

MONOGRAPH
OF
THE GENUS
CALLIDRYAS.

BY
ARTHUR GARDINER BUTLER, F.L.S., &c.

(From LEPIDOPTERA EXOTICA, Parts III-XVIII, 1870-1873.)

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MONOGRAPH OF THE GENUS CALLIDRYAS WITH FIGURES OF THE TYPICAL
FORMS OF THE DIFFERENT SPECIES.

In the present Monograph of this most difficult group of Butterflies, I propose to give representations of both surfaces of such species, whether previously figured or not, as I can obtain. It is a fact to be much deplored that in almost every instance in which Lepidopterists have professed to represent both sexes of a *Callidryas* they have grievously erred. Hübner, for instance, on one of his plates, figures the males of two species as sexes of one. Poey, again, in his little pamphlet on the Lepidoptera of Cuba, gives Cramer's *P. Marcellina* as the female of his new species *C. Orbis*.* Cramer figures the male *C. Larra* as the female of *C. Eubule*, and so on. These errors, therefore, render it exceedingly desirable that the true sexes of each separate species should be brought together upon one plate, and this it will be my endeavour to effect in the present revision of the Genus.

FAMILY PAPILIONIDÆ.

SUB-FAMILY PIERINÆ. *Bates*.

GENUS CALLIDRYAS. *Boisduval*.

Hist. Gén. et Icon. Lép. et Chen. Am. Sept., p. 73 (1829).

1. *Callidryas Crocale*, Plate I., figs. 1, 2, 3, 6.

♀ *Papilio Crocale*, *Cramer*, Pap. Exot. 1, pl. 55, figs. C, D (1779).

♀ *Papilio Jugurtha*, *Cramer*, Pap. Exot. 2, pl. 187, figs. C, D (1779).

♂ *Papilio Alcmeone*, *Fab.* (nec. *Cramer*), Ent. Syst. 3, p. 196, n. 611 (1793).

♀ *Colias Jugurthina*, *Godart*, Enc. Méth. IX., p. 95, n. 21 (1819).

Var. ♀ *Callidryas Ender*, *Boisd.* Voy. de l'Astrolabe, pl. 2, figs. 3, 4 (1833).

Male. Wings above with the basal area yellow, the apical white, the external margin of the frontwings from near the base to near the anal angle black; wings below yellow with whitish disc.

Female. Wings above bright yellow, the frontwings with broad dentated marginal band, macular discocellular striole, and seven to eight partially connected submarginal spots, brown; base, greyish; hindwings with broad dentated marginal band and five indistinct discal points, brown; base, reddish; costa, white; under surface glazed, rosy and yellow, the markings of the upper surface indistinctly seen through the wings: average expanse about 3 inches.

* This insect has nothing to do with Swainson's *C. Godartiana*.

The specimens that I have examined are from the following localities—♀, Himalayas, Coll. Druce, ♂, Darjeeling, Coll. Wallace ; ♀, Wuzeerabad, Punjaub (*Hearsey*) ; Almorah ; Nepal (*Wright*) ; Hong-Kong (*Harrington*) ; Moulmein ; ♂, ♀, Madras Coast, B. M. ; ♂, ♀, Ceylon (*Templeton & Cuming*), also in Colls. W. W. Saunders and A. R. Wallace ; ♂, Sumatra, Coll. Wallace ; ♂, Borneo (*Loew*) ; ♂, ♀, Sarawak (*Brooke & Loew*), B. M. ; ♂, Java, B. M, and Coll. Druce ; ♀, Lomboek ; ♂, ♀, Phil. Islands, Coll. Wallace ; ♂, ♀, Batchian, Coll. Saunders ; ♀, Ceram, (*Pfeiffer*,) B. M., also in Colls. Saunders and Wallace ; ♀, Moreton Bay, B. M.

Var. C. Endeer, Assam ; Nepal, (*Wright*,) B. M.

Var. approaching C. Flava ; ♀, Ceylon, Coll. Saunders ; ♂, Queensland, Coll. Wallace.

This species is not identical with Cramer's *C. Almeone* ; the latter being a New World species, and identical with the *C. Statira* of authors. In Cramer's representation of his *C. Jugurtha*, the ocelloid spots are more strongly defined than in any specimens of this insect which have passed through my hands.

Captain A. M. Lang says that this species frequents *Cathartocarpus fistula*, an introduced plant in gardens of the North Indian plains, but indigenous to the lower slopes of the Himalayan ranges, 2,000 to 5,000 feet. Captain H. L. De la Chaumette observed it in gardens at Saugor ; he states that it is very fond of the outside branches of the "Babool" (*Acacia arabica*) : it is on the wing from July to November.

2. *Callidryas Flava*, Plate I., figs. 4, 5.

Callidryas Flava, *Butler*, Ann. & Mag. Nat. Hist., Ser. 4, Vol. 4, n. 21, p. 202 (1869).

Male. Wings above sulphur yellow, the apical area of the frontwings slightly paler ; the apical costa black, and the nervures towards the apex tipped with black : below, sulphur yellow, the anal area of the frontwings whitish.

Female. Very like *C. Endeer*, but smaller, yellower, and with the submarginal spots of the frontwings interrupted in the centre.

♂, Menado, Coll. Wallace ; ♂, ♀, Macassar, B. M. and Coll. Wallace ; ♂, ♀, Ceram ; ♂, Batchian Coll. Wallace.

♀, *Var. approaching C. Crocale* ♀, Celebes, Coll. W. W. Saunders.

♀, *Var. with darker frontwings*, Ceram, Coll. Saunders.

This species may eventually turn out to be an extreme form of *C. Crocale*. The male, however, can always be distinguished from yellow specimens of that species by its very narrow black costal border. *C. Phlegus*, on the contrary, cannot be thus separated from *C. Catilla*, for the latter species varies immensely in this very character, and the female of *C. Phlegus* not being known, there remains nothing to distinguish it from yellow varieties of *C. Catilla*.

3. *Callidryas Catilla*, Plate I., figs. 7—10.

♀ *Papilio Catilla*, *Cramer*, *Pap. Exot.* 3, pl. 229, figs. D, E (1781).

♂ *Papilio Hilaria*, *Cramer*, *Pap. Exot.* 4, plate 339, figs. A, B (1782).

♂ *Papilio Titania*, *Fabricius*, *Ent. Syst. Suppl.*, p. 28, n. 655-6 (1798).

Var. ♂ *Callidryas Phlegheus*, *Wallace*, *Trans. Ent. Soc. Lond.* 4, 3rd Ser., part 3, p. 401 (1867).

Subsp. ♀ *Papilio Pomona*, *Fabricius*, *Ent. Syst.* 3, p. 213, n. 665 (1792).

Male. Above very similar to *C. Crocale*, but with the apex more acute and with a smaller dark margin; below silky, with rosy outer margin; the frontwings with silver centred rosy spot at end of cell, and three to four obliquely placed strioles between upper median and discoidal branches; hindwings with two connected silver centred rosy spots at end of cell, and six to seven discal lunules forming an arc round them.

Female. Above bright sulphur yellow; the frontwings with broad dentated marginal band, interrupted waved striolate discal band, and subgeminat discocellular spot; hindwings generally with orange tinged outer margin, the internervular folds terminating in blackish spots; below golden yellow, the margin slightly deeper coloured, a rusty irregular patch terminating the cells of both wings and enclosing two connected silver centred ocelloid spots; frontwings with rusty discal band answering to that of the upper surface; hindwings with three black centred orange discal lunules, one below each of the median branches.

Specimens from the following localities have passed through my hands—♂, India, Colls. Druce and Wallace; ♂, ♀, Silhet, Colls. B. M. and W. W. Saunders; ♀, Wuzerabad (*Hearsey*), B. M.; ♂, Central India, Coll. Saunders; ♀, Bengal, Coll. Druce; ♂, ♀, Calcutta, (*Hardwicke*); Moulmein; ♂, Nepal, (*Wright*); ♀, Ceylon, (*Templeton*), B. M.; ♂, Malacca; ♀, Mount Ophir, (Coll. Wallace); ♀, Penang, B. M.; ♂, Sarawak, (*Loce*), B. M.; ♂, ♀, Coll. Wallace; Java, Colls. B. M. and Druce; ♂, ♀, Philippine Islands, Bouru, and Timor, Coll. Wallace; ♀, Champion Bay, (*Du Boulay*); ♂, Rockingham Bay, (*McGillivray*); ♂, ♀, Moreton Bay, B. M.; ♂, Queensland, Coll. Wallace.

Var. C. Phlegheus, , Lombok, Coll. Saunders; Timor, Coll. Wallace.

Subsp. *P. Pomona*, ♀, Moreton Bay, (*Diggles*), B. M.

The commoner form of the female has no rusty blotches upon the under surface of the wings, but the blotched form being the type of the species I have felt bound to figure it, though it is not so much like the male. The species, according to Captain Lang, frequents *Cathartocarpus fistula*.

4. *Callidryas Gorgophone*, Plate II., figs. 1—4.

Callidryas Gorgophone, *Boisduval*, *Sp. Gen. Lép.* p. 632, n. 26 (1836).

♂ *Papilio Scylla*, *Fabricius* (nec *Linnaeus*) *Syst. Ent.* p. 475, n. 142 (1775).

Male. Frontwings above white, the base tinted with rosy, the outer margin with sulphur yellow, a black disco-cellular point; the nervures tipped with black; hindwings sulphur yellow with the outer area slightly deeper in colour; the base tinted with rosy; wings below golden yellow; frontwings with the internal area white: a geminate rosy-centred spot at end of cell, a small brown scale-spot just above them and between the first and second subcostal branches and an angulated series of seven similar spots between the nervures on the disc; hindwings with two ringlike spots placed obliquely just beyond the end of the cell; a brown spot towards the base of the cell, a second at the origin of the first subcostal branch and two just below the origin of the first median branch; seven brown bisinuate scale spots forming an irregular arc beyond the cell.

Female. Frontwings above white: the apex and four spots terminating the nervures, brown; a series of seven discal brown spots beginning near the apex, forming an arc to the third median branch, and then continuing in an oblique line to the fold between the first median branch and the submedian nervure; hindwings sulphur yellow, the subcostal and discoidal nervures tipped with black: wings below nearly as in male, but the disco-cellular ring-spots larger and more distinct.

♂, ♀, Queensland, Colls. B. M., Druce and Wallace; ♀, N. W. Australia (*Du Boulay*), Clarence River (*Strange*), Moreton Bay (*Diggles*), B. M.; specimens also merely labelled New Holland in Colls. Druce and W. W. Saunders. The above species seems to vary very little, the chief modifications that I have noticed are confined to the disco-cellular spots upon the under surface. Fabricius describes the species as follows—

“P. D. C. Scylla. *Alis integerrimis, rotundatis flavis: anticis supra albis: limbo nigro, subtus omnibus nebulosis.—Habitat in India.*”

That the above is not the Linnæan *P. Scylla* may be at once concluded from the fact that it is a modification of the Linnæan description which stands thus—

“P. D. Scylla. *Alis subintegerrimis rotundatis fulvis: primoribus supra albis: limbo nigro, subtus omnibus nebulosis.—Habitat in Java.*”

5. *Callidryas Hinda*, sp. nov. figs. 9, 10.

Callidryas Thisorella ♀, *Wallace*, Trans. Ent. Soc. Lond. 3rd Ser. IV. p. 399 1867).

Male. Unknown.

Female. Wings above milky-white, tinted with rosy at base and outer margin of frontwings, the same wings with black disco-cellular spot and two ill-defined scale-spots placed obliquely below the first and second subcostal branches.

Wings below whitish, rosy tinted; markings as in the male of *C. Gorgophone*, but more faintly indicated; a rose-red spot at the base of each wing.

Queensland (type). Coll. Wallace.

This cannot be the female of *C. Thisorella*; the latter is a species belonging to the next group, the females of which generally have a deep black apical border to the frontwings: it is, I think, more likely to be a curious albino form of *C. Gorgophone*, but since it differs from the latter in form as well as colouring, I have felt obliged to consider it a distinct species.

6. *Callidryas Scylla*, Plate II., figs. 5, 6, 7, 8.

♂ *Papilio Scylla*, *Linnaeus*, Syst. Nat. II, p. 763, n. 95 (1766).

♂ *Papilio Cornelia*, *Fabricius*, Mant. Ins. p. 21, n. 229 (1787).

♂ Var. *Callidryas Gorgophone*, *Hewitson* (nec *Boisduval*), Gen. Diurn. Lepid., pl. 9, fig. 2 (1847).

Callidryas Etesia, *Hewitson*, Exot. Butterf. 4, part 63, pl. Eron. et Callid., figs. 5, 6 (1867).

Male. Frontwings above white, rosy tinted at base, with deep black-brown dentate-sinuate marginal border, beginning very narrow upon the costa near the base, widening to the apex, and then slightly narrowing to the submedian nervure; hindwings orange, with base and abdominal margin sulphur yellow: wings below almost exactly as in *C. Gorgophone*.

Female. Frontwings above white, the base and apical area rosy tinted; a subquadrate ring-spot at end of cell (frequently filled in with black), the margin broadly black-brown as in male, but dentate hastate, with an angulated series of seven to eight submarginal irregular black-brown spots: hindwings orange, generally paler than in male, and becoming sulphur yellow towards the base; five irregular diamond-shaped black-brown spots terminating the nervures upon outer margin; and four indistinct angulated scale spots between the nervures upon disc. Wings below bright golden yellow; frontwings with outer margin and apical costa broadly rosy, uniting near the apex with an irregular semi-connected discal series of five to six rosy-brown spots; a large irregular rosy centred brown ring-spot at end of cell, and a small brown spot above it at origin of second subcostal branch; hindwings with two ocelloid silver-centred spots placed obliquely just beyond end of cell, and surrounded by an irregular circular series of rosy brown spots, connected by rosy streaks from base to beyond middle of costa, continuing through the centre of disc to the submedian nervure and terminating in a ring-spot at the origin of the first median branch: outer margin rosy; the nervures black-tipped.

The localities are as follows—♂, ♀, Menado (*Pfeiffer*), B. M.; ♂, Coll. Wallace; ♀, Ternate, Coll. Wallace; ♂, ♀, Java (*Horsfield*), B. M., also in Coll. Druce; ♂, Timor; ♀, Lombok, Coll. Wallace.

Var. *C. Etesia*, ♂, N. Australia (*Elsey*); Champion Bay (*Du Boulay*); Port Essington, B. M.

♀, Var. with frontwings dark, as in *C. Flava*, but on a white ground; hindwings with spots, as in ordinary examples, but on a golden-yellow ground. Menado (*Wallace*), Coll. W. W. Saunders.

♀, *Albino*. Frontwings with brown margin, as in male specimens, a few very indistinct submarginal spots towards apex; hindwings yellowish white with yellow tinted margin, nervures brown-tipped: wings below rosy, markings very indistinct. —? Coll. Kaden in Coll. Druce.

C. Scylla is a much more variable species than *C. Gorgophone*, the males even differing considerably both on the upper and under surfaces; a striking variety of this sex (which I regret to say cannot rank as a distinct species) has been figured as *C. Etesia* by Mr. Hewitson, who gives the following as the characters by which it may be distinguished from *C. Scylla*, namely, that it is "of paler colour and spotless on the underside." In the British Museum we have a male agreeing exactly with Mr. Hewitson's figure, from Port Essington; a second from N. Australia, which has both of the characters mentioned above, but differs from *C. Etesia* in having the black border of the upper surface dentate-sinuate as in *C. Scylla*; and a third from Champion Bay, which has the black border of *C. Etesia* but the under surface of *C. Scylla*, the markings being all strongly defined. Even the brighter golden orange upon the upper surface of the hindwings will not serve to distinguish this form, since the specimens from Celebes are generally darker in tint than those from Java; and a female in Mr. Wallace's collection from Lombeck has the hindwings of the same tint with that of *C. Etesia*.

Fabricius describes his *C. Cornelia* as "alis rotundatis integerrimis fulvis: anticis supra albis, margine nigro. Habitat Tranquebaria," thus discriminating between it and his *C. Scylla*, the description of which I have given under *C. Gorgophone*.

The larva of *C. Scylla*, according to Dr. Horsfield, feeds on various species of *Cassia*, particularly *C. Fistula* and *C. Obtusifolia*, but is occasionally found on other plants. It is most abundant in the early part of the rainy season.

The larva and pupa are figured on pl. 1 of the first volume of Horsfield and Moore's Catalogue of the Lepidoptera of the East India Company.

1. *Callidryas Evangelina*, Plate III., figs. 1, 2, 3.

♂ *Callidryas Evangelina*, *Butler*, Trans. Ent. Soc. London, p. 1, pt. 11, n. 6 (March, 1870).

Callidryas Minna, *Wallace*, (nec. *Herbst*), Trans. Ent. Soc. 4, 3rd Ser. pt. 3, p. 400, n. 4 (November, 1867.)

Male. Wings above white; frontwings with very minute discocellular striole; the apical half of costa, apex, outer margin and outer half of nervures, black; hindwings with narrow, interrupted, squamose, brown margin. Wings below white, the costal half of frontwings and the whole of hindwings tinted with pale yellow, and striolated with pale brown, and with somewhat macular, arched, discal band of the same colour.

Female. Wings above white, marginal banding wider and paler than in male, in frontwings considerably widened from end of costal nervure to third median branch so as to enclose five more or less distinct white spots; base dusky; discocellular striole enlarged. Wings below paler than in male, markings obsolete.

Localities—♂, Flores, Coll. Wallace; ♀, Flores (*Wallace*) Coll. W. W. Saunders; ♀, var. with narrower black margin, nervures not blackened. Baly Island (*Wallace*), Coll. W. W. Saunders.

This species may be distinguished from small specimens of *C. Chryseis* by the more rounded apex and outer margin of its frontwings, the narrower and more regular brown border, (the macular expansion of which in the female only extends to the third median branch), the greater extent of black on the nervures of male, and the paler tint of the under surface.

8. *Callidryas Chryseis*, Plate III., figs. 4, 5, 6, 7.

♂ *Papilio Chryseis*, *Drury*, Ill. 1, pl. 12, figs. 3, 4, (1770).

♂, ♀ *Papilio Alcyone*, *Cramer*, Pap. Exot. 1, pl. 58, figs. A—C, (1779).

Male. Wings above white; frontwings with blackish costa widening towards the apex into a broad marginal black band, which tapers suddenly from the third median branch to the submedian nervure; an elongate disco-cellular black spot: hindwings with a narrow squamose marginal blackish border. Wings below whitish, the costal half of frontwings, and the whole of hindwings tinted with yellow and striolated with pale brown; hindwings with an obsolete disco-cellular point.

Female. Wings above yellowish white; frontwings with broad costal and external brown border, that of the outer margin dentated on its inner edge, and widened from costa to second median branch so as to enclose three or four white spots; hindwings with elongate squamose brown spots at termination of nervures: wings below almost as in male.

The localities are as follows—♂, N. India; ♂, ♀, Assam, B.M.; India, Coll. Druce; ♂, Bengal, B.M.; ♂, ♀, Formosa, Coll. Wallace; ♀, Moulmein, B.M.; ♂, Sumatra, Colls. Wallace and Saunders; ♂, Singapore, Coll. Wallace; ♀, Manila, Coll. Saunders; Philippines, (*Cuming*) B.M. and Coll. Wallace; ♀, Port Stephen, (*Macgillivray*) B.M.; Queensland, Coll. Wallace; New South Wales, Coll. Saunders.

Drury remarks of his *P. Chryseis* that "it seems to be a distinct species from that described by Linnaeus, in his Syst. Nat. page 763, No. 98 (*Pgranthe*) there being no red or silver spots on the underside," there is no doubt that he is right in this conjecture, doubtless the *P. Pyranthe* of Linnaeus is the species both sexes of which are figured by Hübner under the name of *Mancipium fugax Minna* (Samml. Ex. Schm. 1, pl. 144), and identical with the *P. Minna* of Herbst & Jablonsky.

9. *Callidryas Pyranthe*, Plate III., figs. 8, 9, 10.

♂ *Papilio Pyranthe*, *Linnaeus*, Syst. Nat. 2, p. 763, n. 98 (1766).

♀ *Papilio Minna*, *Herbst*, Natursyst. Schmett, 5—7, p. 74, n. 9; pl. 89, figs. 1, 2 (1792).

Var. ♂ *Papilio Ilea*, *Fabricius*, Ent. Syst. Suppl. p. 421, n. 587—588 (1798).

♂ *Callidryas Thisorella*, *Boisduval*, Sp. Gen. Lép. 1, p. 629, n. 3 (1836).

Giant Race ♂ *Papilio Nephte*, *Fabricius*, Ent. Syst. 3, p. 190, n. 588 (1793).

Callidryas Chryseis, var. *Gnoma*, *Butler*, Fabr. Cat. p. 224, n. 11.

Male. Wings above white, frontwings with black disco-cellular spot, the apical part of costa, apex and outer margin to below second median branch black; the marginal border narrower and more distinctly dentated than in *C. Evangelina* or *C. Chryseis*.

Wings below coloured almost as in the male of *C. Chryseis* but paler and with a reddish disco-cellular ring-spot in all the wings.

Female. Wings above almost as in *C. Chryseis* ♀, but with additional white spots on marginal border.

Wings below yellowish and (with the exception of the internal area of the frontwings which is white), striated with pale brown; frontwings with a small disco-cellular ring-spot, and beyond it an angulated series of pale brown striæ; the extreme outer margin orange; hindwings with three more or less distinct central silver ring-spots, and beyond them an irregularly arched series of reddish or orange spots; nervures minutely black-tipped.

Localities—♂, Darjeeling, Coll. Wallace; Wuzerabad (*Hearsey*) B.M.; Central India, Coll. W. W. Saunders; Ceylon (*Templeton*), ♀, (*Cuming*) B.M.; ♂, Formosa, Coll. Wallace; Java, Coll. Druce.

Var. *P. Ilea*—♂, Wuzerabad (*Hearsey*); Ceylon (*Cuming*), ♀, (*Templeton*), B.M.; ♂, India Coll. W. W. Saunders.

Race. *P. Nephte*, ♂, ♀, Hong-Kong (*Lurkin*) B.M.

The caterpillar and chrysalis of *C. Pyranthe* are figured in Mr. Moore's Catalogue of the Lepidoptera of the East India Company, pl. 1, figs. 8, 8a.

Herr George Semper describes the caterpillar, which frequents *Cassia fistula* and *C. occidentalis* as yellowish green with a black and yellow lateral stripe, the pupa rests seven days, this species has been reared by Capt. Lang who found it on *Cassia tora*; the perfect insect, according to Mr. Swinhoe, is abundant amongst rank and overgrown herbage.

The variety *P. Ilea* of Fabricius differs from the typical form on the upperside, in its extremely narrow marginal border, below in its uniform colouring and more distinct disco-cellular spots: the race *P. Nephte* (which I unfortunately confounded with *P. Gnoma*, when determining the Fabrician species of *Callidryas* for my Catalogue) differs only in its much greater size, in which respect it agrees with *C. Chryseis*, the pattern of both surfaces being however precisely as in *C. Pyranthe*.

10. *Callidryas Gnoma*, Plate IV., figs. 1, 2, 3, 4.

♂ *Papilio Gnoma*, *Fabricius*, Syst. Ent. App. p. 828, n. 152-153, (1775).

♀ *Papilio Philippina*, *Cramer*, Pap. Exot. 4, pl. 361, figs. C, D, (1782).

Male. Wings above white; frontwings with small black disco-cellular spot and small brown marginal spots; hindwings unspotted: wings below as in some males of *C. Pyranthe* but with the markings better defined.

Female. Wings above white, margins yellow-washed; frontwings with basal costa brownish ochreous; a large round disco-cellular black spot and reddish brown maculate marginal border: wings below as in some females of *C. Pyranthe* but the markings bolder and much better defined.

