

tains of Semién, in Abyssinia, in an absolute altitude of from 10,000 to 11,000 feet. The only individual I ever shot was an adult female. It was in the month of February in 1863. I did not succeed in obtaining a male, these birds living exclusively near the margins of colossal precipices, into which, when once alarmed, they dive with a bewildering velocity. The drawing was made from the freshly killed bird, several specimens of *F. erkelii* and *F. gutturalis* being near me at the time.

10. DESCRIPTIONS OF SIX BUTTERFLIES NEW TO SCIENCE, BELONGING TO THE GENERA *HETEROCHROA* AND *ROMALEOSOMA*. BY ARTHUR G. BUTLER, F.Z.S., ASSISTANT, ZOOLOGICAL DEPARTMENT, BRITISH MUSEUM.

1. *HETEROCHROA SALMONEUS*. (Fig. 1, p. 668.)

Upperside—front wings, basal half rich brown, varied with black lines; apical portion deeper-coloured, with a black submarginal line along the outer margins; crossed beyond the middle by an irregular bright orange belt. Hind wings rich brown, crossed by five broad black bands converging towards the anal angle, the two nearest the base divided in the middle; a narrow submarginal black line along the outer margin.

Underside—front wings golden reddish brown, anterior margin and anal angle paler; crossed beyond the middle, from the anterior margin to the anal angle, by a broad, oblique, irregular silver band, broader above than below, interrupted by the nervures, which are fuscous, and by a faint ochreous streak crossing the space between the first and second median nervules; three bluish-silver spots, placed obliquely between the nervules and extending from near the apex to the central silver band; a submarginal row of silver spots between the nervules, close to the outer margin, the two lowest ones lunular; a large wedge-shaped bluish-silver patch margined with rufous at the base, interrupted by the median nervure and an oblique orange streak; a smaller curved elongate patch, intersected by a rufous lunular line, and margined with rufous, closing the cell; a small bluish-silver spot below the base of the third median nervule, a second oblong spot of the same colour below the middle of the same nervule, and a small silver lunule just above it margined on its inner edge with rufous. Posterior wings golden reddish brown, basal half and anterior margin paler; crossed by four irregular violaceous silvery bands, bordered with rufous, converging towards the anal angle and interior margin; the second from the base short, bounded by the median nervure, its upper half contiguous to the third band; the fourth somewhat dusky, broadest in the middle; a submarginal row of silver lunules intersected by a rufous line along the outer margin, between the nervures.

*Hab.* Venezuela.

Allied to *H. irmina*, Doubl. & Hewits. (from the Amazons), but



very distinct; we have, however, a variety of *H. irmina* that is almost identical with it in the colour and markings of the upperside, although very different beneath.

