

# THE BUTTERFLIES OF KENYA AND UGANDA.

## PART IX.

By

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and

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### NYMPHALIDAE; SUB-FAMILY *Charaxidi* (contd.).

#### INTRODUCTION.

We feel that an apology is due to members for the delay in publishing the continuation of the series of papers dealing with the Butterflies of Kenya and Uganda. This delay is due entirely to a desire to be in a position of placing before our readers as full an account as possible of all the facts relative to this, the most difficult of all the groups of the Family *Charaxidi*. Indeed, it would not be an exaggeration to say that this final group includes certain species which are the most puzzling of any butterfly in the world.

We refer more particularly to that aggregate of closely related *Charaxes* which have received the name *ETHEOCLES* and to which several variatal names have been applied. In spite of the delay, expenditure of time and money, much still remains to be discovered regarding this sub-group, and we have considered it desirable that at least part of the final group should now be published. We will therefore deal with such species as occur within the bounds of our territories, omitting for the time being *Charaxes etheocles* (s.l.) and *Chx. ethalion*.

#### *CHARAXES ANTICLEA ADUSTA*, Rothsch. Pl. XCIX, figs. 1-4.

Expanse: Male 55-62 mm. Female 52-65 mm. Sexes unlike. General colour black with orange-red marks.

F.-w: ♂ Deep purply-black, with sub-marginal orange-red marks at the hind angle in 1a, 1b, and 2, sometimes a small spot in 4, and less often in 3. H.-w.: Deep purply-black, fading to brownish on the inner fold; outer edge broadly bordered with an orange-red band ornamented with a series of sub-marginal circular black spots in each internervular area, double in 1b, and these as well as those in 1c and 2 with central white dot. The black marks are marginal in 6. Two variations are fairly common: (a) in which the black spots are contiguous and coalescent thus forming a continuous sub-marginal black band; (b) in which areas 4, 5, and 6 are without black spots.

The extreme margin of the wing is narrowly edged with black each internervular area fringed with white scales.

PLATE XCIX.

