its appearance. Their exact history does not appear to be completely understood, but what is known respecting them is highly interesting in a physiological point of view, as tending to throw light on the effect of temperature in modifying the colours of insects. The insect not occurring in Great Britain, it is to our Continental brethren that we are indebted for observations on its history.

The pupæ from a number of caterpillars reared in June, and all from the eggs of the same female, were divided into three portions, one of which, being left under ordinary circumstances, produced the perfect insect in the course of the next month. These were all *Prorsa*. Another portion, placed in a cellar until the following spring, produced only *Levana*. The third portion, retained at a low temperature until the following July, produced *Prorsa* and some specimens of *Porima*. From this statement, perhaps not quite exact, Duponchel seems to conclude that the eggs of *Prorsa* hatch in August or September; that the larvæ from these become pupæ the same autumn, which pupæ, in the spring, produce *Levana*; that from the eggs of this brood of *Levana* are produced larvæ destined to become *Prorsa* in the following July; from which, again, arises a brood of *Levana*; and the fulvous colour of *Levana* is caused by exposure of the pupæ to the cold of winter. In support of this conclusion, which appears somewhat hasty, he quotes in his supplement the observations of M. Geyer, published in Treitschke's tenth volume. "On the 29th of July," says that careful observer, "I found at Altmuthal, near Augsburg, many *Prorsa* flying near the road sides; I observed them carefully, and saw that there was not one *Levana* with them. The idea that these butterflies might have deposited their eggs on the large nettles growing hard by induced me to examine these plants. I soon found on the under side of a leaf five little rows of eggs, looking like the broken links of a watch chain. Each little series consisted of about eighteen or twenty eggs.

I continued my researches with activity, and soon succeeded in collecting about forty of these little groups, amounting altogether to more than six hundred eggs, which hatched between the thirtieth of July and the fifth of August. Of nearly six hundred larvæ, little less than four hundred reached their full growth. I saw no difference in them, except that some had the spines yellow instead of black. When they had become pupæ I examined them with the greatest care, without discovering any differences. I expected to rear Prorsa, which I had never yet bred. As to Levana, I had reared about thirty from larvæ, which were full grown in the beginning of September. As I had only seen Prorsa where I found the eggs, I could expect no other insect. From the second till the ninth of September, about forty butterflies appeared, all Prorsa; then, on the eighteenth of October two more butterflies, partly Prorsa, partly Levana, the variety indicated in the Mazzola and other older collections under the name of Porima. This circumstance at once awakened all my attention. Every day I visited my pupæ, but no more butterflies appeared. Those which had not yet hatched, by far the greater portion, remained during the first winter month exposed to intense cold. In the beginning of February I removed some of them to a heated room; and to my surprise, in about six days, there came forth Levana only. From the middle of February till the beginning of March I did the same successively with the rest of the pupæ, and from about three hundred I obtained Levana only; there was not one Prorsa."

It is quite clear from these facts that the insects known by the name of Levana are but the vernal variety of those which have received the name of Prorsa; that the variety known by the name Porima is an intermediate variety, appearing at an intermediate period of the year, and moreover, we are told, capable of being produced at pleasure by removing the pupæ into a warm room in November or December. The natural inference is, that the change of colour is produced by exposure to cold: but why do the pupæ exposed to a longer cold produce, in July, only Prorsa? Is this the fact? It may be well to reject this part of the history, until we have further evidence.

But Geyer's statements by no means support what are certainly Duponchel's, and apparently his own, views. He does not get Levana from the egg of Prorsa, and Prorsa from the egg of Levana; but he raises Prorsa, Porima, and Levana from the same batch of eggs. And here arise several questions. What becomes of the eggs of these different varieties? Does Porima lay eggs? or are the females always sterile, as is often the case with the great majority of females of many species of Lepidoptera? What becomes of the eggs of the females of Prorsa which appear in September? Perhaps it was from the eggs of this brood that Geyer had formerly reared Levana. Has any one reared specimens from the eggs of Levana, or found larvæ in the spring which have produced Prorsa in July? All these points want elucidation, and I cannot find any observations tending to this. Our cautious, close-observing, painstaking fellow-labourers in Germany will, I trust, some day be able to give us all the needed information on these interesting points. That the colour of Lepidoptera sometimes is influenced by the length of time passed in the pupa state is well known, especially in the case of *Chariclea Delphinii*. This beautiful moth passes one, two, or even three winters in the pupa; and the richness and deepness of colouring of the perfect insect are in proportion to the time passed in the pupa state: hence, many Continental Lepidopterists do not preserve the specimens which appear the first or second year, but await those of the third, which are so much more beautiful.

The LARVÆ are subcylindric, tapering towards the head, each segment, except the second and last, armed with two branched spines, those on the head the longest. The most common colouring is dark olivaceous, with the lower surface pale; sometimes the sides have interrupted, longitudinal, pale bands. They live in societies of about a score, on the common nettle, preferring generally the moist parts of woods, or shady spots in fields.

The PUPÆ are tuberculate, with the head deeply bifid.

The Geographical Range of this genus appears not to extend beyond the middle zone of Europe.

ARASCHNIA.

A. PRORSA *Hübner, Verz. bek. Schmett.* 37. (1816).

Doubleday & Hewitson, t. 26. f. 1, 2. (1848).

P. Pr. *Linn. Syst. Nat.* 11. 783. n. 202. (1767).

Fab. Ent. Syst. 111. i. 256. n. 795. (1793).

Hübner, Europ. Schmett. Pap. f. 94-6. (1806).

Van. Pro. *Godt. Enc. M.* ix. 311. n. 34. (1819).

Var. Vern. P. *Levana Linn. Syst. Nat.* 11. 783. n. 201. (1767).

Fab. Ent. Syst. 111. i. 256. n. 794. (1793).

Hübner, Europ. Schmett. Pap. f. 97-8. 145.

728 9. (1806-27).

Ar. Le. *Hübner, Verz. bek. Schmett.* 37. (1816).

Van. Lev. *Godt. Enc. M.* ix. 312. n. 35. (1819).

France, Switzerland, Germany, Polish Ukraine, &c.

B. M.

November, 1848.

3 E

Genus XVII. **LAOGONA** *Boisd.**Boisd. Sp. Gén. i. t. 10. f. 3. (1836).**VANESSA* *Godt. &c.**SYMBRENTHIA* *Hüb. Verz. bek. Schmett. 43. (1816).**HYPANARTIA* *Hüb.-Geyer.*

HEAD of moderate width, hairy.

Eyes oval, not remarkably prominent, hairy.

Maxillæ nearly three fourths the length of the body.

Labial Palpi ascending, projecting beyond the forehead; clothed with long scales, rather closely appressed, except at the back of the second joint towards the apex. First joint short, subcylindric, curved, two fifths the length of the second joint; second joint cylindric, scarcely curved, subtruncate at the apex; third joint elongate, conical, rather shorter than the first joint.

Antennæ about three fourths the length of the body, terminating in a rather short obtuse club.

THORAX oval, stout, hairy.

Anterior Wings nearly triangular; the apex very slightly truncate. Anterior margin but little curved. Outer margin about three fourths the length of the anterior, slightly emarginate. Inner margin nearly straight, equal to the outer. Costal nervure rather stout, extending beyond the middle of the wing. Subcostal nervure five-branched; its first nervule thrown off considerably beyond the middle; its second shortly before the end of the cell; the third at a greater distance from the origin of the second than from that of the fourth; this last nearer to the apex than to the origin of the third. Upper disco-cellular very short. Middle disco-cellular much curved, about half the length of the lower, which is nearly straight, and anastomoses with the third median nervule, where this last makes a slight angle. Internal nervule wanting.

Posterior Wings angular; the base with a rather prominent shoulder. Anterior margin curved; outer curved as far as the third submedian nervule, then produced into a short tooth, thence sinuate to the anal angle; all the margins of about equal length. Precostal nervure bifid. Discoidal nervule separating from the second subcostal close to its origin. Cell open. Third median nervule scarcely curved.

Anterior Legs of the male with the femur scaly; the tibia, except at the base, and the tarsus densely clothed with very long hairs. Femur longer than the tibia. Tibia and tarsus equal in length; the former slenderer at the base than at the apex; the latter cylindric, scarcely curved, rounded at the base and apex. *Anterior Legs* of the female with the femur, tibia, and tarsus scaly, and

furnished with long delicate hairs, least numerous on the tarsus. Tibia much shorter than the femur, equal in length to the tarsus. Tarsus four-jointed; the first cylindric, spiny below, the spines small, the apex unarmed; second joint about one fourth the length of the first, armed with a few small spines below, and two stronger ones at the apex; third and fourth joints combined scarcely longer than the second, both armed with two spines at the apex, those of the fourth having a tuft of hair at the base.

Middle and Posterior Legs with the tibiae and tarsi of equal length, shorter than the femora, which are rather stout. Tibia spiny within except at the base; the spines short, slender, arranged in two nearly regular series. Tarsi spiny below and at the sides, except the fifth joint, which wants the lateral series of spines; spines of the lower surface in two somewhat regular series. First joint longer than the rest combined; second joint less than one third the length of the first; third joint rather more than half the length of the second, longer than the fourth; fifth joint longer than the second. Claws short, curved, grooved below. Paronychial bilacinate. Outer lacinia slender, pointed, as long as the claw. Inner lacinia shorter, slender, pointed. Pulvillus jointed, shorter than the claws.

ABDOMEN about two thirds the length of the inner margin of the posterior wing.

LARVA and *PUPA* unknown.

From the preceding genus *Laogona* may be known by its more robust structure, the different form of its wings, and their different venation. It is much more nearly allied to *Eurema*, which it represents in India, the Indian Islands, and in China.

Of its larva, pupa, or habits, nothing is recorded.

The only two species yet known are insects of moderate size, with the upper surface of the wings fuscous, banded longitudinally and transversely with fulvous in the males; the lower surface being pale, variously clouded and marked with brown and black, and marked on the posterior wings in one species with bluish white, in the other with green, spots. The female of *Laogona Hyppocla* has the fulvous colour of the upper surface replaced by white. The female of the second species is unknown to me.

LAOGONA.

1. *LA. HYPPOCCLA* *Boisd. MSS.*

♂ *P. Hyp. Cram.* t. 220. f. C. D. (1780).

Hypanartia Hyp. Hübn-Geyer, Samml. Exot. |
Schmett. III. (1841).

Van. Hyp. Godt. Enc. M. IX. 298. n. 5. (1819).

♀ *P. Lucina Cram.* t. 330. f. E. F. (1782).

N. India, Java.

B. M.

2. *LA. HYPSELIS* *Boisd. Sp. Gén.* I. t. 10. f. 3. (1836).

Doubleday & Hewitson, t. 25. f. 1. (1847).

Van. Hyps. Godt. Enc. M. IX. *Suppl.* 818. n. 5,
6. (1823).

Nepal, N. Bengal.

B. M.

Genus XVIII. **EUREMA** *Boisd. MSS.*VANESSA, NYMPHALIS, *Godt. &c.*HYPANARTIA *Hübner*.

HEAD moderately broad, hairy.

Eyes oval, not remarkably prominent, hairy.*Maxillæ* moderately stout, somewhat longer than the thorax.

Labial Palpi porrect, ascending, projecting considerably beyond, and rising higher than, the forehead, densely scaly, and slightly hairy, with a slight dorsal tuft on the second joint. First joint short, curved, nearly as long as broad. Second joint three times the length of the first, subcylindric, nearly equal in breadth at its base to the first, slenderer towards the apex, which is rounded. Third joint subcylindric, placed a little below and in front of the apex of the second joint, about equal in length to the first, and in breadth to the apex of the second joint; its apex pointed.

Antennæ mostly about the same length as the body, terminating in a very short obtuse club.

THORAX oval, rather stout.

Anterior Wings subtriangular; the apex distinctly truncate. Anterior margin but little curved, about one fifth longer than the outer and inner margins, which are equal. Outer margin more or less profoundly sinuate and emarginate. Inner margin nearly straight. Costal nervure stout, extending beyond the middle of the wing. Subcostal nervure slender, throwing off its first nervule at a short distance from its second, which has its origin just before the end of the cell; the third about midway between the end of the cell and the origin of the fourth nervule, which is nearer to the apex of the wing than to the origin of the third nervule; fourth subcostal nervule terminating on the outer margin, a little below the apex. Upper disco-cellular nervule very short, as is also the middle disco-cellular. Lower disco-cellular long, about six times the length of the middle disco-cellular, anastomosing with the third median nervule considerably beyond its origin. Cell equal to half the length of the wing. Third median nervule much curved at the point where the lower disco-cellular nervule anastomoses with it.

Posterior Wings subtriangular or subrhomboidal. Anterior margin considerably rounded towards the base. Outer margin rounded or angular, dentate, caudate-dentate, or caudate, rather longer than the anterior margin. Inner margin longer than the anterior; the abdominal fold ample. Precostal nervure simple, or showing a rudiment of an external branch. Costal nervure much arched at its origin. Discoidal nervure arising from the second subcostal nervule at a short distance from its origin; curved where the disco-cellular nervule anastomoses with it. Cell rather short; closed by a somewhat rudimentary disco-cellular nervule, which arises from the discoidal nervure at some distance from its origin, and anastomoses with the third median nervule at its origin.

Anterior Legs of the male densely clothed with long hairs. Femur and tibia about equal in length: the former compressed; the latter subcylindric, narrowed near the base. Tarsus shorter than the tibia, nearly cylindric, somewhat narrowed beyond the middle, conical or rounded at the apex. *Anterior Legs* of the female less densely hairy, and rather longer than those of the male. Tibia scarcely so long as the femur, subcylindric, unarmed. Tarsus rather shorter than the tibia; all the joints spiny below, and, except the fifth, with a stout spine on each side at the apex, which is sometimes covered by a tuft of hair at the base of the next joint. First joint three or four times the length of the second; this nearly double the length of the third; fourth shorter than the second, very much broader on its lower, than on its upper, surface; this nearly covered by the fifth joint, which is scarcely visible from below.

Middle and Posterior Legs rather large. Femora about the same length as the tibiæ. Tibiæ spiny externally and internally; the spines long, especially the inner ones, which are arranged in two lateral series; spurs long, stout. Tarsi with all the joints nearly cylindric, spiny above, laterally, and, except the fifth, below; the lateral spines longest; those of the lower surface not disposed in a regular series, those of the upper surface widely scattered. First joint nearly equal to the rest combined; second joint about one third the length of the first; third and fifth about three fourths the length of the second; fourth about one half the length of that joint. Claws short, curved, grooved below. Paronychia bilaciniate. Outer lacinia as long as the claw, slender, obtuse at the apex. Inner lacinia short, narrow, subtriangular. Pulvillus short, two-jointed; the second joint broad.

ABDOMEN moderately robust, about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Eurema is very closely allied to the preceding genus, of which it is the Western representative. It may be known from that genus by the different proportions of the joints of the palpi; some slight difference in the neurulation of the wings; and its more robust middle and posterior legs, of which the tibiæ are spiny externally, and the tarsi spiny on the upper surface; the spines on the inside of the tibiæ are also much longer. The form of the posterior wings varies considerably, approaching in some species that of the preceding genus, in others presenting one or two distinct tails, a character most developed in the West Indian and African species.

Eurema Delius offers some differences from most of the other species, especially in its more caudate posterior wings; but it much resembles, in all its characters, the female of Eurema Paullus.

The general colouring of the upper surface is fulvous; the apex of the anterior and outer margin of both pairs of wings being black, the apex of the former marked with a white or transparent spot; the disc itself is sometimes marked with black. Eurema Kefersteinii is of a deeper hue than most of the species. Eurema Dione is remarkable for its umber-coloured upper surface banded with black. The lower surface, in all the species, is beautifully varied with different shades of brown or ochreous yellow.

The Geographical Range of the species, with one exception, is limited to the intertropical parts of the New World. Two species appear confined to Brazil, and to be most common in the southern provinces; two range over the northern part of South America, extending along the eastern range of the Andes to Bolivia; one beautiful undescribed species is found in Mexico; Eurema Paullus is found in the Antilles and Jamaica; and Eurema Delius in Western Africa, but its facies is so American, that Godart, who did not know its true habitat, suspected that it came from the New World.

EUREMA.

1. EUR. ZABULINA.

Van. Zab. *Godt. Enc. M.* ix. 301. n. 13. (1819).
Hypanartia Dæmonica ♀ *Hübner. Samml. Exot.*
Schmett. (1806-27).

Brazil.

B. M.

2. EUR. LETHE.

P. Le. *Fab. Ent. Syst.* iii. i. 80. n. 250. (1793).
Donovan Ins. of India (1800-3).

Van. Le. *Godt. Enc. M.* ix. *Suppl.* 818. n. 13-14. (1823).

Hypanartia Dæmonica *Hübner. Samml. Exot.*
Schmett. (1806-27).

Brazil.

B. M.

3. EUR. KEFERSTEINII *Doubleday & Hewitson*, t. 24. f. 4. (1848).

Bolivia, Venezuela.

B. M.

4. EUR. DIONE.

Van. Di. *Latr. in Humb. et Bonpl. Obs. de Zool.*
et d'Anat. Comp. t. 37. f. 1, 2. (1811-16).
Godt. Enc. M. ix. 300. n. 12. (1819).

Bolivia, Venezuela.

B. M.

5. EUR. PAULLUS.

P. Pa. *Fab. Ent. Syst.* iii. i. 63. n. 196.
 (1793).

Hypanartia Tecmesia *Hübner. Samml. Exot.*
Schmett. (1806-27).

Van. Pa. *Godt. Enc. M.* ix. 819. n. 14-15.
 (1823).

Antilles.

B. M.

6. EUR. ? DELIUS.

P. De. *Drury*, iii. t. 14. f. 5, 6. (1782).

P. Eurocilia *Fab. Ent. Syst.* iii. i. 79. n. 247.
 (1793).

Jones, Icon. v. t. 35. f. 2. (ined.).

Van. Dæmonica *Godt. Enc. M.* ix. 301. n. 14.
 (1819).

Sierra Leone, As-hanti.

B. M.

Genus XIX. **GRAPTA** Kirby.*Kirby, Fauna Bor. Am.* 292. (1837).

VANESSA Godt. &c.

POLYGONIA, EUGONIA, Hübn.

HEAD moderately broad, densely hairy, especially between the antennæ.

Eyes slightly oval, prominent, very hairy.

Maxillæ scarcely so long as the thorax.

Labial Palpi porrect, slightly ascending, projecting about half their length beyond the forehead, rather divergent; densely clothed with long scales, of which the lateral ones are rather broad, the dorsal ones mostly hair-like; the sides of the second joint furnished with some stiff hairs. First joint two fifths the length of the second, subcylindric, much curved; second joint subcylindric, somewhat stoutest in the middle, truncate at the apex; third joint about half the length of the second, very elongate ovate, somewhat compressed laterally, slenderer than the second joint.

Antennæ moderately stout, about two thirds the length of the body, terminating in a rather short gradually swollen club, which is slightly grooved below; the apex obtusely pointed.

THORAX elongate oval, moderately stout, hairy.

Anterior Wings subtriangular. Anterior margin more or less deeply emarginate near the shoulder, thence nearly straight to the apex, where it is gradually curved; apex truncate. Outer margin about two thirds the length of the anterior, deeply and sometimes almost semicircularly emarginate, produced into a tooth at each end of the emargination. Inner margin rather longer than the outer, deeply emarginate. Costal nervure stout, extending to the middle of the costa. Subcostal nervure slender, throwing off its first and second nervules close together near the end of the cell; its third at about three fourths the distance from the base; its fourth nearer to the third than to the apex; the third nervule ending close to the apex of the wing. Upper and middle disco-cellular nervules nearly wanting. Lower disco-cellular nervule quite atrophied, its place merely indicated by a faint line. Internal nervure wanting.

Posterior Wings caudate or subcaudate, dentate. Inner margin the longest. Anterior margin sinuate, emarginate; the apex deeply emarginate. Outer margin dentate, caudate or subcaudate; the greatest prolongation being on the third median nervule; anal angle produced. Precostal nervule simple. Discoidal nervule separating from the second subcostal soon after its origin. Lower disco-cellular nervule entirely atrophied, its place indicated by a faint line.

Anterior Legs of the male densely clothed with long hairs. Femur, tibia, and tarsus about equal in length. Tarsus nearly cylindric, rounded at the apex. *Anterior Legs* of the female rather less hairy than those of the male. Tibia not quite so long as the femur; both nearly cylindric; the former unarmed. Tarsus shorter than the tibia. First joint nearly three times the length of the rest combined, spiny below except at the base; its apex, as is also the case with the second, third, and fourth joints, armed with a stout spine on each side, covered by a tuft of hairs at the base of the succeeding joint; second joint spiny below, about one seventh the length of the first; third and fourth joints shorter than the second, the fourth very obliquely truncate; fifth joint very short, scarcely visible from below, obtuse.

Middle and Posterior Legs moderately robust. Femora of the middle pair rather longer than those of the posterior pair. Tibiæ of both pairs shorter than the femora; spiny without, and furnished within on each side with a lateral row of long spines; spurs stout, long. Tarsi subcylindric; spiny laterally, and, except the fifth joint, below. First joint considerably longer than the rest combined; second less than one third the length of the first; third and fourth about equal in length, half as long as the second; fifth joint one fourth the length of the first. Claws not much curved, grooved below, strong. Paronychia with the outer lacinia strap-shaped, very narrow, longer than the claw; the inner shorter, triangular; both very hairy. Pulvillus two-jointed, not so long as the claw; the second joint broad.

ABDOMEN about two thirds the length of the inner margin of the posterior wings, subconical.

LARVA cylindric; the head armed with two verticillate spines; the second and third thoracic and all the abdominal segments also armed with verticillate spines.

PUPA angular, tuberculate; the head bifid.

Grapta differs from Eurema in the form of its palpi and antennæ, in the open cells of both pairs of wings, and other characters. It is more nearly allied to Vanessa; from which it may be known by its more excised and angular wings, and its less hairy palpi.

All the known species have the upper surface more or less brightly fulvous, spotted with black; the lower surface clouded and veined with different shades of brown; the posterior wings having a more or less angular silvery or pale golden mark, resembling, sometimes, the letter L or C, whence the names *L. album*, *C. album*, &c.

The LARVÆ, like those of the neighbouring genera, have the second and third thoracic and all the abdominal segments armed with spines, which are set round with whorls of delicate bristles; that of our British species is remarkable for the colouring of its upper surface, the anterior half of which, like the lower surface, is of a reddish brown, whilst the posterior half is white, slightly tinged with red. The larva of Grapta Progne is described by Dr. Harris, in his valuable *Report on the Insects of Massachusetts injurious to Vegetation*, as of a pale yellow colour, with a reddish head, and a lateral series of four rust-coloured spots; its spines being white tipped with black. That of Grapta interrogationis is varied with pale yellow and brown, sometimes one colour sometimes the other predominating, with a pale lateral band; the head is red, its spines black; the other spines are yellowish with black tips. Like that of our *Gr. C. album*, this caterpillar feeds on the common hop, to which it often does great injury. In the summer of 1838, I saw the hops in a garden at Asheville, in N. Carolina, entirely destroyed by it; and the roof of a long verandah was hung with the pupæ, suspended so closely together, that, the webs by which they were attached being united, I pulled them down with my stick in masses of thirty or forty at a time. A large portion were attacked by their brilliant little parasite, to which Dr. Harris has given the name of *Pteromalus Vanessa*. The lime, elm, and gooseberry are also eaten by most of the species of which the larvæ are known.

The PUPÆ are angular and tuberculate; the head rather deeply notched. They are generally brown or greyish brown, marked with silvery or golden blotches. The duration of the pupa state varies with the temperature, from eleven days to a month.

The PERFECT INSECTS appear in the summer and autumn months, some few specimens hibernating and appearing in early spring. In East Florida, the beautiful sunshiny days of December and January prevent the torpid hibernation of most species of Lepidoptera which live through the winter, and, like many other butterflies, Grapta interrogationis is not unfrequently seen in those months. It is only the few cold or wet days of February that prevent its appearance on the wing for a short time. This species is very fond of sucking the sap which flows from wounded trees, especially oaks; and, like many other Nymphalidæ, almost always alights on the trunks with its head downwards.

The Geographical Range of this species is nearly confined to the temperate or subtropical regions of both continents. Two species inhabit Europe, one the more northern, the other the more southern part; one is found in China, occurring, but very rarely, in those boxes of insects made up in the more northern provinces for sale at Canton. Three species are found in the United States, one in California, and the species figured in Mexico.

I am indebted to Dr. Boisduval for the loan of the only specimen of this species which I have seen.