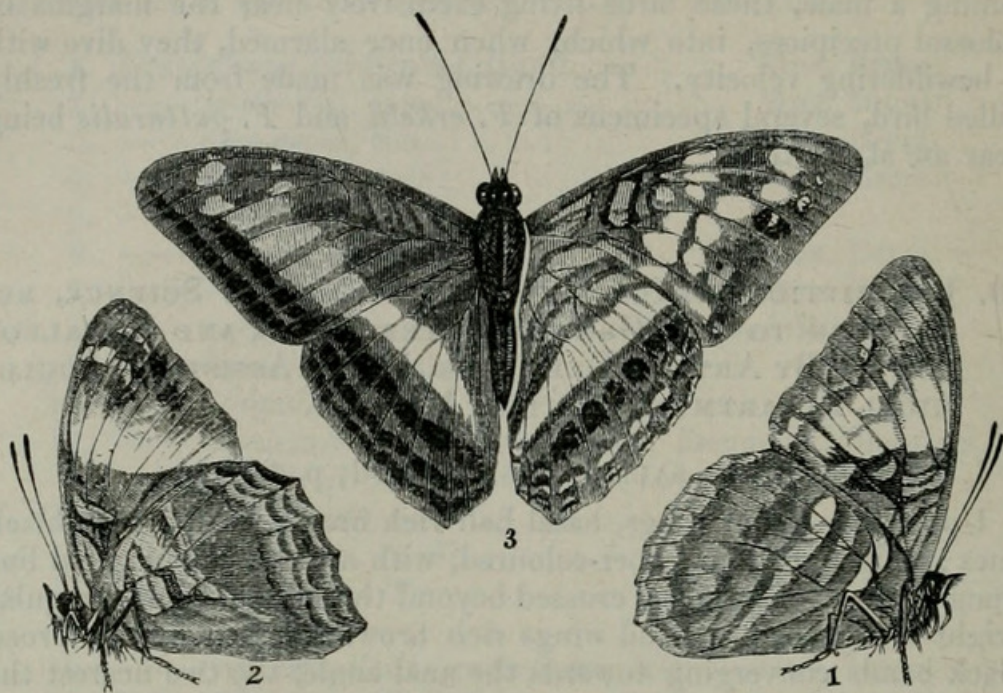


Fig. 1. *Heterochroa salmoneus*.  
 2. *H. boreas*.  
 3. *H. sichæus*.

## 2. *HETEROCHROA BOREAS*. (Fig. 2.)

Upperside—front wings rich brown, crossed beyond the middle by a broad oblique dull orange band; the two extremities curved, the upper end, which touches the anterior margin, outwardly, the lower and smaller end, at the anal angle, inwardly; the outer edge produced just before the middle, forming two irregular sinuations; a row of three orange spots between the nervures connecting this projection with the anterior margin near the apex, the lowest spots very minute; cell crossed by five oblique black lines, the two central ones continued below the median nervure and meeting each other; two indistinct, converging, submarginal black lines along the outer margin near the apex. Posterior wings rich brown, crossed by a paler brown band just beyond the middle, broad at the anterior margin, and gradually tapering towards the anal angle; outer margin pale, intersected by two submarginal darker bands.

Underside—front wings deep reddish brown, paler towards the outer margin; central band similar to that of the upperside, but roseate white, and interrupted by the nervures, which are red-brown, and by a faint brown streak intersecting the band between the upper disco-cellular and the second median nervules; a row of three white spots, the two upper ones tinged with roseate, the lower one with blue, meeting the projection of the central band, and connecting it with the anterior margin near the apex; the second spot divided into two, the third into three, by central brown lines; two dark



quadrate spots parallel to the outer margin, one between the disco-cellular, and the other between the first and second median nervules; a large triangular violaceous spot edged with brown at the base, intersected by the median nervure and an oblique brown line; a smaller curved elongate patch, enclosing a brown spot and margined with brown, at the end of the cell, and a third similar small indistinct spot beyond it; a small violaceous spot just below the middle of the median nervure. Posterior wings, basal half white glossed with violaceous, apical half pale reddish brown; crossed beyond the middle by a broad irregular oblique dark reddish brown band, broadest just above the middle, its outer edge following the direction of the outer margin; a submarginal row of white lunules edged with rufous between the nervules along the outer margin; cell crossed by three rufous lines, extending from the anterior margin to the median nervure, and closed by an oblong pale brown spot edged with rufous; interior margin pale rosy brown.

*Hab.* Bolivia.

Allied to *H. leucophthalma*, Latr. (Bogota).

### 3. *HETEROCHROA SICHÆUS*. (Fig. 3, p. 668.)

Upperside—front wings rich black-brown, the cell crossed by two oblique black lines, and closed by two similar lines; a submarginal black line near the outer margin; a broad bright orange band extending from the upper disco-cellular to the interior margin near the anal angle, wider above than below, dentated on its inner edge at the nervures, connected with the anterior margin by three orange spots extending from its outer upper angle to near the apex, and with the costal nervure by two orange spots from its inner upper angle. Posterior wings rich black-brown, crossed in the middle by a white band tapering from the anterior margin beyond the middle to near the anal angle; two submarginal pale brown lines parallel to the outer margin.

Underside—front wings red-brown, crossed beyond the middle by a broad irregular white band tinged with violaceous, broader above than below, divided through the centre by a fuscous line extending from the upper disco-cellular to the third median nervule, connected with the anterior margin by three white spots on either side between the nervules, and bordered on its outer edge by a row of pale blue-white spots edged outwardly with brown, extending from the apex to the anal angle; a white spot at the anal angle; a large triangular blue-white patch at the base, bordered with brown, and interrupted by the median nervure and by an oblique brown line; cell closed by an oblong blue-white patch margined with brown; two similar spots just beyond it and touching the central band; a small spot of the same colour below the cell. Posterior wings red-brown, crossed in the middle by a white band as above; basal half crossed by two violaceous bands bordered with brown, the outer one bounded by the median nervure; a marginal row of violaceous lunules between the nervures on the outer margin, and a similar row of larger lunules just above them; a deep-brown band, tapering to the anal angle and



intersected by the nervures, between the submarginal row of lunules and the central band.