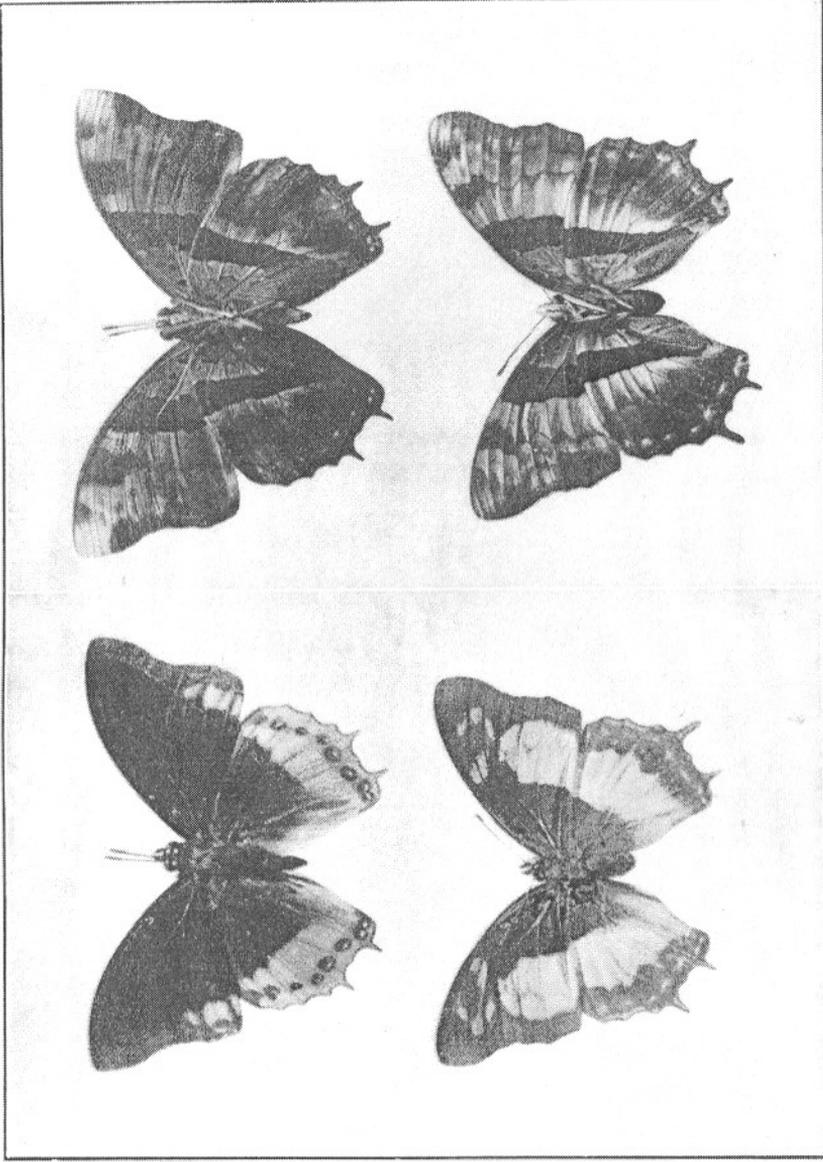


Photo: Dr. van Someren.

*Charaxes anticlea adusta*, Rothsch.  
Upper surfaces ♂ ♀.  
Under surfaces ♂ ♀.

#### UNDERSIDE:

F.-w.: Ground colour chocolate brown with a sheen, traversed by two bars, one complete and bordered by black passing from the costa at apex of cell and bases of 2-7 and sub-basally 1a and 1b, the other incomplete, and more pronounced at the costal margin passes through the mid-areas of 2-7, gradually fading in 1a and 1b. The apex is greyish internally carrying a series of obscured brownish spots; outer margin of wing chocolate-brown. Cell carries three black spots, one basal, two set oblique, ringed with white. The orange areas of above are faintly represented on the underside.

H.-w.: Ground colour as fore-wing, with the greyish sheen more accentuated basally. A strongly marked chocolate brown bar crosses the wing from costa to inner margin where it fades; the orange-red areas of above are represented below by an area of rufescence, the inner margin of which is decorated with crescentic red marks outlined in black. The black submarginal spots of above are shown as violet-grey areas each with a white dot; the anal angle is olive green carrying two white and purple dots; a narrow red border is present on the margin of the wing, and the extreme edge is relieved internervularly with white. Two short tails are present on 2 and 4.

#### FEMALE:

F.-w.: Brown-black, with a wide orange-red band traversing the areas 1a-3, thence breaking up into two series of spots, the outer series being sub-apical in 4-6, the others basal in 5 and 6.

H.-w.: Black-brown with a wide discal band of orange red extending from the costa and fading at the inner fold. A narrow red line follows the marginal contour of the wing, and this is distally outlined in black. Two tails are present, that on 4 being longest and often spatulate.

#### UNDERSIDE:

Much as in the male, but all marks rather accentuated, and in addition the ground colour in the area corresponding to the orange-red above, more rufescent.

#### EARLY STAGES:

This species lays its eggs on the leaves of the thorny creeper *Acacia goetizi*, Harms., also on *Acacia pennata*, Wild. (LEGUMINOSAE). The eggs are deposited on the upper surface of the leaflets and seldom on the stems. They are creamy white, somewhat ovoid in shape with a depression on top which is fluted, more especially at the margin. As development proceeds the upper portion of the egg just below the margin of the depression, turns brownish; later on the entire egg turns black. The larva emerges in seven to ten days and is of a brownish olive colour with a black head. Green replaces the olive at the first

moult, and at the third instar two dorsal marks appear on the sixth and eighth segments. These marks are yellowish and are more strongly papillated than the rest of the surface of the segments, and both are outlined posteriorly with black. This colour and decoration is maintained until the larva is ready to pupate. The head is distinctive, having a well-marked depressed line marking the division between the lateral segments. The bases from which the horns arise are rather angulated, giving a marked hexagonal outline to the facial disc. The horns are purplish-brown in colour, relatively long, being three-quarters of the length of the head. The central horns are longer than the lateral ones and are slightly incurved. The larval stage lasts fourteen days; but if the food is inclined to wither as it does very readily, this stage may be prolonged to over a month. (Head: Pl. LXXVI, fig. 27.)

The pupa is of the usual *Charaxes* form, about 16 mm. long, and much stippled anteriorly with white markings, especially near the margins of the wing cases. The imago emerges in ten days in normal temperature, about 80°. The red areas of the wings show through the scutae long before the black ones.