GRAPTA.

1. GR. C. AUREUM.

P. C. aur. *Linn. Syst. Nat.* II. 778. n. 161. (1767).

Van. C. aur. *Godt. Enc. M.* IX. 304. n. 20. (1819).

P. Angelica *Cram.* t. 388. f. G. H. (1782).

Eugonia Aug. *Hüb. Verz. bek. Schmett.* 36. (1816).

China.

B. M.

2. GR. INTERROGATIONIS.

♀ P. int. *Fab. Ent. Syst.* v. 224. n. 243-4. (1793).

♂ Van. int. *Godt. Enc. M.* IX. 301. n. 15. (1819).

P. C. aureum *Cram.* t. 19. f. 1. (1775).

♂ Van. C. aur. *Boisd. et Lecomte, Léop. et Chen. Am. Sept.* t. 51. (1827-).

Polygonia C. aureum *Hüb. Verz. bek. Schmett.* 36. (1816).

United States (generally).

B. M.

3. GR. ARGENTEUM *Doubleday & Hewitson*, t. 26. f. 3. (1848).
Mexico.

4. GR. HARTWEGII.

California.

B. M.

5. GR. C. ALBUM.

P. C. album *Linn. Syst. Nat.* II. 778. n. 168. (1767).

Fab. Ent. Syst. III. i. 124. n. 380. (1793).

Hüb. Samml. Europ. Schmett. Pap. f. 92, 93. (1806).

Polygonia C. album *Hüb. Verz. bek. Schmett.* 36. (1816).

Vanessa C. album *Godt. Enc. M.* IX. 302. n. 17. (1819).

Europe, especially the northern and middle parts.

B. M.

6. GR. COMMA.

Vanessa Comma *Harris, Report*, 221. (1841).

United States (N. States), Canada, Hudson's Bay.

B. M.

7. GR. PROGNE.

P. Pr. *Cram.* t. 5. f. E. F. (1775).

Fab. Ent. Syst. III. i. 124. n. 379. (1793).

Polygonia Progne *Hüb. Verz. bek. Schmett.* 36. (1816).

Van. Pr. *Godt. Enc. M.* IX. 304. n. 19. (1819).

Boisd. et Lecomte, Icon. Léop. et Chen. Am. Sept. t. 50. f. 56. (1827).

Grapta C. argenteum *Kirby, Fauna Bor. Am.* t. 3. f. 6, 7. (1837).

Hudson's Bay, Nova Scotia, Canada, United States (N. States).

B. M.

8. GR. EGEE.

P. Egee *Cram.* t. 78. f. C. D. (1775).

P. V. album *Esper, Schmett.* t. 52. cont. 2. f. 1. (1777-1805).

P. J. album *Esper, Schmett.* t. 95. cont. 50. f. 4. (1777-1805).

P. triangulum *Fab. Ent. Syst.* III. i. 125. n. 381. (1793).

P. L. album *Hüb. Samml. Europ. Schmett. Pap.* f. 90, 91. (1806-27).

Van. L. alb. *Godt. Enc. M.* IX. 303. n. 18. (1819).

Variety Papilio F. album *Fab. Ent. Syst.* III. i. 140. n. 431. (1793).

Van. F. alb. *Godt. Enc. M.* IX. 302. n. 16. (1819).

Polygonia I. alb. *Hüb. Verz. bek. Schmett.* 36. (1816).

Middle and Southern Europe.

B. M.

Genus XX. VANESSA.

VANESSA *Fabr., Latr., Godt., &c.*EUGONIA, INACHIS, *Hübner*.

HEAD of moderate width, densely clothed with long hairs.

Eyes more or less oval, densely hairy.

Maxillæ about two thirds the length of the body.

Labial Palpi porrect, ascending, projecting considerably beyond the forehead, scaly and densely hairy all round. First joint scarcely two fifths the length of the second, subcylindric, much curved; second joint more or less swollen beyond the middle, thence tapering to the apex, which is obliquely truncate; third joint fully two fifths the length of the second, slender, subcylindric, or nearly acicular, more or less pointed at the apex.

Antennæ about three fourths the length of the body, with two distinct grooves below; the club rather short, gradually tapering at its origin; the last joint minute, pointed.

THORAX moderately stout, clothed with long hairs.

Anterior Wings subtriangular; the apex truncate. Anterior margin but little curved, sometimes deeply emarginate at the shoulder. Outer margin about three fourths the length of the anterior, sinuate, emarginate. Inner margin nearly straight, slightly longer than the outer. Costal nervure rather stout, extending about to the middle of the anterior margin. Subcostal nervure not much slenderer than the costal, and separated from it by a short interval; its first and second nervules thrown off close together, and but little before the end of the cell; the third arising at about two thirds of the distance from the base to the apex, and terminating close to the apex; the fourth rather nearer to the origin of the third than to the outer margin. Upper disco-cellular nervule very short, all but wanting; the middle disco-cellular likewise short. Lower disco-cellular atrophied, or nearly so; its position indicated by a faint line, sometimes showing the rudiment of a nervule, which arises from the second discoidal nervule, not far from its origin, and runs obliquely downwards to the third median nervule. Internal nervule wanting.

Posterior Wings somewhat obovate. Inner margin the longest. Anterior and outer margins about equal; the former more or less rounded; the latter more or less sinuate, dentate, prolonged into a tooth or short tail at the termination of the third median nervule. Precostal nervule simple. Discoidal nervule arising from the second subcostal, soon after its origin.

Anterior Legs of the male with the femur and tibia about equal in length; the latter rather stouter than the former. Tarsus of the same length as the tibia, subcylindric, or slightly tapering towards the apex, sometimes with one or two strangulations near the middle. *Anterior Legs* of

the female with the femur and tibia equal in length; the latter unarmed. Tarsus about the same length as the tibia. First joint more than three times the length of the second, spiny below, beyond the middle; this and the three following joints armed at the apex with a stout spine on each side, mostly covered by a tuft of hairs at the base of the next joint; second joint spiny below; third and fourth about one third the length of the second; the latter shorter than the former, very obliquely truncate at the apex; fifth joint short, transverse, sometimes scarcely visible from below.

Middle and Posterior Legs moderately stout. Femora and tibiae about equal; the latter spiny without, and laterally within; the spurs long, robust. Tarsi about as long as the tibiae, spiny laterally, and, except the fifth joint, below; the spines of the lower surface arranged in two nearly regular series. First joint almost four times the length of the second; third and fourth each gradually shorter; fifth longer than the second. Claws long, but little curved, grooved below. Paronychia with the inner lacinia wanting, or very short; the outer as long as the claw, and slender, but little hairy. Pulvillus small, short.

ABDOMEN about two thirds the length of the inner margin of the posterior wing.

LARVA cylindric; the head and first thoracic segment unarmed; the rest armed with long spines, set with setae in whorls.

PUPA very angular and tuberculate.

Vanessa is closely allied to the preceding genus, but differs from it in the palpi, which are much less hairy, and of which the last joint is not compressed; and in the form of the wings, which differ especially in not having the inner margin of the anterior pair emarginate. Two species closely approach Polygonia, namely, Vanessa V. album of Europe, and its American representative Vanessa F. album; and, independently of their approximation in structure, they have great affinity in the white letter-like mark on the disc of the posterior wings.

The species now placed in this genus differ in some points of structure; for example, Vanessa Io has the anterior tarsus of the male nearly cylindric, whilst that of V. Urticae is, as it were, strangulated near the middle, and V. Antiopa offers two strangulations. Again, the anterior tarsi of the females differ in some slight degree; the articulations in Vanessa Io being much more distinct than they are in V. Urticae or V. F. album, and the proportions of the joints slightly different. Vanessa V. album and F. album, which approach Polygonia, have the inner lacinia of the paronychia of the middle and posterior legs more developed than the other species, though less so than they are in Polygonia. In colour, too, there is much variation, some species resembling the preceding genus, whilst Vanessa Antiopa, with its rich brown wings bordered with yellow, offers a character almost unique in the diurnal Lepidoptera; and the same may almost be said of Vanessa Io, which its richly painted wings, faintly imitated in some species of Junonia, render the most beautiful of the butterflies of the northern temperate zone.

The LARVAE differ from those of the preceding genus in wanting the spines on the head. They are more or less gregarious, all those from the same batch of eggs generally remaining together until they arrive at their full growth. Those of Vanessa Urticae and V. Io live on the nettle; those of V. Polychloros chiefly on the elm and pear tree; and those of V. Antiopa on the willow, poplar, and elm, generally, I believe, preferring the first of these trees in Europe, and the last in N. America, on the upper branches of which I have seen them in large masses, like the larvæ of Pygera bucephala in England. These larvæ, like those of Vanessa Io, are black, with red feet; but they differ from those of that species in having a series of red blotches on the back, and in wanting the small white dots dispersed over their whole surface. Those of V. Urticae are of a dull olivaceous hue. Hübner figures that of V. V. album as of a yellowish colour, with two lateral black lines bordered on each side with white, and all the abdominal segments marked with a lateral crimson spot. The larva of V. Polychloros is striped longitudinally with fuscous and reddish brown.

The PUPÆ are all very angular and tuberculate; the head deeply bifid. They are mostly of some shade of brown, but that of *Vanessa Io* is sometimes pale green. They often bear brilliant golden spots. The duration of the pupa state, in the summer months, is generally about two weeks.

The PERFECT INSECTS much resemble in their habits those of the preceding and following genera. They are insects of rather bold rapid flight, fond of alighting in the sun, and then alternately expanding and closing their wings, producing, by so doing, a faint rustling sound. Most, if not all, of the species hibernate; and it is curious to observe some of those which appear in September, at once hiding themselves in some dark corner, remaining motionless until the spring, when they appear as perfect as if just emerged from the chrysalis. Others fly much in the autumn, and then reappear in the spring, worn and ragged.

Their Geographical Range is extensive, and the species of the Old World are, to a certain extent, represented in the New World; and one species, *Vanessa Antiopa*, seems to be common to both continents. This butterfly, now so rare in Great Britain, though it has appeared in great numbers, is common throughout almost the whole continent of Europe; and, in America, extends from Hudson's Bay to the Rocky Mountains; and, southward, to the mountains of Mexico. The American specimens are generally rather more freckled with black on the borders of the wings than are the European ones. *Vanessa Urticæ* of Europe is represented in America by *V. Milberti*, and the *V. V. album* of Eastern Europe has its exact counterpart in *V. F. album* of the Northern States of America. The genus is decidedly a genus of the northern temperate zone, extending probably round the world. One species, which however is very aberrant, is found in the more southern parts of Asia.

I am indebted to Dr. Boisduval for the loan of the singular species from Mexico, figured under his manuscript name of *Vanessa cyanomelas*.

VANESSA.

- | | |
|---|--|
| <p>1. VAN. I. ALBUM <i>Boisd. & Lecomte, Icon. Lép. et Chen. Am. Sept. t. 50. f. 1, 2. (1831).</i>
United States, N. States. B. M.</p> | <p>Var. P. pyrrhomelænaa <i>Hübner-Geyer, Samml. Europ. Schmett. Pap. f. 845. (1840).</i>
Europe generally. B. M.</p> |
| <p>2. VAN. V. ALBUM <i>Ochs. Schmett. von Europa, iv. 17. (1816).</i>
<i>Godt. Enc. M. ix. 306. n. 22. (1819).</i>
<i>Boisd. Icon. Hist. t. 24. f. 1. (1833).</i>
P. V. alb. <i>Denis & Schiffermüller, Wien. Verz. 176. (1776).</i>
<i>Fab. Mant. Ins. ii. 50. n. 489. (1787).</i>
<i>Fab. Ent. Syst. iii. i. 122. n. 373. (1793).</i>
<i>Hübner. Samml. Europ. Schmett. Pap. f. 83, 84. (1806).</i>
<i>Eugonia V. alb. Hübner. Verz. bek. Schmett. 36. (1816).</i>
P. L. alb. <i>Schneider, Syst. Besch. 163. (1787).</i>
P. Polychloros <i>Cram. t. 330. f. c. d. (1782).</i>
Hungary, Southern and Eastern Russia, Siberia.
B. M.</p> | <p>4. VAN. XANTHOMELAS <i>Ochs. Schmett. von Europa, iv. 17. (1816).</i>
<i>Godt. Enc. M. ix. 307. n. 24. (1819).</i>
P. Xanth. <i>Denis & Schiffermüller, Wien. Verz. 175. (1776).</i>
<i>Hübner. Samml. Europ. Schmett. Pap. f. 85, 86. (1806).</i>
<i>Eugonia pyrrhomelæna Hübner. Verz. bek. Schmett. 37. (1816).</i>
Germany, N. India? B. M.</p> |
| <p>3. VAN. POLYCHLOROS <i>Ochs. Schmett. von Europa, iv. 17. (1816).</i>
<i>Godt. Enc. M. ix. 304. n. 21. (1819).</i>
P. Pol. <i>Linn. Syst. Nat. ii. 777. n. 166. (1767).</i>
<i>Fab. Ent. Syst. iii. i. 121. n. 372. (1793).</i>
<i>Hübner. Samml. Europ. Schmett. Pap. f. 81, 82. (1806).</i>
<i>Eugonia Pol. Hübner. Verz. bek. Schmett. 37. (1816).</i>
Var. P. Testudo <i>Esper, Schmett. t. 73. cont. 23. f. 1, 2. (1777-1805).</i></p> | <p>5. VAN. KASCHMIRENSIS <i>Kollar, in Hügel, Reise, t. 9. f. 3, 4. (1848).</i>
Kaschmir, Nepaul. B. M.</p> |
| <p>6. VAN. URTICÆ <i>Ochs. Schmett. von Europa, iv. 17. (1816).</i>
<i>Godt. Enc. M. ix. 306. n. 23. (1819).</i>
P. Urt. <i>Linn. Syst. Nat. ii. 777. n. 167. (1767).</i>
<i>Fab. Ent. Syst. iii. i. 122. n. 374. (1793).</i>
<i>Hübner. Samml. Europ. Schmett. Pap. f. 87, 88. (1806).</i>
<i>Eugonia Urt. Hübner. Verz. bek. Schmett. 37. (1816).</i>
Europe generally. B. M.</p> | <p>7. VAN. ICHNUSA <i>Bonelli, Mem. della R. Acad. de Torino, xxx. p. 74. (1824).</i>
<i>Rambuhr, Ann. Soc. Ent. de France, i. t. 7. f. 3. (1832).</i>
Corsica. B. M.</p> |

8. VAN. MILBERTI *Godt. Enc. M.* ix. 307. n. 25. (1819).
Doubleday & Hewitson, t. 26. f. 4. (1849).
 Van. furcillata *Say, Am. Ent.* ii. 27. (1826).
 Hudson's Bay, Canada, Nova Scotia, United States
 (N. States). B. M.
9. VAN. IO *Ochs. Schmett. von Europa*, iv. 16. (1816).
Godt. Enc. M. ix. 309. n. 30. (1819).
 P. IO *Linn. Syst. Nat.* ii. 769. n. 131. (1767).
Fab. Ent. Syst. iii. i. 88. n. 276. (1793).
Hüb. Samml. Europ. Schmett. Pap. f. 77, 78.
 (1806).
Inachis IO Hüb. Verz. bek. Schmett. 37. (1816).
 Europe generally. B. M.
10. VAN. ANTIOPA *Ochs. Schmett. von Europa*, iv. 16. (1816).
Godt. Enc. M. ix. 308. n. 28. (1819).
 P. Ant. *Linn. Syst. Nat.* ii. 766. n. 165. (1767).
Fab. Ent. Syst. iii. i. 115. n. 355. (1793).
Hüb. Samml. Europ. Schmett. Pap. f. 79, 80.
 (1806).
- Eugonia Ant. *Hüb. Verz. bek. Schmett.* 37.
 (1816).
 Europe generally, N. Asia, N. America from Hud-
 son's Bay and the Atlantic coast to the Rocky
 Mountains and Mexico. B. M.
11. VAN. CYANOMELAS *Boisd.*
Doubleday & Hewitson, t. 26. f. 5. (1849).
 Mexico.
12. VAN. ? CHARONIA *Godt. Enc. M.* ix. 308. n. 27. (1819).
 P. Ch. *Drury*, i. t. 15. f. 1, 2. (1770).
Cram, t. 47. f. A. C. (1775).
Fab. Ent. Syst. iii. i. 119. n. 364. (1793).
 Eugonia Ch. *Hüb. Verz. bek. Schmett.* 37.
 (1816).
 China, N. India. B. M.

Genus XXI. PYRAMEIS.

VANESSA *Latr., Godt., Hübn., &c.*

CYNTHIA *Fab., &c.*

PYRAMEIS *Hübn.*

HEAD of moderate width, hairy.

Eyes nearly round, hairy.

Maxillæ considerably longer than the thorax.

Labial Palpi porrect, slightly ascending, convergent, projecting fully half their length beyond the forehead, scaly, slightly hairy in front, more so on the sides and upper surface of the second joint. First joint subcylindric, much curved; second joint more than three times as long as the first, subcylindric, stouter a little beyond the middle, then narrowed to the apex; third joint less than half the length of the second, elongate-conic, the apex rather obtuse.

Antennæ about three fourths the length of the body, rather slender, terminating in a short somewhat pyriform club, of which the terminal joints taper to a point.

THORAX oval, moderately stout, hairy.

Anterior Wings subtriangular; the apex more or less truncate; the anterior margin but little curved; outer margin but three fourths the length of the anterior, sinuate, emarginate; inner margin slightly longer than the outer, straight, or slightly emarginate. Costal nervure stout, extending to the middle of the costa. Subcostal nervure slender, lying close to the costal; its first and second nervules arising near to one another, and but little before the end of the cell; the third arising at about two thirds of the distance from the base to the apex, terminating at the apex; the fourth rather nearer to the origin of the third than to the outer margin. Upper and middle disco-cellular nervules all but wanting. Lower disco-cellular nervule very slender, sometimes nearly atrophied, arising from the second discoidal nervule at a short distance from its origin, nearly straight, directed outwards, anastomosing with the third median nervule at some distance from its origin, at a point where it is slightly angulated. Internal nervule wanting.

Posterior Wings somewhat obovate; the inner margin the longest; the anterior and outer margins of about equal length; the former rounded, the latter more or less sinuate and subdentate. Precostal nervure simple, or slightly bifid; the outer branch nearly atrophied. Discoidal nervure arising from the second subcostal soon after its origin. Lower disco-cellular nervule very slender, anastomosing with the median nervure opposite to the origin of its second nervule.

Anterior Legs of the male densely hairy; the tibia a little shorter than the femur; the tarsus than the tibia. Tibia subcylindric, unarmed. Tarsus subcylindric, tapering towards the apex, which is obtusely conical. *Anterior Legs* of the female with the femur, tibia, and base of tarsus densely hairy; the proportions of these parts as in the males. Tibia subcylindric, sparingly spiny within. Tarsus with the first and second joints spiny below, the latter rather more than one fifth the length of the former; both armed at the apex, as are the two following joints, with a stout spine on each side, covered by a more or less distinct tuft of hairs at the base of the following joint; third joint little more than half the length of the second, transverse; fourth joint shorter than the third, transverse, obliquely truncate at the apex; fifth joint short, transverse, about equal to the fourth.

Middle and Posterior Legs moderately stout; the femur in the former longer than in the latter, equal to the tibia. Tibiæ with two latero-internal rows of spines, and lateral less regular series; spurs stout, elongate. Tarsi spiny above, laterally, and, except the fifth joint, below; the spines of the lower surface stout, long, arranged in two nearly regular series. Middle tarsi with the first joint about three times the length of the second; the posterior tarsi with the first joint little more than double the length of the second; third joint considerably shorter than the second; the fourth than the third; fifth about equal to the second. Claws rather stout, curved, grooved below. Paronychia very hairy, bilacinate; the outer lacinia strap-shaped, as long as the claw; the inner short, subtriangular, or with the inner lacinia rudimentary; the outer elongate, triangular, slender. Pulvillus jointed, shorter than the claws, or merely rudimentary.

ABDOMEN stout, about half the length of the inner margin of the posterior wings.

LARVA cylindric; all the segments, except the head and prothoracic segment, armed with verticillate spines.

PUPA more or less angular and tuberculate; the head rather obtusely bifid.

Pyrameis differs from Vanessa in having the wings less angular, the palpi less hairy; and of somewhat different form; the club of the antennæ rather more pointed; and in other less obvious characters.

The *LARVÆ* of those species of which the metamorphosis is known are brown or olive, tending more or less to green, with an interrupted pale longitudinal band on each side. Like those of the preceding genus, all the segments, except the head and prothorax, are armed with long spines, set round with whorls of stiff bristles. In their habits they are different, being always solitary, drawing together the sides of a leaf with silken threads, and thus forming a cylindrical dwelling. Those of Pyrameis Atalanta feed on the common nettle, those of P. Cardui on thistles, and, according to Abbot, those of V. Huntera on Gnaphalium obtusifolium.

The *PUPÆ* are angular, tuberculate, with the head bifid, of some shade of brown, grey, or olive, more or less ornamented with golden spots. This state generally lasts, in temperate climates, about fifteen days.

The *PERFECT INSECTS* are disclosed from the pupæ in the summer and autumn months; but many hybernate, and consequently are frequently met with in the spring. They are butterflies of rather powerful flight, but often alighting on flowers and fruits. Pyrameis Atalanta is exceedingly fond of the juices of our autumnal fruits, especially the greengage; Pyr. Cardui is more attached to flowers, the thistle and other Compositæ being its favourites.

The last-mentioned species offers, perhaps, a wider Geographical Range than any other butterfly. It is found throughout the whole of Europe, Africa, and Asia; in the New World it has been met with from Hudson's Bay to

within ten or twelve degrees north of the equator: it is certainly found in the Polynesian Islands; and, although the specimens from Australia offer some constant differences, they can hardly be considered to form a distinct species.

The specimens from the northern parts of America are precisely like those from the Cape of Good Hope; those from the Himalaya range resemble those of Europe in being rather less brightly coloured than the American specimens. This butterfly is rare, in some years, in England, in others it appears in vast numbers. I have never, however, seen it so plentiful in Europe as I have in the United States, especially in Ohio, where I have seen literally tens of thousands on the thistles by the road sides.

Pyr. Atalanta has a less wide range, but is found throughout Europe and the northern parts of America: but the American specimens always present a slight difference, as pointed out by Mr. Stephens; the white spot near the costa of the anterior wings always going slightly beyond the second discoidal nervule in the European specimens, but not in the American. This species is replaced in more southern latitudes by Pyr. Callirhoë, which has a range from Teneriffe to China. In New Zealand it is represented by the beautiful Pyr. Gonerilla, and in the Sandwich Islands by the fine species figured. Pyr. Dejeanii supplies its place in Java, as Pyr. Itea does in Australia.

In the New World, as Pyr. Cardui becomes rare, its place is supplied by Pyr. Huntera, and further south by an allied species, and by Pyr. Carye, which seems to extend to the southernmost parts of the New World.

I have dwelt particularly on the geographical distribution of this genus, so poor in species, yet so universally distributed, presenting two distinct sections, species of which are known to coexist in almost every part of the world except the southern parts of Africa and America; never, except in Australia, presenting more than two species in the same district, and those generally of different sections. Thus, Pyr. Cardui has for its compatriot in Europe and North America Pyr. Atalanta; further south, in the Old World, Pyr. Callirhoë; in Java, Pyr. Dejeanii; in Australia, Pyr. Itea, and an undescribed species, of which I have only seen the fragment in the collection of the British Museum; in New Zealand, Pyr. Itea and Pyr. Gonerilla; in the Sandwich Islands, Pyr. Tammeamea. At the Cape of Good Hope and Sierra Leone it seems to be the only species of the genus. As it dies out, if I may use the expression, in the equatorial and southern parts of America, it is replaced first by one species, then by another, and if these species coexist, one is sure to be rare, for this coexistence is only found on the very limits of their respective territories.

I hope to be excused this repetition of facts. The geographical distribution of species is a most important branch of enquiry in Natural History, as yet too much neglected, and too much in its infancy, for us to venture to draw general conclusions from the facts we possess, for new facts are continually pouring in to disturb or overturn our generalisations. At present we can only carefully collect and register facts, from which, at some future time, to deduce our theories. Let us accurately record facts, but guard carefully against the error of making a theory, and seeking for facts, or semblances of facts, to support it.

PYRAMEIS.

Section I. *Paronychia* distinctly *bilaciniate*.1. PYR. ATALANTA Hübner. *Verz. bek. Schmett.* 33. (1816).

P. At. *Linn. Syst. Nat.* ii. 779. n. 175. (1767).

Fab. Ent. Syst. iii. i. 118. n. 362. (1793).