*Hab.* Bogota.

Allied to *H. cocala*, Cramer (Brazil, &c.), but very distinct.

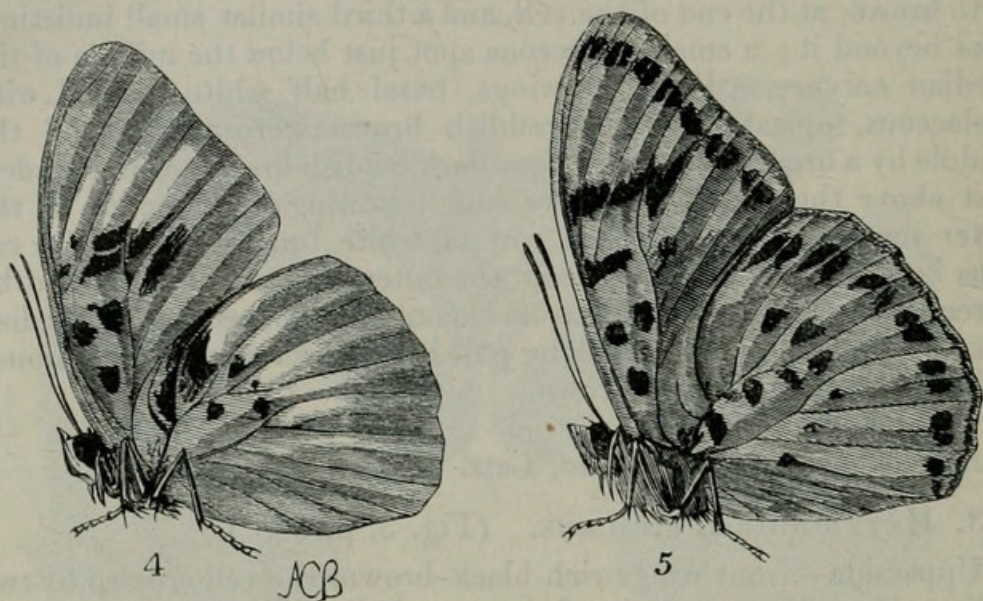


Fig. 4. *Romaleosoma phaethusa*.  
5. *R. gausape*.

#### 4. ROMALEOSOMA PHAËTHUSA. (Fig. 4.)

*Male.* Upperside—front wings blue-black, with anterior and interior margins of metallic golden green, crossed beyond the middle by a broad oblique pale orange band, which extends from just beyond the middle of the anterior to near the middle of the outer margin. Hind wings golden green, bluish at the base and hind margin; an indistinct blue-black band along the hind margin, and a small spot of the same colour at the end of the cell; inner margin fringed with long chocolate-brown hairs. Body brown, palpi orange.

Underside—front wings golden-green, crossed beyond the middle by a pale ochreous band; edge of front margin, cilia, and nervures orange; apex faintly tipped with white; three large black spots within the cell, one near the base, the other two placed obliquely just beyond it; cell closed by four obliquely placed black spots, the two upper ones small, circular, the lower ones oblong, irregular, the outer couple touching the ochreous band; a subtriangular black dash below these spots, also touching the band, with another blackish brown dash below it and between the second and third median nervures; hind margin somewhat grey. Hind wings golden-green, basal half deeper-coloured; an oblique, irregular, pale ochreous band crossing the middle of the wing from the middle of the anterior margin to near the anal angle, its outer edge gradually shading off towards the outer margin, bordered on its inner edge by three black dashes between the nervures; the first large, oblong, oblique, crossing the space between the costal nervure and first subcostal ner-



vule; the second small, nearly triangular, oblique, between the first and second subcostals; the third indistinct, very small, between the second and third subcostals; costal nervure margined outwardly with black, broadest near the base; two small oval black spots within the cell, one in the middle just below the subcostal nervure, the other at the end of the cell; inner margin rich golden-green. Body—thorax orange; legs pale ochreous.