#### DISTRIBUTION AND HABITS:

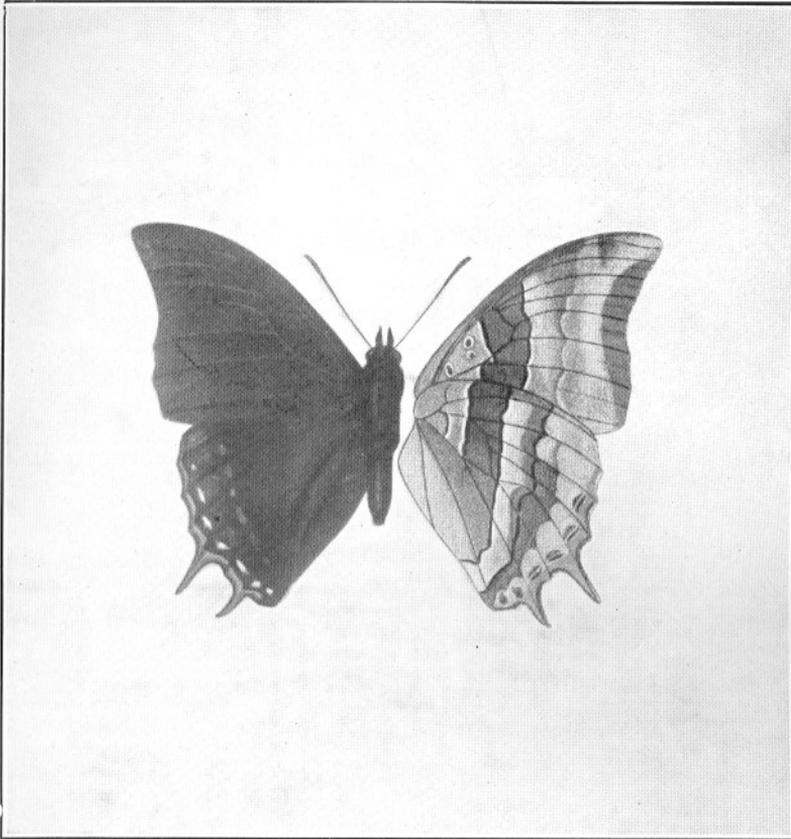
*Charaxes anticlea adusta* is the eastern form of the species. It is extremely common throughout Uganda, and extends east and south to the Nandi Range and reaches Sotik on the west of the Rift Valley, and has been taken at Londiani. It is, strictly speaking, a forest species, but nevertheless frequents the wooded valleys of rivers away from any main forest area. Males are much in evidence on leopard droppings and other animal excrement; while the females are most usually seen fluttering round their food plant. The two species of food plant are most usually found growing along the edges of forests, forest clearings and along roadways through forests.

The males are quick-flying lively insects when on the move, but when intent on feed on some evil-smelling excrement, one can without difficulty capture them with the fingers. Females, on the other hand, are always more wary and thus are rather rare in collections, but if one takes up a stance within striking distance of a favoured food plant, one can capture them freely if one does not attempt to take in part of the thorny food into the net; should this happen, it means a torn net and possible loss of the insect!

#### MIMETIC ASSOCIATIONS:

The male of this little *Charaxes* is really a miniature edition of that powerful insect *Chx. protoclea nothodes* and there is no doubt that by this resemblance it derives benefit, for few birds would be prepared to tackle such a strong insect as its model. The female is rather of a puzzle: it resembles most closely, both male and female

PLATE C.



*Photo: Dr. van Someren. (From Trans. Zool. Soc., 1910.)*

*Charaxes opinatus*, Heron.

Upper and under surfaces ♂.

of *Vanessula milca*, a Nymphaline of whose edibility one knows little. There is little doubt that in Uganda, the female of *Ch. anticlea adusta* is still in a state of evolution.

There is evidence to show that in quite a proportion of the 16 females in my collection there is a tendency for the orange of the hind-wing to become very pale, thus tending to exhibit a resemblance to *Ch. etheocles f. vansomereni* and even toward that ubiquitous Acraeine, *Planema poggei*. As suggested by Talbot, certain of the *Precis* may come into this association. A close study of this matter is required before the true association can be determined.

*CHARAXES OPINATUS*, Heron. Pl. C, fig. 1.

Expanse: 78 mm. Only the male is known.

This is a very rare species and is unrepresented in our collections. I take the liberty of quoting the original description as published in the Transactions of the Zoological Society, October, 1909:—

“ Above the species has the appearance of a member of the *Ch. ethalion* group, and resembles some ally of *Ch. anticlea*, thus apparently forming a link between these two divergent groups. In wing-shape, hardly differing from the same sex of *Ch. ethalion*, except that the tornus of the fore-wings is a little less acute, while the hind-wings are rather more produced and the tail at vein 4 is a third longer than at 2, which latter is about the usual *ethalion* length, though in that species the proportionate length of the tails is reversed.