Hübner. Samml. Europ. Schmett. Pap. f. 75, 76. (1806).

Van. At. *Godt. Enc. M.* ix. 320. n. 54. (1819).

Europe generally, N. America from Hudson's Bay to Mexico. B. M.

2. PYR. CALLIRHOË Hübner. *Verz. bek. Schmett.* 33. (1816).

Hamadryas dec. Cal. *Hübner. Samml. Exot. Schmett.* (1806-16).

P. Atalanta *Cram.* t. 84. f. E. F. (1775).

Van. *Vulcania Godt. Enc. M.* ix. 320. n. 55. (1819).

Teneriffe, Madeira, N. India. B. M.

3. PYR. TAMMEAMEA.

Van. *Tamin. Eschscholtz, in Kotzebue, Reise, &c.* t. 5. f. 8. a. b. (1821).

Pyr. Cordelia *Doubleday & Hewitson*, t. 25. f. 3. (1847).

Sandwich Islands.

B. M.

4. PYR. GONERILLA.

P. Gon. *Fab. Ent. Syst.* 498. n. 537. (1775).

Fab. Ent. Syst. iii. i. 103. n. 317. (1793).

Donovan, Ins. of New Holland (1805).

Van. Gon. *Godt. Enc. M.* ix. 321. n. 56. (1819). New Zealand. B. M.

5. PYR. DEJEANII.

Van. Dej. *Godt. Enc. M.* ix. Suppl. 821. n. 55, 56. (1823).

Boisd. Sp. Gén. i. t. 10. f. 2. (1836).

Java. B. M.

6. PYR. ITEA.

P. It. *Fab. Ent. Syst.* 498. n. 238. (1775).

Fab. Ent. Syst. iii. i. 109. n. 318. (1793).

Donovan, Ins. of New Holland (1805).

Australia, New Zealand. B. M.

Section II. *Paronychia with the inner lacinia rudimentary.*

7. PYR. CARDUI.

P. Car. *Linn. Syst. Nat.* II. 774. n. 157. (1767).*Fab. Ent. Syst.* III. i. 104. n. 320. (1797).*Hüb. Samml. Europ. Schmett. Pap.* f. 73, 74. (1806).Vanessa Car. *Hüb. Verz. bek. Schmett.* 33. (1816).*Godt. Enc. M.* IX. 323. n. 62. (1819).Cynthia Car. *Stephens, Ill. Haust.* I. 47. (1827).P. Carduelis *Cram. t.* 26. f. E. F. (1775).Var. V. *Leachiana Sommer MSS.*Europe generally; Egypt, Teneriffe, Sierra Leone, Cape of Good Hope; Asia and Asiatic islands, Sandwich Islands; America, from Hudson's Bay to Venezuela (var. *Leachiana*); Australia, and New Zealand. B. M.

8. PYR. HUNTERA.

P. Hunt. *Fab. Ent. Syst.* 499. n. 240. (1775).*Fab. Ent. Syst.* III. i. 104. n. 321. (1793).*Sm.-Abbot. r. t.* 9. (1797).Vanessa Hunteri *Hüb. Verz. bek. Schmett.* 33. (1816).*Godt. Enc. M.* IX. 324. n. 63. (1819).P. Cardui Virginiensis *Drury, r. t.* 5. f. 1. (1770).? P. Iole *Cram. t.* 12. f. E. F. (1775).

United States, Haiti.

B. M.

9. PYR. MYRINNA.

Brazil.

B. M.

10. PYR. CARVE.

Hamadryas decora *Ca. Hüb. Samml. Exot. Schmett.* (1806).Vanessa Ca. *Hüb. Verz. bek. Schmett.* 33. (1816).

Chili, Buenos Ayres.

B. M.

Note. — Since the remarks on the preceding page were printed, I have again examined the fine collection of Haitian insects belonging to J. Hearne, Esq., in which I find specimens of Pyrameis Atalanta, Pyr. Cardui, and Pyr. Huntera, all exactly corresponding to the specimens from the United States. The species to which I have given the name of Pyr. Myrinna differs from Pyr. Huntera in having the upper surface of a less fulvous hue; the posterior wings produced into a short tooth at the end of the first median nervule; the upper surface of these wings crossed by a dark broad band beyond the middle; the white band of their lower surface of more uniform width, and not produced into a tooth at the third median nervule. In addition to these characters, it may be added that the outer margin of the wing is more sinuate, and the submarginal bluish band less sinuate, than in the preceding species.

Genus XXII. JUNONIA.

VANESSA *Fab., Godt. &c.*

PRECIS, TEMENIS, JUNONIA, ALCYONEIS, APATURA, EUGONIA, *Hüb.*

VANESSA, SALAMIS, *Boisd.*

HEAD about equal in width to the thorax, thickly clothed with short hair-like scales.

Eyes nearly round, rather prominent, smooth.

Maxillæ rather slender, about two thirds the length of the body.

Labial Palpi porrect, ascending, clothed with scales, which are all short and appressed near the base, in part longer and hair-like towards the apex; the second joint with a dorsal tuft. First joint subcylindric, much curved, short; second joint fully three times the length of the first, stout, considerably swollen beyond the middle, then diminishing towards the apex, which is truncate; third joint much longer than the first, slender, elongate, conic, almost acicular.

Antennæ about three fourths the length of the body, slender, terminating in a short, abrupt, obtuse club, grooved below; or, proportionately, rather shorter, the club more gradually incrassate and longer.

THORAX rather stout, oval.

Anterior Wings nearly triangular; the apex more or less truncate, sometimes falcate. Anterior margin sometimes but little curved, sometimes considerably arched. Outer margin about two thirds the length of the anterior, emarginate. Inner margin equal in length to the outer, straight. Costal nervure rather strong, not extending beyond the middle of the anterior margin. Subcostal nervure emitting its first and second nervules close together, a little before the end of the cell; the third at a point rather less than halfway between the origins of the second and fourth nervules; this last nearer to the third than to the outer margin of the wing; the third subcostal nervule terminating at the apex. Upper disco-cellular nervule very short. Middle disco-cellular nervule about equal in length to one third the width of the cell. Cell almost always open, the lower disco-cellular nervule being almost always entirely wanting. Third median nervule considerably curved.

Posterior Wings rounded or angular; the anal angle often produced considerably. Anterior margin not much curved. Outer margin sinuate, more or less dentate, often produced into a tooth or short tail at the termination of the third median nervule. Precostal nervule mostly bifid. Costal nervure much curved near its origin. Discoidal nervule separating from the second subcostal soon after its origin. Cell always open. Third median nervule not much curved.

Anterior Legs of the male slender, clothed with scales and delicate hairs. Femur considerably longer than the tibia. Tibia nearly cylindric, slightly slenderer towards the apex. Tarsus one-jointed, one third or nearly one half the length of the tibia, slender, subcylindric, sometimes tapering towards the apex, which is not unfrequently truncate. *Anterior Legs* of the female rather small. Femur longer than the tibia. Tibia subcylindric, smooth. Tarsus as long as, or but little shorter than, the tibia. First joint cylindric, twice or three times the length of the rest combined, with a spine on each side at the apex, and sometimes a few scattered spines within: second joint scarcely one fifth, sometimes scarcely one seventh, of the length of the first; armed at the apex, as are the two following joints, with two spines: third, fourth, and fifth joints very short, transverse; the fourth the shortest; the fifth sometimes broader than the fourth; all, as is also the second, furnished with a tuft of hairs on each side at the base.

Middle and Posterior Legs moderately stout. Femora of the former pair longer than, of the latter pair equal to, the tibiæ. Tibiæ subcylindric, with two interno-lateral series of spines, and sometimes a few external spines; armed at the apex with two stout spurs. Tarsi equal to the tibiæ, spiny laterally and below, except the fifth joint, which wants the lateral spines; the spines below somewhat in two series; the upper surface sometimes with one or two delicate spines or stiff hairs. First joint more than double the length of the second; this mostly equal to, but sometimes shorter than, the fifth, always longer than the third; fourth mostly shorter than the third. Claws curved, grooved below. Paronychia bilacinate. Outer lacinia broad at the base, then very slender, pointed; equal, or nearly equal, in length to the claw; sometimes almost strap-shaped. Inner lacinia short, subtriangular. Pulvillus shorter than the claw, two-jointed; second joint broad.

ABDOMEN rather small, about two thirds the length of the inner margin of the wing.

LARVA with the head and all the segments armed with spines.

PUPA tuberculated, scarcely angular.

Junonia may be known from the six preceding genera by its naked eyes, and by its less hairy anterior legs. In all those genera the anterior legs of the males are densely clothed with long hairs, and this is the case also with the females of Vanessa and Pyrameis. But in Junonia, though the legs of the males are thickly set with fine hairs, they are short, and do not so entirely cover the legs as to make it difficult to detect their form, and even their articulations. The cells of both pairs of wings are always open, with the exception of the anterior wings in three or four very aberrant species, which I place in the genus with much reluctance.

After long hesitation and a more extensive comparison of the structure of the different species than it was in my power to make when the twenty-fifth plate was drawn, I have come to the conclusion of combining in one genus what I had previously proposed to divide into two genera, under the names of Junonia and Salamis. The latter name was given by Dr. Boisduval in 1827 to an insect from Madagascar and Mauritius, which I have not been able to dissect, but which probably resembles in structure Junonia Cacta. Subsequently, in his cabinet and in a manuscript catalogue which he communicated to me, he placed in this genus his *Vanessæ Goudotii*, *Andremlaja*, &c., with *P. Laodice* of Cramer and other allied species, an arrangement which I followed in the catalogue of the collection of Lepidoptera of the British Museum. These species mostly have the club of the antennæ more gradually formed than the species which compose Hübner's genus Junonia, and have some other differences which will be found indicated in the sectional characters given in the list of species. There is, however, so gradual a transition from species to species in the form of the club, that I have found it impossible to draw a line of distinction.

Few genera exhibit greater variety of colour than this.

The species composing the first section, for which I would retain the name *Junonia*, have generally the upper surface of the wings marked with ocelli, one or more of which is very large; the under side is generally more or less marbled. These species have the posterior wings either slightly angled or rounded, their anal angle being very rarely prolonged into a tail. The anterior tarsi of the males are mostly proportionately longer than in the males of the next section.

The next group mostly have the outer margin of both pairs of wings more angular, and the anal angle of the posterior wings prolonged into a short tail, resembling, in this last respect, the genera *Kallima* and *Zeuxidia*. The colouring of the upper surface of the wings in some species of this group is extremely beautiful, consisting of fulvous and blue bands and spots on a fuscous ground; in other species it is more sombre, being a dull fuscous, with rather paler markings. A third group, for which I would retain the name of *Salamis*, resembles some of the preceding species in its angular outlines, and is extremely beautiful in colouring. *Junonia? Cacta* has the base of the wings fulvous, glossed with purple; the disc purple; the outer margin fuscous. In *Junonia? Anacardii* the whole upper surface, with the exception of some trivial fuscous markings, is of a most brilliant pearly hue, with shades of rosy purple scarcely equalled in any other insect. Its close ally, *Junonia? Sabina*, is fuscous brown with a broad transverse fulvous band.

The LARVÆ appear in one respect to resemble those of *Argynnis*, rather than those of the true *Vanessæ*, as the prothoracic segment is spiny. The head is mostly, if not always, armed with spines; but Dr. Horsfield represents that of *Junonia Laomedea* as having the head unarmed. The larvæ of *Junonia Laomedea*, *Jun. Lemonias*, *Jun. Orithyia*, and *Jun. Cænone* are all of a fuscous hue, with a paler lateral line, and pale or rufous spots. That of *Jun. Asterie* is brown, with the thoracic segments almost entirely black. That of *Junonia Cænia* is brown with two pale lateral lines, and some lateral red spots; the spines are blue. It feeds on *Linaria canadensis*.

The PUPÆ which are known are but little angular, and, with the exception of *Junonia Laomedea*, have the head rounded. Dr. Horsfield represents that of this insect as having the head bifid. The back and sides are tuberculated. The colour is some shade of brown or fuscous, with paler or darker markings. The pupa state continues about fifteen days.

The PERFECT INSECT has, in its habits, many points of resemblance to *Argynnis* and the allied genera, which it nearly resembles in the form of its palpi. The only species of which I have observed the habits is *Junonia Cænia*. Its flight is rapid, somewhat like that of *Pyrameis Cardui*, or still more that of *Euptoicta Claudia*. It is very abundant in the more southern parts of the United States, but, I believe, does not occur more to the south. It is two-brooded, the autumnal brood hibernating, and giving rise to a brood of larvæ which are full grown in April, and of which the perfect insect appears early in May. Godart has confounded two other species with this, one a West Indian, the other a Brazilian insect. The northern and western parts of South America have their peculiar species, as yet undescribed, which are closely allied to the above-mentioned and to one another, but readily distinguishable by a minute examination of a large series of each species.

The Geographical Range of the genus comprises the whole tropical and subtropical regions of both hemispheres, to the exclusion, however, of the southern Mediterranean district. The first section occurs most numerously in the New World, but is also found in Africa from Senegal to the Cape of Good Hope, in Asia and its islands, some of the Polynesian Islands, and in Australia. The second and third sections are more peculiarly African, though species occur in Asia and the Asiatic Islands.

JUNONIA.

Section I. JUNONIA.

Antennæ with a short rather abrupt club. Cell of Anterior Wings open. Posterior Wings mostly rounded, often marked with large ocelli. Anterior Tarsus of the male about half the length of the tibia.

1. JUN. LEMONIAS.

P. Lem. *Linn. Syst. Nat.* ii. 770. n. 136. (1767).

Fab. Ent. Syst. iii. i. 90. n. 282. (1793).

Van. Lem. *Godt. Enc. M.* ix. 310. n. 31. (1819).

P. Aonis *Cram.* t. 35. f. D. E. F. (1775).

China, Java, Ceylon, India generally. B M.

2. JUN. AONIS.

P. Ao. *Linn. Syst. Nat.* ii. 769. n. 134. (1767).

Van. Ao. *Godt. Enc. M.* ix. 311. n. 32. (1819).

Indian Archipelago.

3. JUN. ERIGONE.

- P. Eri. *Cram.* t. 62. f. E. F. (1775).
 Temenis Eri. *Hüb. Verz. bek. Schmett.* 34. (1816).
 Van. Eri. *Godt. Enc. M.* ix. 311. n. 33. (1819).

India.

B. M.

4. JUN. LAOMEDIA.

- P. Lao. *Linn. Syst. Nat.* ii. 772. n. 145. (1767).
Drury, i. t. 5. f. 3. (1770).
Cram. t. 8. f. F. G. (1775).
Fab. Ent. Syst. iii. i. 98. n. 302. (1793).
 Temenis Lao. *Hüb. Verz. bek. Schmett.* 34. (1816).
 Van. Lao. *Godt. Enc. M.* ix. 322. n. 59. (1819).
 ? P. Atlites *Linn. Amæn. Acad.* vi. 407. (1763).
 China, Java.

B. M.

5. JUN. CLELIA *Hüb. Verz. bek. Schmett.* 34. (1816).

- P. Cl. *Cram.* t. 21. f. E. F. (1775).
Fab. Ent. Syst. iii. i. 91. n. 285. (1793).
 Van. Cl. *Godt. Enc. M.* ix. 317. n. 50. (1819).
 W. and S. Africa.

B. M.

6. JUN. EPICLELIA.

- Van. Epiclelia *Boisd. Faune Ent. de Mad.* t. 7. f. 3. (1833).
 Madagascar.

7. JUN. CENONE *Hüb. Verz. bek. Schmett.* 34. (1816).

- P. Cn. *Linn. Syst. Nat.* ii. 770. n. 135. (1767).
Fab. Ent. Syst. iii. i. 90. n. 280. (1793).
Cram. t. 35. f. A—C. (1775).
 Van. Cn. *Godt. Enc. M.* ix. 318. n. 51. (1819).
 Var. P. Hierta *Fab. Ent. Syst.* v. 424. n. 281–2. (1798).
 Van. Hi. *Godt. Enc. M.* ix. 218. n. 51. (1819).
 S. Africa, India, China.

B. M.

8. JUN. ORITHYIA *Hüb. Verz. bek. Schmett.* 34. (1816).

- P. Or. *Linn. Syst. Nat.* ii. 770. n. 137. (1767).
Fab. Ent. Syst. iii. i. 91. n. 284. (1793).
 ♀ *Cram.* t. 19. f. C. D. (1775).
 ♂ *Cram.* t. 32. f. E. F. (1775).
 ♂ *Cram.* t. 290. f. A. B. (1782).
 Van. Or. *Godt. Enc. M.* ix. 317. n. 48. (1819).
Godt. Enc. M. ix. Suppl. 821. (1823).
 China, Java.

B. M.

9. JUN. OCYALE *Hüb. Verz. bek. Schmett.* 34. (1816).

- P. Orithyia *Cram.* t. 281. f. E. F. (1782).
Cram. t. 290. f. C. D. (1782).
 Van. Orthosia *Godt. Enc. M.* ix. Suppl. 821. n. 48–49. (1823).

Amboyna, Java.

B. M.

10. JUN. HADROPE *Doubleday & Hewitson*, t. 25. f. 2. (1847).

W. Africa.

B. M.

11. JUN. GENOVEVA.

- P. Gen. *Cram.* t. 290. f. E. F. (1782).
 St. Barthélemy, Nevis.

B. M.

12. JUN. LAVINIA.

- ♂ P. Lav. *Cram.* t. 21. f. C. D. (1775).

February, 1849.

- Var. P. Evarete *Cram.* t. 203. f. C. D. (1780).

Hamadryas decora *Hüb. Samml. Schmett.* (1806).

- P. Larinia *Fab. Ent. Syst.* v. 424. n. 284–5. (1798).

- ♀ ? P. Esra *Fab. Ent. Syst.* v. 425. n. 284–5. (1798).

- P. Flirtea *Fab. Ent. Syst.* iii. i. 90. n. 281. (1798).

Jones, Icon. iv. t. 20. f. 1. (ined.).

Brazil.

B. M.

13. JUN. CENIA *Hüb. Samml. Exot. Schmett.* (1806–27).

Van. Cn. *Boisd. et Lecomte, Icon. des Lép. et des Chen. de l'Am. Sept.* t. 49. (1830–42).

- P. Orithya *Sm.-Abbott*, i. t. 8. (1797).

United States (Middle and Southern States). B. M.

14. JUN. VELLIDA.

- P. Vell. *Fab. Ent. Syst.* iii. i. 91. n. 283. (1793).
Donovan, Ins. of New Holland (1805).

Van. Vell. *Godt. Enc. M.* ix. Suppl. 807. (1823).
Boisd. Voy. de l'Astrolabe, 121. (1832).

- Van. Calybe *Godt. Enc. M.* ix. 316. n. 49. (1819).

Australia.

B. M.

15. JUN. ASTERIE.

- P. Ast. *Linn. Syst. Nat.* ii. 769. n. 133. (1767).
Cram. t. 58. f. D. E. (1775).

Fab. Ent. Syst. iii. i. 89. n. 279. (1793).

Alcyoneis Ast. *Hüb. Verz. bek. Schmett.* 35. (1816).

- Van. Ast. *Godt. Enc. M.* ix. 321. n. 58. (1819).

Java.

B. M.

16. JUN. ALMANA.

- P. Alm. *Linn. Syst. Nat.* ii. 769. n. 132. (1767).

Cram. t. 58. f. F. G. (1775).

Fab. Ent. Syst. iii. i. 89. n. 278. (1793).

Alcyoneis Alm. *Hüb. Verz. bek. Schmett.* 35. (1816).

- Van. Alm. *Godt. Enc. M.* ix. 313. n. 36. (1819).

China.

B. M.

Section II. PRECIS.

Antennæ with the club rather gradually incrassate. Cell of both pairs of Wings open. Posterior Wings often prolonged at the anal angle. Anterior Tarsus of the males about one third the length of the tibia.

17. JUN. OCTAVIA.

- P. Oct. *Cram.* t. 135. f. B. C. (1777).

Fab. Ent. Syst. iii. i. 120. n. 369. (1793).

Precis Oct. *Hüb. Verz. bek. Schmett.* 33. (1816).

- Van. Oct. *Godt. Enc. M.* ix. 322. n. 60. (1819).

Sierra Leone, Angola.

B. M.

18. JUN. ARCHESIA.
P. Arch. Cram. t. 219. f. D. E. (1782).
Fab. Ent. Syst. III. i. 119. n. 363. (1793).
Apatura Arch. Hübn. Verz. bek. Schmett. 35. (1816).
Van. Arch. Godt. Enc. M. ix. 315. n. 47. (1819).
 S. Africa. B. M.
19. JUN. AMESTRIS.
P. Am. Drury, III. t. 20. f. 3, 4. (1782).
Van. Am. Godt. Enc. M. Suppl. 807. (1823).
P. Zingha Fab. Ent. Syst. III. i. 117. n. 358. (1793).
Van. Emma Godt. Enc. M. ix. 315. n. 43. (1819).
 Sierra Leone. B. M.
20. JUN. CERYNE.
Salamis Ceryne Boisd. Voy. de Delgorgue, II. 592. (1847).
21. JUN. RHADAMA.
V. Rhad. Boisd. Faune Ent. de Madag. t. 7. f. 2. (1833).
 Madagascar. B. M.
22. JUN. TEREÄ.
P. Te. Drury, II. t. 18. f. 3, 4. (1773).
Cram. t. 138. f. E. F. (1777).
Fab. Ent. Syst. III. i. 92. n. 288. (1793).
Apatura Te. Hübn. Verz. bek. Schmett. 35. (1816).
Van. Ter. Godt. Enc. M. ix. 314. n. 39. (1819).
 W. Africa. B. M.
23. JUN. SOPHIA.
P. So. Fab. Ent. Syst. III. i. 248. n. 771. (1793).
Donovan, Ins. of Ind. (1800-3).
Van. So. Godt. Enc. M. ix. Suppl. 823. n. 60-1. (1823).
 Africa. B. M.
24. JUN. CHORIMENE.
Van. Chorimene Guérin-Ménéville, Icon. du Règne Anim. texte, II. 476. (1844).
Van. Orthosia Klug & Ehrenberg, Symbolæ Physicæ, t. 48. f. 8, 9. (1845).
 Senegal. B. M.
25. JUN. GOUDOTIL.
Van. Goud. Boisd. Faune Ent. de Madag. t. 7. f. 1. (1833).
 Madagascar. B. M.
26. JUN. GALAMI.
Van. Gal. Boisd. Faune Ent. de Madag. t. 46. (1833).
 Senegal? B. M.
27. JUN. PELARGA.
♂ P. Pel. Fab. Ent. Syst. 513. n. 296. (1775).
P. Laodice Cram. t. 138. f. G. H. (1777).
Fab. Ent. Syst. III. i. 93. n. 289. (1793).
Van. Laodora Godt. Enc. M. ix. 314. n. 38. (1819).
- ♀ *P. Pelarga Drury*, III. t. 27. f. 12. (1782).
Stoll, t. 27. f. 2. and 2A. (1790).
 ♀ *P. Harpyia Fab. Mant. Ins.* II. 104. (1781).
 ♀ *Van. Pel. Godt. Enc. M.* ix. 313. n. 37. (1819).
 Sierra Leone. B. M.
28. JUN. PELASGIS.
Van. Pel. Godt. Enc. M. ix. 820. n. 389. (1823).
 S. Africa.
29. JUN. ANDREMIJA.
 ♀ *Van. Andr. Boisd. Faune Ent. de Madag.* 45. (1833).
 ♂ *Van. Musa Guérin-Ménéville, Icon. du Règne Anim. texte*, II. 475. (1844).
 Madagascar. B. M.
30. JUN. LIMNORIA.
Van. Limn. Klug & Ehrenberg, Symbolæ Physicæ, t. 48. f. 6, 7. (1845).
 Abyssinia. B. M.
31. JUN. HEDONIA.
P. Hed. Linn. Syst. Nat. II. 774. n. 153. (1767).
 ♂ *Cram.* t. 69. f. C. D. (1775).
 ♀ *Cram.* t. 374. f. E. F. (1782).
Fab. Ent. Syst. III. i. 98. n. 304. (1793).
Van. Hed. Godt. Enc. M. ix. 316. n. 45. (1819).
 East Indies.
32. JUN. IPHITA.
 ♂ *P. Iph. Cram.* t. 209. f. C. D. (1780).
 ♀ *Fab. Ent. Syst.* III. i. 109. n. 337. (1793).
 ♂ *Van. Iph. Godt. Enc. M.* ix. 314. n. 40. (1819).
 ♀ *P. Ida. Cram.* t. 42. f. C. D. (1775).
Cram. t. 374. f. C. D. (1782).
 ♀ *Van. Idamene Godt. Enc. M.* ix. 315. n. 41. (1819).
 ♀ ? *P. Zelima Donovan, Ins. of Ind.* (1800-3).
 ♀ ? *Van. Zelima Godt. Enc. M.* ix. 316. n. 46. (1819).
 Java, China. B. M.
33. JUN. CLOANTHA.
P. Cl. Cram. t. 338. f. A. B. (1782).
Van. Cl. Godt. Enc. M. ix. 322. n. 61. (1819).
 Sierra Leone, Angola. B. M.
34. JUN. EUDOXIA.
Van. Eudoxia Guérin-Ménéville, Rev. Zool. 44. (1840).
Guérin-Ménéville, in Delessert, Souvenirs d'un Voy. App. t. 20. (1843).
 Malacca.
35. JUN. POLYNICE.
P. Pol. Cram. t. 195. f. D. E. (1780).
Fab. Ent. Syst. III. i. 89. n. 277. (1793).
Van. Polynissa Godt. Enc. M. ix. 308. n. 26. (1819).
 Java, Sumatra. B. M.