I have examined specimens from the following localities—

♀, Afghanistan, B.M.; ♂, N. India, Coll. Wallace, ♀, B.M.; ♂, ♀, India, Coll. E. Brown; ♂, ♀, Punjab, B.M.; ♀, Hong Kong, Coll. Hewitson.

♀ Var. resembling ♂ on upper surface, Ceylon, B.M.

Captain Lang caught *C. Gnoma* on the Himalayas and Plains, and reared the larva on *Cassia tora*; Captain H. L. De la Chaumette states that it occurs also on *C. Occidentalis*, he found the larva on the 13th September and describes the transformations (Ent. Month Mag. 2, p. 36) as follows—Larva "Length 1½ inch, cylindrical, elongated, attenuated at both ends, rough, covered all over (particularly on the sides) with black slightly raised spots, forming, on the upper side of the broad pale yellowish lateral line, a dark border. Dorsal artery plainly visible. The back strongly transversely ringed on each incision with deep furrows, giving it rather a crested appearance. Abdomen, head, anus, and prolegs pale dull green. Body above grass-green, dark. Thoracic legs pale yellow. Head spotted like the rest of the body, spiracles cream colour. Slow in its movements. It went into chrysalis on the 14th September, 1864. Chrysalis, very delicate green, with a narrow straw-coloured lateral line from the anus to the eighth segment. After eight days the marginal pinkish spots of the imago were distinctly visible under the wing covers. Came out on the 24th September, 1864. Egg spindle-shaped, perfectly white, fastened by one end to the under surface of the leaf, several on one leaf, placed apart."

11. *Callidryas Lactea*, Plate IV., figs. 5, 6, 7.

♂, ♀ *Callidryas Lactea*, *Butler*, Ann. & Mag. Nat. Hist. 4th S., 5, p. 361 (1870).

♂ *Callidryas Thisorella*, (part) *Wallace*, (nec. *Boisd.*) Trans. Ent. Soc. Lond., 3rd Ser., IV., p. 399 (1867).

Male. Wings above milky-white; frontwings with the apex sometimes tinted with brown, the nervures towards apex tipped with brown; base of wings slightly rosy-tinted, a minute disco-cellular brown spot; hindwings unspotted; the usual mealy patch upon disc.

Wings below pale ochraceous, hatched with brownish ochreous, rosy tinted at base ; a minute brownish disco-cellular ring-spot : frontwings with the internal area whitish.

Female. Generally only to be distinguished from male by the larger disco-cellular spot on upper surface of frontwings, but in the example figured it differs also in the well-defined brown spots at termination of nervures on outer margin ; and below in the brighter ochraceous ground colour with ill-defined disco-cellular ring-spots.

The localities are as follows—♂, ♀, Solomon Islands (*Brenchley*) ; ♀, Australia (*Stutchbury*) ; ♀, Champion Bay (*Du Boulay*) B.M. ; ♂, Queensland. Coll. Wallace, ♀, B.M.

The above species seems to supply the place of *C. Gnoma* in Australia.

12. *Callidryas Pyrene*, Plate IV., figs. 8, 9, 10.

♂, ♀ *Colias Pyrene*, *Swainson*, Zool. Ill., 1st Ser., pl. 51 (1820-1).

Callidryas Florella, *Boisduval*, (nec. *Fabricius*), p. Gen. Léop. 1, p. 608, n. 2 (1836).

Male. Wings above milky-white ; frontwings with exceedingly narrow brown marginal border from beyond middle of costa to middle of outer margin ; a very minute disco-cellular brown point ; hindwings with usual mealy patch ; the outer margin of all the wings very feebly yellow-tinted.

Wings below, pale yellowish or greenish ochraceous, hatched with brownish ; base rosy ; frontwings with red disco-cellular ring spot ; three indistinct brown spots in an oblique line from second median to first discoidal nervure ; hindwings with red disco-cellular ring-spot ; five indistinct brown spots forming a bracket-shaped line between subcostal and median branches.

Localities—♂, ♀, Interior of S. Africa (*Burke*), B.M. ; ♂, S. Africa, Coll. Wallace ; ♂, Madagascar, Coll. T. De Grey ; ♂, ♀, Mauritius (*Beke*), B.M. ; ♂, ♀, Kartoum Coll. Wallace ; ♂, Sierra Leone (*Foxcroft and Morgan*), B.M.

Dr. Boisduval in all probability followed Fabricius, when describing the female of his *C. Florella*, but had he possessed the same opportunity that I have of examining the Fabrician type, he would have discovered that the true *Florella* was a faded and worn female of his *C. Rhodia* ; in fact, Swainson is perfectly in the right when he says that the sexes of his *C. Pyrene* are identical in pattern and colouration.

The Fabrician description of *C. Florella* says "alis posticis subtus punctis tribus argenteis" which would at once distinguish it from the female of *C. Pyrene*.

Mr. Bowker states (Trimen's Rhop. Afr. Austr., p. 332) that the species is numerous about March, appearing in one day by thousands, it is rare by the middle of April. Easily caught, settling upon flowers at edge of forest, but rarely met with inside woods. Seen on 20th July, 1863.

Hopffer, in Peter's "Reise nach Mosambique" p. 365, remarks that "the colour of the female, which Boisduval entirely passes by in his description, is quite distinct from that of the male, it is on the upperside sometimes pale yellow, sometimes beautiful gamboge yellow, on the underside always yellow-ochre," there can be no doubt that Hopffer has here referred the female *C. Florella* to the male *C. Pyrene*.

In the "Kongl. Vet. Akad. Forhandl," for 1858, Wallengren characterizes a new genus under the name of *Thespia*: but in his paper on the Rhopalocera of Caffraria, he described the genus under the name of *Ptychopteryx*; as no reason is assigned for this alteration I cannot follow him.

In describing the above Genus, Wallengren invents a system of nomenclature entirely different to that in general use, and calls each nervure a costa; the costæ of the frontwings are counted upwards from the inner to the anterior margin of the wing, and are stated to be ten in number, whilst *Callidryas*, the most nearly allied genus, is said to have nine; the actual difference in neuration between the two genera is one of position, not of number; some of the characters distinguishing *Ptychopteryx* from *Callidryas*, when put into the usual form, are good, others bad; for instance, the character of a patch of fine bristles at base of hindwings, is common to *Callidryas* (See Drury on *C. Chryseis* and Trimen on *C. Florella*); the costal nervure of hindwings much arched; the first subcostal arched, emitted from centre of its nervure, and running to apex; the straight fold from base through whole length of cell and between discoidal and third median branches to outer margin, are all characters common to *Callidryas*: the following good characters remain:—

h. w. The second subcostal and discoidal branches springing from nearly the same place so as to reduce disco-cellular to a point.

f. w. Upper discoidal not branching from subcostal but emitted close to it at end of cell; second subcostal nearer to first.

1. *Ptychopteryx Bohemani*.

♂, ♀ *P. Bohemani*, *Wllgr.* Wings above whitish yellow, frontwings deeper coloured, apex broadly black-brown intersected by five orange yellow spots, a discoidal black point; hindwings below with very many short striolations of a pale reddish grey colour and a longitudinal deeper streak upon the fold. Caffraria.

The following must I think be a second species of this Genus.

2. *Ptychopteryx Lucasii*.

Callidryas Lucasii, *Grandidier*, *Revue et Mag. de Zool.*, 2nd S., t. 273 (Aug. 1867.)

Male. Frontwings above falcate, whitish towards base; with black apex exhibiting a rounded yellow spot; discoidal spot elongate, black; below beautiful yellow, with hind-margin yellowish white and apex ferruginous.

Hindwings above white, exhibiting two marginal rows of blackish spots; below, yellow with ferruginous hatchings; costa and outer margin spotted with same colour.

Female. Differs in the dentated, not falcated frontwings; three silver spots on under surface of hindwings.

Cape Sainte-Marie (*Grandidier*.)

13. *Callidryas Thaurama*, Plate V., figs. 3—6.

Callidryas Thaurama, *Reakirt*, Proc. Acad. Nat. Sci., Philad., p. 238 (1866).

Callidryas Fiaduna, *Hewitson*, Exot. Butterf., p. 63, pl. Callid. et Eron. figs. 1—4 (1867).

Male. Wings above very similar to *C. Catilla*, but with large black disco-cellular spot, and without black at apex: below pale green with white hatchings; frontwings with inner half (excepting the anal area which is white), sulphur yellow, an orange discoidal streak at base; a disco-cellular ring spot, and the outer margin towards apex, reddish; hindwings, subcostal nervure yellow margined; a small ring spot at end of cell, and six brown points forming an arch beyond it.

Female. Wings above with basal area white, apical area golden yellow, deeper towards outer margin; frontwings with large black disco-cellular spot; the subcostal and median branches terminating in large brown spots united at apex; an indistinct brown spot below second subcostal branch, and three in an oblique series beyond cell: below golden yellow hatched with orange, frontwings with a large reddish spot at end of cell, and two or three brown points beyond it: hindwings with three silver-centred ring-spots at end of cell, and eight red-brown points placed in an arch beyond it.

♂, ♀, Madagascar. Colls. Hewitson and Saunders.

The above species seems to represent *C. Catilla* in Madagascar.

14. *Callidryas Florella*, Plate V., figs. 1, 2, 2a.

♀ *Papilio Florella*, *Fabricius*, Syst. Ent., p. 479, n. 159 (1775).

♂, ♀ *Callidryas Rhadia*, *Boisduval*, Sp. Gén. Lép., p. 617, n. 11 (1836).

Pontia Marcellina, *Bertoloni*, in *Memorie Acad. Sci. Inst.*, Bologna, 2, p. 178 (1849, publ. 1850).

Var. *Callidryas Hyblæa*, *Boisduval*, Sp. Gén. Lép., 612, n. 11 (1836).

Var. *Callidryas Florella*, ♂ var. *Maillard* in "Notes sur L'Ile de la Réunion," p. G.—5, pl. 22, figs. 1—4 (1862).

Male. Wings above sulphur yellow, without spot: below citron—yellow; the frontwings exhibit a transverse disco-cellular brick-red mark, divided by yellow nervures; the hindwings with a silver-centred disco-cellular spot, and a transverse series of indistinct ferruginous points beyond cell.

Female. Wings above sulphur yellow becoming deeper coloured on the outer margin, the nervures terminated by reddish spots; frontwings with large black disco-cellular spots; the basal costa rosy-tinted: below golden yellow with scattered red-brown hatchings; frontwings with rosy silver-centred ring-spot at end of cell; an angulated series of five or six reddish spots; the nervures terminating in rosy spots; hindwings with three silver-centred ring-spots at end of cell and an irregularly arched series of ill-defined reddish spots beyond it; the nervures terminating in ill-defined rosy spots.

I have examined specimens from the following localities:—

♀, Sierra Leone, (*Foxcroft and Morgan*); Ashanti, B. M.; Senegal, Coll. Druce; Abomey, Coll. Saunders; Madagascar, Coll. T. De Grey.

Dr. Boisduval seems to be the only Lepidopterist, who has been favoured with a sight of the male of this species, it is in none of the collections to which I have access, and (so far as I can judge from the writings of Messrs. Trimen, Wallengren, and others), has not made its appearance since the publication of the *Species Général*; indeed Dr. Wallengren, in the *Svenska Handlingar*, evidently considers the male *C. Pyrene* to be that sex of *C. Florella*.

In the *Species Général*, Dr. Boisduval, described the typical female, *C. Florella* (under its true name), as the female of *C. Pyrene*, in all probability compiling his description from that of Fabricius: Mr. Trimen in his "*Rhopalocera Africae Australis*" translated Dr. Boisduval's description, with the following remark:—"Having only seen males of this species, I am obliged to borrow the above description of the *female* from M. Boisduval's work;" under the localities, however, I find "Interior of South Africa, Sierra Leone, St. Vincent (Cape Verd Islands).—Coll. Brit. Mus.," which proves to me that my friend Trimen, (like Mr. Doubleday and myself), was under the influence of the Boisduvalian description, when he examined the Museum specimens (See localities at p. 44 of this work). In a foot-note to the same page, however, Mr. Trimen says, "A ♀ of *Florella*, in Mr. D'Urban's collection confirms Mr. Swainson's statement, being identical in colour and marking with the ♂;" I mention the above facts to explain a note in my Fabrician Catalogue, which Mr. Trimen, in his paper, recently read before the Entomological Society, seems to have misunderstood; at p. 224, I observed "The female is much like a large pale variety of the *C. Rhodia* of Mr. Doubleday's List;" unfortunately the sheet was printed off before I discovered my error, which I corrected in the next page, "*Callidryas Rhodia*, Boisd. (*Florella* Fabr.);" I had no intention of suggesting the identity of two apparently so distinct species, as *C. Pyrene* and *C. Florella*, nor do I now think, considering the totally different colouring and pattern of the two, and the fact that the sexes of both have been described, that the capture of a single ill-assorted pair is a sufficient reason for uniting them as modifications of one variable form: I cannot help thinking that the intermediate form mentioned by Mr. Trimen must have been *C. Thauroma*.

Signor Bertoloni received *C. Florella* ♀ from Inhambane, and observing its near resemblance to the *P. Marcellina* of Cramer, came to the conclusion that the latter species was indigenous to the east coast of Africa.

Mr. Trimen remarks (Rhop. Afr., Austr) :—" I once saw this butterfly at Knysna, on the 11th of March, 1859, flying rapidly over the marshes near the river. I chased it for some time, but when close upon it, by an unlucky fall gave the insect time for so long a start, that it was useless to try further pursuit. An aged specimen of the *female*, from the same locality was given me by a lady who took it there some years ago. The insect is conspicuous in flight, owing to its bright-yellow colour."

The chrysalis figured was sent with the perfect insect from Sierra Leone by Mr. Foxcroft.

15. *Callidryas Eubule*, Plate V., figs. 7-10.

♂ *Papilio Eubule*, *Linnaeus*, Syst. Nat. 2, p. 743, n. 102 (1766).

Male. Wings above sulphur yellow, unspotted, with narrow marginal mealy band: below sulphur yellow; frontwings with paler internal area, an irregular rosy-centred ring-spot at end of cell and a deeply bisinuate series of eight brown spots beyond it: hindwings with two silver-centred spots at end of cell, encircled by an irregular discal series of ten or eleven red-brown scale-spots, sometimes obsolete.

Female. Wings above sulphur yellow, with orange margin, the nervures terminating in black spots; frontwings with large black disco-cellular spots, and sometimes with an indistinct series of discal spots towards apex: below golden yellow, the margins deeper coloured; frontwings with a large geminate silver-centred ring-spot, the discal spots as in male, but redder; hindwings with two silver-centred ring-spots placed obliquely upon a squamose rusty band at end of cell, and encircled by a discal series of irregular reddish markings; several reddish spots at base.

Localities—♂, ♀, St. John's Bluff, (*E. Doubleday*), B. M., Coll., Saunders; N. America, Coll. Druce.

Dr. Boisduval rightly observes that the individuals from North America have the wings less rounded than those from South America, but I cannot agree with him in considering the Southern form a local variety of *C. Eubule*, I would rather call it a representative form of the latter, since the female differs constantly in its smaller size, deeper or paler* colouring, and more strongly defined markings.

Messrs. Smith and Abbot figure both sexes of *C. Eubule* in their "Lepidopterous Insects of Georgia," with the food-plant *Cassia chama-crista*; they call attention to "the conformity of colours between the flowers of this plant, and the fly bred upon it;" the following observations on the transformations of this (figured on the plate) are added—"one of them spun itself up the 30th of August, changed the next day, and the perfect insect appeared September 10th; another spun on the 23rd of September, changed the 24th, and came out on the 6th of October.

* A white form occurs at Honduras and Venezuela.

16. *Callidryas Sennæ*, Plate V., figs. 1—4.

♀ *Papilio Sennæ*, *Linnaeus*, *Syst. Nat.* 2, p. 764, n. 103 (1766).

Papilio Eubule, *Cramer*, *Pap. Exot.* 2, pl. 120, figs. E, F (1779).

♂ *Papilio Marcellina*, *Cramer*, *Pap. Exot.* 2, pl. 163, figs. A, C (1779).

♀ Var. *Papilio Pomona*, *Donovan*, *Ins. New Holland, &c.*, pl. 17, figs. 3, 3, (1805.)

Callidryas Orbis ♀, *Poey*, *Cent. Lép. Cuba*, pl. 1 (1852).

♀ albino *Papilio Hyperici*, *Sepp.*, *Surinamsche Vlinders*, vol. 1, pl. 19. (1855.)

♀ albino ? *Callidryas Yamana*, *Reakirt*, *Proc. Ent. Soc. Philad.* 2, p. 352 n. 3 (1863.)

Male. Generally smaller than *C. Eubule*, the colouring of the under surface deeper, and the markings much better defined.

Female. Above deep golden-yellow, sometimes inclining to orange, or dirty white; frontwings with internally dentated, well defined dark-brown margin beginning at second-third of costa, and terminating at anal angle; a large black disco-cellular spot, and a sub-apical series of angulated lunules between the nervures, also a point of the same colour between median branches; hindwings with rosy margin; a sub-marginal series of five large geminate dark-brown spots at termination of nervures; abdominal and basal areas pale rosy; under surface of wings paler; the margin with band and spots as above but deep rosy; frontwings with a large geminate silver-centred ring-spot at end of cell, and a zig-zag series of irregular characters on disc, all rosy-brown; costa rosy; hindwings with two silver-centred ring spots placed obliquely at end of cell on a brownish streak and encircled by a series of bracket-shaped characters beginning at base, and continuing in the form of a heart through disc, all rosy brown.

Localities—♂, ♀, S. America, Coll. Druce; Brazil, ♀, Rio Janeiro (*Macgillivray*), B.M.; ♂, ♀, Para, Coll. Wallace; ♂, Central America; ♀, Bahia Coll. Ward; Colombia (*Dyson*), ♂, Sta. Martha, ♂, Texas, Coll. Saunders; ♀, West Coast of Mexico (*Belcher*), B.M.; ♂, ♀, Trinidad, ♀, Honduras (*Dyson*), Coll. Saunders and B.M.; ♂, ♀, Venezuela (*Dyson*), Jamaica, Haiti (*Tweedie*), ♂, Polochic Valley (*Salvin*), B.M.; ♂, San Lorenzo Coll. Salvin.

♀ Dwarfed form. Trinidad, Coll. Saunders.

♂, ♀ Var. differing from the typical form of *C. Sennæ* in the more sulphur colour of the upper surface, but exactly the same in other respects. Chili (*Reed*), Coll. Saunders.

The *Phœbis Eubule* of Hübner, (*Samml. ex. Schmett.* 2, pl. 131, 1805) represents the two common forms of female *C. Sennæ*; we have examples of both from Honduras.

The *Papilio Pomona* of Donovan, which I have given in the above synonymy, and which somewhat resembles the *C. Orbis* ♀ of Poey's plate, appears to be a slight variety of *C. Sennæ* ♀, it can

scarcely be the female of *C. Orbis* since it does not possess the characters common to the *Godartianus* group, and also because the true female of *C. Orbis* is in Mr. Druce's Collection from Cuba, and is perfectly distinct in form, marking, and coloration.

The *C. Yamana*, of Reakirt, is described as being nearly allied to *C. Pyranthe* to which it bears considerable resemblance; indeed, I am informed by Mr. Edwards, of West Virginia, who has kindly communicated with Mr. Reakirt respecting the species, that the description of *C. Yamana* was delayed until the arrival of a second example from the same locality, in order that Mr. Reakirt might be sure of the correctness of its habitat; under these circumstances I could not well have referred it to *C. Sennæ* had I not received evidence which leads me to suspect that that species has not been correctly identified by American authors.

It is not impossible that *C. Yamana* may be an albino female of *C. Drya* or *C. Trite*, either of which would bear a close resemblance (especially on the upper surface) to *C. Pyranthe*, however without examining the type, or a figure of it, it is impossible to do more than guess at the relations of the species.

Dr. Boisduval, in his *Hist. Gén. Léop. Am. Sept.* remarks that the *P. Sennæ* of Linnæus is a variety of *C. Eubule* which has no black points at the extremity of the frontwings; this is far from being the case, since *C. Sennæ* invariably has the black spots well-defined whilst in *C. Eubule* they are often entirely wanting. Many naturalists seem to have observed the close resemblance existing between *C. Sennæ* and *C. Marcellina* yet almost all have agreed in separating them as distinct species; thus, Mr. James Duncan in his *Naturalist's Library*, vol. 5, p. 122, says that *C. Eubule* (which most old authors considered synonymous with *C. Sennæ*) "so closely resembles *C. Marcellina* that it is possible they would still have continued to be confounded, as they were by the earlier entomologists, had not the different appearance of the caterpillar indicated their essential distinction;" he describes the caterpillar of *C. Eubule* as "green, covered with small black granules, and having a yellow line along each side, surmounted by another of a blue colour." Donovan, however, tells us that "the specific character of *Papilio Sennæ* consists chiefly, according to Linnæus, in having the double spot in the centre of each wing of a ferruginous colour, while in *Papilio Marcellina* that characteristic mark has the exact appearance of two approximating spots of molten silver. The tips of the wings are sometimes spotted as in *Marcellina*, and are sometimes destitute of spots:" Herbst, with more shrewdness than either of the above worthies observes that "*P. Sennæ* is so like *P. Marcellina* that it can scarcely be regarded as a distinct species."

Sepp in his figure of *Papilio Hyperici* omits the black border on outer margin of frontwings, but on the under surface figure, which also shows part of the upper surface, this border is put in: he gives the following account of the transformations, "It was on the 1st of March that we found this caterpillar, of a bluish green and speckled, on the underside of the leaves of the plant which at Surinam bears the Dutch name of Ringwormkruid; as it appeared to us to be full grown we expected soon to see it change to a chrysalis, indeed, four days afterwards it began to fix its body and spin a transverse band over it; after its colour had been altered to a shining and transparent green, on the following day it changed into a red chrysalis prettily striped with yellow, nine days afterwards the butterfly emerged from it."

Under *C. Eubule* Sepp gives us a second account thus: "The green caterpillar of our plate very much resembles the caterpillars of the cabbage butterfly of Europe, and is scarcely less common than

them, it lives on the leaves of the *Hypericum bacciferum*, known in Surinam under the name of Ringwurmkruid, and on various species of *Cassia*; it is met with at various times of the year, it grows rapidly and does not change colour until about to undergo its metamorphosis, then it assumes a shining yellowish tint, the chrysalides are either red or green."

The most quaint description of *C. Sennæ*, in all its stages is to be found in Sloan's History of Jamaica (p. 212, 1725) as follows—

THE COMMON YELLOW CATERPILLAR.

"Its bigness is as that of a goose-quill, it is about an inch long, of a yellowish colour, having here and there black spots on it, after it attains its due growth it becomes the—

AURELIA TRIANGULARIS PURPUREA, LINEIS LUTEIS NOTATIS,

THE COMMON TRIANGULAR AURELIA.

This is almost triangular, about half-an-inch long, and one-fourth part of an inch broad at broadest, having here and there some angles and eminences, and is sharp at both ends; it is of a purple colour with some yellow streaks. When the worm or caterpillar has fed itself full, it creeps to a place free from wind, and there fastens one end to the under part of a stone, twig, &c., and the other end hangs in a string like that of a spider's web, where it takes this figure and comes out—

THE COMMON YELLOW BUTTERFLY.

This was about an inch long from the head to the tail, about twice as much from wing to wing extended; it had six feet, three of each side, it had two brown *antennæ*, three quarters of an inch long went out of its brown head, and two large brown globular eyes. It had hanging out of its mouth a long spiral twirling *Proboscis*, of a brown colour; the body was covered over with a long yellow down and the wings with a shorter, there were in the middle part of each of the four wings, two silver spots or eyes, inclosed in a brown circle, or *Iris*, besides several other brown spots or lines, here and there, especially on the margin of the wings on the upper sides. On that pair of wings nearest to the head, or the upper pair, were by the outside, two brown spots as big as a large pin's head.