#### UPPERSIDE :

“ Head, body, and wings seal-brown, the wing border narrowly black; cilia white on hind-wings and interrupted with black at veins on fore-wing. F.-w. uniform seal-brown. H.-w. with a sub-marginal band about 1.5 mm. wide, which is of an ochreous rufous-brown colour, except at the tornus, where are a few gall-stone-yellow scales; the sub-marginal spots, of the usual *ethalion* shape, are grey-blue scaled with white centres, the white colour disappearing in the more costal-ward spots. A narrow (1 mm.) post-discal macular band of tawny brown to dull brown from vein 7 to 1b, sub-parallel to the external margin.

#### UNDERSIDE :

“ The markings in yellowish and olivaceous greys suggest the brown to light red ones of *anticlea* male, but on the fore-wing the discal band is proportionately wider, more expanded costalward, straighter externally, and more broken internally; the fine sinuate line which bounds externally the next patch of the ground-colour is, from vein 1 to the costal margin, closer to the discal band, which thus exceeds the width of the ground-colour band, except near the costa.

On the H.-w. the space outside this sinuate line is oliveaceous green, with a faint line of demarcation from the band of purply-grey ground-colour which adjoins it externally; the outer border is gall-stone yellow, becoming more rufous toward the costa, the dark linear mark internally delimitating the lunules of purple and grey scales, and the marginal line of hind wings, black. The underside of the palpi and breast, and the tarsi of the fore legs pale Naples yellow. Underside of the thorax and abdomen, and the tibiae and tarsi of the mid and hind legs, of the same grey shade as the underside of the wings."

Early stages unknown.

Distribution: So far as is known, limited to Eastern Ruwenzori. 5,000-13,000 feet.

*CHARAXES BAUMANNI*, Rghfr. Pl. CI, figs. 1-4.

Expanse: Male 55-60 mm. Female 55-65 mm. Sexes unlike. General colour black with blue or white marks.

#### MALE:

F.-w.: Ground-colour brown-black relieved by a series of bluish-white spots arranged to follow the contour of the wing, extending from 6-2, that in the last area rather larger and continued in 1a and 1b as wide blue marks. In some specimens, the smaller spots are entirely wanting.

H.-w.: Brown-black traversed by a wide bluish-white band, more blue distally; which extends from the inner fold to the costa in gradually diminishing width from 5-7. The sub-marginal area carries a series of small bluish-white dots, double in 1c; the margin is decorated with purply-brown to reddish lunules, while the anal angle is ochreous green; the edge is outlined with black and fringed with white between the veins. Veins 2 and 4 carry tails which are black, lined centrally with white.

#### UNDERSIDE:

H. and f.-w.: Ground colour brownish with a distinct sheen; the central area of both wings traversed by two contiguous bars; the inner of a dark-chocolate brown colour proximally and distally edged with black and white; the other white proximally shading to brown distally and edged with a sinuous line of blackish. In the fore-wing, the cell carries three black spots outlined with white; while the concave outer border is shaded with darker brown rendered as a dark patch at the hind-angle. Parallel to the sinuous black line of the hind wing, runs an interrupted line of reddish spots, extending from the costa to the anal angle; a sub-marginal row of pinkish-white spots extend from the anal angle to 7, most of them outwardly lined in black; the anal angle

PLATE CL.