*Hab.* Ashantee.

Near *R. ceres*, Fabr. (Ashantee); differs from it above in the more produced fore wings, and the absence of the submarginal band of spots near the outer margin; beneath, in its paler colouring, the absence of the submarginal spots of the outer margins, the indistinct black dash near the interior margin, the white dots at the outer terminations of the folds between the nervules, and the two black spots, one at the base and the other just above the median nervure within the cell.

##### 5. ROMALEOSOMA GAUSAPE. (Fig. 5, p. 670.)

*Male.* Upperside—front wings, apical half, front and hind margins broadly black, the nervures tinted with greenish; lower basal half and inner margin broadly golden green; an irregular orange band, faintly bordered on its inner side with greenish, crosses the wing obliquely from near the anterior margin, at two-thirds of the distance from the base, to near the outer margin just before the middle. Posterior wings golden green, apical portion inclining to cupreous, anal portion bluish green; outer margin broadly blue-black, getting paler towards the anal angle, and discovering black submarginal spots between the nervules; interior margin fringed with rich-chocolate hairs. Body brown; palpi orange.

Underside—front wings golden green, apical portion greenish ochreous; interior margin dusky, violaceous near the anal angle; three large spots within the cell; cell closed by an oblique oblong black dash; an oblique row of four black spots crossing the wing from the anterior margin, at nearly two-thirds the distance from the base, to near the outer margin just below the middle, the lowest spot somewhat hastate; a marginal row of eight black spots near the outer margin; a small indistinct black spot just below the end of the cell; cilia of outer margin brown. Posterior wings ochreous, basal half and outer margin greenish; anterior margin to near the apex broadly peach-red; inner margin broadly orange; three black spots within the cell, placed close to the subcostal nervure, one at the base, one in the middle, and one at the end of the cell; a minute circular black spot also within the cell and just below the central larger spot; a row of three large spots placed obliquely just beyond the cell and beneath the subcostal nervules, meeting a row of three minute circular black spots placed obliquely beneath the submedian nervules; a submarginal row of eight black spots near the outer margin. Body orange; legs ochreous.

*Hab.* West Africa.

Allied to *R. cyparissa*, Cramer (Ashantee); but differs from it



considerably beneath in the arrangement of the black spots on all the wings, in the further extension of the red patch of the lower wings, and the more brilliant colouring; above in the presence of a subapical orange band and different disposition of the green patches in the fore wing and the narrower black bordering to the hind wing.

#### 6. ROMALEOSOMA AGNES.

Upperside—front wings rich chocolate-brown, crossed beyond the middle by an irregular orange or white band; apex white; a violet patch on the inner margin beyond the middle. Hind wings chocolate-brown, with a central curved band of violet; inner margin pale brown.

Underside—front wings greenish or brownish olivaceous, crossed beyond the middle by an irregular white band; a submarginal row of seven very ill-defined greyish spots near the hind margin; apex white; nervures and extreme edges of wings ochreous; three small black spots within the cell. Hind wings the same as the front wings, but with a much narrower central white band, bounded below by the first median nervule.

*Hab.* Ashantee.

This species, from the similarity of the underside-markings, has been confused with *R. medon* of Linnæus, but I feel certain that it is distinct. It differs from *R. medon* in being shorter in the wings, less robust, the ground-colour of the underside uniform greenish or brownish olivaceous, the black spots much larger, and the bands longer. The upperside is quite different. It is figured in Drury's 'Illustrations of Natural History,' ii. pl. 15.

The description given by Linnæus of *R. medon* is so insufficient that, without Clerck's figure, it would suit about two-thirds of the insects in the genus; and as there have been several mistakes made concerning it, I give a fuller description of it below. Cramer has figured a variety of *R. ceres* as *R. medon* (pl. 205. f. C, D).

#### 7. ROMALEOSOMA MEDON, Linn. (Fig. 6, p. 673.)

*Female.* Upperside—front wings rich chocolate-brown, glossed with steel-blue; crossed beyond the middle by an irregular chrome-yellow band, narrower above than below, extending from just beyond the middle of the anterior to just beyond the middle of the outer margin; apex white; interior margin silvery blue-green; front marginal edge irrorated with orange. Hind wings steel-blue, changing to silvery blue-green beyond the cell; outer and inner margins chocolate-brown glossed with purple. Body brown; antennæ with orange club; palpi orange.