The *Eruca* of this butterfly above described, No. 1, feeds on what they call here Wild Indigo. They are the most common of all butterflies."

The figures accompanying the above description are those quoted by Linnæus for his *C. Sennæ*. Mr. Gosse observed *P. Sennæ* in Jamaica flitting about the expanded blossoms of the prickly pear.

17. *Callidryas Drya*, Plate VI., figs. 5—8.

Papilio Drya, *Fabricius*, Syst. Ent. p. 478, n. 153 (1775).

Callidryas Amphitrite, *Blanchard*, Gay's Fauna Chilena 7, p. 20; pl. 5, figs. 1, 2 (1852).

Callidryas Eubule, ♂ var., *Butler*, Fabr. Cat. p. 222, n. 9, (1869).

Male. Wings above sulphur-yellow, with mealy margin narrower than in *C. Eubule* or *C. Sennæ*, below sulphur-yellow; frontwings with a deep orange point on lower disco-cellular veinlet; hindwings with two minute silver-centred reddish ring-spots at end of cell, the outermost one indistinct; two or three indistinct squamose lines between nervures on disc.

Female. Wings above sulphur-yellow, markings intermediate between *C. Eubule* and *C. Sennæ* but most like the latter, the discal series of spots in frontwings wanting; below pale yellow, deeper tinted at base; outer margin narrowly edged with rosy; discal characters as in *C. Sennæ* but brown and very indistinct; frontwings, basal costa rosy, disco-cellular spot as in *C. Sennæ* but narrower; hindwings with two black-edged silver-centred spots at end of cell: base rosy.

Localities—♂, Peru, B.M. ♂, ♀, Chili, ♂, Haiti, ♀, Cuba, Coll. Druce.

The above may be nothing more than a variety of *C. Sennæ*, but at present I have not sufficient evidence to allow me to form a definite opinion as to their identity or non-identity so that I am obliged to keep them separate. Dr. Herrich-Schäffer remarks (Corr. Blatt, d. Zool. min. Ver. Regensburg, p. 169, n. 6, 1864), "It will surely be no longer doubted that *Marcellina* and *Drya* Boisid., are not specifically distinct," he does not however state his reasons for arriving at this conclusion.

In Madame Merian's Insects of Surinam, a female *Callidryas* is figured (which appears to be *C. Drya*) concerning the metamorphoses of which the following remarks are made—"The yellow caterpillars ate the leaves ("Zoeteboontjes") they had black feet and black spines on the back; I have had more than a hundred, which all died, because the leaves of this tree become hard and dry as soon as they are broken off, and therefore cannot be eaten by the caterpillars; however, I had one on the 16th June, 1770, which became a pupa similar to the one at the end of the tendril, and at the end of June came out a beautiful butterfly like the one which is here represented flying and at rest."

18. *Callidryas Irrigata*, Plate VII., figs. 1, 2.

♀ *Callidryas Irrigata*, *Butler*, Trans. Ent. Soc. Lond., p. 9, n. 2 (1870).

Male. Unknown.

Female. Wings above rosy-tinted ochraceous; frontwings with a brown spot interrupted by the lower disco-cellular nervure, a second extending round the apex, the discoidal nervures also terminating in brown points; hindwings with marginal patches of rosy scalings upon the nervures: below ochraceous irrorated with ferruginous; frontwings with a broad discal zigzag interrupted band, diffused internally and bounded externally by a purplish line; a double silver-centred disco-cellular ring-spot; hindwings with two similar shining spots and about seven diffusely silvery markings forming an irregular arch round the cell.

Locality—♀, Ipaunema? Brazil. Coll. Kaden in Coll. Druce.

Intermediate in character between the *Eubule* and *Cipris* groups; it is the smallest tailed species of the genus, and differs from *C. Neocypris*, its nearest ally, in the slightly more curved outer margin of the frontwings, which are not edged with a continuous series of brown points; both surfaces more deeply coloured, the under-surface densely irrorated with ferruginous, and the silver markings broader and more diffused.

19. *Callidryas Neocypris*, Plate VII., figs. 3—6.

♂ *Colias Neocypris*, *Hübner*, *Exot. Schmett.* 2, pl. 136, figs. 1, 2 (1806).

Male. Wings above sulphur-yellow; frontwings with central area to mealy border golden-yellow; outer margin orange-yellow; nervures conspicuously tipped with black; hindwings with outer margin, except mealy patch and nervures, broadly orange-yellow; nervures black-tipped: below orange-yellow irrorated with ferruginous, nervures black-tipped; frontwings with large irregular silver-centred reddish-brown disco-cellular spot and zigzag discal macular band of same colour; internal area sulphur-yellow; hindwings with two disco-cellular silver spots surrounded by a red-brown patch; several spots near base and an arched discal series of irregular markings, all brown.

Female. Wings above sulphur-yellow becoming golden-yellow externally, outer margin inclining to orange; frontwings with a large black disco-cellular spot and a well-defined series of black points terminating the nervures: below orange-yellow becoming sulphureous externally; a marginal series of silver spots bounded on both sides by purplish dots; frontwings with kidney-shaped silvery centred disco-cellular spot and a zigzag discal series of silver markings; hindwings with two disco-cellular silver spots surrounded by a greyish silvery patch; the discoidal cell surrounded by an irregularly arched series of silver markings; nervures silver-tipped.

Localities—♂, Brazil. Coll. Kaden in Coll. Druce. ♀ — ? Coll. Hewitson.

The above species has been referred by modern authors to *C. Cipris*, it however differs from it in so many particulars that, without evidence of their identity, it would be rash to consider it a variety of that species; in all probability, if we possessed more accurate localities for this and several other nearly allied species in this genus, we should find that they were confined to a more limited area than is at present accorded to them.

20. *Callidryas Cipris*, Plate VII., figs. 7—10.

♂ *Papilio Cipris*, *Fabricius*, *Ent. Syst.* 3, 1, p. 212, n. 663 (1793); *Donovan*, *Nat. Rep.* 2, pl. 40, fig. 1 (1824).

♀ *Callidryas Bracteolata*, *Butler*, *Proc. Zool. Soc. Lond.*, p. 458, n. 6, pl. 26, fig. 6 (1865).

Male. Wings above sulphur-yellow; frontwings with central area to mealy border pale golden-yellow; nervures minutely black-tipped; hindwings with outer area except mealy patch golden-yellow; nervures minutely black-tipped: below golden-yellow, finely irrorated with ferruginous, nervures minutely black-tipped; frontwings with silver-centred disco-cellular red-brown spot and slender zigzag discal macular line of same colour; internal area whitish; hindwings with two

disco-cellular silver spots on an oblique red-brown line ; several markings near base and an indistinct arched discal series of irregular markings, all red-brown.

Female. Wings above sulphur-yellow ; frontwings with large disco-cellular black spot and a slender black line at apex : below greenish-yellow tinted with orange or brownish towards base and externally, and finely irrorated with ferruginous ; a more or less distinct semicircular nebulous red-flecked greyish bar at base ; frontwings with silver-centred reddish disco-cellular spot and zigzag discal series of silver markings ; nervures silver-tipped ; hindwings with two disco-cellular silver spots surrounded externally by a reddish line ; the discoidal cell surrounded by a series of silver markings, nervures silver-tipped.

Localities—♂, ♀, Brazil, B.M. ; Peru, Coll. Druce.

This species seems to be still rare in Collections. I have generally found it represented by males of *C. Virgo*, which closely resemble it. The present group is one of the illustrations occurring throughout the genus of similarity in males of allied forms, with dissimilarity of females.

C. Cipris was confounded by Hübner, Cramer, and others with the *C. Larra* of Fabricius ; Hübner, moreover, showed a want of care in naming his new and allied species *C. Neocypris* (sic). I can scarcely think the alteration in the spelling intentional.

21. *Callidryas Virgo*, Plate VIII., figs. 1—4.

♂, ♀ *Callidryas Virgo*, *Butler*, Tr. Ent. Soc. Lond., p. 9, n. 1 (1870).

Male. Wings above sulphur-yellow ; frontwings with central area to mealy border pale golden-yellow ; nervures black-tipped ; hindwings with outer area except mealy patch pale golden-yellow ; nervures black-tipped : below golden-yellow irrorated here and there with reddish-brown, nervures black-tipped ; frontwings with silver-centred sub-geminate disco-cellular red-brown spot and greyish-brown zigzag series of sagittate spots ; internal area pale yellow ; hindwings with two disco-cellular silver spots enclosed in a red-brown patch ; a short red-brown band at base and a circular series of sagittate markings between nervures, all greyish-brown.

Female. Wings above rosy-white, a large disco-cellular spot, the apex and points terminating the nervures, all black-brown : below greenish or bluish-white irrorated with red-brown, the margins slightly ochre-tinted ; frontwings with rosy silver-centred disco-cellular spot, and a zigzag discal series of eight silver spots bounded externally by a rosy line ; the marginal spots surrounded by rosy scales and bounded internally by diffused silver scales ; a red spot at base ; hindwings with two rosy silver-centred disco-cellular spots, surrounded by a circular discal series of rosy-bound silver sagittate markings ; a red spot at base.

Localities—♂, ♀, Mexico, Coll. Saunders. ♂, Oaxaca, Coll. B.M. ♀, Mountains of Oaxaca, E. Side ; San Geronimo, Vera Paz. ♂, Apolobamba, Coll. Salvin. ♂, Volcano of Chiriqui, Panamá (*Bridges*), Coll. B.M.

Differs from *C. Cipris* in the more arched outer margin of frontwings, more pronounced tails to hindwings, white colour of the female and several other minor characters; it is generally rather larger than *C. Cipris*, although not so in my figures, which are taken from small Mexican specimens.

22. *Callidryas Rurina*, Plate VIII., figs. 5—8.

♂, ♀ *Callidryas Rurina*, *Felder*, Wien. Ent. Mon. v., p. 82, n. 36 (1861); *Reise der Novara*, 2, p. 194, n. 193, pl. xxvi., figs. 9—11 ('1865').

Male. Wings above sulphur-yellow, frontwings with central area to mealy patch and outer margin bright golden-yellow; nervures black-tipped; hindwings with outer area including mealy patch bright golden-yellow; nervures black-tipped: below sulphur-yellow irrorated with red-brown; margins golden-yellow; nervures of hindwings black-tipped; frontwings with two unequal diamond-shaped red-brown disco-cellular spots with pale centres; a grey zigzag discal series of sagittate markings, some of them confluent; internal area pale yellow; hindwings suffused with reddish scales at base; two disco-cellular silver spots enclosed in a red-brown patch, an irregular band crossing basal half of cell and a circular series of spots between nervures, all red-brown, those on discal area placed in the centres of greyish sagittate markings.

Female. Wings above sulphur-yellow; frontwings with a large double disco-cellular brown spot; five squamose points upon disc, three forming a triangle near apex, and two between median branches; nervures terminated by conspicuous black spots greatly increasing in size at apex where they are interrupted by the nervures, all these spots are bounded within by red scales; hindwings with outer area golden yellow, nervures terminating in conspicuous red patches; costal and abdominal areas white; below bright sulphur yellow; outer margin pale rosy-lilac, broadest on hindwings; frontwings with large disco-cellular grey-brown patch; a zigzag series of silver markings, bounded externally by purplish; hindwings with two disco-cellular silver spots upon a large red-brown patch; two short bands within cell and a semicircular discal series of markings, all silver, bounded externally by purplish-brown; base and interno-basal area speckled with red scales.

Localities—♂, Venezuela (*Dyson*); Bogota (*H. Stevens*), Coll. B.M. ♀, ♂, New Granada, Coll. Kaden in Coll. Druce. ♀, Coll. Hewitson.

The most remarkable of the tailed species of *Callidryas*.

23. *Callidryas Philea*, Plate IX., figs. 1—4.

♂ *Papilio Philea*, *Linnæus*, Syst. Nat. 2, 764, n. 104 (1776).

♀ *Papilio Aricye*, *Cramer*, Pap. Exot. 1, pl. 94, figs. A, B (1779).

Papilio Melanippe, *Cramer*, *Pap. Exot.* 4, pl. 361, figs. E, F, (1782).

♂ *Mancipium fugax* Argente ♀, *Hübner*, *Samml. Exot. Schmett.* 1, pl. 145, figs. 3, 4 (1806—16).

Colias Corday, *Hübner*, *Verz. bek Schmett.* p. 99, n. 1053 (1816).

♂, ♀ *Colias Lollia* & *Aricia*, *Godart*, *Enc. Meth.* IX, p. 94, n. 15, 16 (1819).

Male. Wings above bright sulphur-yellow; frontwings with the margin very slenderly blackish, expanded into points at the termination of the nervures; an elongate irregular oblique orange patch crossing discoidal cell; hindwings with external area including centre of disc bright orange, the mealy marginal border slightly paler: below golden-yellow, frontwings with internal area broadly sulphur yellow; two irregular silver-centred brown disco-cellular spots and a biangulate series of discal brown spots, most distinct towards costa; hindwings with two brown encircled silver-spots at end of cell and a circular discal series of irregular brown markings completely surrounding them.

Female. Wings above golden or ochraceous yellow; frontwings becoming gradually deeper coloured towards outer margin where it is slightly reddish; a conspicuous spot at end of cell, a biangulate series of nine discal spots, the apex and six marginal spots dark brown; hindwings with external area reddish-orange diffused internally and interrupted by yellow nervures; costal and abdominal areas whitish; five conspicuous brown marginal spots: below dull opaque rosy-orange, the marginal spots of upper surface replaced by squamose silvery ones; frontwings with pale internal area; a collection of closely packed silver-centred brown spots at end of cell; discal brown spots less distinct than above: hindwings with two silver spots encircled with brown at end of cell and a circular series of irregular brown markings completely surrounding them.

Specimens from the following localities have passed through my hands.—♂, ♀ Brazil, Coll. Druce; Rio Janeiro (*Macgillivray*) and Brazil. ♂, Bogota (*Sterens*), B. M. ♀, Bahia, Coll. Saunders. ♂, ♀, Colls. Druce and E. Brown. ♂, Amazons, Coll. Wallace. ♂, Polochie Valley (*Salvin*) B. M. ♀, Mexico, Honduras (*Dyson*), Coll. Saunders.

♂ var. almost spotless on under surface—Santa Martha (*Bouchard*) Coll. Saunders.

♀ dwarfed—Bahia, Coll. C. Ward.

The caterpillar of *C. Philea*, according to Seba, is clothed with slender hairs and is of a dirty yellow colour, decorated with black spots and bands; the chrysalis varied with black and brown: the perfect insect, according to Erichson, in "Schomburgh's Reisen in British Guiana," occurs near the coast on grass plots in gardens and in meadows. *P. Melanippe*, Cr. may prove to be a distinct race.

24. *Callidryas Thalestris*, Plate IX., figs. 5—8.

♂ *Papilio* (Danaus) *Thalestris*, *Illiger*, *Mag.* 1, p. 207, n. 31 (1802).

♂, ♀ *Colias Thalestris*, *Hübner*, Samml. Exot. Schmett. 2, pls. 132—134 (1806).

♀ var. *Callidryas Solstitia* ♀, *Butler*, Ann. & Mag. Nat. Hist. 4th S., vol. 4, p. 203, n. 3 (1869).

Male. Wings above bright sulphur-yellow; frontwings with black points at terminations of nervures; a broad elongate orange band from above costal to submedian nervure; a conspicuous black spot at end of cell; hindwings with disc golden-yellow becoming orange towards margin; mealy border slightly paler: below golden-yellow, markings as in *C. Phileas*, but a submarginal nebulous streak of brown scales from costal nervure to below second median branch and the brown marking between second and third median branches enlarged.

Female. Wings above dull orange-red varying, in the frontwings especially, to yellow; frontwings with a large black spot at end of cell, a zigzag discal series and submarginal series as in *C. Phileas*, but united into one patch at apex; hindwings with disc gradually redder to margin; six unequal diamond-shaped black spots terminating nervures, the first, at apex, minute; three or four black spots on centre of disc; below golden-yellow varied with rosy and lilac scales; frontwings with an irregular silvery-pupilled, black-edged purplish spot at end of cell, and a zigzag series of the same colour on disc; a submarginal series of lilac spots uniting into one patch at apex; hindwings with large elongated purplish patch, enclosing two silver spots at end of cell; a circular series of dark purple discal and basal spots and a broad submarginal externally dentate-sinuate purple band, beginning narrow upon costa near the middle, becoming suddenly broad from apex and terminating at first median branch; base and submedian area densely irrorated with rosy.

Localities—♂, ♀, Haiti, Colls. B. M., (*Tweedie* and *Hearne*), Salvin; and ♂, E. Brown. ♂, ♀, Porto Rico, Coll. Saunders; Chili, Coll. Druce.

M. Lucas, in Ramon de la Sagra's "Hist. de l'île de Cuba," remarks that—"This species has a male variety, in which the band of the upper wings is very broad, almost of a blood-red colour, as well as its posterior margin; the lower wings entirely of an almost blood-red colour." This is of course nothing more nor less than the *C. Arellaneda* of Herrich-Schäffer.

25. *Callidryas Solstitia*, Plate X., figs. 1, 2.

♂ *Callidryas Solstitia*, *Butler*, Ann. & Mag. Nat. Hist. 4th S., vol. 4, p. 203 (1869).

Male. Wings above bright sulphur-yellow; frontwings with interno-basal area and mealy external area suffused with orange; outer margin inclining to reddish; a broad, somewhat lunate band crossing cell, and continued below median vein by a broad, irregular diffused patch, extending to mealy border, crimson interrupted by yellow nervures; a black spot on lower disco-cellular

nervelet; hindwings, excepting a broad whitish patch above costal nervure, suffused with orange, the discal area crimson, becoming more intense towards mealy border; below dull orange, densely irrorated with minute rusty scales; brown markings and silver spots of hindwings almost as in *C. Philea*.

Female. Unknown.

Locality—♂, Chili, Coll. Kaden in Coll. Druce.

If the habitat of this species can be relied upon, it is certainly distinct from *C. Avellaneda*, from which it differs in shape and in the following colour characters:—Frontwings above with crimson area broader within cell and narrower below it, not encircling disc-cellular spot, and carried through centre of first median interspace to mealy border, the latter narrower and not so well defined; hindwings with broader external mealy area*; body clothed with yellow hairs, abdomen yellow, palpi and collar fulvous; in *C. Avellaneda*, the thorax is clothed with bright ochreous hairs, abdomen yellow, with ill-defined dorsal stripe of orange; anal segments orange; head red-brown, palpi collar and mane orange.

26. *Callidryas Avellaneda*, Plate X., figs. 3—5.

Callidryas Thalestris, var. *Herrich-Schäffer*, Correspondenzblatt. d. Zool. min. Ver. in Regensb. vol. 16, p. 119 (1862).

Callidryas Avellaneda (*Gundlach*) *Herrich-Schäffer*, l. c. vol. 18, p. 169 (1864).

Male. Only differs from preceding in the characters given above.

Female. Frontwings above sulphur-yellow, basal and internal areas irrorated with red scales; outer margin crimson; black spots arranged nearly as in *C. Philea*, but larger, and not filling up the apex of wing, all surrounded by dense crimson scales; hindwings rosy, the central area reddish orange, becoming gradually more intensely crimson to outer margin; four diffused blackish submarginal spots on nervures, and five forming a double zigzag between nervures on disc, the uppermost very indistinct; below orange, irrorated with crimson; frontwings with a discal series of nine blackish spots succeeded by a broad band of rosy lilac; outer margin orange; a large silver spot encircled by a black line, and split up into six unequal parts at end of cell; hindwings with two silver spots placed obliquely beyond cell, and surrounded by a series of diffused blackish spots, which externally form a semicircular band bounded internally by a reddish suffusion; succeeded on disc by a broad band of rosy lilac including ill-defined blackish lunules on second median and subcostal interspaces; outer margin orange.

* The anal margin is broken, and may turn out to be more like that of *C. Avellaneda* than it appears in my figure.

Localities—♂, ♀, Cuba, Coll. Ward; ♀, —? Coll. Hewitson. This, the finest of all the *Callidryades*, was at first characterised by Dr. Herrich-Schäffer as a variety of *C. Thalestris*. His description runs as follows:—"Nearly allied to *Thalestris*, same size and contour, black central spot of frontwings smaller, encircled with orange red, which circling is connected upon the subcostal with the larger, less sharply defined, glowing red central patch, which reaches as far as the broad orange margin.

"The hindwings are glowing orange gradually becoming darker towards the suddenly brighter margin: no black spots on the margin.

"Underside agrees better with *argante*, it is orange, finely and densely dusted with lake-red, the spots of similar more closely packed dustings, both the silver spots are as small as in Hübner's brighter figure."

In the above description I have only one fault to find—the circling of the black spot is connected with the larger central patch upon the lower disco-cellular, and not on the subcostal nervure. I merely mention this because it put me out considerably when determining the species.

"H. Gundlach found several examples of both species (*C. Avellaneda* and *C. Thalestris*), without intermediates, in some places more of one, in others of the other species. I have more accurately defined the male in Corubl. 1862, p. 119, under *Thalestris*. I am, however, sorry to say that I have not yet received the female." H. Sch. in Corubl. 1864.

27. *Callidryas Editha*, Plate XI., figs. 1, 2, 3, 4.

Callidryas Editha Butler, Trans. Ent. Soc., p. 10, n. 4 (1870).

Male. Wings above sulphur-yellow, the outer margin and apex of frontwings exhibiting a broad mealy border; wings below golden yellow dusted with ferruginous; nervures terminating in black points; frontwings with whitish internal area; two black spots dusted with silver and encircled with red at end of cell; a zigzag discal series of eight diffused red spots; hindwings with two black silver centred and red zoned spots at end of cell placed upon a transverse lunated red band and surrounded inferiorly by a nearly complete circle of more or less distinct reddish markings.

Female. Frontwings above fulvous, the central area dull sulphur-yellow; a large black spot at end of cell; a zigzag discal series of nine black-brown spots and a second series on outer margin; hindwings rosy reddish with paler abdominal area; a spot at end of cell and five on outer margin, black-brown; wings below reddish-fulvous dusted with red; markings almost as in male but purplish.

Localities—♂, ♀, Haiti, Coll. Salvin; ♀, Coll. E. Brown.

Intermediate in character between the *Philea* and *Hersilia* groups.

28. Callidryas Fornax, Plate XI., figs. 5, 6.

♀ *Callidryas Fornax*, *Butler*, *Trans. Ent. Soc.*, p. 170 (1871).

Male. Unknown.

Female. Wings above bright sulphur-yellow; frontwings with apical and external areas densely dusted with dull crimson; a black spot at end of cell; apex and terminations of nervures brown; a zigzag series of blackish spots bounded externally on the disc by yellow spots, the two largest nearest to posterior angle; hindwings with external area to cell dull crimson, enclosing two or three yellow spots towards front margin; terminations of nervures blackish; fringe yellow; abdominal area pale yellow; wings below golden-yellow, the external area orange tinted, the whole surface irregularly patched with red; all the markings (which are arranged as in *C. Phileta* ♀) are broad and dull red; two silver spots at end of cell in both wings, but those of frontwings ill-defined.

Locality—'Chili', Coll. Kaden in Coll. Druce.

Intermediate between *C. Arellanola* and *C. Hersilia*; I thought at one time it might be the female of *C. Solstitia*, but it is very unlikely that the female of that species is so dissimilar to that of *C. Arellanola*, or so similar to *C. Hersilia* ♀, as *C. Fornax*.

29. Callidryas Hersilia, Plate XI., figs. 7, 8, 9, 10.

♂ *Papilio Hersilia*, *Cramer*, *Pap. Exot.* 2, pl. 173, figs. C. D. (1779).

♂ ? *Papilio Marcellina* (part) *Cramer*, *Pap. Exot.* 2, pl. 163, fig. B (1779).