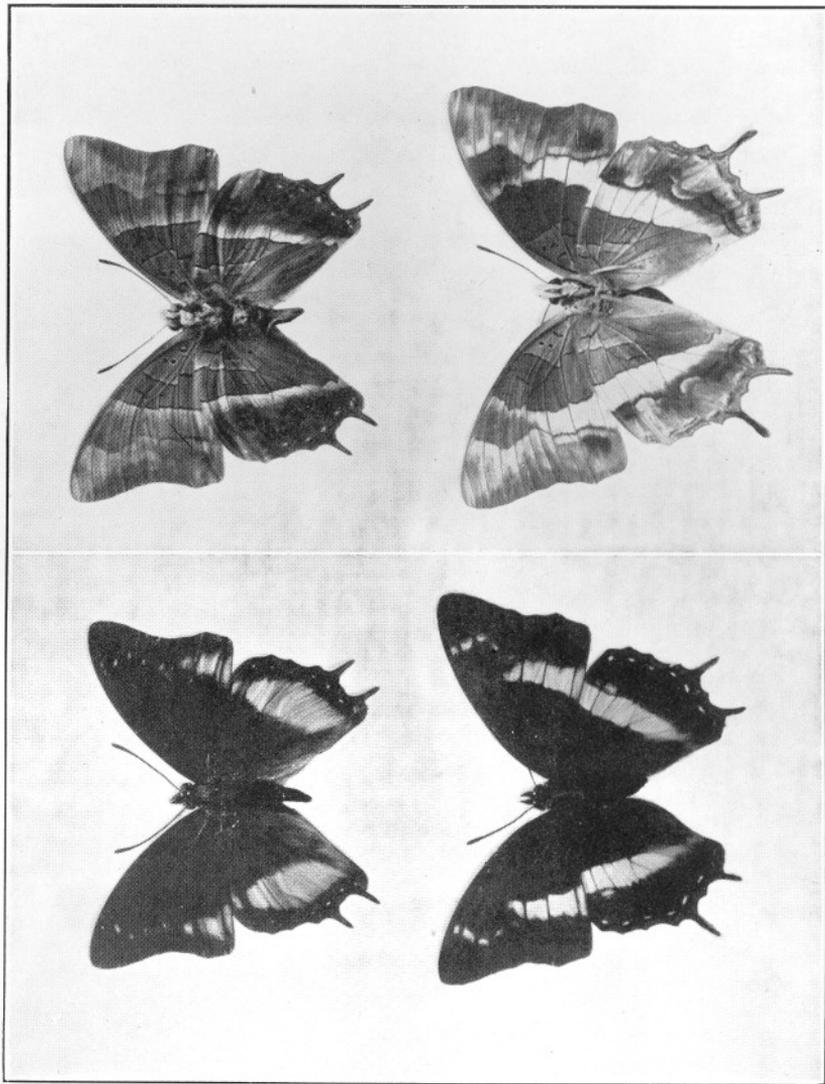


Photo: Dr. van Someren.

*Charaxes baumanni*, Rghfr. Upper surfaces ♂ ♀.  
Under surfaces ♂ ♀.

is olive-ochreous and carries two spots. The margin is narrowly outlined with lunules of a maroon colour, the internervular spaces fringed with white and black.

FEMALE:

Upperside: F.-w. brown-black with slight purple reflections when in the fresh state; a central ala bar starting at the hind margin extends forward in slightly diminishing width to area 3 where it then divides into two rows of spots, one rather obscure passes just beyond the apex of the cell, the other extending in a curve, with increasing size up to mid 7.

H.-w.: Ground colour as in the fore-wing, but paler at the inner fold, more greyish. The white bar of the anterior wing is continued through the hind-wing in about equal width, diminishing abruptly in 1b. A sub-marginal row of white spots extends from 7 to the anal angle where there are double spots; the margin of the anal angle and 2 and 3 are olive-green merging into red which extends up to 7; the extreme edge is outlined in black with white scales in the concavities. There is almost always a white spot distal to the white band in area 6.

UNDERSIDE:

Shiny grey-brown traversed by a representation of the white bar of the upper side; accentuated proximally by a wide chocolate-brown bar and distally by a tortuous black line outwardly edged with reddish lunular marks or whitish ones in 3 and 5 of the h.-w. and in 1b-3 in the f.-w. Some of these lunular marks are distally outlined with black, and this colour is present as two blackish marks just internal to the posterior angle of the fore-wing. A sub-marginal row of long white spots distally bordered with black and double at the anal angle, extends from this area to 7; the marginal border of reddish lunular marks also in these areas becomes greenish at the anal angle; the extreme edge is black fringed with white scales.