Section III. SALAMIS.

Club of antennæ gradually incrassate. Wings angular, the posterior mostly produced at the anal angle. Cell of the Anterior Wings closed. Anterior Tarsi of the males short.

36. JUN. ? SABINA.

P. Sab. *Cram.* t. 289. f. A—D. (1781).

Fab. Ent. Syst. III. i. 68. n. 211. (1793).

Van. Sab. *Godt. Enc. M.* IX. 299. n. 9. (1819).

Java, Amboyna.

B. M.

37. JUN. ? AUGUSTINA.

Salamis Aug. *Boisd. Faune Ent. de Madag.* t. 8. f. 1. (1833).

Madagascar, Bourbon, Mauritius.

38. JUN. ? CACTA.

P. Ca. *Fab. Ent. Syst.* III. i. 116. n. 356. (1793).

Jones, Icon. v. t. 34. f. 1. (ined.).

Donovan, Ins. of India (1800).

Van. Ca. *Godt. Enc. M.* IX. 309. n. 29.

Sierra Leone.

B. M.

39. JUN. ? CYTORA.

Salamis Cyt. *Boisd. MS.*

Doubleday & Hewitson, t. 25. f. 5. (1847).

Ashanti.

B. M.

40. JUN. ? JUCUNDA.

Hamadryas undata Jucunda Hüb. *Samml. Exot. Schmett.* (1806).

Apatura Juc. Hüb. *Verz. bek. Schmett.* 35. (1816).

41. JUN. ? ANACARDII.

P. An. *Linn. Mus. Lud. Ulr.* 236. (1764).

Clerk, t. 28. f. 3. (1764).

Linn. Syst. Nat. II. 758. n. 74. (1767).

Fab. Ent. Syst. III. i. 183. n. 567. (1793).

P. Parrhasus *Drury*, III. t. 4. f. 1, 2. (1782).

P. Æthiops *Pal. de Beauv. Ins. Lép.* t. 3. f. 1, 2. (1805).

P. Opale *Pal. de Beauv. Ins. Lép. texte*, 32. (1805).

Van. Aglatonice *Godt. Enc. M.* IX. 299. n. 8. (1819).

W. Africa, Cape of Good Hope.

B. M.

Note.—The butterfly figured by Petiver under the name of *Papilio oculatus Hampstediensis, ex aureo fuscus*, undoubtedly is a species of this genus, and, as Mr. Stephens long since suggested to me, one of the species allied to *Junonia Orithyia*. Mr. Stephens's suggestion has received a remarkable confirmation from a very remarkable painting of innumerable species of our British Lepidoptera executed about a century since, in which are four very accurate figures representing both surfaces of *Junonia Vellida*, the species which we had considered most to resemble Petiver's figure. The minute accuracy of the figures, worthy of Sepp or Curtis, leaves no doubt of the identity of the insect. How an insect now only known as an Australian species could then exist in a collection of purely British insects, and how Petiver, Albin, and others, came to believe that it had been captured at Hampstead, I cannot explain. The only other exotic insect in the painting referred to is *Deiopeia Cribaria*, and is precisely that variety which is found in the easternmost islands of the Indian Ocean.

Genus XXIII. CYNTHIA.

CYNTHIA *Fab.*ANARTIA *Hübner.*VANESSA *Godt., &c.*

HEAD of moderate width, hairy.

Eyes oval, not prominent.

Maxillæ considerably longer than the thorax.

Labial Palpi ascending, convergent, the third joint directed almost immediately forwards. First joint short, much curved, scaly, with one or two setæ in front; second joint three times the length of the first, much swollen beyond the middle, rounded at the apex, scaly, and thickly set in front and externally with long setæ; third joint ovate, about one fifth the length, and half the breadth, of the first joint, scaly, the scales appressed.

Antennæ fully three fourths the length of the body, terminating in a gradually thickened, short, rather slender club.

THORAX elongate oval, hairy; prothorax very distinct.

Anterior Wings subtriangular. Anterior margin considerably curved. Outer and inner margins about equal in length; the former emarginate, sinuate; the latter very slightly emarginate. Costal nervure extending to the middle of the anterior margin. Subcostal nervure slender, lying close to the costal as far as the end of the cell, five-branched; its first and second nervules thrown off close together; the first a little before, the second immediately beyond, the end of the cell; the third rather nearer to the second than to the apex; the fourth shortly beyond the third. Cell not half the length of the wing. Upper disco-cellular nervule very short, directed obliquely outwards. Middle disco-cellular about half the length of the lower, nearly straight, directed obliquely inwards. Lower disco-cellular curving inwards, joining the third median nervule soon after its origin; this latter subsequently considerably curved. Internal nervure wanting.

Posterior Wings with the anterior margin much rounded, shorter than the outer, which is also much rounded, sinuate, often with a short tail in which the third median nervule terminates. Inner margin equal to the outer, forming a deep channel for the reception of the abdomen. Precostal nervule bifid. Costal not much curved near its origin. Cell open. Discoidal nervure curved at its separation from the second subcostal nervule.

Anterior Legs of the male rather slender. Femur and tibia of about equal length, the latter nearly cylindric, obliquely truncate at its apex, clothed with scales and a few scattered setæ. Tarsus half as long as the tibia, nearly cylindric, mucronate at the apex. *Anterior Legs* of the female with the femur and tibia of about equal length, rather slender, scaly; the latter

also furnished with some scattered setæ, and with two lateral spines before the apex, which is very obliquely truncate. Tarsus shorter than the tibia, clavate. First joint nearly cylindric for about two thirds of its length, then widening to the apex, which is about double the width of the base; second joint transverse, about one sixth the length of the first; third transverse, shorter than the second; fourth transverse, about half the length of the first; all these joints armed with a spine on each side at the apex; fifth joint very small, shorter than the fourth, armed with two small spines before the apex, and furnished, as are the three preceding joints, with a tuft of hair on each side at the base, covering the spines of the preceding joint.

Middle and Posterior Legs rather robust. Femora of the middle pair rather longer, of the posterior rather shorter, than the tibiæ. Tibiæ spiny all round; the two lateral series distinctly regular; spurs strong. Tarsus spiny above, laterally, and below. Fifth joint less spiny below than the others; the spines below arranged in two tolerably regular series; second joint fully one third the length of the first; third joint more than two thirds the length of the second; fourth joint half the length of the fifth, and more than half the length of the second. Claws strong, sharp, curved, grooved below. Paronychia consisting of one lacinia, broad at the base, then suddenly narrower, nearly linear, rather more than half the length of the claw, very hairy. Pulvillus short; the second joint broad, hairy.

LARVA and *PUPA* unknown.

Cynthia may be known at once from the preceding genus by the very different neuration of the wings, and by its differently formed palpi and legs.

The strong setæ with which the palpi and even the anterior legs are furnished cannot be removed in the same manner that the scales or ordinary hairs can be detached; in fact, they cannot be removed without injury to themselves, or the part to which they are attached.

The structure of the anterior tarsus of the female is very remarkable; and the male differs from the allied genera in the singular almost articulated mucro with which this joint is furnished.

The posterior wings present a depression in the place of the disco-cellular nervule, as has already been observed in *Cirrhochroa* and *Lachnoptera*.

The sexes differ materially in colour; the males being fulvous with darker markings; the females of a light greyish brown, both wings being traversed by a broad white interrupted band.

I am not quite sure that I am correct in considering that there is, as yet, only one species of the genus known. It is possible that the Continental specimens may form a distinct species from those of the Indian islands, but I cannot find good reasons for separating them.

The Geographical Range of the genus extends from Northern India to the Indian islands, westward to Sumatra, and eastward to the Philippines.

CYNTHIA.

CYN. ARSINOË *Fab. Syst. Gloss.* (ined.)

♂ *P. Ars. Cram.* t. 160. f. A. B. (1777).

Fab. Ent. Syst. iii. i. 74. n. 233. (1793).

Van. *Ars. Godt. Enc. M.* ix. 297. n. 1. (1819).

♀ *P. Juliana Cram.* t. 280. f. A. B. (1782).

March, 1849.

Fab. Ent. Syst. iii. i. 108. n. 332. (1793).

♀ *Cynthia Deione Erichson, Nova Acta*, xvi. ii. t. 40. f. 2. 2 a. (1833).

N. India, Moulmein, Java, Borneo, Amboyna.

B. M.

Genus XXIV. **ANARTIA** *Hüb.**VANESSA* *Godt., &c.**CELÆNA* *Boisd. MSS.*

HEAD rather small, scaly and hairy.

Eyes round, rather prominent.

Maxillæ rather slender, about two thirds the length of the body.

Labial Palpi ascending, rising considerably above the forehead, densely scaly; the scales appressed, except those in front of the first joint, and those of the dorsal tuft of the second, which are long, hair-like, and spread loosely. First joint short, thick, curved, less than one third the length of the second; second joint elongate, rather swollen beyond the middle, then tapering towards the apex, which is obliquely truncate; third joint slender, almost acicular, equal in length to the first.

Antennæ nearly as long as the body, rather slender; the club short, compressed, pointed.

THORAX oval, moderately stout, sparingly clothed with scales and hairs.

Anterior Wings subtriangular; the apex rounded or truncate. Anterior margin rounded at the base, then nearly straight, curved towards the apex. Outer margin two thirds the length of the anterior, equal to the inner, slightly or somewhat emarginate about the middle, and slightly produced before the middle, so as to make the apex truncate. Inner margin slightly emarginate. Costal nervure stout, extending to the middle of the costa. First subcostal nervule sometimes wanting; when present, arising shortly before the end of the cell, anastomosing with the costal nervure, and afterwards with the second subcostal nervule. Second subcostal nervule arising at the end of the cell; anastomosing, when the first is present, with that, and with the third subcostal nervule, when the first subcostal nervule is wanting, with the costal nervure, afterwards almost touching the third subcostal. Third subcostal nervule terminating at the apex of the wing, arising at less than halfway between the end of the cell and the fourth subcostal; this about equidistant from the third and from the outer margin, or nearer to the outer margin than to the third. Upper disco-cellular nervule very short. Lower disco-cellular nervule entirely wanting. Third median nervule slightly curved upwards. Internal nervure wanting.

Posterior Wings somewhat obovate; the margins nearly of equal length, rounded. Outer margin sinuate dentate, prolonged into a square tooth or scale at the termination of the third median nervule. Inner margin emarginate before the anal angle. Precostal nervule simple, scarcely curved. Discoidal nervure arising from the second subcostal nervule near to its origin, much bent soon after its separation from the second subcostal. Cell open. Third median nervule not much curved.

Anterior Legs of the male clothed with small scales. Femur scarcely stouter than the tibia. Tibia rather longer than the femur, stoutest at the base, where it is slightly curved. Tarsus slender, subcylindric, slightly tapering to the apex, which is truncate, about half the length of the tibia. *Anterior Legs* of the female scaly, stouter than those of the male. Femur nearly cylindric, slightly curved. Tibia three fourths the length of the femur, slightly curved, scarcely, if at all, stouter at the base than at the apex. Tarsus about four fifths the length of the tibia, five-jointed. First joint nearly thrice the length of the rest combined, subcylindric, smooth, obliquely truncate at the apex, which is armed below, as is the case in the three following joints, with two stout spines, covered by a slight tuft of setæ at the base of each succeeding joint; second joint less than one fifth the length of the first, about one half longer than the third, which is transverse; fourth joint very short; fifth small, obtuse at the extremity.

Middle and Posterior Legs rather long. Femora of the middle pair about equal to those of the posterior pair, shorter than the tibiæ. Tibiæ irregularly spiny externally, with two distinct series of spines internally. Tarsi spiny above, below, and, except the fifth joint, laterally; the spines below arranged in two nearly regular series. Claws curved, grooved below. Paronychia bilacinate. Outer lacinia elongate, pointed, as long as the claw. Inner lacinia elongate, not quite so long as the outer, pointed. Pulvillus jointed, rather narrow, not quite so long as the claws.

ABDOMEN rather short and slender.

LARVA and *PUPA* unknown.

Anartia differs from all the preceding genera in the peculiar neuration of the anterior wings, which, moreover, is not absolutely the same in the different species. In Anartia Amatheia, An. Fatima, and An. Lytræa, the first subcostal nervule is wanting; the second, arising at the end of the cell, becomes confounded for a short distance with the costal nervule, then, almost coming in contact with the third subcostal nervule, it is bent obliquely upwards, and becomes atrophied just before the costa. There is a short rudimentary discoidal nervule visible in the cell, opposite the anastomosis of the upper disco-cellular with the first discoidal nervule. In Anartia Iatrophæ the first subcostal nervule anastomoses with the costal nervule, and, after being confounded with it for a considerable distance, separates from it, curves slightly downwards to be united for a time with the second subcostal nervule, then separates from this to be directed towards the costa. The second subcostal nervule, after its separation from the first, just touches the third subcostal, and then is directed obliquely towards the costa. This structure is analogous to what we have seen in some species of Danaïdæ, and to a structure we shall find in some other genera towards the end of this family.

It is of great importance carefully to unravel these intricacies of the neuration of the wings, as they throw a light on the more complicated structure met with in some of the nocturnal Lepidoptera, and help to explain the origin of the areolets, as they have been termed, which are of common occurrence in many families of the Heterocera. It will be found that these areolets are very frequently formed by the anastomosis of two nervules, or of a nervule and nervule. In some of the Notodontidæ, the second subcostal nervule actually turns downwards, crosses the nervule before the origin of its third nervule, and from its subsequent direction might easily be mistaken for the first discoidal nervule. I must not be understood to speak here of the transverse nervules which are sometimes to be met with in the Hepiolidæ and other families; these are the first appearances of the innumerable transverse nervules of the Neuroptera.

This genus is met with throughout the whole tropical portions of America, including the West Indian Islands. From the little known of its habits, it would appear that they much resemble those of the Vanessa. All the species are common in the countries where they occur, and the two species which have the widest Geographical Range are subject to some slight variations in colour, apparently dependent on locality.

ANARTIA.

Section I. *First Subcostal Nervule present.*1. AN. IATROPHÆ *Hübner, Verz. bek. Schmett.* (1816).P. *Iat. Linn. Syst. Nat.* II. 779. n. 172. (1767).*Fab. Ent. Syst.* III. i. 98. n. 301. (1793).*Cram.* t. 209. f. E. F. (1780).Van. *Iat. Godt. Enc. M.* IX. 297. n. 3. (1819).

Honduras, West Indies, Venezuela, Brazil. B. M.

Section II. *First Subcostal Nervule wanting.*

2. AN. LYTRÆA.

Van. *Lytr. Godt. Enc. M.* IX. 299. n. 7. (1819).*Anartia Chrysopelea Hübner, Zutr.* f. 547, 548. (1825).

Jamaica, Haiti.

B. M.

3. AN. FATIMA *Hübner-Geyer, Zutr.* f. 813-4 (1837).P. *Fat. Fab. Ent. Syst.* III. i. 81. n. 252. (1793).*Jones, Icon.* IV. t. 12. f. 1. (ined.)*Donovan, Ins. of India* (1800).Nymph. *Fat. Godt. Enc. M.* IX. 375. n. 83. (1819).

Honduras.

B. M.

4. AN. AMATHEA *Hübner, Verz. bek. Schmett.* (1816).*Doubleday & Hewitson*, t. 24. f. 5. (1847).P. *Am. Linn. Syst. Nat.* II. 779. n. 174. (1767).*Fab. Ent. Syst.* III. i. 128. n. 392. (1793).Van. *Am. Godt. Enc. M.* IX. 298. n. 4. (1819).P. *Amalthea Cram.* 209. f. A. B. (1780).

Mexico, Honduras, Venezuela, Brazil.

B. M.

Genus XXV. CYBDELIS.

CYBDELIS and CYCLOGRAMMA *Doubleday (olim).*

CYBDELIS *Boisd.*

VANESSA *Godt., &c.*

TEMENIS *Hübner.*

HEAD not so wide as the thorax, thickly hairy.

Eyes oval, prominent, covered with hairs.

Labial Palpi projecting considerably beyond the forehead, approximating, ascending, scaly, the second joint with a distinct dorsal tuft. First joint short, curved, less than one third the length of the second; second joint nearly cylindric, very slightly curved, obliquely truncate at the apex, furnished in front with a few setæ; third joint subconical, rounded at the base, broader at its broadest part than the second, of which it is more than half the length.

Maxillæ quite as long as the thorax.

Antennæ about three fourths the length of the body, slender, terminating in a short gradually incrassated club, grooved below.

THORAX moderately stout, oval, hairy, and slightly scaly.

Anterior Wings nearly triangular. Anterior margin but little arched; apex more or less truncate. Outer margin about two thirds the length of the anterior, more or less emarginate. Inner margin nearly straight, rather longer than the outer. Costal nervure much swollen, sometimes for the greater part of its length, terminating beyond the middle of the anterior margin. Subcostal nervure slender at its origin, where it lies close to the costal; its first nervule thrown off just before the end of the cell; the second at about the same distance beyond it; the third at a point opposite to the termination of the first, and about midway between the fourth and the end of the cell, terminating at the apex; the fourth rather nearer to the third than to the outer margin. Upper disco-cellular nervule very short. Middle about two thirds the length of the lower disco-cellular, or of the space between the second discoidal nervule and the third median nervule. Lower disco-cellular nervule either rudimentary or wanting; when present, united to the base of the third median nervule. Median nervure swollen at its origin, its third nervule considerably curved. Submedian nervure sometimes swollen at its origin.

Posterior Wings more or less obovate. Anterior margin considerably produced at the shoulder, thence nearly straight. Outer margin rounded, sometimes slightly produced at the anal angle. Inner margin rather longer than the others, which are nearly equal. Precoastal nervule

simple, curved forward. Discoidal nervure arising from the base of the second median nervule, sometimes bent at a considerable angle soon after its origin. Cell sometimes open, sometimes closed by a rudimentary nervule, terminating at the origin of the third submedian nervule.

Anterior Legs of the male with the femur, tibia, and tarsus nearly equal in length, the first being slightly the longest; all clothed with scales and very delicate long hairs. Tibia slender, broadest at the base, nearly cylindric, slightly curved. Tarsus slender, nearly cylindric, tapering to a point at the apex. *Anterior Legs* of the female scaly. Femur rather longer than the tibia. Tibia cylindric, rather longer than the tarsus, armed internally with one or two scattered spines. Tarsus nearly cylindric. First joint more than equal in length to the rest combined, armed with some scattered spines below, and two stout spines on each side at the apex; second joint little more than one fourth the length of the first, armed below with several spines, and with two on each side at the apex; third joint rather shorter and slenderer, armed below with two or three scattered spines, and with a long spine on each side at the apex; fourth joint shorter than the third, armed with a stout spine on each side at the apex; fifth joint smaller, but rather longer than the fourth, mucronate at the apex.

Middle and Posterior Legs moderately robust; the femora of the former longer than those of the latter, equal in length to the tibia. Tibiæ thinly spiny externally, densely so laterally. Spurs stout. Tarsi with all the joints thickly spiny below and laterally; the first joint, and sometimes one or more of the other joints, with a few spines above. First joint one fourth longer than the rest combined; second not quite one fourth the length of the first; third shorter than the second; fourth one eighth the length of the first; fifth slightly longer than the second. Claws curved, grooved below, moderately large. Paronychæ with the outer lacinia hairy, slender, about equal in length to the claw; the inner lacinia rather shorter, broader, very hairy. Pulvillus about as long as the claw; the second joint broad.

ABDOMEN rather slender, about three fourths the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

From the preceding this genus differs in so many characters that I have hesitated to place them together; yet I can find no other position for it and its allies, without equally breaking the regular succession of the genera. In truth, the more we know of any group, the more difficult it becomes to range the species in a direct series. This may, to a certain extent, be done, if we are confining ourselves to the species from one country, or to those of countries in the same parallels of latitude; but, if we extend our observations to the whole species of a large group, we find them so interwoven in their affinities and analogies, that it becomes impossible to unravel them and draw them into a line.

Cybdelis and the following genera have many of the characters of Vanessa and its allies; at the same time they exhibit a marked resemblance to the Hipparchiæ, in the swollen nervures of their anterior wings.

Cybdelis Mnasyllus presents a character occurring in the previous genus, the contact of the costal nervure and the first subcostal nervule; but there is not the same absolute blending of the nervure and nervule which occurs in Anartia Jatropha.

I had considered that the second section of this genus ought to be looked on as generically distinct; but a more

careful examination of the limited number of specimens at my disposal has led me to doubt whether there is sufficient ground for their separation, and I therefore leave the two groups united, at least until further observations may enable me to arrive at more definite conclusions. In this group the cell of the anterior wings is open, and the outer margin is nearly straight; the lower surface of the posterior wings, which in the first section is marbled with various shades of brown and fuscous, is fawn-coloured, and bears two nearly circular marks before the middle, and two beyond the middle, of the wing; the outer margin is marked with a very zigzag black line. I am only acquainted with two species of this section, the species figured, and one as yet undescribed, for which I would propose the name of *Cy. Bacchis*. This species has the upper surface black, glossed at the base of the anterior wings, and over the whole disc of the posterior, with brilliant blue; the anterior wings have an elongate transverse white patch between the cell and the apex, and a small rounded spot nearer to the apex.

This genus occurs from Mexico to the southern parts of Brazil. Of its habits nothing is recorded.

CYBDELIS.

Section I. *CYBDELIS*.

Discoidal Cell of the Anterior Wings closed; Apex of these wings distinctly truncate; their outer Margin emarginate.

1. *CYB. SOPHRONIA*.

Van. Soph. *Godt. Enc. M.* ix. 823. n. 58, 59a. (1823).

Lucas, Lep. Exot. t. 59. f. 1. (1835).

Brazil.

B. M.

2. *CYB. PHÆSYLA* *Boisd. Spéc. Gén.* t. 9. f. 3. (1836).

Temenis Phæs. Hüb. Zutr. f. 479, 480. (1825).

Brazil, Bolivia.

B. M.

3. *CYB. MNASYLUS* *Doubleday & Hewitson*, t. 27. f. 4. (1848).

Venezuela.

B. M.

Section II. *CYCLOGRAMMA*.

Discoidal Cell of the Anterior Wings open; Apex of these wings not truncate; outer Margin nearly straight.

4. *CYB. Bacchis*.

Bolivia.

B. M.

5. *CYB. PANDAMA*.

Cyclogramma Pand. Doubleday & Hewitson, t. 27. f. 5. (1848).

Mexico.

B. M.

Genus XXVI. MYSCELIA.

MYSCELIA *Boisd. MSS.*

LIBYTHEA, BIBLIS, VANESSA, NYMPHALIS, *Godt.*

SAGARITIS, TEMENIS, EUNICA, CATONEPHELE, *Hüb.*

CYBDELIS, CRENIS, &c. *Boisd*

HEAD considerably narrower than the thorax, densely hairy.

Eyes rather small, prominent, oval, smooth.

Labial Palpi projecting considerably beyond the forehead, approximating, ascending; the third joint pointing directly forward; all the joints scaly; the second with a dorsal tuft. First joint short, much curved, about one third the length of the second; second joint nearly cylindric, rounded at the apex, very slightly curved; third joint about half the length of the second, subconical, the base rounded.

Maxillæ rather slender, longer than the thorax.

Antennæ about three fourths the length of the body, rather slender, terminating in a gradually incrassated compressed club, marked below with two distinct grooves.

THORAX not robust, oval, scaly, and hairy.