♂ *Papilio Larra*, *Fabricius*, *Ent. Syst. suppl.* p. 428, n.n. 653-654 (1798).

♀ *Papilio Cipris*, *Cramer* (nec *Fabr.*), *Pap. Exot.* 2, pl. 99, figs. E, F (1779), yellow form.

♀ *Phœbis Cypris* ♂, *Hübner*, *Samml. Ex. Schmett.* 2, pl. 131, figs. 1, 2 (1806).

♀ *Phœbis Cypris* ♀, *Hübner*, loc. cit. figs. 3, 4 (1806), white form.

Colias Cnidia, *Godart*, *Enc. Meth.* IX., p. 93 (1819).

♀ *Papilio Volcanica*, *Perry*, *Arcana or Mus. Nat. Hist.* 1, pl. 8 (Sept. 1811).

♀ *Papilio Xanthe*, *Sepp*, *Surinamsche Vlinders* 2, pl. 75 (1848).

Male. Wings above bright orange with broad mealy border, with front margins and abdominal area of hindwings sulphur-yellow, frontwings with outer margin black, situated between the nervures, hindwings with five to six black spots at end of nervures on outer margin; wings below golden-yellow sprinkled here and there with ferruginous scales; the nervures terminating in black points; frontwings

with two red ring-spots at end of cell ; a zigzag discal series of brown markings ; apical margin reddish ; hindwings with two silver-centred ring-spots and a brown dash at end of cell, surrounded by a circular series of brown markings dusted towards the base with red atoms.

Female. Wings above golden yellow or rosy white with large black spots at terminations of nervures ; frontwings with a large irregular spot at end of cell, the apical costa and apex, two irregular submarginal spots adjoining apical patch, and two, of different sizes, between median branches, black-brown ; hindwings with costal and abdominal areas rosy-whitish ; wings below golden yellow hatched with ferruginous ; nervures terminating in small red-brown points ; frontwings with several dark purplish lines towards base of cell, a large subquadrate lilacine patch surrounded with purplish brown at end of cell ; a partially connected zigzag series of violaceous spots on disc, confounded at apex with a diffused red nebula ; a series of silvery lilacine submarginal spots towards end of nervures ; hindwings with two silver-centred ring-spots at end of cell upon a broad oblique purplish band and surrounded by a circular series of broad lilacine spots ; central interno-median area densely irrorated with reddish scales ; submarginal spots in frontwings.

I have examined specimens from the following localities—♂, ♀, Brazil, B.M. and Coll. Druce ; ♀, Coll. Saunders ; Rio Janeiro, Coll. Salvin ; Rio Grande, Coll. Saunders ; ♂, Demerara (*Bower*), B.M. ; ♀, Cayenne, Coll. Hewitson ; ♂, ♀, Para (*J. P. G. Smith*), B.M. ; ♂, Santarem, Coll. Wallace ; ♂, Ucayali, Coll. Salvin ; Peruvian Amazons (*Bartlett*), Coll. Saunders ; ♂, ♀, Nicaragua (*Belt*), Coll. Hewitson ; ♂, Ecuador, Coll. Buckley.

This very beautiful species was for many years confounded with *C. Argante*, the two males being very similar ; the *P. Larra* of Fabricius was supposed to be the female of *C. Philea*, an insect to which the Fabrician description in no way applies ; the diagnosis runs thus—"Papilio (D.) Larra. Alis rotundatis, integerrimis, fulvis, margine nigris ; subtus pallidioribus, punctis duobus argenteis." M. Ménétrés (Bull. Soc. Imp. de Mosc. 5, p. 296) remarks—"M. Godart in the supplement p. 805 has reunited this species to the preceding" (*Col. Philea*) "but I think wrongly, for in very many individuals that I have had to examine at one time, the characters of *C. Larra* have always been constant."

That *P. Hersilia* is identical with *C. Larra* ♂ there can be no doubt, for Cramer says that it has "on the undersurface of the wings, two small silvery white spots" and Herbst adds "the upperwings have a very narrow black margin" (upperside), thus distinguishing it from *C. Argante* which he describes thus—"All the wings on the uppersurface reddish-yellow, the hind margin a little spotted with brown."

In Perry's Arcana there is a very amusing description of the female under the name of *Papilio Volcanica* which he states to be "a native of the Rio de la Plata in South America, and of Peru," he then adds—"The back is yellow, spotted with black and brown spots, irregularly placed. The underside coloured with the most splendid orange tints, mixed with red, and of a light brown ; small and large circular pellets, of a pale brown, and scattered unequally with black netted lines which cover the skin. The whole texture of this curious fly exhibits to a fanciful and capricious mind the representation of a volcano or burning mountain, with balls of fire, and burning streams of lava, rising amongst the

smoke. The lower fly* resembles a soil of sulphur tint of a brown and burnt appearance, with several orifices placed at intervals. If imagination can be indulged so far, we may call to mind the description of Sir William Hamilton, in his travels in the vicinity of Mount Vesuvius, at the time of an eruption. Balls of fire were seen spreading over the illuminated scene, mounting high in the air, and falling near to his feet. Rivers of red hot lava, running in red lines, were stopped for some time by a valley, then taking its course through lakes and pools, till it arrived at last at the sea, and buried its heat in the deep."

In Sepp's "Surinamsche Vlinders" the following account is given of the transformations—"The Latin name of the tree which serves as food for these caterpillars is *Inga vera*, called in Surinam 'Zoetenbootjesboom.' "We found it for the first time in the month of March, it is of a uniform green, adorned at the sides with a pale yellow stripe, its head is black, it retains this colour until the adult state.

"When the period of its change approaches, the green colour changes into yellow, spotted with brownish black, which we have not observed in any other species of this family; moreover a blue stripe becomes apparent above the yellow one.

"It was on the 7th April that the caterpillar attached itself, and the beautiful glowing chrysalis appeared on the next day."

NOTE.—The above species should by rights bear the name of *Cipris* given by Cramer to the female, but I prefer, to avoid confusion, to retain the name *Hersilia* given to the male the same year in the same work, Fabricius having described another species several years later under the name of *P. Cipris* by which it has ever since been known, the typical *C. Cipris* moreover having been supposed meanwhile to be a female variety of *C. Argente*.

30. *Callidryas Rorata*, Plate XII., figs. 5, 6, 7, 8.

Callidryas Rorata, *Butler*, Ann. & Mag. Nat. Hist. Ser. 4, vol. 4, p. 202 (1869).

Male. Wings above nearly as in *C. Hersilia*; but larger and with black points at terminations of nervures in frontwings in place of the black border; below the red-brown markings are more scattered and less distinct.

Female. Wings above pale ochraceous, irrorated, excepting at base, with red scales; black markings as in *C. Thalestris* ♀; the larger markings of the underside visible through the wings; below golden-yellow, hatched at base and upon nervures with red-brown specks and lines; frontwings with a large red-brown patch at end of cell; outer margin, a broad oblique irregular macular band from apex to inner margin, apical costa and three spots between subcostal branches, red-brown; the lower discocellular nervelet, a spot at apex, and four others terminating nervures on outer margin, silvery blue;

* Uppersurface figure.

hindwings with a broad red-brown patch at end of cell, enclosing two silver spots, and encircled by a series of broad irregular red-brown markings between nervures and uniting upon median nervure with a large patch of red-brown scales ; nervures terminating in black spots.

Localities—♂, ♀, Haiti (*Tweedie*) Colls. B.M., E. Brown, Druce, Salvin, and Saunders.

31. *Callidryas Argante*, Plate XII., figs. 1, 2, 3, 4.

♂ *Papilio Argante*, *Fabricius*, Syst. Ent. p. 470, n. 116 (1775).

Mancipium fugax Argante (part) *Hübner*, Samml. Exot. Schmett. 1, pl. 145, figs. 1, 2 (1806).

Callidryas Agarithe (part) *Lucas*, in Ramon de la Sagra's Hist. Cuba, *Articulata*, pl. 15, figs. 4, 4a, (1856).

Male. Wings above nearly as in *C. Rorata* but darker, and size of *C. Hersilia* ; below without silver spots in hindwings, otherwise as in *C. Hersilia*.

Female. Wings above orange-yellow : frontwings with a spot at end of cell, three submarginal placed somewhat obliquely, the first between discoidal and the others between median branches, the apex and outer margin irregularly blackish-brown ; hindwings with costa pale ; nervures terminating in black spots ; wings below same colour as above, irrorated with red-brown ; frontwings with a spot at end of cell, a zigzag discal series and spots terminating nervures, red-brown ; a small bluish spot at apex ; hindwings with a red-brown patch at end of cell, enclosing two silver spots and surrounded by a series of irregular squamose markings between nervures ; black spots terminating nervures on outer margin. I have seen specimens from the following localities—♂, ♀, Brazil, Coll. B.M. ; ♂, Rio Janeiro, Coll. Salvin ; ♀, Bahia, Coll. Saunders ; ♂, Panama (*Salvin*) Colls. B.M. and Salvin ; ♂, ♀, Oaxaca, Coll. B.M. ; ♂, Honduras, Colls. B.M. and Saunders.

Dr. Theodor Thon, in his "Naturgeschichte der in-und ausländischen Schmetterlinge" p. 92 (1837), confounds *C. Argante* with *C. Hersilia*, remarking that "in the centre of the hindwings there is, occasionally in the male and constantly in the female, a pair of silver-coloured brown-encircled spots : " M. Lucas, in the History of Cuba, confounds it with *C. Agarithe*, figuring opposite sexes of the two species as *C. Agarithe* on his plate : both sexes of *C. Argante* are correctly figured on one plate in Swainson's Illustrations.

This species, according to Erichson, occurs along with *C. Marcellina* and *C. Evalne* and, like them, migrates in vast hordes ; the frequent mention made by travellers of innumerable hosts of individuals, all apparently journeying steadily onwards in one direction, will explain to some extent the wide range of several of the commoner forms.

32. *Callidryas Minuscula*, Plate XII., figs. 9, 10, 10a,

Callidryas Minuscula, *Butler*, *Cist. Ent.* 1, p. 16 (1869).

Male. Wings above as in *C. Argante*, but considerably smaller and somewhat paler; below paler, nearly as in *C. Argante*, but with all the markings paler and more diffused.

Female. Unknown.

Locality—Havannah, Coll. Kaden. in Coll. Druce.

The above is very probably a dwarfed form of *C. Argante*, but the difference in size is so great, and the males of the various species in this genus, are so much alike that I have thought it better to consider it provisionally a distinct species.

The chrysalis figured on our plate came with the perfect insect in the Kaden collection.

33. *Callidryas Agarithe*, Plate XIII., figs. 1, 2, 3, 4.

Callidryas Agarithe, *Boisduval*, *Sp. Gén. Léop.* 1, p. 623, n. 16 (1836).

Male. Above very similar to *C. Argante*, but paler, the frontwings more produced at apex; below differs from *C. Argante* in the oblique band of frontwings which is continuous and not angulated as in *C. Argante*.

Female. Above generally golden-orange, sometimes pinky-white; frontwings with diffused orange patch over end of cell; a brown spot at end of cell; apex, an oblique series of spots between the nervures on disc, and a marginal series terminating nervures black-brown; hindwings with costal and internal areas rosy-whitish; three or four blackish spots terminating the nervures on outer margin; wings below golden-yellow, irrorated with ferruginous atoms; frontwings with base and apex red; a bluish subapical nebula; a geminate pearly brown-zoned spot at end of cell; an oblique discal brown band and three spots between subcostal branches; hindwings with a red spot at base; a transverse streak crossing cell from costal nervure, a subcostal spot near base, and a semicircular discal series of markings, brown; two silver-centred ring-spots at end of cell.

Localities—♂, ♀, Brazil, Coll. Druce; ♀, Santa Martha, Coll. Saunders; ♂, Caraccas, Coll. Hewitson; ♂, ♀, Yucatan (*Belcher*), Coll. B. M.; ♀, Texas (white var.), Coll. Druce; ♂, Nicaragua, Coll. Saunders; Panamá, B.M.; ♂, ♀, Venezuela, Coll. Druce; ♀, Haiti, Coll. Salvin.

♂ var. spotless below, Santa Martha, Coll. Saunders.

This species has been confounded by M. Lucas and others with *C. Argante*, and apparently with *C. Orbis* by Dr. Herrich-Schaeffer, who says that "no other species has the remarkable orange basal half of the frontwings of the male."

The chrysalis figured came in the Kaden collection, associated with *C. Agarithe*; attached to it, however, is a label bearing the following note—"Aricia nach 21 Tagen, auf Carsia"; from which I gather that the chrysalis was found upon a species of *Cassia*, and after 21 days produced *C. Aricie* of

Cramer, the female of *C. Philea*: this, judging by the size of the pupa-skin, seems more probable than that it should belong to *C. Agarithe*.

34. *Callidryas Trite*, Plate XIII., figs. 5, 6, 7, 8.

Papilio Trite, *Linnæus*, Syst. Nat. 2, p. 763, n. 97 (1766).

Male. Wings above bright sulphur-yellow; frontwings with slight tint of golden-yellow at base; broad mealy border; apical half of costal and outer margins generally black; hindwings with costal margin paler; a broad mealy apical patch; below silky greenish-yellow; frontwings with costal and external areas slightly rosy or ochraceous; base rosy; an oblique brown discal bar, and three or four spots between subcostal branches; hindwings with base rosy; subcostal area slightly rosy; submedian area slightly ochraceous; an oblique brown bar crossing end of cell from first subcostal branch, and four irregular discal markings between nervures beyond it.

Female. Wings above sulphur-yellow or white; external and basal areas rosy tinted; frontwings with outer margin to centre of costal black; base golden-yellow; below silky rosy white, with central and internal areas sulphur-yellow; frontwings with external border visible through the wings; an orange spot at end of cell; otherwise as in the male.

Localities—♂, Brazil, and ♂, Pará (*Bates*), Coll. B.M.; ♂, ♀, Coll. Wallace; ♂, Maranh, Coll. Salvin; Colombia (*Dyson*), Coll. Saunders; Venezuela (*Dyson*), B.M.; ♂, ♂, Coll. Druce.

One of the most striking of the *Callidryades*, the marking of the under-surface is evidently a rude imitation of the ribbing of a leaf.

35. *Callidryas Wallacei*, Plate XIII., figs. 9, 10.

♂ *Callidryas Wallacei*, *Felder*, Wien. Ent. Monatschr. 6, n. 11 (1862).

Male. Wings above sulphur-yellow, mealy border, and black margin of frontwings narrower than in *C. Trite*; hindwings with mealy apical border; wings below sulphur-yellow; inner margin of frontwings slightly paler; basal area of hindwings darker than ground-colour.

Female. Unknown.

Specimen examined from the following locality—♂, E. Peru (*Dugand*), B.M. Dr. Felder gives the Rio Negro as the habitat of this species; it is closely allied to *C. Stativa*.

36. *Callidryas Statira*, Plate XIV, figs. 1, 2, 3, 4.

♀ *Papilio Statira*, *Cramer*, *Pap. Exot.* 2, pl. 120, figs. c, d (1779).

♂ *Papilia Alcmeone*, *Cramer*, *Pap. Exot.* 2, pl. 141, fig. e (1779).

Colias Evadne, *Godart*, *Enc. Méth.* 9, p. 98, n. 28 (1819).

Callidryas Zulema, *Poey*, *Hist. Nat. de Cuba*, 1, pp. 197, 198 (1851).

White var. ♀ *Papilio Fabia*, *Fabricius*, *Ent. Syst. Suppl.* p. 426, n. 587 588 (1798).

♂, ♀ *Callidryas Evadne*, var. *Boisduval*, *Sp. Gén. Lép.* 1, p. 629 (1836).

Callidryas Boisduvalii, *Felder*, *Wien. Ent. Monatschr.* 5, p. 82, n. 37 (1861).

Male. Wings above sulphur-yellow, mealy area nearly white, very broad on frontwing, so as distinctly to enter discoidal cell; margin generally narrowly black, but sometimes without black border; below sulphur-yellow, becoming whitish towards inner angle of frontwings and outer margin of hindwings, the latter tinted with golden-yellow towards base, a silky-white spot at end of cell.

Female. Wings above sulphur-yellow, whitish towards outer margin of frontwings and apex of hindwings; frontwings with a small black spot at end of cell, the apical half of costa, apex, and outer margin somewhat broadly black; hindwings with five elongated partly confluent black spots at end of nervures on outer margin; below sulphur-yellow, becoming silvery-whitish towards outer margin; frontwings with a rosy encircled silver spot at end of cell; a rosy spot at base; an irregular waved discal bar running from second median branch to costa; apex and outer margin somewhat broadly lilacine; crossed near apical margin by a darker waved line; hindwings with silvery spot at end of cell, a rosy spot at base; an orange nebula spreading from base into the interno-median interspace; an irregular arched series of angular rosy markings beyond cell; outer margin narrowly rosy.

Localities—♂, ♂, Pará, Coll. Wallace; Guiana, Coll. B.M.; Bahia, Coll. Ward; ♂, Pebas, Coll. Salvin; E. Peru (*Whiteley*), Coll. B.M.; ♂, ♀, Coll. Druce; Ucayali; Maranham, Coll. Salvin; ♂, Panamá (*Salvin*), Colls. B.M. and Salvin; ♀, Guatemala, central valleys, Coll. Salvin; ♂, Venezuela, Colls. B.M.

♂ var. intermediate, paler, and with scarcely any black margin to frontwings—Pacific Slope Coll. Salvin.

♂ var. intermediate between last and *C. Boisduvalii*—Panamá, Coll. Salvin.

var. *C. Boisduvalii*—♀, Brazil; ♂, Quito (*Bourcier*), Coll. B.M.; ♀, Bogota*; Costa Rica; ♂, Izabel, Coll. Salvin; ♂, Panamá (*Salvin*), Coll. B.M.; ♀, Coll. Salvin; ♂, Oaxaca, Coll. B.M.; Duenas, Coll. Salvin.

Much confusion formerly arose between this species and the Indian *C. Crocale*, on account of the strange resemblance between them; Swainson (*Zool. Ill. Ist. Ser.* pl. 5) figures the female, and remarks: "I have no doubt this is the *Pap. Statira* of Cramer; it is found only in Brazil, and has been

* Specimen labelled by Dr. Felder.

erroneously considered by Godart and Latreille as a variety of *C. Jugurthina*, an Indian insect, and which in fact is not in itself a species, being no other than the female of *C. Alceone*,† as an attentive examination of both, collected in Java by Dr. Horsfield, enabled me to ascertain.”

Herbst says (Natarsystem 5—7, p. 161)—“The habitat is, according to Fabricius, E. Indies, it strikes me, however, that I have received it from America.”

The form *C. Boisduvalii* cannot rank as a species, a complete transitional series in Mr. Salvin's Collection proves it to be simply an albino form of *C. Statira*.

Dr. Theodor Thom in his “Naturgeschichte der Schmetterlinge” says that *C. Statira* “varies so much in colouring, that scarcely two examples resemble one another.”

Erichson remarks (Reisen in Britisch-Guiana) that this species occurs in the same situations as *C. Argante* and *C. Marcellina* (*C. Sennæ*).

37. *Callidryas Jaresia*, Plate XIV., figs. 5, 6.

♀ *Callidryas Jaresia*, *Butler*, Trans. Ent. Soc. p. 171 (1871).

Male. Unknown.

Female. Wings above, orange-yellow; margin and disco-cellular spot black as in *C. Statira*; abdominal area pale ochreous; wings below satiny ochraceous, becoming pearly towards outer margin; markings nearly as in *C. Statira*, but more distinct and rosy; the discal bar broken up and not confounded with the apical nebula; two distinct rosy-encircled silver spots at end of cell.

Locality—♀, Para, Colls. Hewitson, Saunders and Wallace; —? Coll. Druce.

This species is nearly allied to *C. Statira*, from which it chiefly differs in colour and form, it appears to be confined to the Lower Amazons, and therefore there is no reason to suppose it to be an extreme variety of that species.

38. *Callidryas Jada*, Plate XIV., figs. 7—10.

♂, ♀ *Callidryas Jada*, *Butler*, Trans. Ent. Soc. p. 11, n. 5 (1870).

Male. Wings above orange-yellow, with the mealy area sulphur-yellow; no black margin to wings; below golden-yellow, becoming orange-yellow towards base; frontwings with inner angle whitish.

Female. Sulphur-yellow, becoming orange-yellow towards base; apical half of costa, a patch at apex, interrupted by an oval spot, a moderately broad, internally sinuated, marginal border, and a large spot at end of cell, black; four orange spots running from second median branch to apical patch; wings

† The *C. Alceone* of Horsfield is nothing more nor less than *C. Crocale*.

below pearly tinted with yellow towards base; frontwings with inner half of discoidal cell sulphur-yellow; an irregular geminate rosy-encircled silver spot at end of cell; apical half of costa, apex, outer margin and five nearly confluent spots between nervures on disc, rosy; hindwings with an irregular marking at end of cell, an arched series of markings beyond it, and the outer margin rosy.

Locality, ♂, ♀, Central Valleys of Guatemala. Coll. Salvin.

Another interesting species with a somewhat restricted range.

39. *Callidryas Neleis*, Plate XV., figs. 1—4.

Callidryas Neleis, *Boisduval*, Sp. Gén. Léop. 1, p. 629, n. 23 (1836); *Lucas*, in Ramon de la Sagra's Hist. Cuba, Articulata, pl. 15, figs. 5, 5A, 5B (1856).

Male. Wings above sulphur-yellow, with broad, slightly paler mealy area, beginning in the frontwings immediately beyond cell; below pale sulphur-yellow, the costal margin and cell of frontwings bright sulphur-yellow, the bases of all the wings orange tinted.

Female. Wings above sulphur-yellow; frontwings with base and outer margin golden-yellow; a large black spot at end of cell, and seven small hastate spots terminating the nervures on outer margin; hindwings with base and anal area golden-yellow; the costa and inner margin rosy whitish; five small black spots terminating the nervures on outer margin; below pearly whitish, with median area of frontwings, from centre of discoidal cell to external angle, bright sulphur-yellow; outer margin rosy tinted; frontwings with pearly lake-encircled spot at end of cell; an angular series of six indistinct purplish spots on disc, and six to seven similar spots terminating the nervures on outer margin; a rosy spot at base; hindwings with costal area ochre-tinted; two silver-centred lake-encircled spots placed obliquely from end of cell, and beyond them an irregular series of discal purplish spots; a rosy spot at base.

I have examined specimens from the following localities:—♂, ♀, Havannah (*Beske*), Coll. Druce; ♂, Table-land of W. Mexico, Coll. B.M.; ♂, Central Valleys of Guatemala, Coll. Salvin.

This species is interesting from its odd resemblance to *C. Eubule*, to which, however, it is not structurally allied.

40. *Callidryas Godartiana*, Plate XV., figs. 5—8.

♀ *Colias Godartiana*, *Swainson*, Zool. Ill. 1st S., pl. 34 (1820).

Callidryas Orbis ♀, *Boisduval*, Sp. Gén. Léop. 1, p. 630 (1836).

Male. Frontwings above with basal half sulphur-yellow tinted with golden-yellow at base; external half (forming mealy area) white, tinted with sulphur-yellow on the costal margin and with ochre on outer margin; hindwings greyish ochreous, becoming sulphur-yellow above median nervure;

nealy border white; below greenish ochreous, the anal area of frontwings being whitish and the basal half of discoidal cell sulphur-yellow; a rosy spot at base; hindwings with two small silver-centred purple-ringed spots placed obliquely from end of cell; five grey discal dashes, placed above first subcostal, radial and median branches; a rosy spot at base, and a few scales of same colour near base and between costal and subcostal nerves.