EARLY STAGES:

There are three food plants known to us: *Acacia pennata*, Wild., *Acacia* nr. *goetzi*, Harms., and *Pterolobium lacerans* (LEGUMINOSAE). The eggs are small and white, 0.75 mm., and are laid on the upper or underside of the leaflets. As development proceeds, a brown ring appears just below the somewhat flattened crown and extending to the upper surface obliterates the slight fluted marks which decorate this area, Pl. LXXII, fig. 7. The larva emerges in ten days and makes its first meal off the egg-shell; having eaten this it selects a couple of contiguous leaves and covers an area with silk, always retiring to this spot between meals off the young leaves in the vicinity of its "roost." The larva is at first yellowish with a blackish head and brown tail. At the second moult the colour changes to bright green; a distinct whitish

body line appears; and the head is now green with a yellowish marginal line. The dorsal marks on the sixth and eighth segments take the form of horse-shoes, are yellowish in colour, and raised above the rest of the surface of the segments. These marks are whitish anteriorly. The underside of the body is pale greenish, Pl. XLVII. fig. 3. The head is remarkable for the length of the horns in proportion to that of the facial disc. The face is oval in outline, and carries on its upper third four horns and four spines. The latter are crimson or red, while the terminal half of the horns which are slender and straight is orange-red shading to yellowish at the base. The yellow of the lateral horns is continued round the margin of the facial disc as a border which in turn is accentuated distally by black. The mouth parts are yellow, Pl. XLVII, fig. 3a, and Pl. LXXVI, fig. 25.

The pupa is small, and in shape, typical of the group. It is pale apple-green in colour slightly darker on the thorax, somewhat keeled on the marginal aspects of the head, while each abdominal segment is ornamented with three rows of yellowish spots, Pl. XLVII, fig. 3b. The imago emerges in ten days, if the weather is warm and humid, but in longer time if cold.

#### DISTRIBUTION AND HABITS :

So far as our experience goes, this little *Charaxes* has rather a restricted distribution. It is found in the forests at the coast and in the more wooded areas of the acacia country, Teita and Dabida, right up to the Highlands and to Elgon, but not in Uganda, though there is a specimen taken by Jackson labelled Entebbe. Its range is governed by the presence of its food plant and where this is abundant, the species is plentiful. Further, as these plants are found on the margins of forests, in forest clearings and such like open areas, it is in these places that one finds the insects. Males can be taken at animal dung while the females and males also are very partial to the fermenting sap from certain wounded trees. It is in such a situation that one learns to appreciate that both male and female bear a strong superficial resemblance to the form of *Eurytela hiabas lita* found in Kenya. This species also frequents droppings and oozing sap, and I have frequently mistaken the one species for the other, when fluttering round a tree. This brings us to a consideration of the species' mimetic associations. Prof. Poulton mentions the resemblance to *Neptis agatha* and its allies, but does not stress this as "there is no reason to suppose that the presence of this butterfly has influenced their pattern." This may be true as far as *Neptis* is concerned, but I think it otherwise when we are dealing with *Eurytela hiabas*. When *E. hiabas* is feeding it opens and shuts its wings and thus displays its conspicuous type of colouration; it is also remarkably free from molestation on the part of birds, and this would suggest that it possesses some distasteful qualities.