Anterior Wings subtriangular; the apex more or less truncate. Anterior margin moderately curved. Outer margin shorter than the inner, more or less emarginate. Inner margin about three fourths the length of the outer, nearly straight. Costal nervure more or less swollen at the base, extending to the middle of the costa, curved towards its termination. Subcostal nervure very slender at its origin, lying close to the costal; its first nervule, at its origin, distant from the upper disco-cellular about one fourth the length of the cell; its second arising about midway between the first and the end of the cell; its third at about one third of the distance between the cell and the apex of the wing, terminating at the apex; its fourth midway between the third and the outer margin. Cell less than half the length of the wing. Upper disco-cellular nervule very short. Middle disco-cellular nervule rather short. Lower disco-cellular nervule slender, sometimes nearly atrophied, united to the third median nervule near to its origin. Median nervure more or less swollen at its origin; its third nervule, mostly, considerably curved at its origin.

Posterior Wings more or less obovate. Anterior margin mostly much produced at the shoulder, thence nearly straight. Outer margin rounded, slightly sinuate dentate, or sinuate and produced into a tooth at the end of the third median nervule, sometimes slightly produced at the anal angle. Precostal nervule simple, curved forward. Discoidal nervure arising from the second

subcostal soon after its origin. Cell open, or closed by a merely rudimentary disco-cellular nervule.

Anterior Legs of the male slender, scaly, and clothed with delicate hairs. Femur and tibia about of equal length. Tarsus subcylindric, more or less tapering towards the apex, which is pointed.

Anterior Legs of the female more robust, scaly. Femur rather longer than the tibia. Tarsus about as long as the tibia, moderately stout, scaly. First joint more than equal to the rest combined, cylindric, more or less spiny all round, armed at the apex, as are the three following joints, with a stout spine on each side; second joint about one third longer than the third; fourth joint shorter and narrower than the third; fifth joint as long as, or longer than, the fourth, more or less mucronate at the apex.

Middle and Posterior Legs moderately robust. Femora of the former longer than, of the latter equal to, the tibiae. Tibiae rather longer than the tarsus, slightly spiny without, more thickly and irregularly within: spurs rather short. Tarsus with the first joint spiny above; all the joints spiny laterally and below; the spines below arranged nearly in a double series. First joint longer than the rest combined; second joint one fourth the length of the first; third and fourth progressively shorter; fifth joint longer than the first. Claws curved, grooved below. Paronychial with the outer lacinia equal in length to the claw, slender; the inner broader, shorter, very hairy. Pulvillus about as long as the claw, jointed; the second joint often very broad.

ABDOMEN about two thirds the length of the inner margin of the posterior wings, rather slender.

LARVA and *PUPA* unknown.

Myscelia differs from the preceding genus in two very striking characters; its naked eyes, and the different position of the second subcostal nervule of the anterior wings. These, alone, readily distinguish the two genera, without the necessity of having recourse to more minute differences.

There is considerable variety of form and colouring in the different species of this genus, and, perhaps, it may be necessary at some future time to subdivide it; but, in truth, it is not easy to find even sectional characters, beyond the trivial ones of the more or less angular outline of the wings, or the differences in colour.

In *Myscelia* Orsis, *Mys. Cyaniris*, *Mys. Antholia*, and their allies, the anterior wings are almost falcate; the shoulder of the posterior wings is much produced, and in the first-mentioned species these wings have a short tail-like prolongation at the third median nervule. In all these species some shade of blue is the predominant colour of the upper surface of the wings; in the males of *Myscelia* it is a rich deep blue, in *Mys. Cyaniris* and *Mys. Antholia* it is a bright metallic blue, in other species the blue tends more or less to slate colour. Most of these species have the wings marked longitudinally with white; and this is the case with the females of *Mys. Orsis*, in which species the male is almost of a uniform colour. *Myscelia Antholia* is remarkable for its more elongate palpi and its short antennae, showing a tendency to the genus *Libythea*.

The next group is distinguished by its yellow markings, in some species answering completely to the white markings of the preceding group. These have the anterior wings much resembling those of the first group; the posterior without so projecting a shoulder.

The third group has the shoulder of the posterior wings much produced; the anterior wings sometimes approaching to the form of the preceding group, sometimes triangular, the outer margin being straight. They occasionally have the anal angle of the posterior wings produced. The prevailing colour of the upper surface of the wings in this group is fuscous or greyish brown, more or less glossed with blue, sometimes brilliantly so; the apex of the anterior wings generally offering some white spots. One species, *Myscelia Margarita*, is nearly white, with the apex and outer margin of the wings fuscous. In some species of this group, the anterior tarsi of the males are set with a few slender spines.

There is a fourth group which Dr. Boisduval has considered a distinct genus, but which, from the limited observation I can bestow on it, does not appear to possess any characters requiring us to separate it. Unlike its congeners, this group is found in the Old World, but appears to be confined to the southern parts of Africa, and the Island of Madagascar. Two species only have been described, but five exist in Dr. Boisduval's collection. In form they closely resemble the species of the preceding group; their general colour above is a tawny brown, with the apex of the anterior wings more or less fuscous.

Another group has the wings much more rounded, and the anterior especially shorter in proportion to their breadth. I am not sure that these ought not to constitute a new genus, but having only seen two or three specimens, and these wanting the legs, at least in greater part, I have not the materials for forming a correct decision. I believe the tibiae are not spiny.

I am not aware that any species of this genus have been supposed to make a noise resembling that produced by *Ageronia Feronia*, but I have observed in an undescribed species allied to *Myscelia Cyaniris* a structure exactly the same as that which I have already described under the genus *Ageronia*.

This genus is found in Mexico, the West Indian Islands, and the whole of the tropical portion of South America east of the Andes. I have never seen specimens from the western side of these mountains, though, probably, the genus occurs in Peru. In the Old World, as is remarked above, it is confined to the southern portions of Africa, and the Island of Madagascar.

MYSCELIA.

Section I. *MYSCELIA*.

Anterior Wings subfalcate. Shoulder of the Posterior Wings much produced.

1. *MYSC. ORSIS* Doubleday, *List of Lep. Ins. Brit. Mus.* 88. (1845).
 δ P. Ors. *Drury*, III. t. 16. f. 3. (1782).
Sagaritis Or. *Hübner. Samml. Exot. Schmett.* (1816-27).
 δ P. Oisis *Fab. Ent. Syst.* III. i. 124. n. 378. (1793).
 δ Nymph. Oi. *Godt. Enc. M.* IX. 381. n. 102. (1819).
 φ P. Blandina *Fab. Ent. Syst.* III. i. 129. n. 397. (1793).
Donovan, Ins. of India (1800-3).
Brazil. B. M.
2. *MYSC. CYANIRIS* Doubleday & Hewitson, t. 27. f. 2. (1848).
Honduras. B. M.
3. *MYSC. ETHUSA*.
Cybdelis Eth. *Boisd. in Cuv. Règne Anim.* edit. Crochard, t. 138. f. 3. (1836-46).
Mexico. B. M.
4. *MYSC. ANTHOLIA*.
Biblis Anth. *Godt. Enc. M.* IX. 824. n. 5-6. (1823).
Haïti. B. M.

Section II. *CATONEPHELE*.

Anterior Wings more or less subfalcate. Posterior Wings with the shoulder scarcely produced.

5. *MYSC. MICALIA* Doubleday, *List of Lep. Ins. Brit. Mus.* 89. (1845).
P. Mic. *Cram.* t. 108. f. C. D. (1777).
Fab. Sp. Ins. II. 103. n. 453. (1781).

Vanessa Mic. *Godt. Enc. M.* IX. 315. n. 44. (1819).

Nymph. Mic. *Godt. Enc. M.* IX. 415. n. 205. (1819).

Brazil. B. M.

6. *MYSC. MEDEA*.

P. Med. *Fab. Syst. Ent.* 508. n. 273. (1775).

Fab. Ent. Syst. III. i. 129. n. 397. (1793).

Nymph. Med. *Godt. Enc. M.* IX. 415. n. 204. (1819).

P. Chione *Cram.* t. 90. f. E. F. (1775).

Catonephele Ch. *Hübner. Verz. bek. Schmett.* 40. (1816).

Guiana, Brazil. B. M.

7. *MYSC. CHROMIS* Doubleday & Hewitson, t. 27. f. 1. (1848).

Honduras. B. M.

Section III. *EUNICA*.

Anterior Wings trigonate; the Apex sometimes truncate. Posterior Wings with the shoulder produced.

8. *MYSC. SYDONIA*.

Nymph. Syd. *Godt. Enc. M.* IX. 416. n. 207. (1816).

Cybdelis Syd. Doubleday, *List of Lep. Ins. Brit. Mus.* 89. (1845).

Brazil. B. M.

9. *MYSC. MYGDONIA*.

Nymph. Myg. *Godt. Enc. M.* IX. 416. n. 208. (1819).

Cybd. Myg. Doubleday, *List of Lep. Ins. Brit. Mus.* 89. (1845).

Brazil. B. M.

10. MYSC. CUVIERII.
Libythea Cuv. *Godt. Enc. M.* ix. 171. n. 6.
(1819).
Lucas, *Pap. Exot.* t. 61. f. 2. (1835).
Eunica Hyperipte Hüb. *Samml. Exot. Schmett.*
(1806-26).
Jamaica. B. M.
11. MYSC. VOLUMNA.
Nymph. Vol. *Godt. Enc. M.* ix. 416. n. 206.
(1819).
Brazil. B. M.
12. MYSC. ALPAIS.
Nymph. Alp. *Godt. Enc. M.* ix. 416. n. 209.
(1819).
Brazil. B. M.
13. MYSC. MARSOLIA.
Nymph. Mars. *Godt. Ent. M.* ix. 418. n. 214.
(1819).
Brazil.
14. MYSC. MACRIS.
Nymph. Mac. *Godt. Enc. M.* ix. 417. n. 212.
(1819).
Brazil. B. M.
15. MYSC. MAIA.
P. Ma. *Fab. Syst. Ent.* 512. 295. (1775).
Fab. Ent. Syst. iii. i. 138. n. 426. (1793).
Brazil. B. M.
16. MYSC. ANNA.
P. Anna *Cram. t.* 218. f. A. B. (1780).
Cybd. Anna *Doubleday, List of Lep. Ins. Brit.*
Mus. 89. (1845).
Eunica Anna Hüb. *Verz. bek. Schmett.* 61.
(1816).
Colombia, Guiana. B. M.
17. MYSC. MONIMA.
P. Mon. *Cram. t.* 387. f. F. G. (1782).
Cybd. Mon. *Doubleday, List of Lep. Ins. Brit.*
Mus. 89. (1845).
Eunica Mon. Hüb. *Verz. bek. Schmett.* 61.
(1816).
Nymph. Myrto *Godt. Enc. M.* ix. 418. n. 213.
(1819).
Brazil. B. M.
18. MYSC. MARGARITA.
Nymph. Marg. *Godt. Enc. M.* ix. 406. n. 184.
(1819).

Cybd. Mag. *Doubleday, List of Lep. Ins. Brit.*
Mus. 89. (1845).

Brazil.

B. M.

Section IV. CRENIS.

*Anterior Wings rather elongated, triangular. Posterior Wings
produced at the shoulder. Colour more or less fulvous.*

19. MYSC. MADAGASCARIENSIS.

Crenis Mad. *Boisd. Faune Ent. de Madag.* 48.
(1834).

Madagascar.

B. M.

20. MYSC. NATALENSIS.

Crenis Nat. *Boisd. in Delegorgue, Voy. dans
l'Afr. Austr.* ii. 592. (1847).

Port Natal.

B. M.

Section V. AMYCLA.

*All the Wings more or less rounded; outer Margin of the Ante-
rior Wings distinctly so.*

21. MYSC. TAURIGONE.

Eunice Tau. *Hüb.-Geyer, Zutr. fig.* 783-4.
(1832).

Brazil.

B. M.

22. MYSC. ? ORPHISE.

P. Orph. *Cram. t.* 42. f. E. F. (1775).
Nymph. Orph. *Godt. Enc. M.* ix. 417. n. 211.
(1819).

Cyb. Orph. *Doubleday, List of Lep. Ins. Brit.*
Mus. 89. (1845).

Brazil, Guiana.

B. M.

23. MYSC. ? TRIPHOSA.

Eunice Try. *Hüb.-Geyer, Zutr. fig.* 935-6.
(1837).

Surinam.

24. MYSC. ? AMYCLA.

Vanessa Am. *Godt. Enc. M.* ix. 823. n. 59-60.
(1823).

Brazil.

25. MYSC. ? CÆLINA.

Vanessa Cæl. *Godt. Enc. M.* ix. 822. n. 58-9.
(1829).

Brazil.

Note.—The last two species, perhaps, belong to the pre-
ceding genus; but I have not seen them, and, consequently, can-
not decide.

Genus XXVII. **EPIPHILE.***EPIPHILE* *Boisd. MSS.**TEMENIS* *Hübner.**NYMPHALIS* *Godt.*

HEAD moderately broad, very hairy.

Eyes round, rather prominent, densely clothed with hairs.

Maxillæ longer than the thorax, slender.

Labial Palpi projecting more than half their length beyond the head, porrect, moderately ascending, scaly; the scales mostly long, hair-like, appressed, those on the back of the second joint longer and less appressed than the rest. Basal joint very short, its length but little exceeding its breadth, obliquely truncate at the apex; second joint more than three times the length of the first, curved slightly at the base, thickening towards the apex, which is truncate; third joint two thirds the length of the second, elongate, subconic, the base rounded.

Antennæ about three fourths the length of the body, grooved below, terminating in a short spatulate club.

THORAX oval, moderately stout, hairy.

Anterior Wings trigonate, the apex truncate. Anterior margin curved. Outer margin about two thirds the length of the anterior margin, emarginate about the middle, produced before the middle, so as to cause the apex of the wing to be broadly truncate. Inner margin about three fourths the length of the outer, nearly straight. Costal nervure not swollen, but rather stout at its origin, extending to the middle of the costa. Subcostal nervure slender, lying close to the costal; its first nervule, at its origin, distant from the upper disco-cellular about one fourth the length; its second arising about midway between the first and the end of the cell; the third at about one third of the distance between the end of the cell and the apex of the wing, where it terminates; the fourth arising midway between the origin of the third and the outer margin. Cell less than half the length of the wing. Upper disco-cellular nervule very short. Middle disco-cellular nervule rather short. Lower disco-cellular nervule curved, united to the third median nervule at its origin. Median nervure rather stout, but not swollen at its base; its third nervule moderately curved.

Posterior Wings more or less obovate. Anterior margin produced at the shoulder, thence nearly straight or very slightly emarginate. Outer margin a little shorter than the anterior, rounded, more or less sinuate, sometimes very slightly produced at the anal angle. Inner margin longer than either of the others. Precostal nervule simple, curved forwards. Discoidal nervure

arising from the second subcostal nervule soon after its origin. Cell closed by a slender disco-cellular nervule.

Anterior Legs of the male rather large, densely clothed with very long hairs. Femur rather longer than the tibia. Tibia subcylindric, simple. Tarsus shorter than the tibia, cylindric, rounded at both extremities.

Middle and Posterior Legs moderately stout. Femora of the middle pair longer than the posterior pair, about equal in length to the tibiae. Tibiae spiny internally; the spines arranged in two series, and armed also externo-laterally with a few spines. Spurs rather stout. Tarsi about equal in length to the tibiae; all the joints spiny laterally, and, except the fifth joint, below; the spines of the lower surface arranged in two regular series. First joint about equal to, or a little longer than, the rest combined; second joint about one third the length of the first, and rather shorter than the fifth; third joint rather more than half the length of the second, and about twice as long as the fourth. Claws curved, grooved below. Outer paronychialia as long as the claws, narrow, blunt at the apex, hairy. Inner paronychialia very short, broad, velvety. Pulvillus two-jointed, nearly equal in length to the claw; the last joint very broad.

ABDOMEN rather slender, about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Epiphile partakes of the characters of the two preceding genera, having the hairy eyes of the one, and the neuration of the wings of the other. It differs from both in its densely hairy anterior feet, which, in one sex at least, resemble those of *Vanessa*. Whether the anterior feet of the female differ from those of the male I do not know. Those of the reputed females do not differ from those of the males to which they are supposed to belong. In no species have I found any individuals offering the structure of the anterior tarsus commonly found in the females of this family. It may be that all the specimens I have examined are males, or the genus may offer the extraordinary anomaly of both sexes agreeing in the form of the anterior tarsus.

The species of this genus are amongst the most beautiful of the *Nymphalidae*. The upper surface, in nearly all the species, is varied with fuscous black and fulvous orange, disposed either in broad patches or in transverse bands, the fuscous colour often with brilliant metallic blue or rich purple reflexions. Certain individuals wanting the metallic hues, and offering some few peculiar characters, have been supposed to be the females of other individuals, to which they seem to bear a very close relation; but, as I have already remarked, these do not present the usual structure of the anterior tarsus found in the females of this family, and without the dissection of recent specimens it is not easy to determine their sex. The lower surface of the posterior wings is mostly marbled with brown, and offers, upon the anterior margin near the middle, a subtriangular white spot.

This genus is found in all the tropical parts of the New World, but seems to be rather more abundant in the mountainous, or at least in the elevated, districts. Several undescribed species exist in collections.

EPIPHILE.

- | | |
|--|--|
| <p>1. EP. OREA <i>E. Doubleday, List of Lep. Ins. Brit. Mus.</i> 90. (1845).
 <i>Temenis Or. Hübn. Samml. Exot. Schmett.</i> (1806-27).
 Brazil. B. M.</p> | <p><i>Vanessa Chry. Godt. Enc. M.</i> ix. 822. n. 56—57. (1823).
 Peru, Venezuela. B. M.</p> |
| <p>2 EP. CHRYSITES.
 <i>Nymphalis Chry. Latr. in Humb. et Bonpl. Obs. d'Anat. Comp.</i> t. 25. f. 1, 2. (1811-23).</p> | <p>3. EP. LAMPETHUSA <i>Doubleday & Hewitson</i>, t. 27. f. 3. (1848).
 Bolivia. B. M.</p> <p>4. EP.? LAOTHOE.
 <i>P. Laoth. Cram.</i> t. 132. f. A. B. (1777).
 <i>An Mysceliæ Ariadnes var.?</i>
 Surinam.</p> |

NOTE.

Two insects which, in the "List of Lepidopterous Insects in the British Museum," are placed in this genus, belong to the preceding, though in their colouring they approach the present genus. Their smooth eyes and the less hairy anterior legs of the males distinguish them readily. To these must also be added the *Nymphalis flavilla* of Godart, which differs slightly from the other species of *Myscelia*, in having the third joint of the palpi shorter and more acute. Closely allied to this is a species as yet undescribed, very common in Venezuela, whilst the true *Nymph. flavilla* *Godt.* seems to be confined to Brazil. These two species form a separate section in the genus *Myscelia*, preceding *Mys. Natalensis*, and its allies; the two previously alluded to belong to the third section. The Venezuelan species has the transverse flexuous lines of the lower surface rather differently placed, and they are bordered by a plumbaginous line, with somewhat steel-blue reflexions.

I must here add that the LARVA of *Myscelia Ariadne* is figured by Stoll. It is green, with four transverse black bands; the head blue, and the feet yellow. The head bears two long spines, set with three whorls of short, but stout, spines. Each segment, except the last, has a pair of black verticillate spines, of which those of the metathoracic and penultimate segments are much the thickest. The last segment bears two stout yellow spines fringed at the apex.

The PUPA is elongate, smooth; the head bifid. It is of a green colour, with some slight red markings according to the figure, black according to the text.

Stoll states that the larva feeds on the lemon trees, and that the pupa state continues about ten days. The larva shows much affinity to those of the genera *Epicalia*, *Pyrrhagya*, and *Callizona*. This induces me to think that a more natural order might be arrived at by placing *Epiphile* nearer to the true *Vanessæ*, with which it has so many characters in common, and reversing the places of *Cybdelis* and *Myscelia*. Perhaps, when we know more of the genus *Anartia*, it will be found expedient to remove it from its present position, and place it near to *Amphirene*. Nothing but a thorough knowledge of the metamorphosis will ever enable to place the genera of *Lepidoptera* in a natural series.

1. MYSC. ARIADNE.

- P. Ar. Cram.* t. 180. f. E. F. (1777).
P. Merione Fab. Ent. Syst. iii. i. 126. n. 382. (1793).
? Temenis Mer. Hübn. Verz. bek. Schmett. 34. (1816).
P. Liberia Fab. Ent. Syst. iii. i. 135. n. 418. (1793).
Nymph. Lib. Godt. Enc. M. ix. 375. n. 84. (1819).
Epiph. Lib. E. Doubleday, List of Lep. Ins. Brit. Mus. 90. (1845).
? P. Agatha Fab. Ent. Syst. iii. i. 134. n. 414. (1793).
 Brazil. B. M.

2. MYSC. MERIONE.

- Temenis Mer. Hübn. Samml. Exot. Schmett.* (1816-27).
Epiph. Mer. E. Doubleday, List of Lep. Ins. Brit. Mus. 90. (1845).
 Brazil. B. M.

3. MYSC. FLAVILLA.

- Nymphalis Flav. Godt. Enc. M.* ix. 406. n. 185. (1816).
Nica Flav. Hübn. Samml. Exot. Schmett. (1816-27).
 Brazil. B. M.

4. MYSC. CANTHARA.

- Venezuela. B. M.

Genus XXVIII. ECTIMA.

Nymphalis Godt.

Ageronia Geyer.

Cybdelis E. Doubleday (olim).

HEAD rather small, hairy.

Eyes oval, very prominent, smooth.

Maxillæ slender, elongate, fully two thirds the length of the body.

Labial Palpi rather slender, elongate, projecting considerably beyond the forehead, scaly. First joint very short, nearly reniform; second joint curved, truncate at the apex, scarcely varying in thickness throughout, nearly four times the length of the first; third joint about one third the length of the second, cylindric, rounded at the apex.

Antennæ more than three fourths the length of the body, slender, terminating in a short, rather slender, fusiform club.

THORAX rather slender, oval, scaly and hairy.

Anterior Wings trigonate; all the margins nearly straight; the anterior slightly rounded towards the apex, one third longer than the outer margin, which latter is a little shorter than the inner margin. Costal nervure slightly swollen at its origin, terminating about the middle of the anterior margin. Subcostal nervure slender, throwing off its first nervule a little before the end of the cell; its second at rather more than the same distance beyond it; the third (which terminates at the apex) nearer to the base than is the termination of the first subcostal nervule; the fourth midway between the third and the apex. Upper disco-cellular nervule very short. Middle less than half the length of the lower disco cellular nervule. Lower disco-cellular nervule atrophied, except at its two extremities, united to the third median nervule at its origin. Median nervure slightly swollen at its origin; its third nervule but little curved. Submedian nervure swollen at its origin for a short distance.

Posterior Wings somewhat quadrangular, the anterior margin being nearly straight; outer obtusely angular; the angle being at the termination of the third median nervule. Inner margin about as long as the anterior. Preccostal nervule simple, curved forwards. Discoidal nervule arising from the second subcostal nervule shortly after its separation from the first, bent at its origin. Third median nervule scarcely curved.

Anterior Legs of the male slender, clothed with scales, and, not densely, with fine hairs. Femur nearly cylindrical. Tibia nearly cylindrical, slightly curved, three fourths the length of the femur. Tarsus two thirds the length of the tibia, subcylindrical, rather tapering towards the

apex, which is pointed, showing faint indications of two articulations beyond the middle. *Anterior Legs* of the female rather stouter than those of the male, scaly. Femur nearly cylindric, rather thickened towards the base, longer than the tibia. Tibia subcylindric, curved. Tarsus two thirds the length of the tibia, five-jointed. First joint nearly cylindric, unarmed, more than double the length of the rest combined; second joint about one sixth the length of the first, armed at the apex, as are the two following joints, with a long stout spine on each side; third joint shorter than the second, transverse; fourth joint transverse, shorter than the third, obliquely truncate, so that the lower surface is but about half the width of the upper; fifth joint as long, but scarcely so broad, as the second, rounded, armed with some rather strong setæ.

Middle and Posterior Legs rather long; the femora of the former longer than, of the latter equal in length to, the tibiæ. Tibiæ of the middle pair spiny internally; the spines placed in two rows; spurs stout. Tarsi spiny below and laterally; the spines rather long, arranged in four series, except on the fifth joint which has only two series. First joint four times the length of the second; third joint rather more; fourth joint rather less than half the length of the second; fifth joint equal to the second. Tibiæ of the posterior pair smooth, cylindric, unarmed, except by the two ordinary spurs, which are rather shorter than usual. Tarsi longer than the tibiæ, cylindric, the lower surface not flattened, spiny laterally and below; the spines somewhat arranged in four series; the fifth joint less spiny. First joint three times the length of the second; third joint about half the length of the second, and double that of the fourth; fifth joint two thirds the length of the second. Claws, in both pairs, curved, grooved, rather slender. Outer paronychialia very slender, linear, as long as the claw. Inner paronychialia short, broad. Pulvillus two-jointed, shorter than the claws.