Female. Wings above ochreous, deepest at base, the frontwings becoming gradually paler externally; a large black spot at end of cell, and a small angulated marking between second and third median branches; apical half of costa a broad apical patch and an irregularly dentated broad border to outer margin black; hindwings with costa pale; five well-defined unequal black spots terminating nervures on outer margin; below, basal area pale ochreous, the discoidal cell and costa of frontwings deeper coloured; external area pearly; frontwings with a large rosy purplish zoned spot at end of cell; a series of seven more or less connected purplish discal spots placed irregularly beyond cell; outer margin broadly rosy becoming purplish internally; a few rosy scales at base; hindwings with two silver-centred spots from end of cell; surrounded externally by a discal series of seven purplish markings, six diffused purplish spots terminating nervures on outer margin; a rosy spot at base.

Localities—♂, ♀, Haiti (*Tweedie*), Colls. B.M., E. Brown, and Salvin; ♀, Porto Rico, Coll. Saunders.

Dr. Boisduval's premature conclusion respecting this species has been the cause of considerable confusion. Poey (in the *Hist. Nat. de Cuba*, 1, p. 196, 1851) publishes the following remarks:—"Mr. Boisduval has referred to the female of this species (*C. Orbis*) the *Colias Godartiana* of Swainson; he, however, retains my name, which is later, placing that of Swainson in the synonymy; the authority of Mr. Boisduval is of the greater weight because he is one of those who have, in our time, been most indefatigable in the study of the Lepidoptera, and I suspect good reasons have not been wanting for his acting as he has done; the following have occurred to me. There are many species of the *Eubule* and *Orbis* group whose females do not exhibit any difference, and the species can only be satisfactorily distinguished when one knows the male; * I myself, if unable to shew the male, female, caterpillar, and chrysalis, could not separate *Orbis* from *Eubule*. This may be seen in the *Pomona*, which Swainson figures in his *Lepidoptera of Asia*, † since it in no respect differs from the female of *Orbis*. The figures of Swainson, though brilliant in hue, are not much like the natural colouring; this is what Boisduval justly observes in the 618th page of his *History of Lepidoptera*, and one may notice it in the manner in which the curved lines of atoms are shewn on the under-surface of his *C. Godartiana*. If indeed we could have a guarantee that the original is like what Mr. Swainson has painted, we should be able to assert that it is a distinct species.

"I am ignorant of the habitat of *Godartiana*, and if the author did mention it I forgot to make a note of it when his work was at my disposal; if it should turn out to be *Asiatic* like his *Pomona* we should then have another reason for doubting its identity with *C. Orbis*."

* No statement more surprising than this could have been made; the *Eubule* and *Orbis* groups being quite distinct, and the males throughout the genus being far more similar than the females.—A. G. B.

† ? Donovan.

I have quoted the above remarks to shew how carelessly and unfairly an author may be criticised by those who are ignorant of his species; I suppose few more accurate draughtsmen ever existed than Swainson. Dr. Thon, in a highly commendatory notice of the "Zoological Illustrations" (*Entom. Arch.*, Vol. I., p. 89, 1829), justly remarks that this work is "splendid auf schönstes Velinpapier gedruckt und mit Farbe, wie wir Deutsche wenig sehen, rein und lebhaft sorgfältig colorirt, keinem *deutschen* Werke vergleichbar, ausser einem Exemplar der Insekten belustigungen von *Rösels* Hand."

Dr. Boisduval's supposition has been boldly adopted by Dr. Herrich-Schäffer (*Corr-blatt*, p. 169, n. 3, 1864).

41. *Callidryas Hartonia*, Plate XV., figs. 9—12.

♂, ♀ *Callidryas Hartonia*, *Butler*, *Trans. Ent. Soc.* pt. 1, p. 10, n. 3 (1870).

Male. Wings above sulphur-yellow, tinted with orange at base; frontwings with mealy area, which occupies apical half of wings nearly white, tinted with sulphur-yellow at the margins; hindwings with costa, inner margin, and mealy area whitish; below sulphur-yellow, the external angle of frontwings and the external area of hindwings becoming gradually whitish to margin; base of wings golden-yellow with orange scaling at base; frontwings with a small silver-centred orange spot at end of cell and seven orange dots forming an irregular series beyond cell; hindwings with an impressed silvery spot near end of cell; a silver-centred orange spot at end of cell and three orange dots below the median branches.

Female. Wings above sulphur-yellow, the basal area of frontwings golden-yellow, the hindwings slightly ochre-tinted; frontwings with a large black spot at end of cell; a moderately broad undate black border to outer margin; hindwings with four black dots at terminations of nervures on outer margin; wings below pale sulphur-yellow, the costa of frontwings and basal two-thirds of hindwings deeper coloured; frontwings with a large lilacine spot at end of cell, seven spots beyond it, and marginal border as on upperside, rosy lilacine; a rosy spot at base; hindwings with external area pearly; two silver-centred purplish spots from end of cell, surrounded externally by a series of seven irregular purplish discal markings; a rosy spot at base.

Locality—♂, ♀, Jamaica, Colls. B.M., Hewitson and Saunders.

A very constant local representative of *C. Godartiana*.

42. *Callidryas Orbis*, Plate XVI., figs. 1—4.

♂, *Callidryas Orbis* (part), *Poey*, *Cent. Lep. Cuba*, p. 196, 5 (1852).

Male. Wings above sulphur-yellow, mealy area whitish, clouded with sulphur-yellow towards

costa of frontwings; frontwings with a large circular patch covering basal three-fourths of cell and thence extending to inner margin; below golden-yellow; frontwings with external area whitish; a spot at base, a second at end of cell, seven forming an irregular discal series beyond cell, and a squamose submarginal band, reddish; hindwings with a spot at base, two silver-centred from end of cell, five beyond them on disc, and a squamose submarginal streak, reddish.

Female. Wings above orange; frontwings with a black spot at end of cell; seven indistinct discal brown spots beyond cell; seven squamose black spots terminating nervures on outer margin; hindwings with costa and inner margin whitish; wings below pale ochreous with outer margin more or less rusty, bounded internally by lilacine; frontwings with rosy spot at base; a silver-centred reddish spot at end of cell and seven beyond it; hindwings with rosy spot at base; a short reddish irregular band at end of cell enclosing a silver spot and surrounded by a series of reddish markings.

Localities—♂, Haiti, Coll. Salvin; ♀, Havannah, Coll. Kaden in Coll. Druce.

This beautiful species is one of the most remarkable in the genus.

The following species arrived in England during the progress of the present paper: it should follow *C. Virgo*.

43. *Callidryas Intermedia*, Plate XVI., figs. 5, 6, 7, 8.

♂, ♀ *Callidryas Intermedia*, *Butler*, Cist. Ent. 4, p. 81 (Jan., 1872).

Male. Chiefly differs from *C. Neocypris* ♂, in having a linear black spot at end of frontwing cell on upper-surface.

Female. Chiefly differs from *C. Virgo* ♀, in having the marginal red patches of *C. Rurina* on upper-surface of hindwings.

Locality—♂, ♀, Cartago (*Van Patten*), Coll. Druce.

The following additions may be made to the synonymy:—

1. *Callidryas Crocale*.

♂ *Papilio Lalage*, *Herbst*, *Natursyst. Schmett.* 5, p. 163, pl. 106, figs. 1, 2 (1792).

3. *Callidryas Catilla*.

Papilio nigro-punctatus, *Goeze*, *Beitr.* 1, p. 185, n. 96 (1779).

9. *Callidryas Pyranthe*.

? *Papilio flavo-cinereascens*, *Goeze*, *Beitr.* 1, p. 183, n. 86 (1779).

15. Callidryas Eubule.

Papilio Eubule, *Brown*, Book of Butt. and Moths, p. 46, pl. 5 (1843).

16. Callidryas Sennæ.

Papilio læte-flavus, *Goeze*, Beitr. 1, p. 184, n. 92 (1779).

31. Callidryas Argante.

Faded. *Papilio pallide-flavus*, *Goeze*, Beitr. 1, p. 185, n. 97 (1779).

HAVING now completed the Monograph of this beautiful group, bringing the number of species up to forty-three; it will be necessary, in order to establish the name *Callidryas*, to look into the structural characters of the various species, we then discover that they divide readily into four well-marked groups, which I propose to separate as distinct genera.

1. CATOPSILIA. Hübner (part).

Syn. *Martinia*. Hübner.

Males with a well-developed brush of silky hairs towards base of inner margin of *frontwings*; scales above subcostal nervure of hindwings distinctly thickened; palpi of both sexes short, thickened. Type *C. Crocale*, Cramer.

All the species from the Old World—*C. Crocale*, *Flava*, *Catilla*, *Thaurunus*, *Florella*, *Gnomia*, *Pyranthe*, *Chryseis*, *Evangelina*, *Lactea*, *Pyrene*, *Hinda*, *Gorgophone*, *Seylla*. 14 species.

2. * PHOEBIS. Hübner (part).

Males with a well-developed brush of silky hairs, above subcostal nervure, towards base of *hindwings*; palpi of both sexes short and thickened. Type† *P. Cipris*, Cramer.

All the species from the New World:—

SPECIES WITH TAILS. Sub-gen. *Metura*.

P. Rurina, *Irrigata*, *Intermedia*, *Virgo*, *Bracteolata* (*Cipris*, Fabr.), *Neocypris*. 6 species.

SPECIES WITHOUT TAILS. Sub-gen. *Phobis*.

P. Cipris (*Hersilia*, Cr.), *Rorata*, *Argante*, *Minuscula*, *Agarithe*, *Trite*. 6 species.

* The genus *Phobe*, used in *Colcoptera*, is more recent.

† This genus not having been previously adopted, it is allowable to take any of the species cited as the type: I therefore take one from the centre of the genus.

3. CALLIDRYAS. *Boisdural*.

Males without brush of hairs on any of the wings; hindwings with more or less defined patch of thickened scales, above subcostal nervure, towards base of hindwings; palpi of both sexes short and thickened. Type *C. Eubale*, Linnaeus.

All the species from the New World:—*C. Eubale*, *Drya*, *Senna*, *Editha*, *Philea*, *Thalestris*, *Acellaneda*, *Solstitia*, ? *Formax*. 9 species.

4. APHRISSA. *n. gen.*

Males without brush of hairs; hindwings with more or less defined patch of thickened scales, above subcostal nervure, towards base of hindwings; palpi of male moderately short, thickened, of female long, with terminal joint well exposed; antennae moderately slender. Type *A. Statira*, Cr.

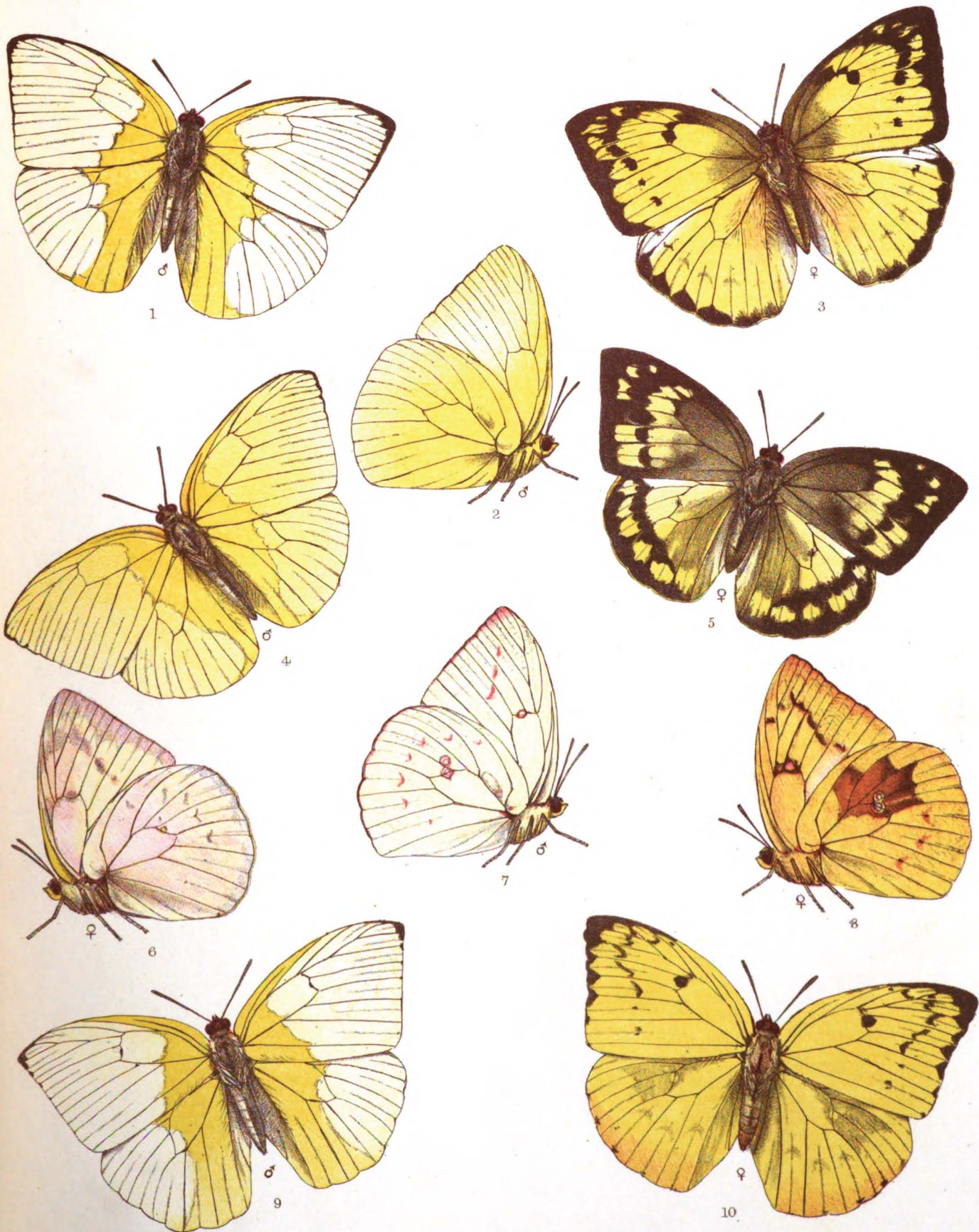
All the species from the New World:—*A. Wallacci*, *Statira*, *Jaresia*, *Jada*, *Nelis*, *Godartiana*, *Hartonia*, *Orbis*. 8 species.

In all probability, when we know more of the early stages of the above four genera they will be found to differ considerably; a comparison of the pupa of *C. florella* with those of *C. Philea*, *P. minuscula* and *A. Orbis* reveals sufficient differences to suggest non-affinity.





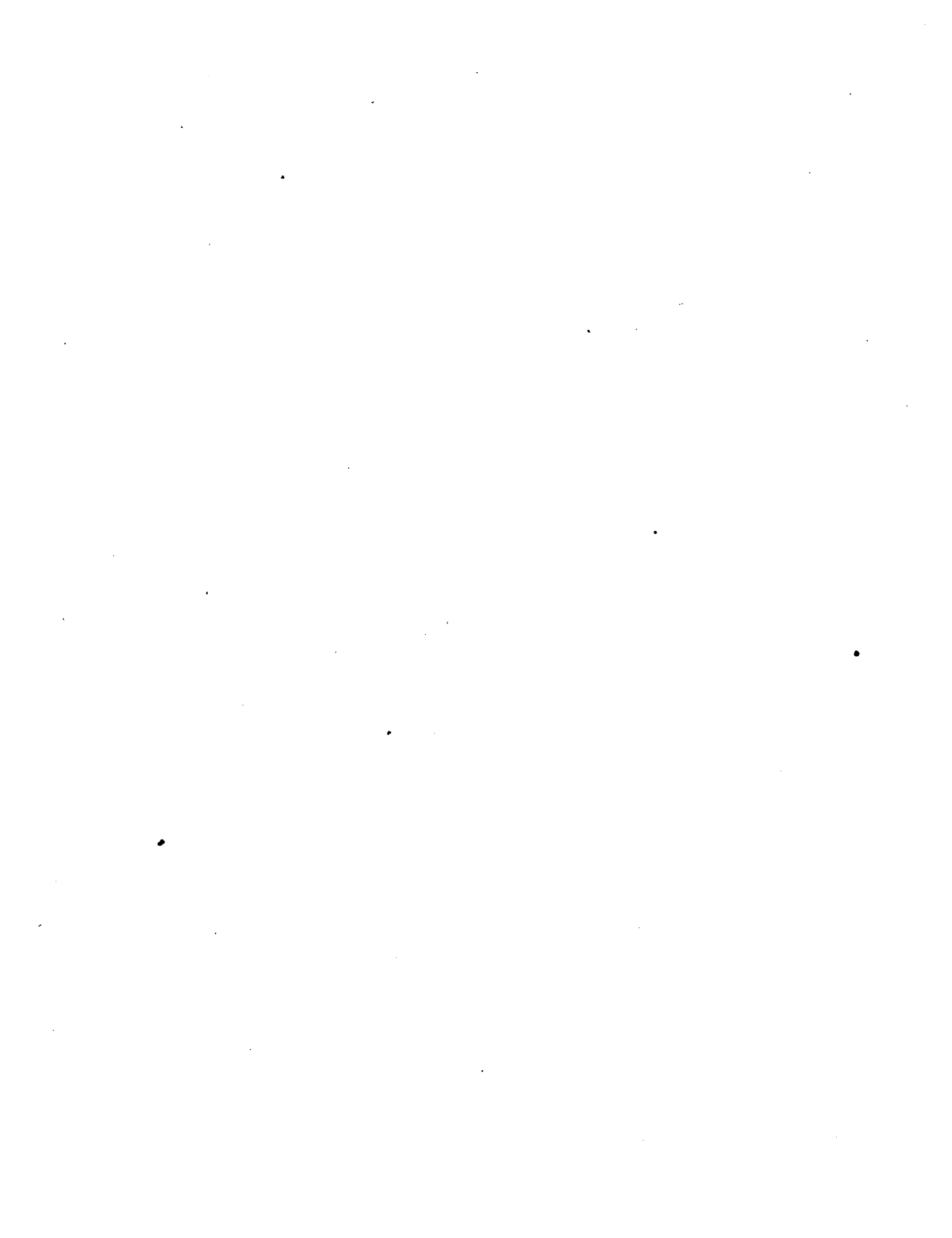
CALLIDRYAS.1.



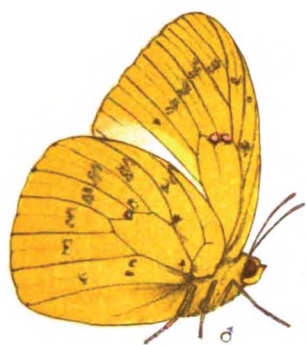
A.G. Butler, del. et lith. October, 1869.

W. West imp.

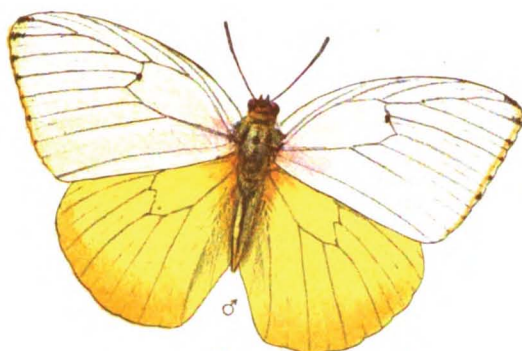
1. 2. 3. 6. CALLIDRYAS CROCALE—4. 5. CALLIDRYAS FLAVA.
 7. 8. 9. 10. CALLIDRYAS CATILLA.



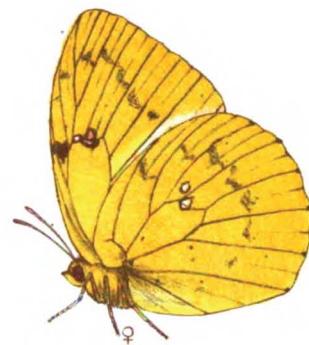
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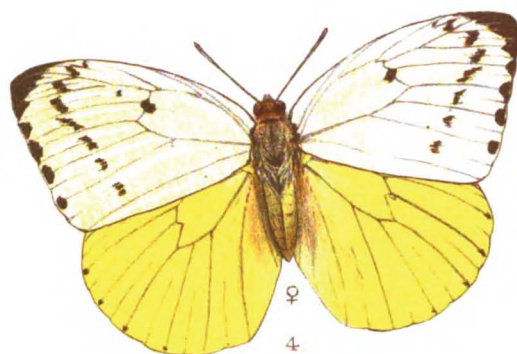
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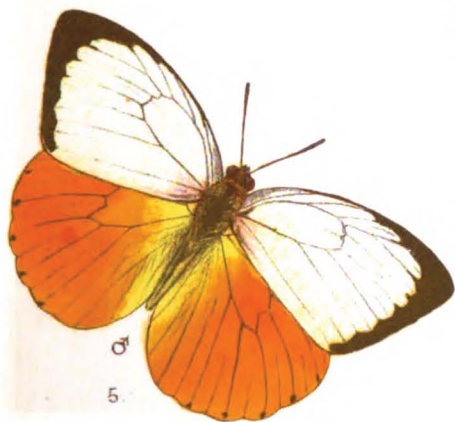
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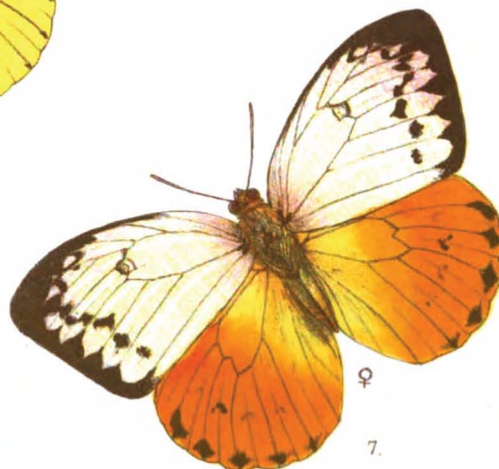
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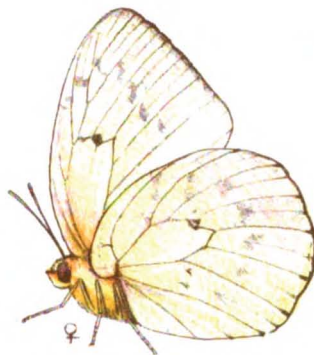
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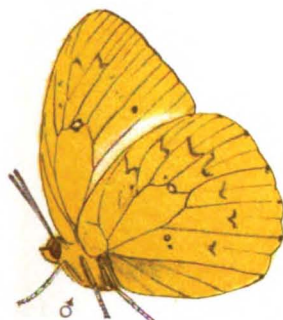
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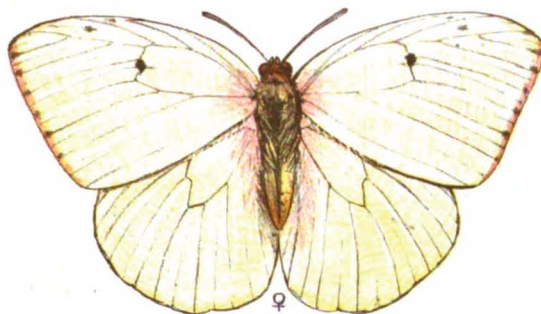
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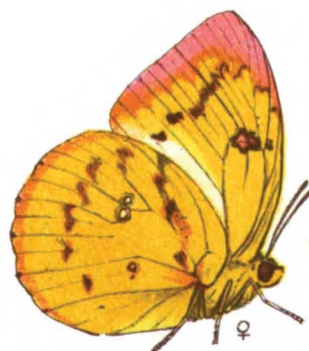
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10.



8.

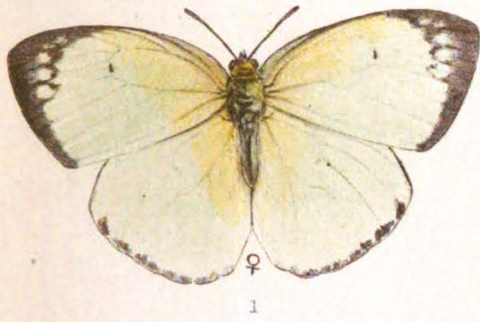
A G Butler del et lith. December 1869.