Underside—front wings pale greenish, varied with dull chocolate-brown, crossed beyond the middle by an irregular white band, narrower above than below, extending from just beyond the middle of the anterior margin to near the outer margin just beyond the middle, and interrupting a submarginal band of ill-defined brown spots extending from the anterior margin near the apex to the interior margin near the anal angle; apex white, cilia and basal half of front



marginal edge brownish ochreous ; three large black spots within the cell. Hind wings pale green varied with brown ; an irregular white band just beyond the middle, sinuated on its inner edge and gradually shaded off on its outer edge, extending from the front margin, towards the anal angle, to the second median nervule ; a submarginal row of seven large ill-defined brown spots a little way from and following the direction of the outer margin ; three large black spots within the cell, one near the base, the other two placed obliquely just beyond the middle of the cell ; cilia, anterior and interior marginal edges brownish ochreous. Body orange ochreous ; legs pale ochreous ; palpi and club of antennæ orange.

*Hab.* Congo.

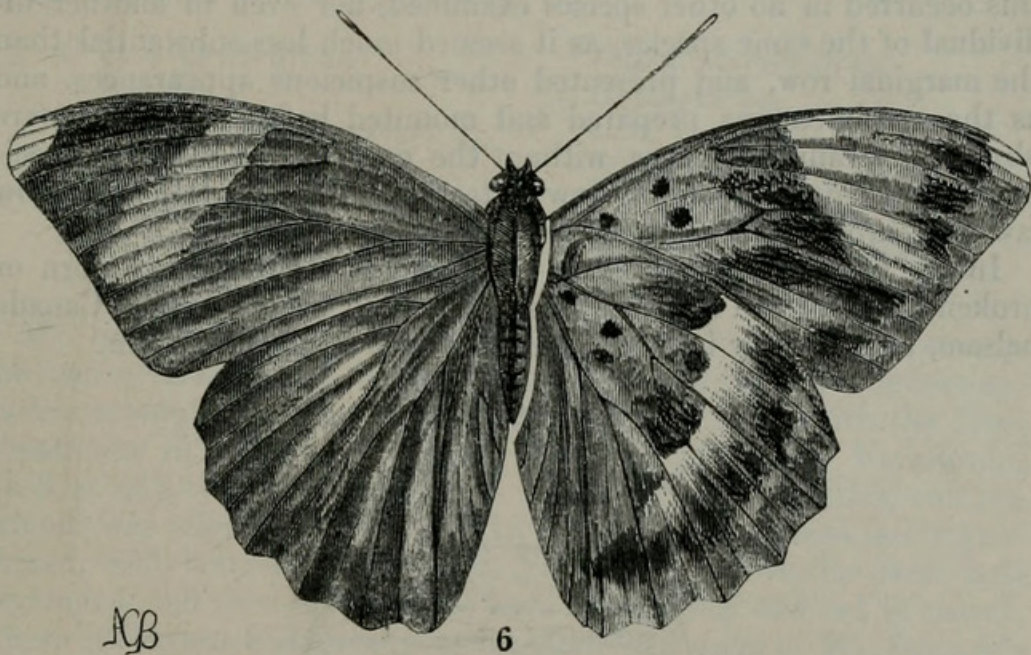


Fig. 6. *Romaleosoma medon*, Linn.

11. NOTE ON THE PRESENCE OF TEETH ON THE MAXILLÆ OF SPIDERS. BY MISS STAVELEY. COMMUNICATED BY DR. J. E. GRAY\*.

I do not find in Dr. Blackwall's 'Monograph of the British Spiders,' nor in M. Simon's 'Histoire Naturelle des Aranéides,' nor in any other work which I have had an opportunity of consulting, that the occurrence of teeth on the maxillæ of Spiders has been noticed.

On the maxillæ of six out of seven Spiders which I have examined, belonging to various genera, there is a row of very regular and perfectly-formed teeth on the outer edge of the extremity of the maxilla. These teeth vary slightly in form in the different species, and the

\* Since this paper was read, Miss Staveley has examined several other species of Spiders, and found these teeth developed in all of them.—J. E. G.



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