ABDOMEN slender, about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Ectima has the smooth eyes of *Myscelia*, and the neuration of *Cybdelis*. It differs from both in its antennæ and in the dissimilar structure of the middle and posterior tibiæ and tarsi.

Only one species of the genus is as yet described. This is an insect of rather small size, of a fuscous ash colour above, with some blackish lines; the anterior wings crossed by a broad white band, and the posterior wings marked with some ocelli near the margin. The lower surface inclines to ochreous. Another species, of which an imperfect specimen exists in the British Museum, differing in the position and form of the band, and having a blue gloss on the posterior wings above, will be figured in one of the supplementary plates.

We know nothing of the habits or of the earlier stages of these insects, which seem to be nearly confined to Brazil and Guiana, and the north of South America.

ECTIMA.

ECT. LIRIA.

- P. Lir. *Fab. Ent. Syst.* III. 239. n. 747. (1793).
 Nymphalis Lirissa *Godt. Enc. M.* IX. 406. n. 186. (1819).
 Ageronia Lir. *Geyer in Hübner, Zutr.* f. 953, 954. (1837).
 Guiana, Brazil. B. M.

Genus XXIX. **PELIA.**NYMPHALIS *Godt.*

HEAD moderately broad, hairy.

Eyes oval, not very prominent, smooth.

Maxillæ slender, longer than the thorax.

Labial Palpi porrect, ascending, projecting considerably beyond the head, scaly; the scales short, appressed, except in front of the first, and at the back of the second, joint towards its apex, where they are long and loose. First joint short, rounded at the apex, clothed with long scales; second joint more than three times the length of the first, slightly curved, incrassated beyond the middle, but diminishing again towards the apex, which is truncate, clothed with appressed scales, and furnished with a slight dorsal tuft; third joint clothed with short appressed scales, slenderer than the second, nearly one half its length, almost fusiform; the base rounded; the apex acute.

Antennæ about three fourths the length of the body, slender, terminating in a short, gradual, slender, obtuse club.

THORAX rather stout, oval, hairy.

Anterior Wings trigonate. Anterior margin but little curved. Outer margin nearly straight, slightly crenulate, less than two thirds the length of the anterior margin, and about three fourths that of the inner margin. Inner margin nearly straight. Costal nervure stout, rather swollen at the base, ending about the middle of the anterior margin. Subcostal nervure slender, only four-branched; its first nervule arising just before the end of the cell, and extending very nearly to the apex of the wing; its second nervule arising about midway between the origin of the first and the apex, and terminating at the apex; its third arising nearer to the apex than to the origin of the second, terminating on the outer margin below the apex. Upper disco-cellular nervule wanting. Middle disco-cellular nervule short, angled. Lower disco-cellular nervule slender, fully double the length of the middle disco-cellular nervule, curved inwards, united to the third median nervule near to its origin. Median nervure slightly swollen at the base; its third nervule not much curved.

Posterior Wings obovate. Outer margin slightly crenate. Precostal nervure bifid; the inner branch short, straight; the outer curved, nearly reaching the anterior margin. Discoidal nervure separating from the second subcostal nervule at some distance from its base, considerably curved at its origin. Cell closed by a slender disco-cellular nervule, which arises from the discoidal nervure a little way from its origin, and terminates at the separation of the second and third median nervules.

Anterior Legs of the male clothed with scales, and, especially the tarsus, with long delicate hairs. Femur nearly cylindric. Tibia scarcely so long as the femur, cylindric, slightly curved, truncate obliquely at the apex. Tarsus about the same length as the tibia, subcylindric, pointed. *Anterior Legs* of the female longer than those of the male, slender, scaly. Femur cylindric. Tibia cylindric, slightly curved, truncate at the apex, scarcely so long as the femur. Tarsus shorter than the tibia. First joint one half longer than the rest combined, nearly cylindric, but rather thickened towards the apex, where it is armed, as are the three following joints, with two spines; second, third, and fourth joints transverse, nearly equal; fifth joint rather longer than the preceding, tapering towards the apex, which is mucronate; its sides furnished with two tufts of setæ.

Middle and Posterior Legs rather short; the femora of the former longer than, of the latter equal to, the tibiæ. Tibiæ of the middle pair armed with a few scattered spines, of the posterior pair with two interno-lateral series of spines very wide apart; the spurs short. Tarsi of the middle pair shorter than the tibiæ of the posterior pair, equal to the tibiæ; all the joints, except the fifth, very spiny below; the spines forming four series; the two lateral series very regular, the two inner ones less so. First joint rather longer than the rest combined; second joint scarcely longer than the third, about one third the length of the first; fourth joint about two thirds the length of the second; fifth joint about the length of the second, with only a few slight spines below towards the sides, its apex produced above. Claws curved, grooved below. Outer and inner laciniae of the paronychiae scarcely differing in length, strap-shaped, hairy. Pulvillus nearly as long as the claw; the second joint broad.

ABDOMEN rather slender, not exceeding two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

This genus, like the last, consists, at present, of but one described species; an insignificant insect in appearance, of an almost uniform dark brown above, and of a more ochreous brown below, with a few ferruginous brown markings: but in structure it is very interesting, and, to a certain extent, anomalous. From all the neighbouring genera it differs in the neururation of the anterior wings, one of the subcostal nervules, probably the first, being wanting; a structure more common in the group composing the families having braced, than in those which have suspended, pupæ.

Though in most points of structure this insect resembles the genera near which I have placed it, yet I am by no means sure that, if ever the larva be known, it will not be necessary very materially to change its position. In the mean time I have placed it near to those genera with which it has most points of resemblance, though it rather interrupts the natural order of succession.

This insect appears to be peculiar to Guiana and the valley of the Amazons.

PELIA.

PEL. LAMIS *Doubleday & Hewitson*, t. 30. f. 3. (1849).

P. La. *Cram.* t. 238 f. E. (1782).

Nymphalis Laphria *Godt. Enc. M.* ix. 427. n. 244. (1819).

N. Brazil, Guiana.

B. M.

Genus XXX. HÆMATERA.

Nymphalis Godt.

Callidula Hübn.

HEAD moderately wide, hairy.

Eyes oval, rather prominent, smooth.

Maxillæ rather slender, longer than the thorax.

Labial Palpi porrect, ascending, clothed with rather long hair-like scales, not appressed; the second joint with a loose dorsal tuft. First joint subcylindric, curved; second joint less than three times the length of the first, subcylindric, rather thickened before the apex, which is obliquely truncate; third joint about equal in length to the first, elongate, ob-pyriform.

Antennæ about two thirds the length of the body, slender, terminating in a short spatulate club, grooved below.

THORAX oval, scaly, and hairy.

Anterior Wings trigonate. Anterior margin considerably rounded. Outer margin slightly rounded, scarcely more than half the length of the anterior. Inner margin fully three fourths the length of the anterior, slightly emarginate. Costal nervure very stout at its base, terminating before the middle of the anterior margin, just touching the first subcostal nervule. Subcostal nervure slender; its first nervule thrown off opposite to the upper disco-cellular nervule; its second at a point nearly opposite to the end of the costal nervure; its third, which terminates at some distance before the apex, at a point as distant from the first as that is from the base of the wing; its fourth, which is very short, and which terminates before the apex, at a point nearly opposite to the end of the third; the fifth nervule terminating just below the apex. Cell open. Upper disco-cellular nervule very short, directed immediately forward. Middle disco-cellular nervule very short, about equal in length to the upper. Median nervure slightly swollen at the base; its third nervule gradually curved.

Posterior Wings obovate, the shoulder slightly produced. Anterior margin nearly straight, except at the base and apex. Precostal nervule simple, curved forward, long. Costal nervure diverging rather widely from the subcostal. Discoidal nervure separating from the second subcostal at a short distance from its origin. Cell open. Third median nervule but little curved.

Anterior Legs of the male slender, rather sparingly clothed with scales and slender hairs. Femur about equal in length to the tibia, slightly stouter towards the apex. Tibia nearly cylindric, a little thickened towards the apex, which is obliquely truncate. Tarsus cylindric; the apex obtusely pointed.

Middle and Posterior Legs rather slender. Femora of the middle pair longer than, of the posterior

pair about equal in length to, the tibiæ. Tibiæ with two interno-lateral and an external series of spines; the spines rather wide apart. Tarsi scarcely shorter than the tibiæ, very spiny below, except the fifth joint, which has few spines; the spines somewhat in four series. First joint more than equal in length to the rest combined, about three times the length of the second; third and fourth joints progressively shorter than the second; fifth joint equal to the second, produced above at the apex. Claws short, curved, grooved below. Paronychia with the outer lacinia not quite so long as the claw, broad at the base, then strap-shaped, obtuse. Inner lacinia rather shorter, rounded, fringed with long hairs. Pulvillus jointed, not quite so long as the claw; its second joint broad.

ABDOMEN very slender, about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

The two beautiful little butterflies which compose this genus are readily known by their delicate structure, and the large blood-coloured spots on the black ground colour of their upper wings, this black colour being more or less brilliantly glossed with blue; and by the beautifully mottled colouring of the lower surface of the posterior wings. They are nearly allied to the three following genera, but differ from them all, in having the eyes smooth, and in the neururation of the anterior wings. In the latter character, especially in the position of the termination of the fourth and fifth subcostal nervules, they differ also from *Cybdelis* and its allies, to which genera they show a great affinity. I am unable to give the form of the anterior legs of the female, not having yet been able to find a female which had not lost them. The carelessness of collectors in regard to the feet of Lepidoptera is very vexatious to the scientific entomologist.

I have little doubt that the *Hesperia Pyramis* of Fabricius is the same insect as the *Papilio Pyramus* of Drury, though by some accident he has omitted, in the *Entomologia Systematica*, to refer to Drury's or to Stoll's figure.

This species is apparently confined to Brazil and Guiana, whilst the species figured under the name of *Hæmaterata Thysbe* is very common in Venezuela and New Granada. The lower surface of the second species differs but little from that of the older known one, but its upper surface is so abundantly different, that there can be no possibility of confounding the two species.

HÆMATERA.

1. HÆ. PYRAMUS.

- P. Pyr. Drury*, III. t. 23. f. 3, 4. (1783).
Stoll, t. 32. f. C. C. a. (1790).
Nymphalis Pyr. Godt. Enc. M. ix. 422. n. 227.
 (1819).
Callidula Pyrame Hübn. Verz. bek. Schmett. 66.
 (1816).

? *Hesp. Pyramis Fab. Ent. Syst.* III. i. 323. n. 223.
 (1793).

Brazil. B. M.

2. HÆ. THYSBE *Doubleday & Hewitson*, t. 30. f. 4. (1849).
 Venezuela, New Granada. B. M.

Genus XXXI. EUBAGIS.

EUBAGIS *Boisd. Voy. de l'Astr. t. 3. f. 3. (1832—35).*

NYMPHALIS, ERYCINA, *Godt.*

DYNAMINE, SIRONIA, THYSANOTIS, *Hübner.*

HEAD moderately broad, hairy.

Eyes oval, rather prominent, hairy.

Maxillæ rather slender, about two thirds the length of the body.

Labial Palpi ascending, clothed with scales and hairs. First joint short, curved, its length about double its breadth; second joint four times the length of the first, narrowed a little towards the base, tapering towards the apex, which is rather narrower than the base of the third joint; third joint rather longer than the first, elongate-conic, nearly acicular, the base rounded.

Antennæ rather slender, grooved below, terminating in a gradually thickened obtuse club.

THORAX rather slender, oval, clothed with scales and hairs.

Anterior Wings trigonate. Anterior margin nearly straight, except at the shoulder and apex, where it is rounded. Outer margin slightly rounded, about two thirds the length of the anterior. Inner margin slightly emarginate, somewhat longer than the outer. Costal nervure stout, terminating about the middle of the anterior margin. Subcostal nervure slender; its first and second nervule thrown off near together, shortly before the end of the cell, the first almost touching, or actually anastomosing with, the costal nervure not far from its termination, the nervure and nervule being bent in opposite directions; its third nervule thrown off at rather less than half the distance from the cell to the apex; the fourth much nearer to the origin of the third than to the apex, the nervule terminating at the apex. Upper and middle disco-cellular nervules very short. Lower disco-cellular nervule either entirely wanting or nearly atrophied, four or five times the length of the middle one, curved inwards, united to the origin of the third median nervule. Third median nervule but slightly curved.

Posterior Wings subtrigonate, rounded; the anterior margin longer than the others, which are nearly equal, produced at the shoulder, nearly straight. Outer margin rounded, slightly sinuate. Precostal nervure simple, directed forward, nearly or quite reaching the anterior margin. Discoidal nervure arising from the second subcostal nervule close to its origin, scarcely or not at all bent at its commencement. Cell open. Third median nervule scarcely curved.

Anterior Legs of the male slender, clothed with scales and long delicate hairs. Femur somewhat thickened towards the apex. Tibia a little longer than the femur, subcylindric, slightly curved, a little thickened about the middle. Tarsus two thirds the length of the tibia, subcylindric,

tapering towards the apex, which is rounded. *Anterior Legs* of the female slender, scaly. Femur slightly thickest about the middle. Tibia a little longer than the femur, slightly dilated before the apex. Tarsus nearly cylindric. First joint unarmed, considerably longer than the rest combined; second joint less than one third the length of the first, armed, as are the two following joints, with two stout spines at the apex, these spines covered at their base by a tuft of strong hairs at the base of the succeeding joints; third and fourth progressively shorter; fifth about equal to the fourth, rounded at the apex.

Middle and Posterior Legs rather small; the femora of the former longer, of the latter shorter, than the tibiæ. Tibiæ subcylindric, slightly curved, sometimes rather stouter towards the apex; armed with two interno-lateral series of spines placed rather widely apart, and also with a similar external series; the spurs of moderate length. Tarsi shorter than the tibiæ, very spiny below, except the fifth joint, the spines arranged somewhat in four series. First joint as long as, or longer than, the rest combined; second about one third or one fourth the length of the first; third and fourth joints progressively shorter; fifth joint longer than the second, produced above. Claws small, curved, grooved below. Paronychia with the outer lacinia very slender, pointed, as long as the claw; the inner triangular, nearly semicircular, emarginate, very hairy. Pulvillus jointed, with the second joint, broad; nearly as long as the claw.

ABDOMEN slender, about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Eubagis differs from *Hæmateræ*, as has already been remarked, in its hairy eyes, and also in the structure of its wings and legs. From *Catagramma* and *Callicore* it differs in the neururation of the wings as well as other characters. The anterior wings have the first and second subcostal nervules thrown off before the end of the cell; whilst in *Catagramma* only one, and in *Callicore* no nervule arises before the end of the cell. The approximation of the costal nervule to, or its union with, the first subcostal nervule is another distinctive character.

The species composing this genus are of small size, and sometimes of very delicate structure, especially as regards the wings; they are, in fact, the smallest of the Nymphalidæ, and much resemble some of the Erycinidæ, in which family, following Dr. Boisduval, I have formerly placed one species.

The sexes often differ materially in the colour of the upper surface, and the species may be divided into two groups by their colour, which division is also borne out by some slight differences in structure. The first group contains those species of which the upper surface, in the male at least, is bronze green, as in *Eubagis Postverta*, the male of which is of a bright, light, bronze green above, the apex of the anterior wings being varied with fuscous; and that of the female fuscous, more or less glossed with bronze, and spotted with white. The great difference in the sexes of this species, and of *Eubagis Serina*, has caused the females to be considered as specifically distinct from the males. The second group has the wings of a very delicate texture, semitransparent, and of a satiny white; bordered or marked near the margin to a greater or less degree with black, which, in the males, is often tinted with purple and steel blue. The species of this group are difficult to discriminate; but I hope that the note at the end of the list of species will facilitate the determination of those which are known to me.

In this group it may be said that there is no middle disco-cellular nervule, as the two discoidal nervules separate at an acute angle, as regards one another, from the end of the upper disco-cellular nervule. In the posterior wings the discoidal nervule springs from the very origin of the second subcostal nervule. The anterior tarsus of the male is slender, and more pointed than in the first group.

The genus is purely American, and is found from Mexico and the West Indies southward to Rio Janeiro. I have seen no specimens from the western slope of the Andes, but most probably it will be found in Peru.

EUBAGIS.

†

1. EUB. POSTVERTA *Boisd. MSS.*♂ ♀ *Nymphalis* Post. *Godt. Enc. M.* ix. 419. n. 218. (1819).♂ P. Post. *Cram. t.* 254. f. C. D. (1782).
Fab. Ent. Syst. iii. i. 100. n. 311. (1793).
Dynamine Post. *Hüb. Verz. bek. Schmett.* 41. (1816).♀ P. *Mylitta* *Cram. t.* 253. f. C. D. (1782).
Fab. Ent. Syst. iii. i. 101. n. 312. (1793).
Dynamine Myl. *Hüb. Verz. bek. Schmett.* 41. (1816).

Brazil. B. M.

2. EUB. SERINA.

♂ ♀ *Nymph.* Ser. *Godt. Enc. M.* ix. 419. n. 219. (1819).♂ P. Ser. *Fab. Syst. Ent.* 497. n. 232. (1775).
Fab. Ent. Syst. iii. i. 100. n. 310. (1793).♀ P. *Egæa* *Fab. Syst. Ent.* 496. n. 231. (1775).
Fab. Ent. Syst. iii. i. 100. n. 309. (1793).

Brazil. B. M.

3. EUB. ZETES.

Nymphalis Zet. *Ménétries, Nouv. Mém. Soc. Imp. des Nat. de Moscou.* ix. t. 11. f. 12. (1834).

Haiti, Jamaica. B. M.

4. EUB. ARTEMISIA.

P. Art. *Fab. Ent. Syst.* iii. i. 101. n. 313. (1793).*Nymphalis* Art. *Godt. Enc. M.* ix. 420. n. 220. (1819).

America.

5. EUB. JOHANNA.

Nymphalis Joh. *Godt. Enc. M.* ix. 420. n. 221. (1819).Dynamine Arete *Hüb. Samml. Exot. Schmett.* (1806-27).

Brazil.

6. EUB. TITHIA.

Seronia Tit. *Hüb. Zut. f.* 391-2. (1823).

Brazil. B. M.

7. EUB. IRMA.

Nymphalis Ir. *Godt. Enc. M.* ix. 420. n. 222. (1819).

Brazil. B. M.

8. EUB. INES.

Nymphalis In. *Godt. Enc. M.* ix. 421. n. 223. (1819).

Brazil. B. M.

9. EUB. DYONIS.

Dynamine Dy. *Geyer in Hüb. Zutr.* 871-2. (1837).

Mexico. B. M.

10. EUB. SETABIS *Doubleday & Hewitson, t. 30. f. 2. (1849).*

New Granada, Venezuela. B. M.

††

11. EUB. MYRSON.

Para. B. M.

12. EUB. ATHEMON.

P. Ath. *Linn. Syst. Nat.* i. 484. n. 157. (1758).*Linn. Syst. Nat.* ii. 792. n. 243. (1767).*Clerck, t.* 37. f. 2. (1764).? P. Ath. var. *Clerck, t.* 46. f. 3. (1764).*Hesperia* Ath. *Fab. Ent. Syst.* iii. i. 318. n. 204. (1793).*Erycina* Ath. *Godt. Enc. M.* ix. 578. n. 58. (1823).? *Limnas subtilis* *Athemon Hüb. Samml. Exot. Schmett.* (1806-27).*Thysanotis* *Athemæna Hüb. Verz. bek. Schmett.* 20. (1816).

Brazil (Pernambuco). B. M.

13. EUB. MÆON *Doubleday & Hewitson, t. 30. f. 1. (1849).*

Brazil. B. M.

14. EUB. MYRRHINA.

Eub. Athemon *Boisd. Voy. de l'Astr. t. 3. f. 3.* (1832-5).

15. EUB. CÆNUS.

Hesperia Cæ. *Fab. Ent. Syst.* iii. i. 308. n. 169. (1793).*Donovan, Ins. of India* (1800-3).

Brazil. B. M.

16. EUB. AGACLES.

P. Ag. *Dalman, Anal.* 47. (1823).

Brazil. B. M.

Note.—There has been great confusion in regard to the described species composing the second section, for want of attention to the sexual characters, and to the neuration of the anterior wings. The female of the first species is very well figured by Clerck, t. 37., and an insect which he considers a variety is figured on his forty-sixth plate. This insect, which is also figured by Hübner under the name of *Limnas s. Athemon*, may be only a variety, but varies very much from the type. In the true *Eub. Athemon* the costa of the anterior

August, 1849.

wings of the male is strongly glossed with a purple hue ; in this variety, or species, the costa is glossed with bright blue. It differs also in entirely wanting the brown discoidal mark above in the male, and in having only a very slight trace of it in the female, and below, though present ; this mark is much less distinct than in the true type of *Eub. Athemon*. *Eub. Mæon* wants the discoidal mark in both sexes, and has the black border rather wider in the male than in the female. The female has scarcely any blue on the costa. Some copies of Plate 30., by an error of the colourer, have unfortunately this discoidal mark, represented as it is in the females of the variety of *Eub. Athemon* ; an error I did not discover until after the copies had been sent out. I propose to give the name *Myrrhina* to the species figured by Boisduval, which is very distinct from any other. Of this I only know the male, which has the anterior and outer margin of the anterior wings bordered with black, this border deeply sinuated internally ; the sinus, towards the anal angle, being much deeper and more angular than is represented in the figure. The posterior wings are pure white, with only a very slender submarginal black line. This insect is nearly allied to *Eub. Cœnus*, but this latter species has the border less sinuate internally, and marked with a larger oval white spot near the costa. The females of *Eub. Cœnus* have almost precisely the colouring of *Eub. Agacles*, but always have a considerable gloss of blue on the costa of the anterior wings, which never exists in *Eub. Agacles*. There is also a difference in the neuration of the wing ; the first and second subcostal nervules being much nearer together in this species than in *Eub. Agacles*.

Of the species I have called *Eub. Myrson* I have only seen a female, and it is just possible, not probable, that it may be the female of *Eub. Myrrhina*. It is fully as large as the largest females of *Eub. Athemon*, from which it differs in having the discoidal band united to the costal border by a band which traverses the cell, and to the outer border by a black streak which follows the third median nervule. It also differs from *Eub. Athemon* in having the first subcostal nervule actually anastomosing with the costal nervule.

Genus XXXII. **CALLICORE.**

CALLICORE *Hübner*.

ERYCINA *Latr.*

NYMPHALIS *Godt.*

CATAGRAMMA *Boisd. Blanch. Guérin, &c.*

HEAD moderately broad, hairy.

Eyes oval, not very prominent, hairy.

Maxillæ rather slender, scarcely longer than the thorax.

Labial Palpi porrect, ascending, the third joint directed forwards; scaly, the scales short, appressed, except in front of the first joint, and at the back of the second joint. First joint stout, subcylindric, somewhat compressed, curved, more than one third the length of the second joint, truncate at the apex; second joint subcylindric, curved, truncate at the apex; third joint elongate-conic, slenderer than the second joint, and nearly half its length.

Antennæ about two thirds the length of the body, rather slender, terminating in a short, rather abrupt, obtuse club, not grooved below.

THORAX oval, stout, hairy.

Anterior Wings trigonate. Anterior margin slightly rounded. Outer margin rounded, two thirds the length of the anterior. Inner margin longer than the outer, slightly emarginate. Costal nervure stout, terminating at the middle of the anterior margin. Subcostal nervure slender; its first nervule arising beyond the end of the cell; its second opposite to the termination of the costal nervure; its third almost opposite to the termination of its first nervule, and terminating before the apex; its fourth arising considerably nearer to the origin of the third than to the apex, immediately below which it terminates. Upper and middle disco-cellular nervules both very short, the latter longer than the former, mostly curved inwards, sometimes nearly straight. Cell open. Third median nervule considerably curved.

Posterior Wings obovate; the shoulder rather prominent; the middle of the anterior margin nearly straight; this margin equal in length to the inner. Precostal nervure directed forwards, simple, curved. Discoidal nervure separating from the second subcostal nervule soon after its origin. Cell open. Third median nervule considerably curved.