W West imp.

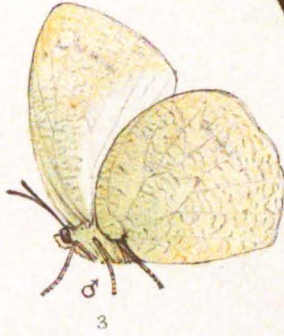
1 2. 3. 4. CALLIDRYAS GORGOPHONE. 5 6 7. 8. CALLIDRYAS SCYLLA.
9. 10. CALLIDRYAS . HINDA.



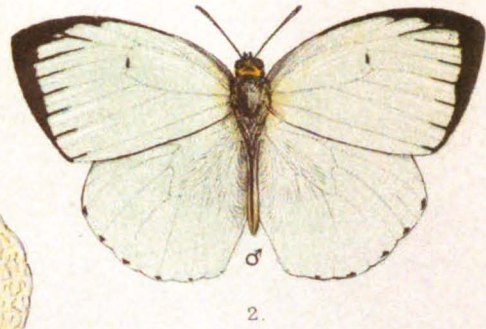
CALLIDRYAS. III.



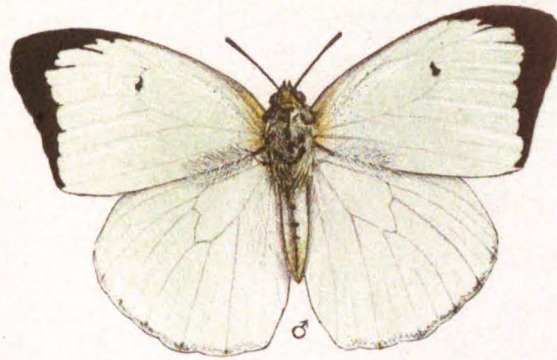
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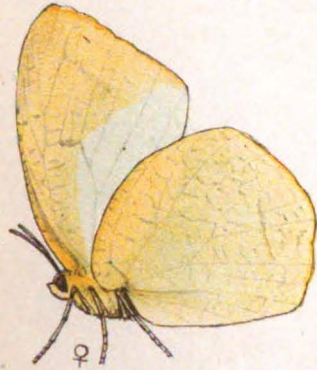
3



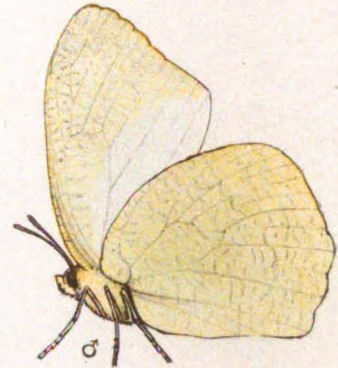
2



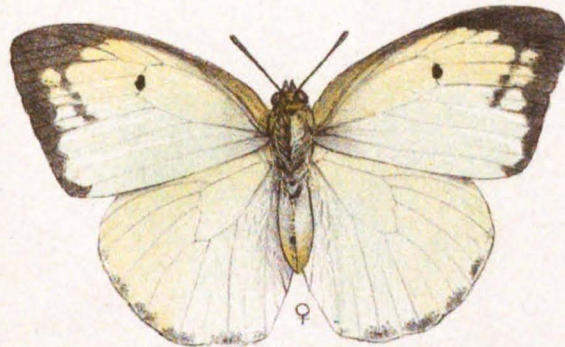
5



4



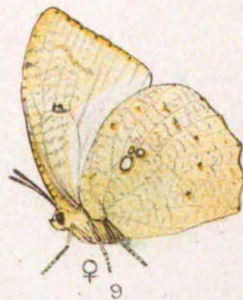
6



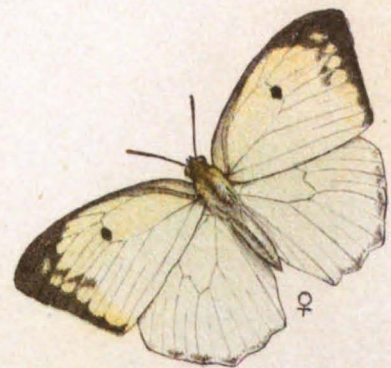
7



8



9

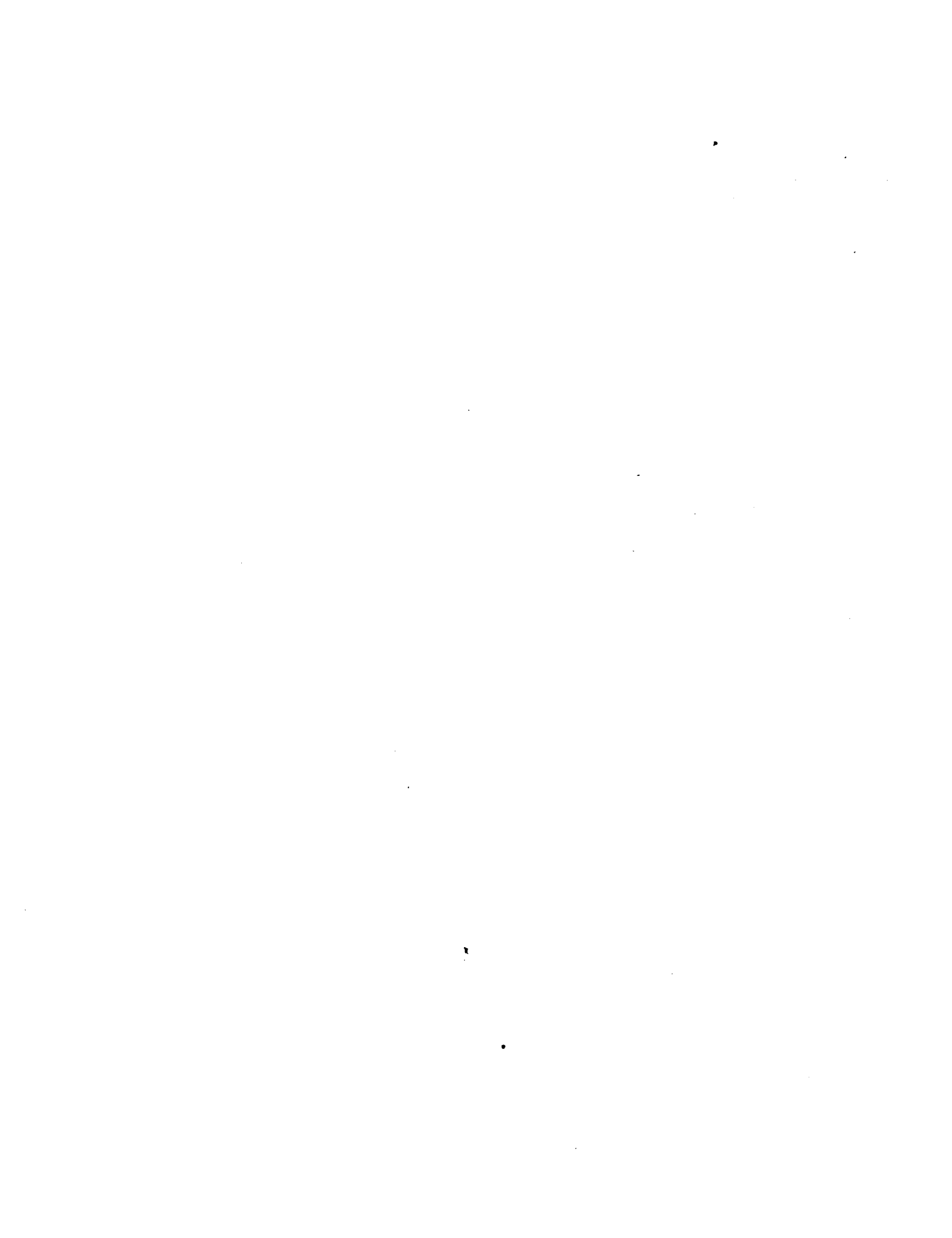


10

A. C. Butler del et lith. March 1870.

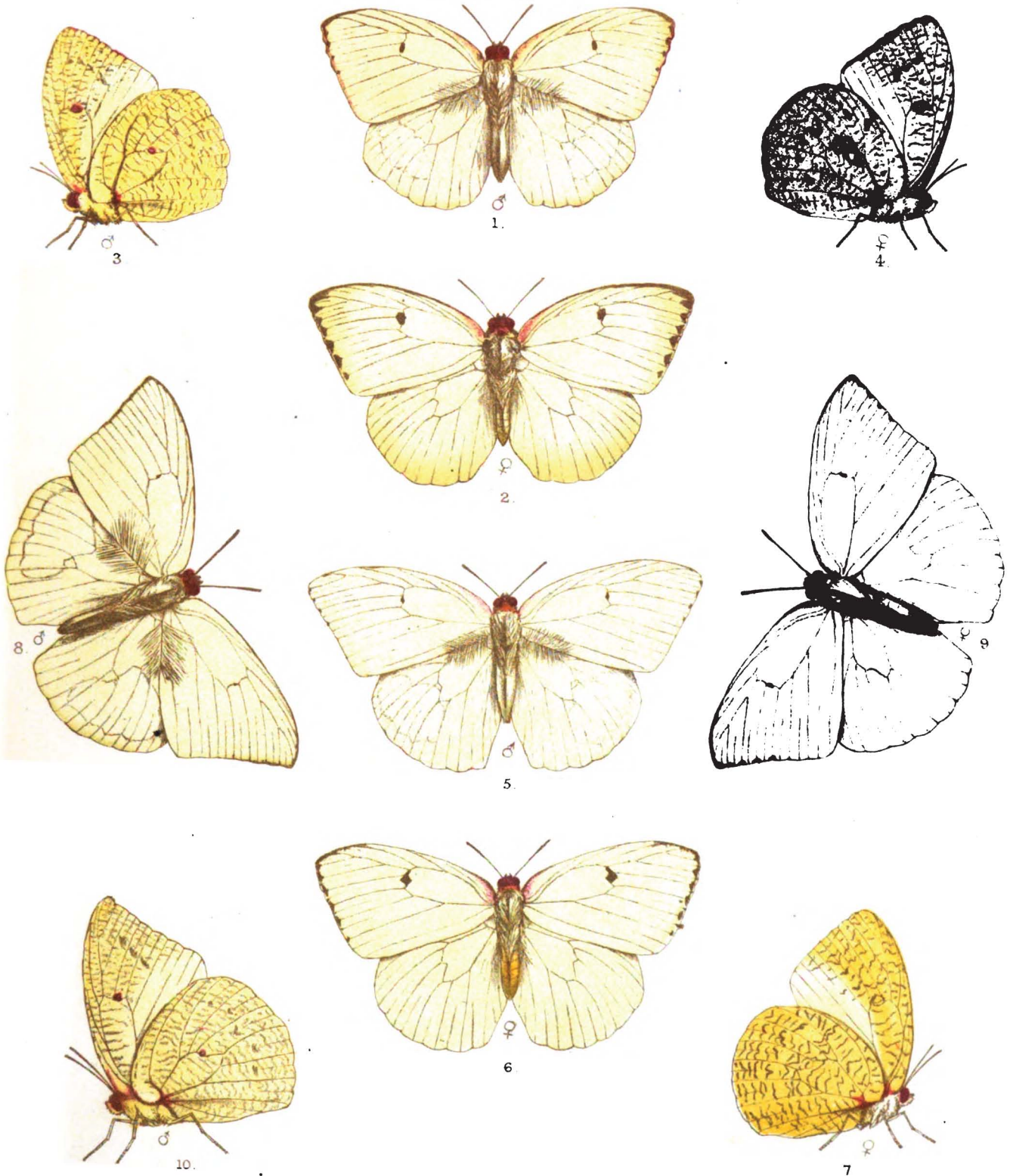
1 2 3.	CALLIDRYAS	EVANGELINA
4 5 6 7.	"	CHRYSEIS
8 9 10.	"	PYRANTHE

W. West imp.





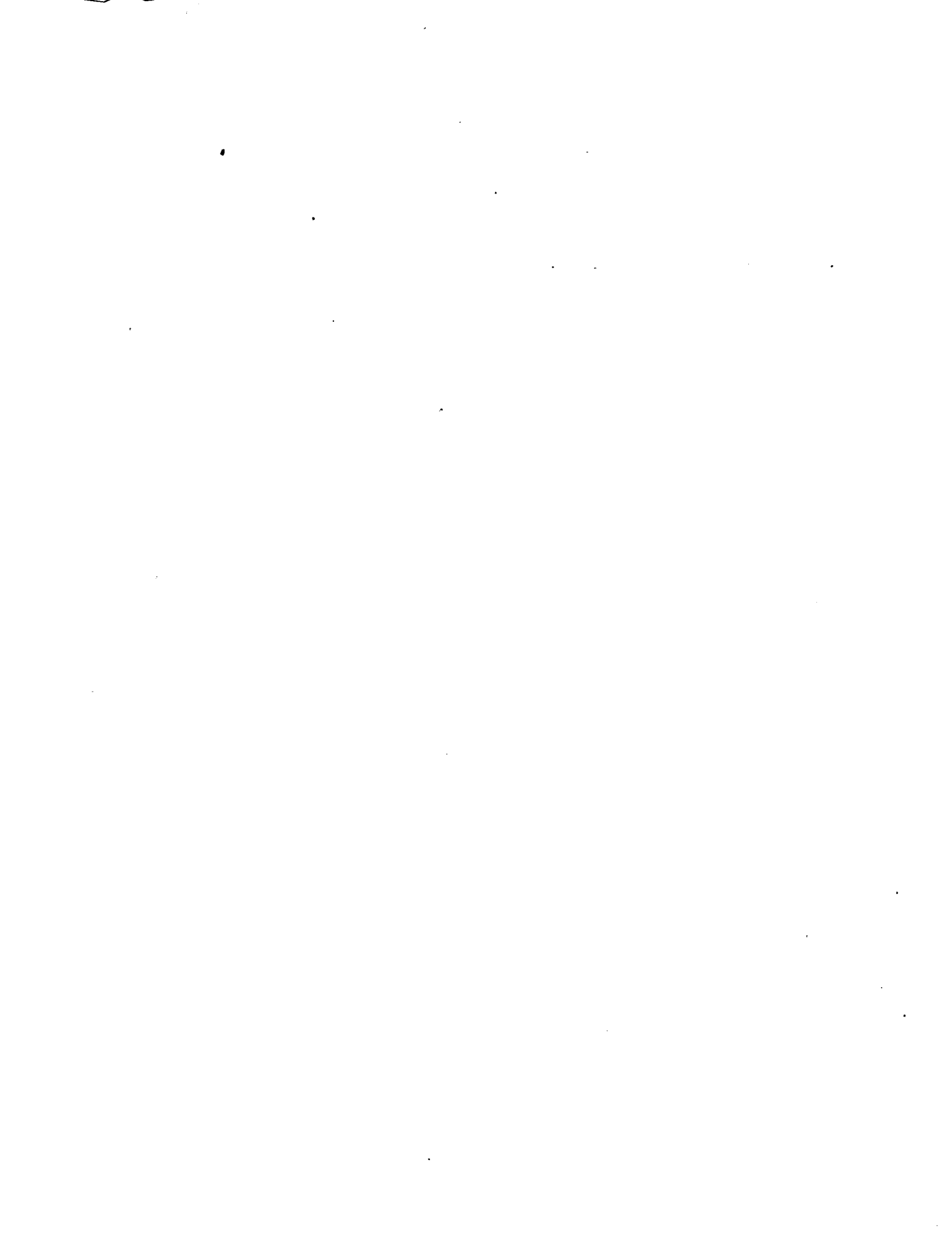
CALLIDRYAS IV.



A. G. Butler del et lith. July 1870.

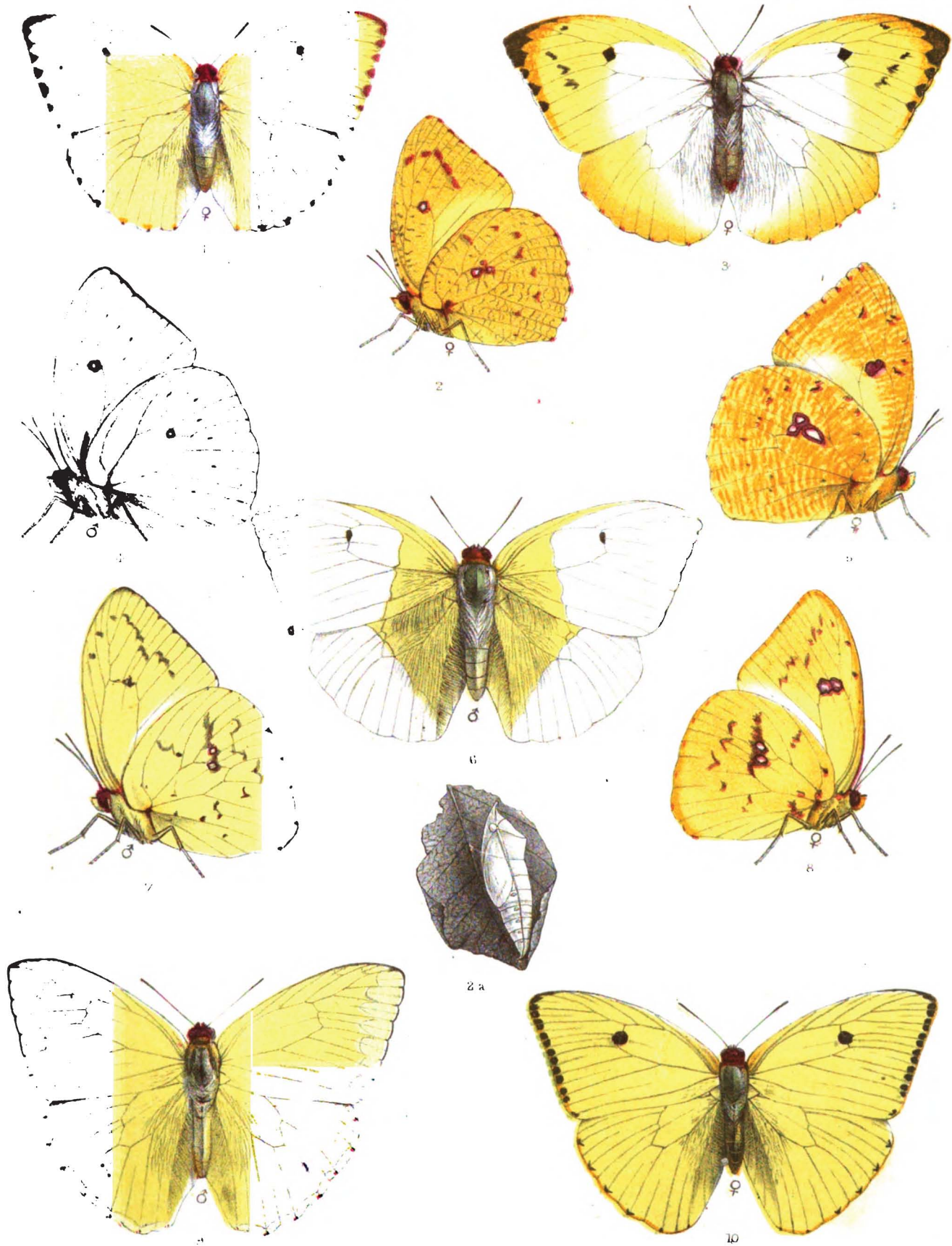
W. West del.

1	2	3	4.	CALLIDRYAS	GNOMA.
5	6	7.		"	LACTEA.
8	9	10		"	PYRENE.





CALLIDRYAS. V

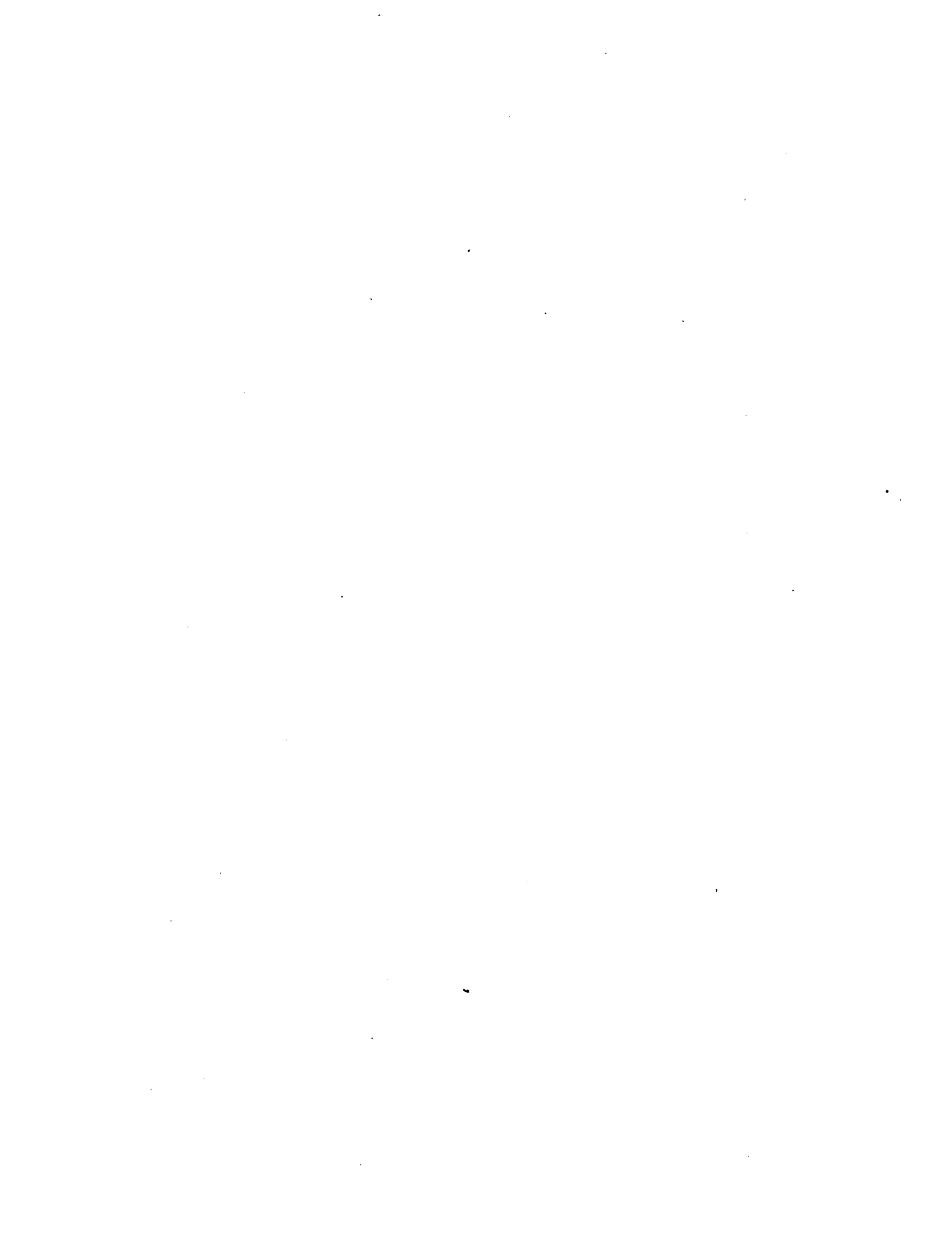


1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

Motern Bios imp

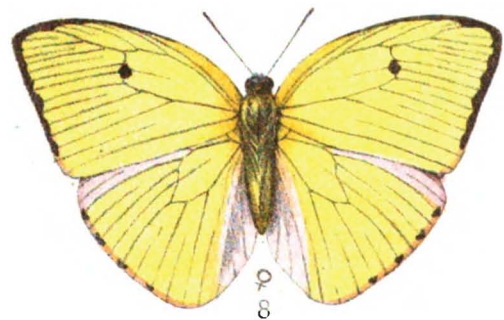
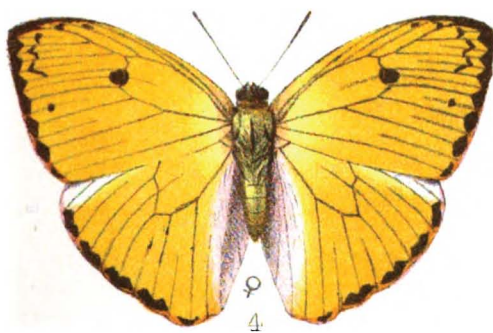
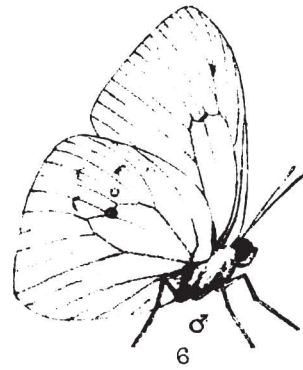
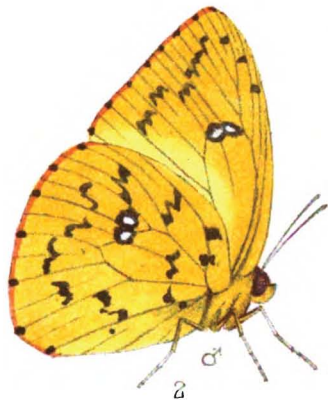
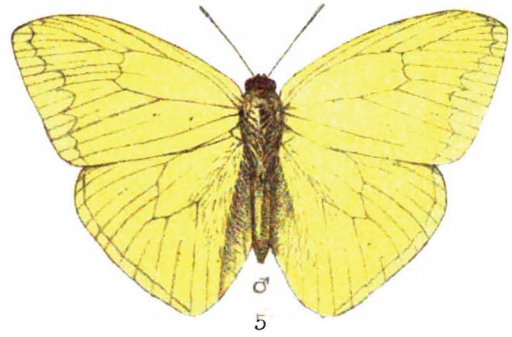
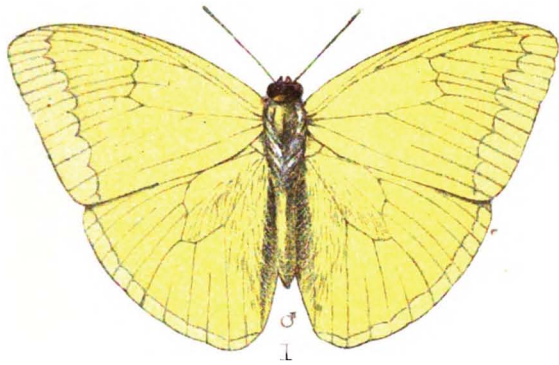
1. 2. 3. 4. 5. 6. CALLIDRYAS THIAURAMA
7. 8. 9. 10. CALLIDRYAS EUBULE