Anterior Legs of the male rather slender, clothed with delicate hairs. Femur cylindric, rather shorter than the tibia. Tibia sometimes nearly cylindric, sometimes slightly compressed, and swollen beyond the middle. Tarsus shorter than the femur, subcylindric, sometimes slightly

swollen near the base, rather tapering towards the apex, which is rounded. *Anterior Legs* of the female rather slender, scaly. Femur subcylindric, longer than the tibia. Tibia subcylindric, slightly curved, armed internally, except towards the base and apex, with spines in pairs; the apex itself with two rather strong spurs. Tarsus shorter than the tibia; all the joints, except the fifth, armed below with slender spines, placed somewhat in two series, and at the apex with a stout spine on each side. First joint subcylindric, thickest at the base, longer than the rest combined; second, third, and fourth joints diminishing successively in length, but only very slightly; fifth joint slenderer than the others, mucronate, the sides with a tuft of strong setæ.

Middle and Posterior Legs rather slender. Femora of the middle pair longer than, of the posterior pair equal in length to, the tibiæ. Tibiæ armed with two internal and an externo-lateral series of spines; the apical spurs not very stout. Tarsi shorter than the tibiæ, subcylindric; all the joints, except the fifth, which has only the lateral series, furnished with two series of spines below, and a series on each side. First joint as long as, or longer than, the rest combined; second, third, and fourth joints successively shorter; fifth joint much longer than the second. Claws rather slender, curved, grooved below. Paronychia with the outer lacinia narrow, strap-shaped, equal in length to the claw, or nearly so; the inner lacinia slender, shorter than the outer, pointed. Pulvillus about equal in length to the claw.

ABDOMEN rather slender, about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Callicore is allied, in many respects, to the preceding genus, but is readily known from it by its larger size, different colouring, and the neuration of the anterior wings, of which all the subcostal nervules arise beyond the cell.

All the species are insects of rather small size, but yielding in beauty to scarcely any genus of this family. The upper surface of all the known species is black, banded with metallic green, more or less glossed with blue, sometimes of a brilliancy equal to that of the most splendid humming-birds. Below, the anterior wings have the disc, to a greater or less extent, of a brilliant crimson; the posterior wings are white or whitish, marked with curved lines or ring-like marks, of which the two discoidal ones, enclosed within the larger external ones, generally bear two black spots. In addition to these markings, many species have a delicate crimson line near the outer margin.

We know nothing of the metamorphosis, and next to nothing of the habits, of this genus. I believe most of the species frequent the open sunny spots in the forests, more than the cultivated parts of their native countries. They appear to prefer the lower regions, whilst the two following genera seem to be most numerous in the mountains, or on the high table lands.

Their Geographical Range is great, extending from the southern parts of East Florida to the extreme south of Brazil. The only evidence I have obtained of the occurrence of any species so far north as East Florida is a drawing shown to me by Dr. Bachman of Charleston, S. C., of a species, which, as far as can be determined without comparison of specimens, is Callicore Clymenus. This drawing was made by Dr. Leitner, from a specimen which he took during his journey to the southern parts of East Florida, in 1836. Should this insect prove to be a distinct species from Callicore Clymenus, I trust that the entomologist who may describe it will name it after the unfortunate discoverer, who fell a victim, in the following year, to Indian treachery, a fate which, but for a fortunate detention on the St. John's, I should probably have shared with him.

CALLICORE.

1. CALL. CLYMENA *Hübner, Verz. bek. Schmett.* 41. (1816).
Hübner, Zutr. f. 583, 584. (1825).
P. Cly. Cram. t. 24. f. E. F. (1776).
P. Clymenus Fab. Ent. Syst. III. i. 43. n. 131. (1793).
Nymphalis Clym. Godt. Enc. M. ix. 425. n. 236. (1819).
Guiana, Brazil. B. M.
2. CALL. COMATAS.
Bolivia. B. M.
3. CALL. CONSOBRINA *Guérin-Ménéville, Icon. du Règne Anim.* texte, Ins. 482. (1829-42).
Columbia.
4. CALL. MARCHALII *Guérin-Ménéville, Icon. du Règne Anim.* texte, Ins. 481. (1829-42).
Eryc. Euclides var. Latr. in *Humb. et Bonpl. Obs. de Zool. et d'Anat. Comp.* II. t. 42. f. 5, 6. (1811-19).
Colombia. B. M.
5. CALL. CANDRENA *Geyer in Hübner, Zutr.* f. 893, 894. (1837).
Nymphalis Cand. Godt. Enc. M. ix. 425. n. 238. (1819).
Brazil. B. M.
6. CALL. ANNA *Guérin-Ménéville Icon. du Règne Anim.* texte, Ins. 480. (1829-42).
Mexico. B. M.
7. CALL. EUCLIDES.
Erycina Euc. Latr. in *Humb. et Bonpl. Obs. de Zool. et d'Anat. Comp.* I. t. 24. f. 3, 4. (1811-19).
Nymphalis Euc. Godt. Enc. M. ix. 425. n. 237. (1819).
Peru. B. M.
8. CALL. LACON.
Bolivia. B. M.
9. CALL. ASTALA *Guérin-Ménéville Icon. du Règne Anim.* texte, Ins. 479. (1829-42).
Mexico. B. M.
10. CALL. CYANOSTOLA.
Brazil. B. M.
11. CALL. METISCUS *Doubleday & Hewitson*, t. 30. f. 5. (1849).
Venezuela. B. M.
12. CALL. CRATIDAS.
Venezuela. B. M.

Genus XXXIII. PERISAMA.

NYMPHALIS *Godt.*

ERYCINA *Latr.*

CATAGRAMMA *Boisd. Blanch. Guérin, E. Doubleday (olim).*

HEAD rather broad, hairy.

Eyes oval, moderately prominent, hairy.

Maxillæ a little longer than the thorax, slender.

Labial Palpi ascending, porrect, clothed with scales and some long hairs, the scales much longest at the base. First joint short, slightly curved; second joint nearly three times the length of the first, subcylindric, rounded at the base, slightly swollen towards the apex, which is truncate; third joint very nearly half the length of the second, very elongate-obovate, the apex rounded.

Antennæ about three fourths the length of the body, moderately stout, the club gradually incrassated, slightly pointed, not grooved below.

THORAX oval, moderately stout, hairy.

Anterior Wings trigonate. Anterior margin rounded. Outer margin nearly straight, two thirds the length of the anterior. Inner margin rather longer than the outer, sometimes slightly emarginate. Costal nervure stout, extending to the middle of the anterior margin. Subcostal nervure slender; its first nervule arising just before the end of the cell; its second at an equal distance beyond it; its third about midway between the first and the apex, terminating just before the apex; the fourth nearer to the apex than to the origin of the third, terminating a little below the apex. Upper disco-cellular nervule very short. Middle disco-cellular nervule about double the length of the upper, curved inwards. Cell open, less than half the length of the wing. Third median nervule curved.

Posterior Wings obovate; the shoulder slightly produced. Anterior margin nearly equal in length to the inner, almost straight, except at the base and apex. Outer margin rounded, slightly sinuate, shorter than the anterior. Precostal nervure long, simple, directed forwards. Costal nervure much curved at its origin. Discoidal nervure separating from the second subcostal soon after its origin. Cell open. Third median nervule curved.

Anterior Legs of the males rather slender, clothed with long delicate hairs. Femur about equal in length to the tibia, nearly cylindric. Tibia nearly cylindric, slightly curved near the base, more or less truncate at the apex. Tarsus nearly cylindric, somewhat truncate at the base,

rounded at the apex, rather shorter than the tibia. *Anterior Legs* of the female rather slender, clothed with scales and, thinly, with long hairs. Femur subcylindric, rather longer than the tibia. Tibia nearly cylindric, slightly curved, the base rounded, the apex truncate, armed with two or three slender spines. Tarsus about three fourths the length of the tibia: all the joints, except the fifth, spiny laterally, the spine on each side of the apex longest. First joint equal in length to the rest combined; second, third, and fourth progressively shorter, the last about equal in length and breadth; fifth joint about as long as the fourth, acuminate or rather mucronate, its side furnished with a tuft of setæ.

Middle and Posterior Legs moderately stout. Femora somewhat swollen in the middle, those of the middle pair longer than those of the posterior pair, equal in length to the tibiae. Tibiæ nearly cylindric, spiny, the spines on those of the middle pair placed in two tolerably regular interno-lateral series, and, in addition, some few scattered spines; those of the posterior pair less numerous, irregular, more numerous towards the apex, where they form two tolerably regular series. Spurs stout. Tarsi becoming gradually slenderer from the base to the claw; all the joints, except the fifth, spiny laterally and below; the spines below arranged somewhat in two series, especially on the first joint. First joint not quite equal to the rest combined; second, third, and fourth progressively shorter, the fourth being nearly three fourths the length of the second; fifth equal in length to the second and third combined, produced at the apex above, having only three or four slender spines on each side. Claws curved, grooved below. Outer lacinia of the paronychial slender, except at the base, strap-shaped, as long as the claw. Inner lacinia shorter, triangular. Pulvillus jointed, not so long as the claws.

ABDOMEN moderately stout, about two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

It is only after careful examination that I have resolved to divide this genus from *Catagramma*, which genus it resembles in the neurulation of the wings, and very nearly in the structure of the antennæ and palpi. With these characters it has, however, the hairy eyes and the more slender anterior feet of *Callicore*, and differs in other characters from both the above-named genera.

The species composing it are rather more robust than those of the preceding genus, and, in one or two instances, of rather larger size. Above, all the wings are black, with a green transverse band, and sometimes a vitta of the same colour extending from the base of the wing nearly to the middle of the disc. Below, the anterior wings sometimes have the base crimson, as in *Callicore*; sometimes black, marked with brilliant blue spots. The posterior wings have none of the circular or oval markings which distinguish the preceding and following genus. They are generally grey, or of some shade of brown, tending sometimes to red, sometimes to ochrey yellow, and are crossed by two slender lines, between which is often a series of black dots. One insect, which I have placed with doubt in the genus, has the upper surface black, with brilliant blue reflexions; the lower surface of the posterior wings of a yellowish brown, curiously marked with whitish spots.

These insects appear to be confined to the eastern slopes of the Andes, where the westernmost tributaries of the Amazon have their sources, and to the mountain ranges of New Granada and Venezuela. All the species are rather rare in collections.

PERISAMA.

- | | |
|---|--|
| <p>1. PER. AMYNTICHIUS.
Venezuela.</p> <p>2. PER. BONPLANDII.
Catagramma Bon. <i>Guérin-Ménéville, Icon. du Règne Anim.</i> texte, Ins. 485. (1829-42).
Colombia.</p> <p>3. PER. LEBASII <i>Guérin-Ménéville, Icon. du Règne Anim.</i> texte, Ins. 485. (1829-42).
Colombia.</p> <p>4. PER. D'ORBIGNII.
Catagramma Orb. <i>Guérin-Ménéville, Icon. du Règne Anim.</i> texte, Ins. 485. (1829-42).
Colombia.</p> | <p>5. PER. EURICLEA.
Catagramma Eur. <i>Doubleday & Hewitson</i>, t. 28. f. 3. (1847).
Venezuela.</p> <p>6. PER. HUMBOLDTII.
Catagramma Humb. <i>Guérin-Ménéville, Icon. du Règne Anim.</i> texte, Ins. 483. (1829-42).
Colombia.</p> <p>7. PER. OPPELII.
Erycina Opp. <i>Latr. in Humb. et Bonpl. Obs. de Zool. et d'Anat. Comp.</i> I. t. 24. f. 1, 2. (1811-19).
<i>Nymphalis</i> Opp. <i>Godt. Enc. M.</i> IX. 425. n. 239. (1819).
Bolivia.</p> <p>8. PER. ? PHILINUS.
Bolivia.</p> |
|---|--|

B. M.

B. M.

B. M.

B. M.

B. M.

Genus XXXIV. CATAGRAMMA.

CATAGRAMMA *Boisd., Blanchard, &c.*CALLICORE *Hübner.*ERYCINA *Latr.*NYMPHALIS *Godt.*

HEAD very broad, hairy.

Eyes prominent, large, oval, smooth.

Maxillæ about equal in length to the thorax.

Labial Palpi porrect, ascending, projecting beyond the forehead, clothed with scales which are short and appressed, except on the first joint in front, and upon the back of the second towards the apex. First joint short, curved, subcylindric; second joint more than three times the length of the first, subcylindric, curved, thickened towards the apex, which is somewhat truncate; third joint somewhat fusiform, not so stout as the second, the apex pointed.

Antennæ moderately stout, about three fourths the length of the body, terminating in a gradual obtuse club, grooved below.

THORAX robust, oval, hairy.

Anterior Wings trigonate. Anterior margin rounded. Outer margin slightly rounded, two thirds the length of the anterior. Inner margin rather longer than the outer, sometimes slightly emarginate. Costal nervure stout, extending to the middle of the anterior margin. Subcostal nervure slender; its first nervule arising just before the end of the cell; its second at an equal distance beyond it; its third about midway between the first and the apex, terminating just before the apex; its fourth nearer to the apex than to the origin of the third, terminating a little below the apex. Upper disco-cellular nervule very short. Middle disco-cellular nervule about double the length of the upper, curved inwards. Cell open, less than half the length of the wing. Third median nervule curved.

Posterior Wings obovate; the shoulder slightly produced. Anterior margin of nearly the same length as the inner, almost straight except towards the base and apex. Outer margin rounded, slightly sinuate, shorter than the anterior. Precostal nervure long, simple, directed forwards, nearly reaching the margin of the wing. Discoidal nervure separating from the second subcostal nervule soon after its origin. Cell open. Third median nervule curved.

Anterior Legs of the male scaly, tibia and tarsus fringed, especially externally, with long hair. Femur nearly cylindrical, rather slender, very slightly curved. Tibia equal in length to the femur, broad, flat, compressed. Tarsus not so long as the tibia, compressed, flat, broad at the base, tapering to a point at the apex. *Anterior Legs* of the female, short, robust, scaly. Femur

subcylindric, slenderer than the tibia. Tibia equal in length to the femur, stout, not compressed, more or less dilated beyond the middle, diminishing towards the apex. Tarsus considerably shorter than the tibia, stout. First joint very stout, rather longer than the rest combined, sometimes furnished below with a few spines, its apex armed with two stout spines; second, third, and fourth joints progressively rather smaller, transverse, spiny below, all armed at the apex with two stout spines; fifth joint small, mucronate, the sides furnished with some stiff setæ.

Middle and Posterior Legs short and rather stout. Femora considerably thickened about the middle, those of the middle pair longer than the tibiæ, those of the posterior pair equal to the tibiæ in length. Tibiæ a little curved, those of the middle pair spiny interno-laterally from near the base to the apex; the spines in tolerably regular series, those of the posterior pair spring only near the apex; spurs tolerably long and stout. Tarsi not quite so long as the tibiæ; all the joints, except the fifth, spiny laterally and below, in four series; the two inner series more remote on the second, third, and fourth joints than on the first. First joint not quite so long as the rest combined; second nearly equal to the third and fourth combined; fifth joint not quite so long as the second, produced above at the apex, spiny laterally. Claws curved, grooved below. Paronychia with the outer lacinia fully as long as the claw, almost linear except at the base, the apex a little pointed, the inner lacinia very short, nearly triangular. Pulvillus not quite so long as the claws, the second joint broad.

ABDOMEN rather stout, scarcely more than two thirds the length of the inner margin of the posterior wings.

LARVA and *PUPA* unknown.

Catagramma differs from Callicore in having the eyes smooth, the antennæ stouter, the thorax much more robust, and the first subcostal nervule of the anterior wings thrown off before the end of the cell. In this last character it agrees with *Perisama*.

Several of the species are insects of larger size than those of the two preceding genera, which they equal in beauty and surpass in variety of colouring. All the species known to me have on the upper surface of the anterior wings red or pale orange markings, which at once distinguish them from the two preceding genera.

The ground colour of the upper surface of the wings in all the species is black. The anterior wings in *Catagramma Brome* and *C. Lyca* have a transverse orange band; in *C. Lyrophila* and *C. Hesperis* this band is crimson. All these species have parts of the posterior wings splendidly glossed with blue: below, they have the posterior wings black, traversed by two yellow lines, in the same position as in the species of the preceding genus; and between these lines a series of blue or yellow dots. All the remaining species have a transverse band of some shade of red beyond the middle of the anterior wings, or a large patch of the same colour at their base; and the posterior wings either more or less glossed with brilliant blue, or marked at the base with a crimson vitta or patch. The lower surface of the posterior wings is mostly yellowish, with black markings forming somewhat oval rings, in which are two black spots pupiled with blue; sometimes one or more of these spots is bi- or tri-pupillate. In one species the extension of the black causes this colour to predominate over the yellow, but still the character of the type remains. In *Catagramma Hydarnis* they are marked like those of *Callicore Clymenus*; and in *Catagramma Sorana*, and an undescribed species allied to it, they are black, and have on the disc a yellowish mark resembling the figure 8, enclosing two black spots pupiled with blue. This mark is followed by a very zigzag pale blue line.

Some of the species of this genus are found in the lower regions of Tropical America, but by far the greater proportion seem to belong to the mountainous regions.

CATAGRAMMA.

1. CAT. BROME *Boisd.* in *Règne Anim.* edit. Crochard, Ins. t. 138. f. 2, 2. bis.
Cat. discoidalis *Guérin-Ménéville, Icon. du Règne Anim.* texte, Ins. 486. (1829-42).
Quito. B. M.
2. CAT. LYCA *Boisd. MSS., Doubl. Gen. Diurn. Lep.* t. 28. f. 1. (1847).
Mexico. B. M.
3. CAT. LYROPHILA.
Callicore Lyrophila *Hübner, Zutr.* f. 397-8. (1823).
P. Hydaspes *Drury, III. t. 15. f. 2, 3.* (1782); (nec Fabr.).
Biblis Hesperia *Perty, Del. Anim. Art. Bras.* t. 30. f. 4. 46. (1830).
Bolivia. B. M.
4. CAT. HESPERIS *Guérin-Ménéville, Icon. du Règne Anim.* texte, Ins. 479. (1829-42).
Bolivia. B. M.
5. CAT. HYSTASPES.
P. Hystaspes *Fabr. Sp. Ins.* II. p. 57. n. 254. (1781).
P. Hydaspes *Fabr. Ent. Syst.* III. i. 54. n. 167. (1793); *Donovan, Nat. Repos.* 2. pl. 60.
Cat. Fabricii *Guérin-Ménéville, Icon. du Règne Anim.* texte, Ins. 479. (1829-42).
Brazil (Fabricius), Bolivia. B. M.
6. CAT. n. sp.
Bolivia. B. M.
7. CAT. PYRACMON.
Nymphalis Pyr. *Godt. Enc. M.* IX. 424. n. 233. (1819).
Callicore Hydaspes *Hübner-Geyer, Zutr.* f. 887-8. (1837).
Brazil. B. M.
8. CAT. PYGAS.
Catagramma Pygas *Blanchard, Voy. D'Orbigny, Ins.* p. 222. n. 786. pl. 32. fig. 6, 7. (1844).
Nymph. Py. *Godt. Enc. M.* IX. 423. n. 232. (1819).
Cat. Hydaspes *Boisd, Spéc. Gén.* t. 9. (5. B.) f. 2. (1836).
Brazil.
9. CAT. CYLLENE *Doubl. Gen. Diurn. Lep.* t. 28. f. 3. (1847).
Brazil.
10. CAT. n. sp.
Bolivia. B. M.
11. CAT. n. sp.
Quito. B. M.
12. CAT. ASTARTE.
P. Ast. *Cram.* t. 256. f. C. D. (1780).
Callicore Ast. *Hübner, Verz. bek. Schmett.* 41. (1816).
P. Codomannus *Fabr. Sp. Ins.* II. 57. (1781),
Ent. Syst. III. i. 53. n. 165. (1793);
Donov. Nat. Rep. I. pl. 3. f. 1. 1.
Nymphalis Condomanus *Godt. Enc. M.* IX. 423. n. 231.
Guiana, Brazil. B. M.
13. CAT. PITHEAS.
Erycina Pith. *Latr.* in *Humb. et Boupl. Obs. de Zool. et d'Anat. Comp.* II. t. 37. f. 5, 6.
Nymphalis Pith. *Godt. Enc. M.* IX. 423. n. 230. (1819).
Peru, Bolivia, New Granada, Venezuela. B. M.
14. CAT. CYNOSURA *Doubl. Gen. Diurn. Lep.* t. 18. f. 2. (1847).
Bolivia. B. M.
15. CAT. HYDARNIS
Nymphalis Hyd. *Godt. Enc. M.* IX. 424. n. 235. (1819).
Brazil. B. M.
16. CAT. SORANA.
Catagramma Sorana *Blanchard, Voy. D'Orbigny, Ins.* p. 222. n. 785. pl. 32. figs. 4, 5. (1844).
Nymphalis Sor. *Godt. Enc. M.* IX. 422. n. 229. (1819).
Brazil. B. M.
17. CAT. n. sp.
Brazil. B. M.
18. CAT. ? HERACLITUS.
P. Her. *Fab. Ent. Syst.* III. i. 291. n. 112. (1793-4).
Nymphalis Her. *Godt. Enc. M.* IX. 826. n. 234-5. (1823).
S. America.

Genus XXXV. **CALLIZONA.**ARGYNNIS *Godt.*TIGRIDIA *Hübner.*

HEAD quite as broad as the thorax, hairy.

Eyes oval, prominent, smooth.

Maxillæ slender, considerably longer than the thorax.

Labial Palpi somewhat porrect, ascending, scaly; the scales of the first joint and of the back of the second joint long, loose, of the other parts closely appressed. First joint nearly half the length of the second, curved, much broader at the base than at the apex, which is truncate; second joint slightly curved, subcylindric, rather stouter towards the apex, which is obliquely truncate; third joint subconic, rounded at the base, the apex somewhat obtuse, scarcely more than one fourth the length of the second joint.

Antennæ nearly as long as the body, slender, terminating in an elongate, rather slender, almost fusiform club, grooved below.

THORAX rather slender, elongate oval, clothed, especially behind, with long hairs.

Anterior Wings trigonate, the apex slightly truncated. Anterior margin curved. Outer margin slightly sinuate beyond the middle, two thirds the length of the anterior. Inner margin emarginate, one fourth longer than the outer. Costal nervure rather stout, terminating about the middle of the anterior margin. Subcostal nervure slender; its first nervule arising at a short distance from its second, just before the end of the cell; the third arising about midway between the base and apex of the wing, terminating at the apex; the fourth about midway between the origin of the third and the outer margin. Upper disco-cellular nervule very short; middle disco-cellular short, but quite double the length of the upper, showing a slight rudiment of the discoidal nervure; lower disco-cellular nearly atrophied, curved inwards, united to the median nervure before the separation of its second and third nervules. Third median nervule curved.

Posterior Wings obovate. Anterior margin not much rounded, equal in length to the inner. Outer margin shorter than the anterior, sinuate dentate. Precostal nervure simple, straight. Discoidal nervure arising from the second subcostal nervule near to its origin. Cell open. Third median nervule but little curved.

Anterior Legs of the male slender, clothed with delicate hairs. Femur, tibia, and tarsus all nearly cylindric, the last somewhat pointed at the apex. Tibia shorter than the femur, and about one third longer than the tarsus. *Anterior Legs* of the female rather slender, scaly. Femur longer than the tibia, smaller towards the apex. Tibia subcylindric, smallest at the base, slightly curved, unarmed. Tarsus shorter than the tibia, cylindric. First joint considerably longer than the rest combined, armed at the apex, as are the two following joints, with a rather

short spur on each side; third joint not quite two thirds the length of the second; fourth joint very short, but much longer below than above, the apex with a long spine on each side projecting beyond the fifth joint; fifth joint short, transverse, broader below than above, the sides furnished with a tuft of setæ.

Middle and Posterior Legs rather slender; the femora of the former longer than the tibiæ, those of the latter equal to them in length. Tibiæ irregularly spiny within and externally; the inner spines tending to form two interno-lateral series towards the apex, the outer spines few and wide apart; spur moderately long. Tarsi nearly as long as the tibiæ; all the joints spiny laterally below, the spines arranged in four series except at the base of the first joint where they are wanting on one side at the base, and on the fifth joint where the lateral rows are wanting. Claws rather slender, curved, grooved below. Outer lacinia of the paronychia as long as the claw, narrow, strap-shaped; inner lacinia broad, nearly triangular, shorter than the outer. Pulvillus with the second joint broad, nearly as long as the claw.

ABDOMEN slender, about three fourths as long as the inner margin of the posterior wings.

LARVA cylindric, spiny; the head having two long spines on the crown, and two shorter ones on each side; each segment, except the prothoracic, having several verticillate spines.

PUPA gibbous, spiny; the head armed with two long curved processes.

Though *Callizona* has strong affinities to the neighbouring genera, it somewhat interrupts their natural order of succession. Perhaps, when we know the metamorphosis, it may be found advisable to change the position of the last two genera, and place them nearer to *Apatura* and the allied genera, in which case this genus would make an easier transition from *Callicore* to *Gynæcia*. Godart has placed the only species belonging to it in his genus *Argynnis*, and it must be confessed there are some presumptions in favour of such a situation: but its generic characters seem to me to indicate a position near where I now place it.

Callizona Acesta is remarkable for the beauty of the lower surface of its wings. The anterior wings have the base and inner margin fulvous, shading off to pale straw-colour on the costa, and marked by four short brown bands; the apical portion banded alternately with brown and pale straw-colour. The posterior wings are of a pale pearly grey with violet reflections, and are crossed by numerous brown bands; and near the outer margin by an irregular fulvous band, bounded externally by a slender pale violet-coloured line, which is followed by three black dots connected by a fine line of the same colour.

The *LARVA*, which, according to Stoll, feeds on the cocoa, is nearly cylindric, pale green; except the head, the true legs, and the anal prolegs, which are black. The head has two verticillate spines on the crown, and two simple ones on each side. All the abdominal and the mesothoracic and metathoracic segments are furnished with verticillate black spines.

The *PUPA* is rather elongate, brown, with light green and silvery markings, hairy; gibbous at the base of the abdomen, where it has four black spines; the head has two long curved processes, notched at the sides.

The specimen figured, which is from New Granada, has the transverse band of the anterior wings much wider than in those from Guiana and Brazil. I do not think the difference is specific.

CALLIZONA.

CALL. ACESTA Doubl. *Gen. Diurn. Lep.* t. 29. f. 2. (1848).
P. Ac. *Linn. Syst. Nat.* i. 479. n. 127. (1758).
Linn. Syst. Nat. ii. 782. n. 191. (1767)
Clerck, Icon. t. 43. f. 5, 6. (1764).
Cram. t. 121. f. E. F. (1776).
Fab. Ent. Syst. iii. i. 245. n. 764. (1793).

Tigridia Ac. *Hübner. Verz. bek. Schmett.* 40.
(1816).
Argynnis Ac. *Godt. Enc. M.* ix. 817. n. 58-9.
(1823).
N. Brazil, Guiana, Venezuela, New Granada.
B. M.

June 1. 1850.

3 U

Genus XXXVI. **GYNÆCIA** *Boisd.**GYNÆCIA Boisd. MS.**NYMPHALIS Godt.**TIGRIDIA Hübn.*

HEAD rather broad, hairy.

Eyes oval, moderately prominent, smooth.

Maxillæ rather longer than the thorax.

Labial Palpi porrect, ascending, projecting considerably beyond the forehead; scaly, the scales of the first joint elongate, those towards the apex of the second forming a slight dorsal tuft. First joint curved, subcylindric, truncate at the apex, stouter than the second, and nearly half its length; second joint subcylindric, slightly curved, rather stouter just before the apex, which is obliquely truncate; third joint subconic, the base rounded, the apex pointed, more than one third the length of the second joint.

Antennæ fully three fourths the length of the body, rather slender, terminating in a rather short gradually incrassated club, grooved below, its apex obtusely pointed.

THORAX oval, moderately stout, scaly, and hairy; the sides of the metathorax densely hairy.

Anterior Wings trigonate. Anterior margin moderately curved. Outer margin nearly straight, about three fourths the length of the anterior. Inner margin nearly straight, rather longer than the outer. Costal nervure moderately stout at its origin, terminating considerably before the middle of the anterior margin. Subcostal nervure slender; its first and second nervules arising close together just before the end of the cell, the first terminating almost exactly at the middle of the anterior margin; its third nervule arising exactly opposite to the termination of the costal nervure, ending at the apex; its fourth nearer to the apex than to the origin of the third. Cell very short, not one third the length of the wing. Upper disco-cellular nervule extremely short; middle ditto very short, straight; lower ditto five times the length of the middle disco-cellular nervule, nearly atrophied, especially the lower portion, curved inwards, directed obliquely outwards to the origin of the third median nervule. Third median nervule considerably curved upwards.

Posterior Wings with the anterior margin much rounded; the outer margin shorter than the anterior, nearly straight from the apex to a little beyond the second median nervule, then produced into a short rounded tail or palette. Precostal nervule simple. Discoidal nervure arising from the second subcostal nervule soon after its origin, slightly angled where the slender almost atrophied disco-cellular unites with it. Third median nervule curved.

Anterior Legs of the male with the tibia and tarsus fringed on each side with long hairs. Femur nearly cylindric, a little stouter beyond the middle, not quite so long as the tibia. Tibia cylindric, slightly curved, very obliquely truncate at the apex. Tarsus scarcely two thirds the length of the tibia, subcylindric, tapering gradually towards the apex, which is pointed; the base obliquely truncate. *Anterior Legs* of the female rather slender. Femur not quite so long as the tibia, slightly stoutest near the base. Tibia subcylindric, a little curved, narrowed towards the base, truncate at the apex. Tarsus about three fourths the length of the tibia. First joint nearly twice as long as the rest combined, subcylindric, unarmed; second joint equal to the third and fourth combined; these three joints armed at the apex with a spine on each side, the spines of the fourth joint longest, projecting beyond the end of the fifth joint; fifth joint short, very obliquely truncate at the apex, its upper surface not more than half the length of the lower, furnished at the side with a tuft of setæ.

Middle and Posterior Legs rather large, the femora of the former longer than the tibiæ, those of the latter equal to them in length. Tibiæ spiny within; the spines somewhat in two interno-lateral series, especially those of the posterior tibiæ, where they are also rather more numerous; spurs short. Tarsi of the middle pair equal in length to the tibiæ, those of the posterior pair rather longer than them; all the joints, except the fifth, spring laterally below; the spines of the lower surface somewhat in two series. First joint longer than the rest combined; second joint scarcely more than one fifth the length of the first; third joint about two thirds the length of the second; fourth joint half the length of the second; fifth joint longer than the second, a little produced above at the apex, with two series of spines below, but without any lateral ones. Claws curved, grooved below. Paronychia with the outer lacinia pointed, as long as the claw; the inner much shorter, strap-shaped. Pulvillus small, shorter than the claws.

ABDOMEN about two thirds the length of the inner margin of the wing.

LARVA nearly cylindric, rather smaller towards the head, which is armed with two long verticillate spines; the prothoracic segment armed with two simple spines, all the other segments with several branching ones.

PUPA elongate, tuberculate; the head deeply bifid.

Gynæcia may be known from the preceding genus by its more robust structure, the different form of its wings, especially of the posterior pair, and the different proportions of the joints of the palpi.

Like the preceding genus, it consists of but one species, which is common throughout most of the tropical parts of America. The lower surface of its wings bears much resemblance in its markings to those of *Callizona Acesta*, being crossed by numerous brown bands on a pale ground; the short tail has a black ocellus pupiled with blue.

The *LARVA*, figured by Stoll, is subcylindric, smaller towards the head, which bears two long verticillate spines, and, according to Stoll's text, a simple one between them; but from the figure it is quite clear that this spine is one of a pair on the prothoracic segment. All the other segments have several branching spines. The Larva of the male is fuscous, with a row of greenish spots down the side. The spines of the head, the three thoracic and the last abdominal segments, are white, the rest of a dull yellow, inclining to red. The female has all the spines of this latter colour, and has the back crossed by eight greenish yellow bands. Its food is the cassava.

The *PUPA* is elongate, with the head bifid, and with three pairs of tubercles on the back of the abdominal segments.

Its colour is wood-brown, with some whitish lines and little black dots, which, from Stoll's figure, appear to be small tubercles.

GYNÆCIA.

GYN. DIRCE *Gen. Diurn. Lep.* t. 29. f. 1. (1848).

P. Dirce *Linn. Syst. Nat.* i. 477. n. 117. (1758).

Linn. Syst. Nat. ii. 778. n. 177. (1767).

Cram. t. 212. f. C. D.

Fab. Ent. Syst. iii. i. 123. n. 376. (1793).

Tigridia Dirce *Hübner. Verz. bek. Schmett.* 40.
(1816).

Nymphalis Dirce *Godt. Enc. M.* ix. 371. n. 74.
(1819).

P. Butes *Linn. Syst. Nat.* i. 485. n. 169. (1758).

Clerck, Icon. t. 36. f. 3. (1764).

West Indies, Honduras, Venezuela, Guiana, Brazil.
B.M.

EXPLANATION OF THE PLATES OF DETAILS.

PLATE I.

FIG. I. Anterior Wing of *Papilio Homerus*.

- a*, Costal nervure.
- b*, Subcostal nervure.
- b* 1., *b* 2., *b* 3., *b* 4., *b* 5., Subcostal nervules. These, as well as the discoidal and median nervules, bear numbers corresponding to the ordinal numeration used in the text.
- c* 1., *c* 2., Discoidal nervules, the second appearing to be a fourth median nervule: the nervure itself wanting.
- d*, Median nervure.
- d* 1., *d* 2., *d* 3., Its nervules.
- e*, Submedian nervure.
- f*, Internal nervure. This nervure is wanting in many of the Diurnal Lepidoptera.
- g* 1., Upper disco-cellular nervure.
- g* 2., Middle disco-cellular nervure.
- g* 3., Lower disco-cellular nervure. The very oblique position of this nervule causes the second discoidal to appear to be a fourth median nervule.
- h*, Interno-median nervure. This nervule is rarely found, except in the Papilionidæ and Morphidæ.

II. Posterior Wing of *Papilio Homerus*.

- a*, Precostal nervure; bifid, its lower branch united at its termination to the costal. It is this nervure which in a great proportion of the Heterocerous Lepidoptera projects beyond the margin of the wing, in the form of a single stout bristle in the males, of several weaker ones in the females, which are received into a more or less distinct one on the under side of the anterior wing. This structure *never* exists in the Diurnal or Rhopalocerous Lepidoptera, although, for nearly seventy years, most British writers on the Lepidoptera have persisted in stating its existence in the male of *Apatura Iris*.
- a*, *b*, *b* 1., *b* 2., as in Fig. I.
- c*, Discoidal nervure, simple in the posterior wings.
- d*, *d* 1., *d* 2., *d* 3., *e*, *f*, as in Fig. I.
- g* 1., *g* 2., Upper and lower disco-cellular nervules. As in the posterior wings the discoidal nervure is always simple, there can never be more than two disco-cellular nervules. One or both are very commonly wanting.

FIG. III. Anterior Wing of *Morpho Perseus*. All the letters and figures as above. The disco-cellular nervules will be at once seen to be in a very different position to those of Fig. I.

IV. Posterior Wing of *Morpho Perseus*. All the letters and figures as above. Precostal nervure simple. Discoidal nervure united to the second subcostal nervule, and appearing to be a third subcostal nervule. Upper disco-cellular nervule consequently wanting. Lower disco-cellular nervule wanting. *Cell* consequently *open*.

FIG. V. Anterior Wing of *Gonepteryx Leachiana*. Letters and figures as above. Subcostal nervure with only four nervules. Upper disco-cellular wanting. The first discoidal nervule united at its origin to the subcostal nervure. Internal nervure very slender, running into the submedian. Interno-median nervure wanting.

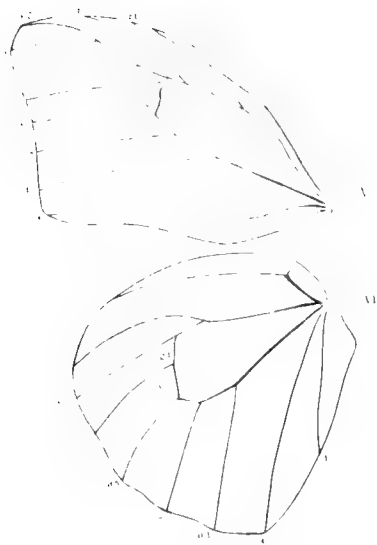
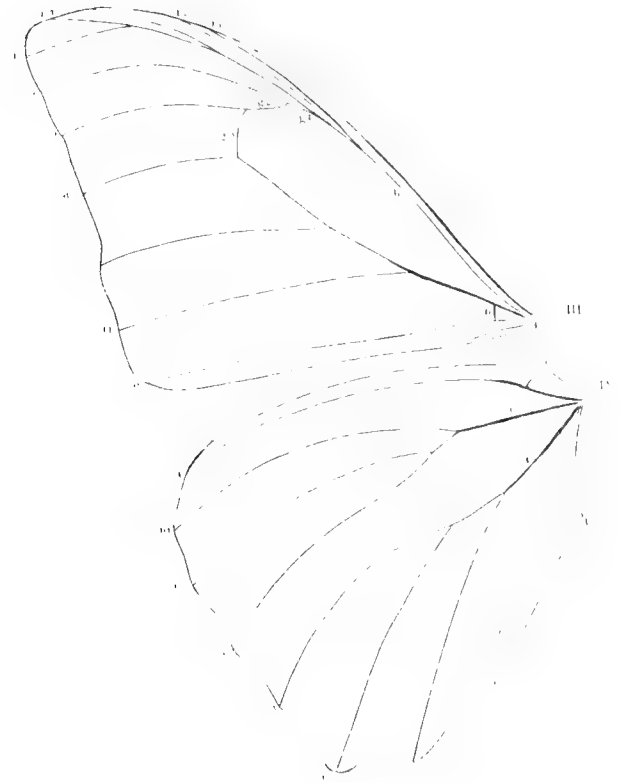
VI. Posterior Wing of *Gonepteryx Leachiana*. All the letters and figures as above. Precostal simple.

FIG. VII. Anterior Wing of *Mechanitis Lysidice*. Letters and figures as above. Lower disco-cellular nervule bent at an acute angle.

g, Rudiment of the discoidal nervure, its basal portion being atrophied.

VIII. Posterior Wing of *Mechanitis Lysidice*. Letters and figures as above. Precostal nervure simple. Costal nervure united for nearly half its length to the subcostal. This structure occurs only in the female. Upper disco-cellular nervule bent at an acute angle. Lower disco-cellular nervule so placed as to cause the discoidal nervure to seem to be a fourth median nervule, a structure analogous to that of the anterior wings of the Papilionidæ.

g, Rudiments of the discoidal nervure, the basal part atrophied as in the anterior wings.



UNIVERSITY
MASSACHUSETTS
AMHERST, MA USA



UNIVERSITY
OF CALIFORNIA
LOS ANGELES



Y
ENSITY
A USA



CITY
USA



BY
SITY
USA



SA

UNIVERSITY
F
MA USA



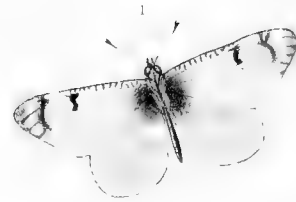
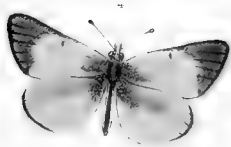
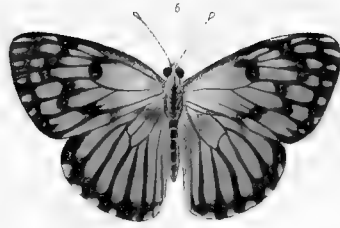
1. *LEPTALIS LUNATA* E. Doubled. 2. *LEPTALIS LUNATA* E. Doubled. 3. *LEPTALIS LUNATA* E. Doubled.
 4. *LEPTALIS MELORATA* E. Doubled. 5. *LEPTALIS MELORATA* E. Doubled. 6. *LEPTALIS MELORATA* E. Doubled.

HAAS UNIVERSITY
CALIFORNIA USA



BY
UNIVERSITY
MA USA

VII.
PIERIDÆ.

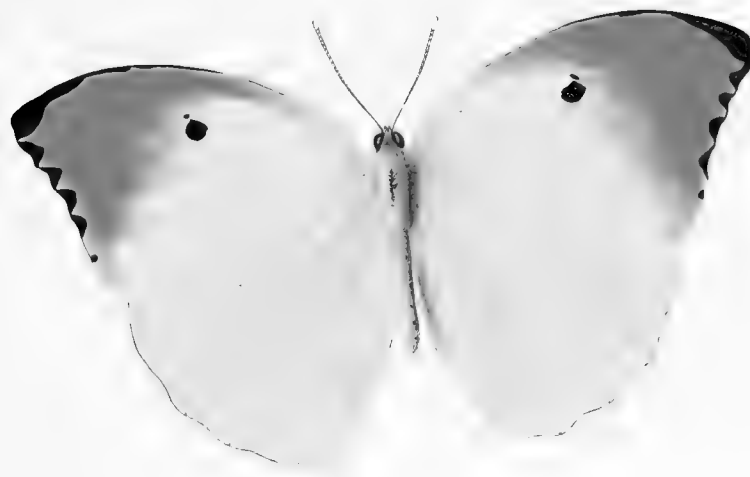


W.C. Hewitson del.

Hullmandel & Watson Lithographers

1. ANTHOCHARIS CREUSA. Doubleday. 3. THEE HIG EUPHEMIE (Esq.)
2. ANTHOCHARIS DANAE. (Fabr.) 4. NATHALIS PLATON (Esq.)
5. IDMAIS CHRYSNOME. (Klug)

BY
SITY
USA



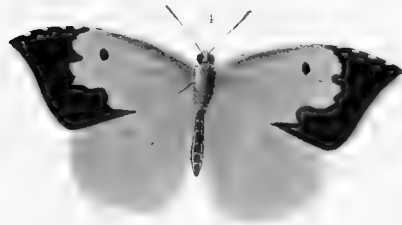
1111

1111

1111

Y
UNIVERSITY
USA USA

IX.
PIERIDÆ.



A. C. Howds. del.

Fullman & Weston Lithographers

1. ECHONIA CLEODORA Hubner
3. COLIAS DIMERA Boisduval
4. COLIAS PHILIPPA var. (Fabricius)

2. CALLIDRYAS GORGOPHONE Boisduval
5. TERIAS GRATIOSA Boisduval
6. TERIAS BRENDA Doubleday



100
CITY
USA

Fig. 1. 18.



Fig. 2. 19.

Fig. 3. 20.

PROPERTY
OF THE
U.S. AIR FORCE



H-1000
SITY
USA



ext. m. d. l. a. d.

Fig. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.



THE
MUSEUM



Pieris democritus

Pieris democritus

THE MUSEUM OF THE UNIVERSITY OF CALIFORNIA
 1897

NEW YORK
USA

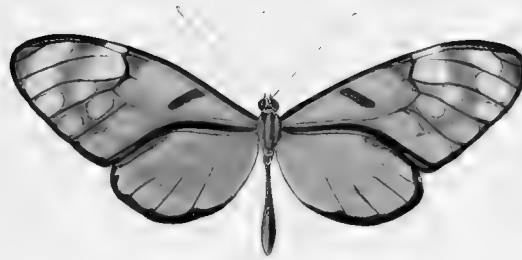


W. C. Hewatson del et lith

Hallman & Watson Lithographers

1 LYCOREA ATERGATIS Doubleday
 3. ATHESES CLEARISTA Doubleday

2 OLYRAS CRACHIS Doubleday
 4 THYRIDIA AEDESIA Doubleday



W. Edwards & Co.

W. Edwards & Co. 1891, 1892, 1893

1. *HEPHAESTUS* Lachet
 2. *HEPHAESTUS* Lachet

3. *HEPHAESTUS* Lachet
 4. *HEPHAESTUS* Lachet

Y
SECURITY
USA USA



UNIVERSITY
OF CALIFORNIA USA



1891

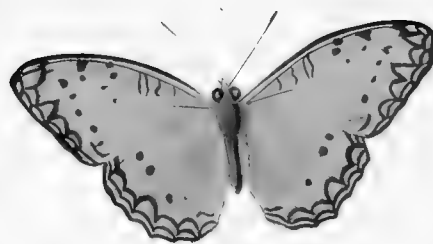
1891





1. *TERMINUS CLARUS* L.
 2. *TERMINUS CLARUS* L.

3. *TERMINUS CLARUS* L.
 4. *TERMINUS CLARUS* L.



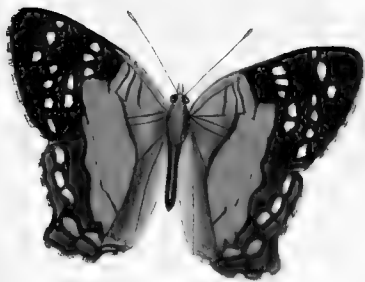
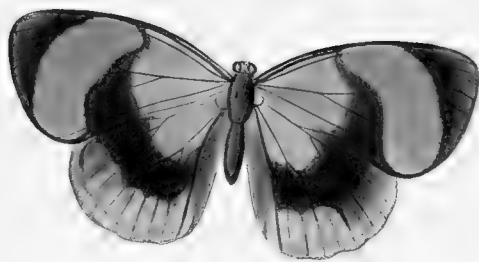
XXIII.
NYMPHALIDÆ.



1. *Chalcidona* (Borbon)

2. *Chalcidona* (Borbon)

3. *Chalcidona* (Borbon) 4. *Chalcidona* (Borbon)
5. *Chalcidona* (Borbon) 6. *Chalcidona* (Borbon)
7. *Chalcidona* (Borbon) 8. *Chalcidona* (Borbon)



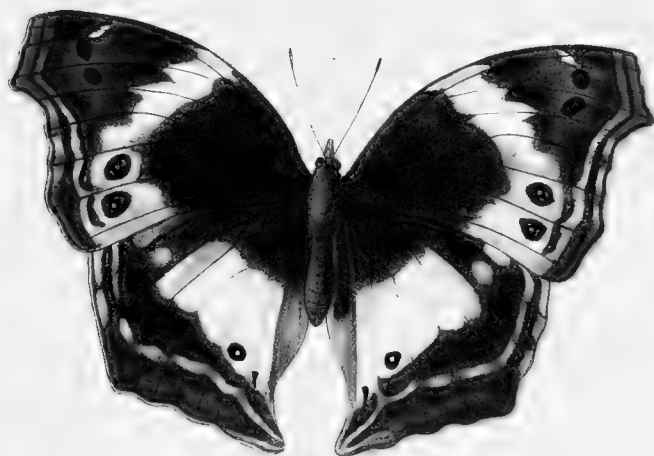
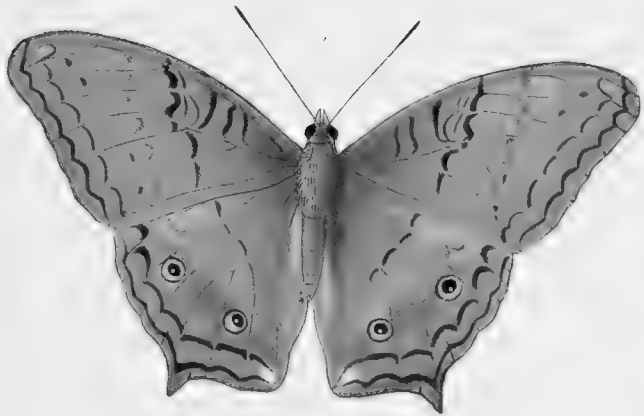


Fig. 1. 1. 1. 1.

Fig. 2.

С. П. ПЕТРОВИЧЕВ, 1912 г. *Известия Академии наук СССР, зоологический отдел*, т. 1, № 1, с. 1-10.

PLATE
 VANESSA ARGENTIFRONS

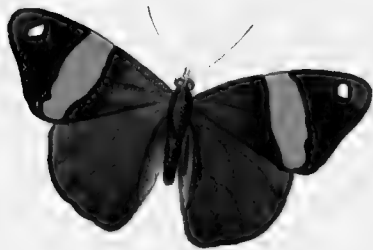


W. C. Hewitson del. & lith.

Printed by Huth & Co. N. York.

1. *ARGENTIFRONS* Prorsa Hübner 4. *VANESSA MILBERTII* Godart
 3. *GRAPTA G-ARGENTIFRONS* Doubleday 5. *VANESSA CYANOPHANTHUS* L.

UNIVERSITY
USA USA



THE BUTTERFLY COLLECTION
OF THE
MUSEUM OF NATURAL HISTORY
AT
THE UNIVERSITY OF CHICAGO

RE
C
SITY
A USA

圖 121。
 雲南昆蟲圖鑑。



1. *Heliconia cyllene*

4. *Heliconia cyllene*

1. *Heliconia cyllene* 2. *Heliconia cyllene* 3. *Heliconia cyllene* 4. *Heliconia cyllene* 5. *Heliconia cyllene*

1212
1872



(1) 1872

USA



HAC
CA USA