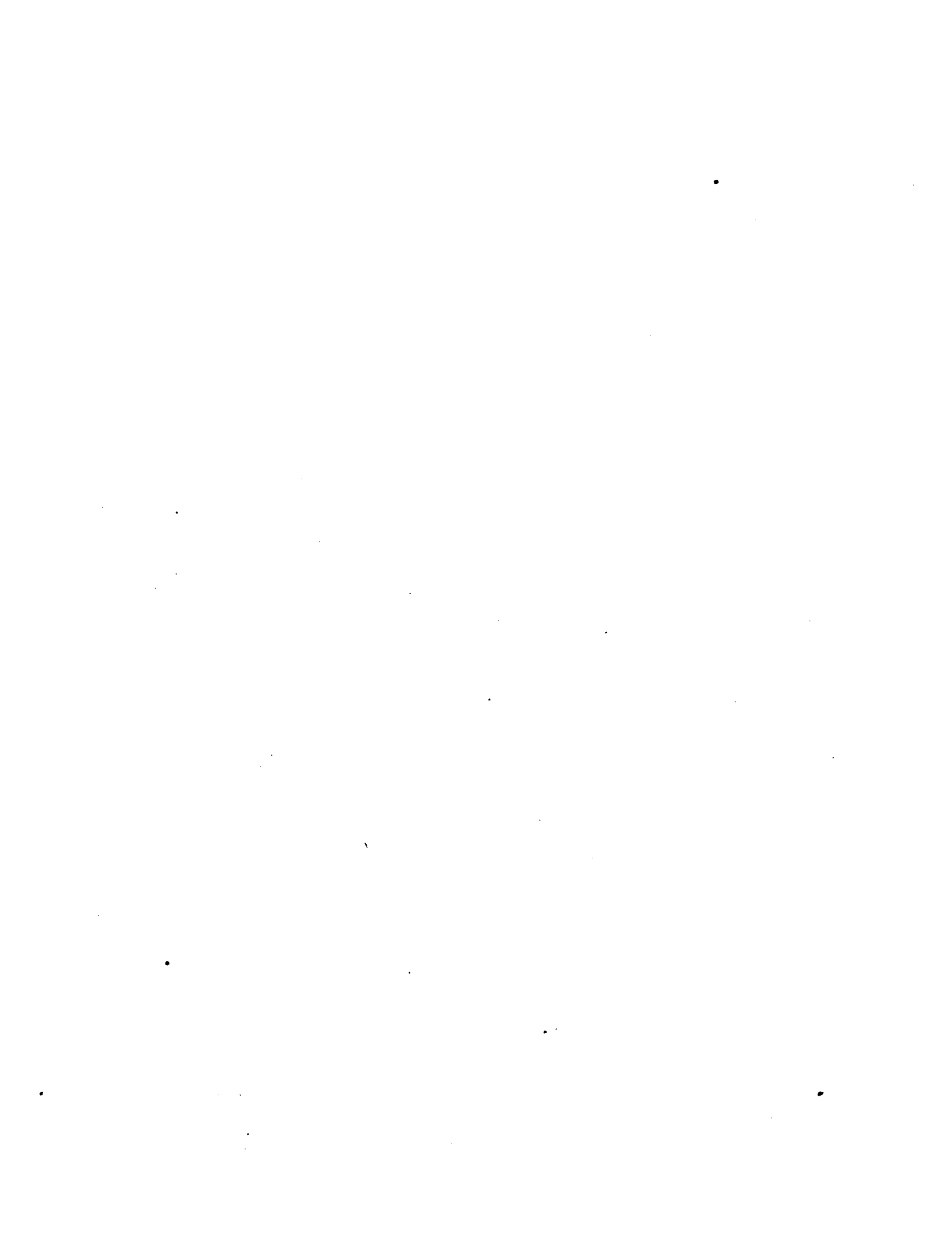
CALLIDRYAS VI.



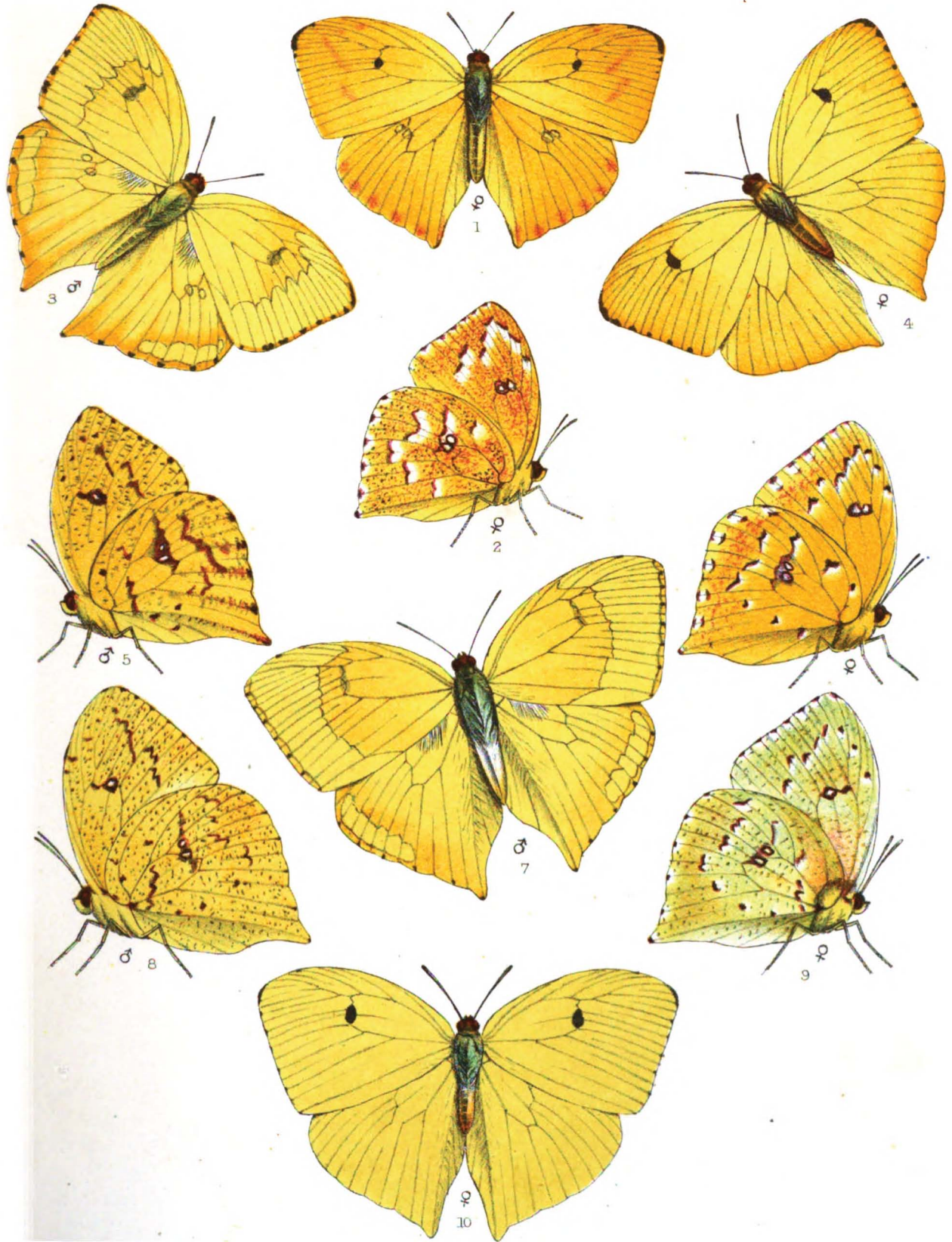
A. C. Butler del et lith. Jan. 1871.

Mintern Bro' imp

1. 2. 3. 4. CALLIDRYAS SENNÆ.
5. 6. 7. 8. CALLIDRYAS DRYA.







A.G. Butler del. et lith. April, 1871.

Musters. Bro'ing.

1 2. CALLIDRYAS IRRIGATA. 3 4. 5. 6. CALLIDRYAS NEOCYPRIS
7 8. 9 10. CALLIDRYAS CIPRIS.





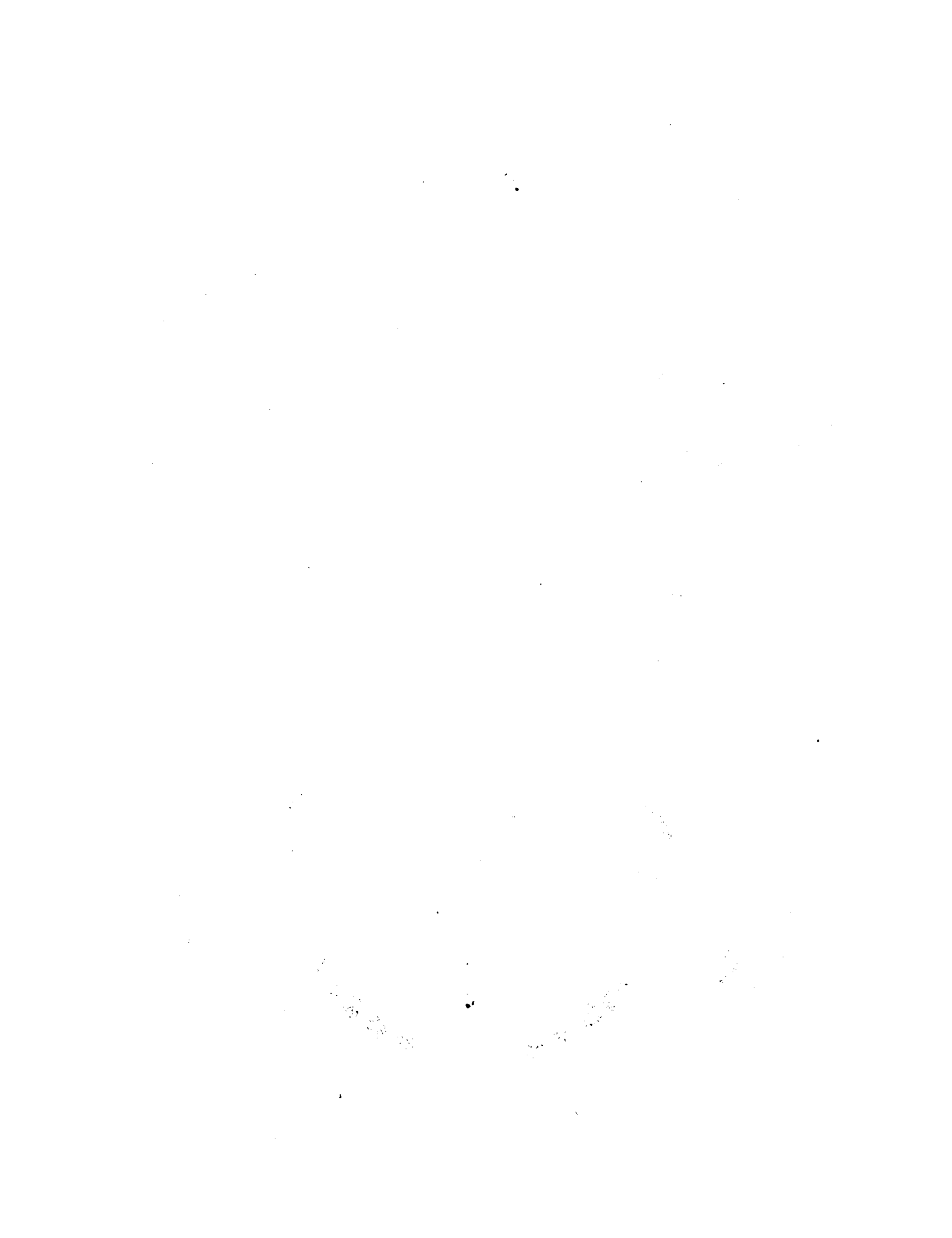
CALLIDRYAS. VIII.



A.C. Butler del et lith. June 1871.

Mintern Bro? imp

1 2 3 4 CALLIDRYAS VIRGO
5 6 7 8 CALLIDRYAS RURINA.







CALLIDRYAS. IX.

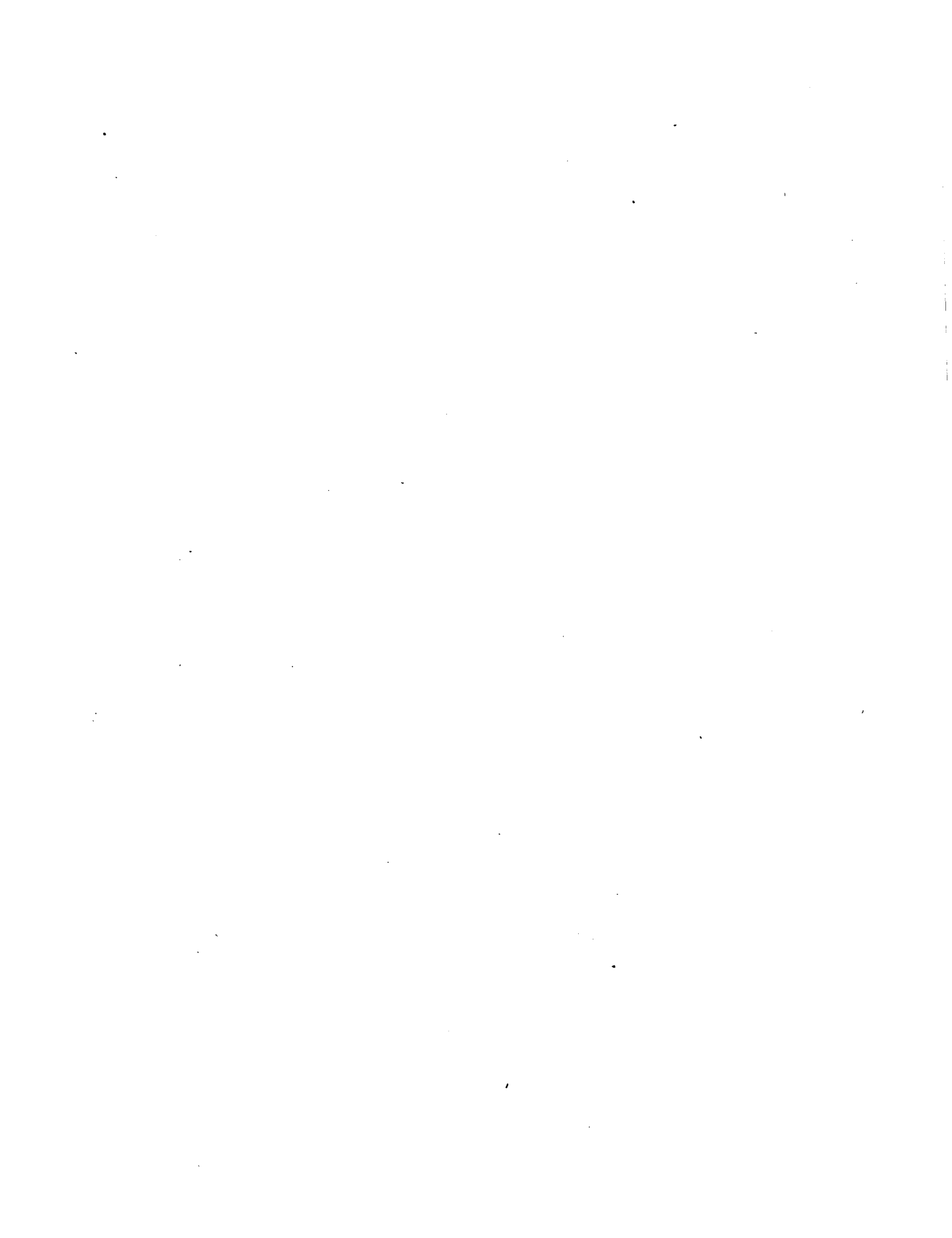


AG Butler del et lith. Oct 1871.

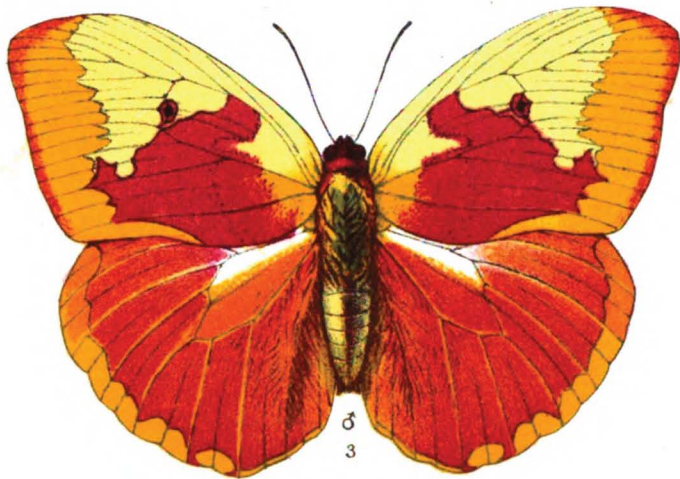
Mutern Bros imp

1-4. CALLIDRYAS PHILEA
5-8 CALLIDRYAS THALESTRIS





CALLIDRYAS.X.



A.C. Butler. del. et lith. Jan. 1872.

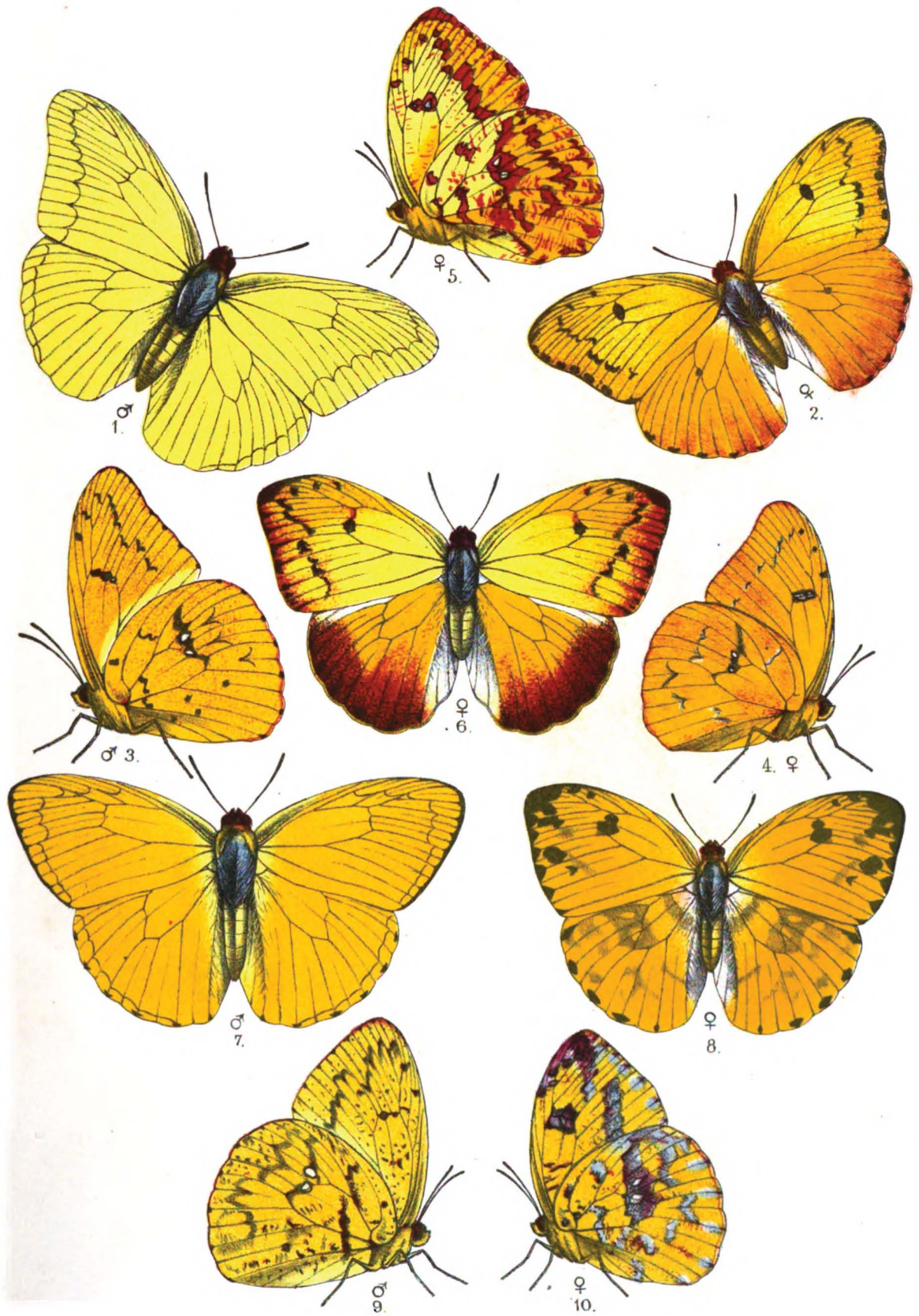
1. 2. CALLIDRYAS SOLSTITIA.
3. 5. CALLIDRYAS AVELLANEDA.

Mintern Bros imp.









A. G. Butler del. et lith. Mar. & April 1872

Mintern Bros. imp.

1 2 3 4. CALLIDRYAS EDITHA. 5. 6 CALLIDRYAS FORNAX.
7. 8 9. 10. CALLIDRYAS HERSILIA.

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CALLIDRYAS. XII.

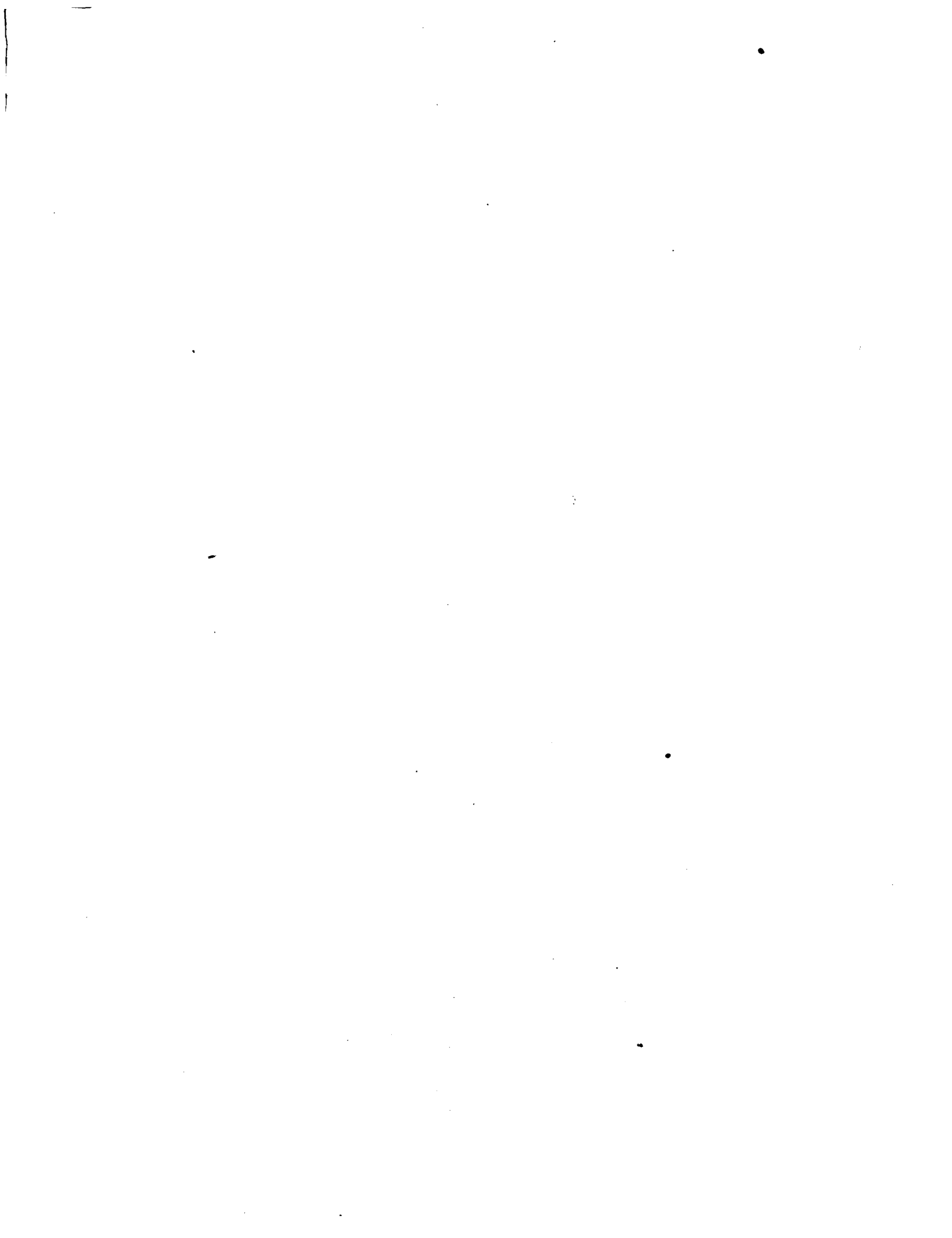


A. G. Butler del et lith July 1872.

Musson Bros. sup.

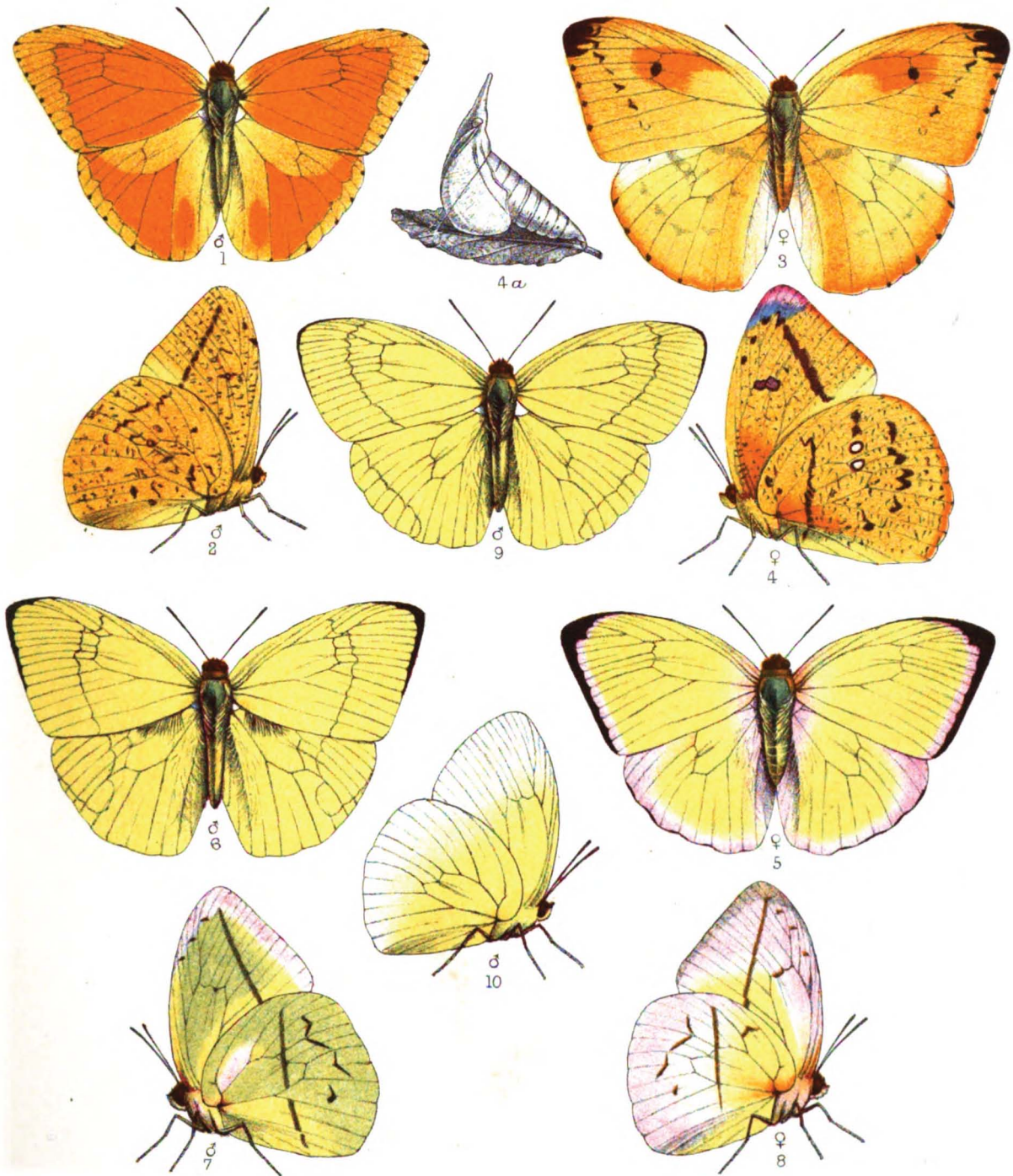
1-4 CALLIDRYAS ARGENTE 5-8. CALLIDRYAS ROTATA.
9-10. CALLIDRYAS MINUSCULA.







CALLIDRYAS XIII

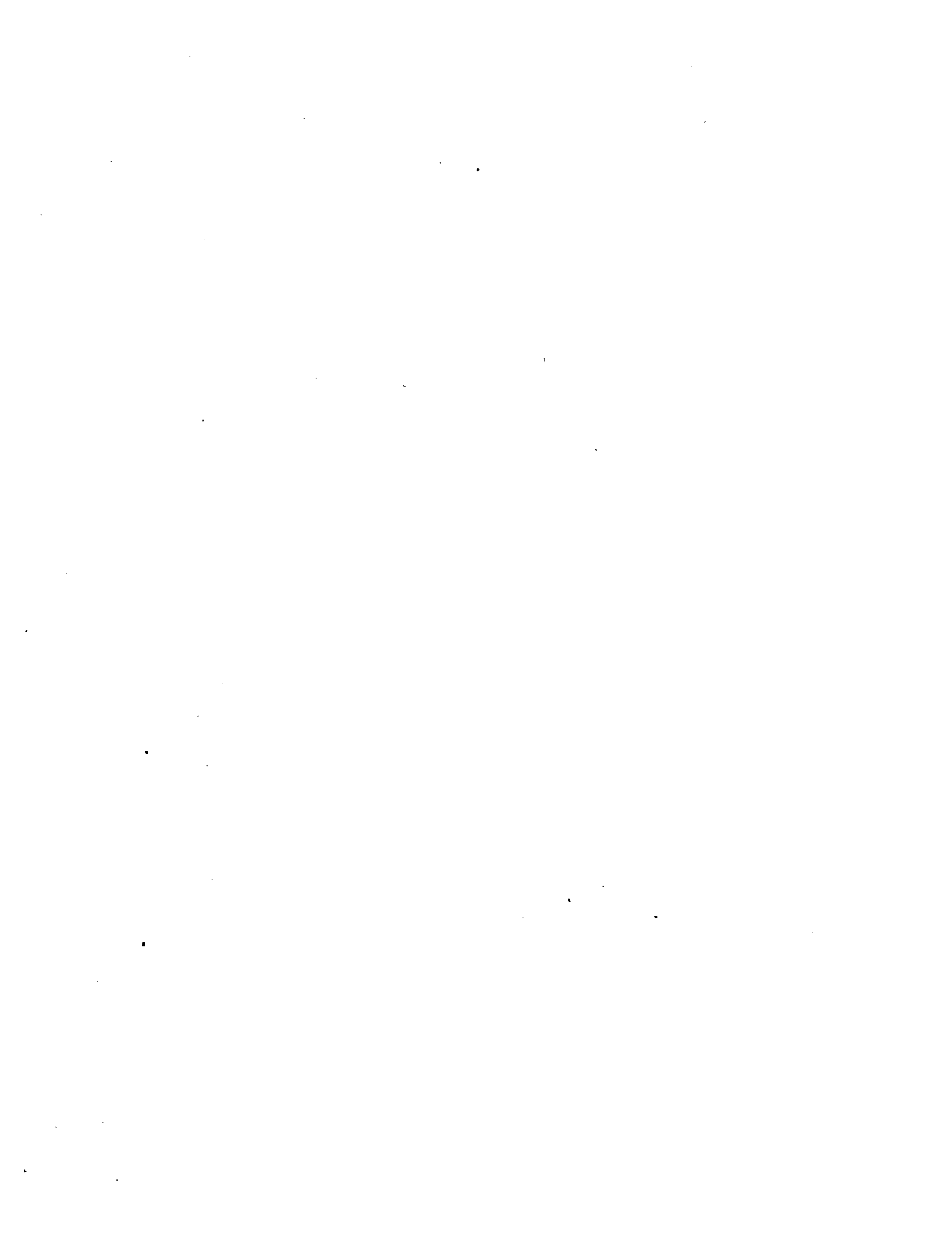


A.C. Butler del et lith Oct. 1872.

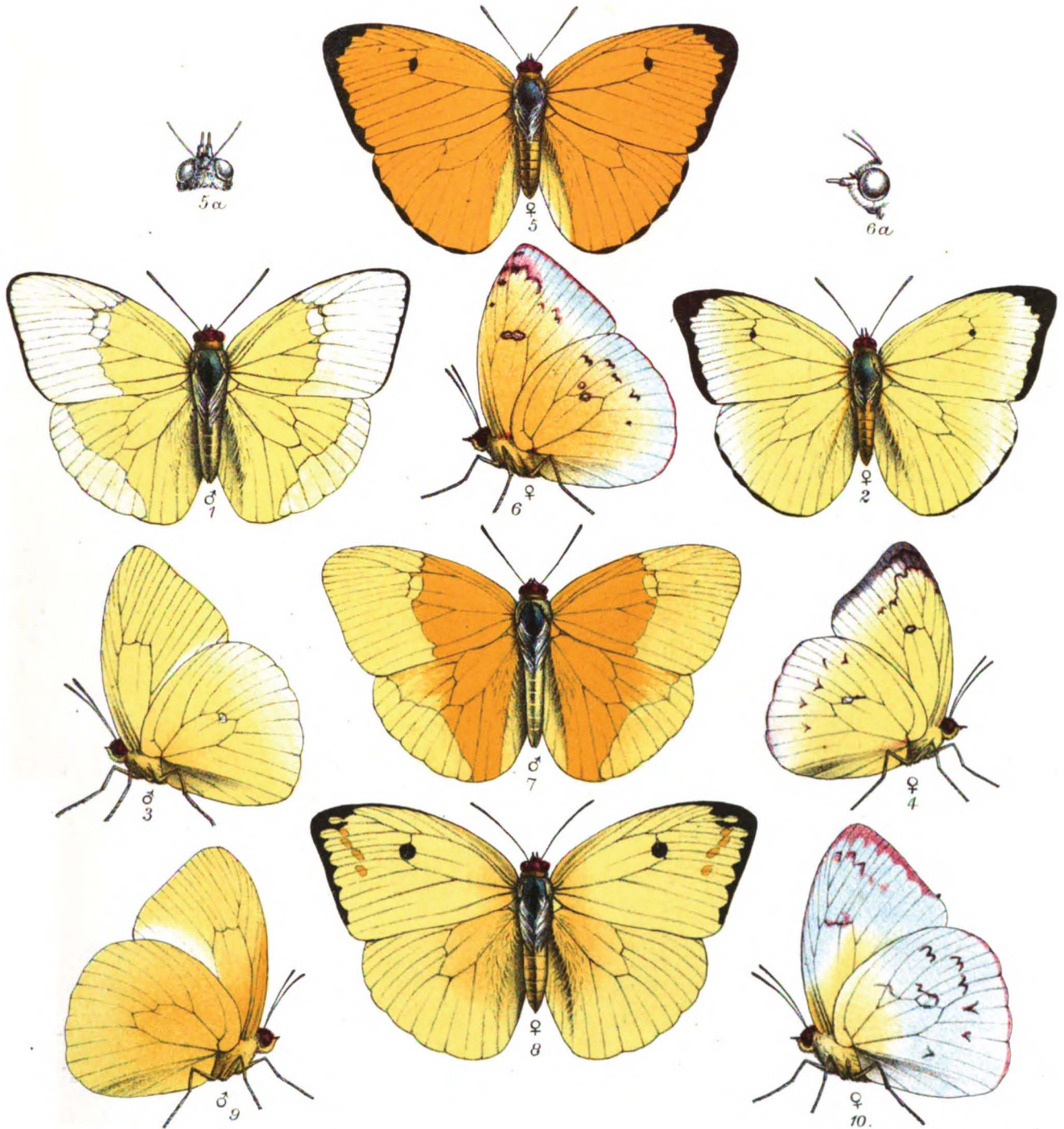
Mintern Bros. rmp

12. 3. 4. CALLIDRYAS ACARITHE.

5. 6. 7. 8. CALLIDRYAS TRITE 9. 10. CALLIDRYAS WALLACEI.



CALLIDRYAS XIV

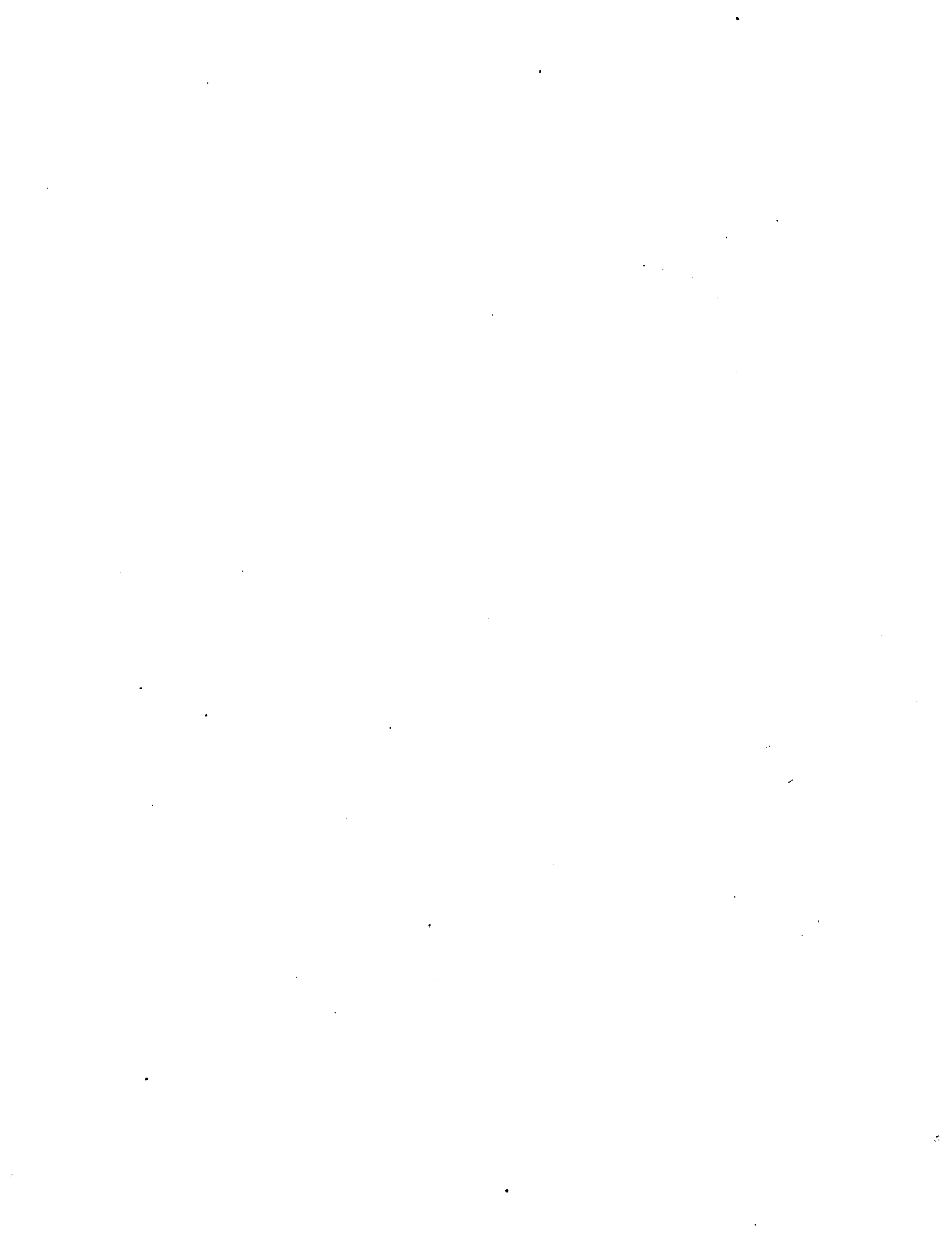


A.G. Butler del et lith. Jan 1873.

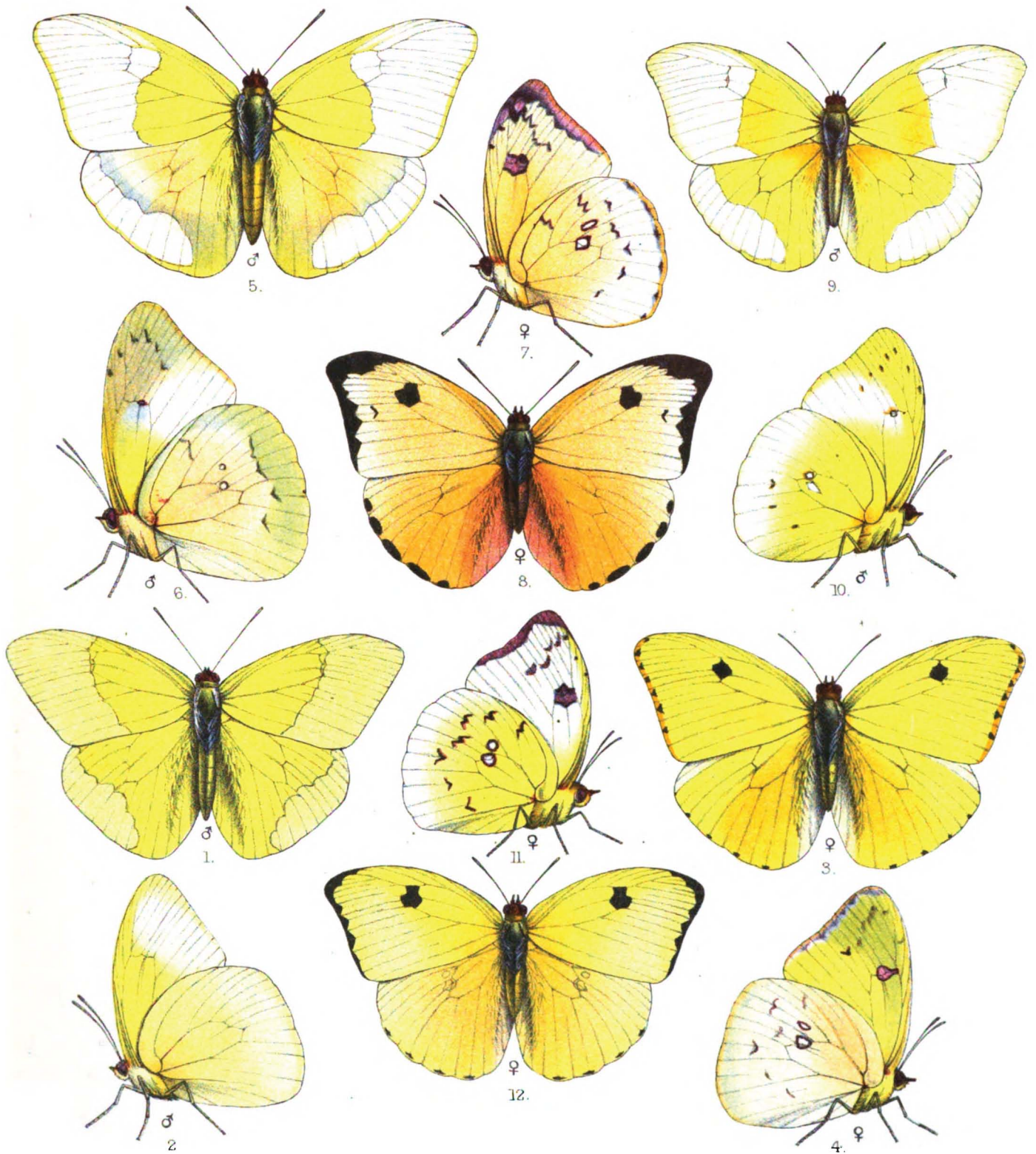
Mutern Bros. imp.

1. 2. 3. 4. CALLIDRYAS STATIRA.
5. 6. CALLIDRYAS JARESIA - 7. 8. 9. 10. CALLIDRYAS JADA.





CALLIDRYAS. XV.



A. G. Butler del. et lith. Mar.

Mintzer Bros imp

1. 2. 3. 4. CALLIDRYAS NELEIS. 5. 6. 7. 8. CALLIDRYAS GODARTIANA.

9. 10. 11. 12. CALLIDRYAS HARTONIA.