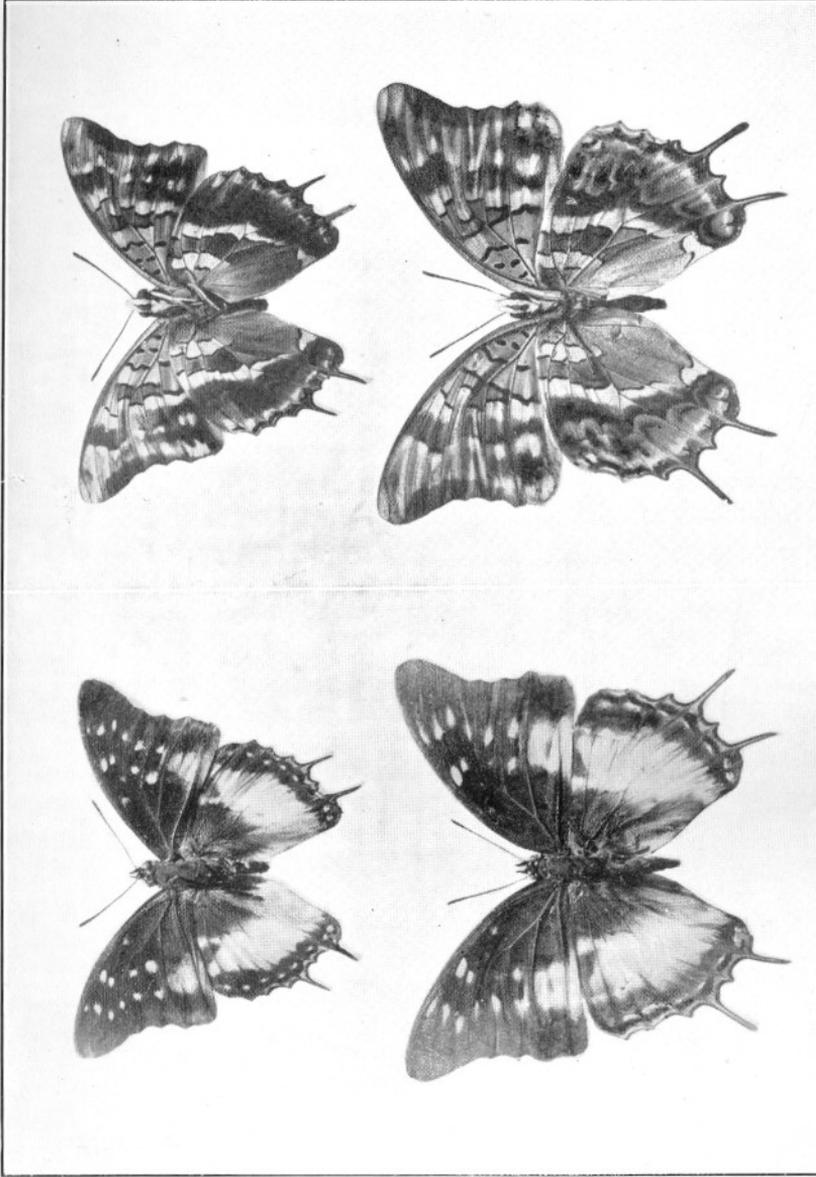


Photo: Dr. van Someren.

*Charaxes blanda kenyae*, Poulton.  
Upper surfaces ♂ ♀.  
Under surfaces ♂ ♀.

I also consider that *Chx. baumanni* derives benefit from its resemblance to *Chx. brutus*, and doubtless in the coastal regions, to its similar colouration to *Chx. etheocles f. f. etheocles*.

*CHARAXES BLANDA KENYAE*, Poulton. Pl. CII, figs. 1-4.

Expanse: Male 60-65 mm. Female 70-75 mm. Sexes unlike.

**MALE:**

General colour blue-black with blue markings. F.-w. very falcate and serrated outwardly.

F.-w.: Apical half strongly iridescent blue-black basally green-black; two rows of parallel white iridescent spots decorate the apical half and these are represented in 1a-2 as a somewhat triangular green-blue mark, base toward the hind margin; a blue spot is present toward the apex of the cell.

H.-w.: Basal triangle blue-black, the outer angle with two bluish-white marks; the greater part of the wing taken up by a large iridescent greenish-blue patch shading to white toward the greyish of the inner fold. Two white spots are visible just beyond the apex of the cell; marginal border black carrying a series of sub-marginal bluish-white spots double at the anal angle and extending to 7; marginal border-line blue from 5 to 2, but golden at the hind angle; extreme edge black with a white fringe; long tails are present on 2 and 4; these are black outlined with blue.

**UNDERSIDE:**

Ground colour light brownish-grey, somewhat shiny; cell with one basal and two sub-basal black spots; a white bar crosses the apex of the cell and is continued through the base of 2; this is margined in black, the inner black line being continued in 1b, sub-basal. A further rather broken whitish bar, outlined proximally in black crosses the sub-base of 7-5, the base of 4 and 3 and about the mid-area in 1b and 1a. The distal series of white spots of above are represented as a series conforming to the outline of the wing and doubled in 1b; on either side of these paired spots are two large blackish spots.

H.-w: Ground colour as fore; basal triangle crossed by a white bar outlined with black extending just through the cell and just into base of 2; discal area crossed by a whitish bar proximally lined with black, fading in 2 and appearing in 1c above the hind angle as a very conspicuous triangular white patch accentuated by black outline. Distal to this second bar is a wavy black line of crescentic marks followed by a further line of red-brown crescents on an olive ground extending from the costa to 3 where the red becomes black; the marginal border is silvery whitish carrying crescentic marks from 7 to the anal angle, those from 7-4 being red, the rest as blue triangles on an ochreous olive ground. These blue spots have a purple tinge and are outlined distally with black. The serrated edge is lined in black.

**FEMALE:**

F.-w. as in the male, but the ground colour is less iridescent towards the apex; the light markings are similar but larger and paler blue; the spots being almost white. Here also the scheme of colour differs only in being very much paler blue to whitish, and the bar is wider. The marginal border is however reddish from 7-4, then ochreous-olive to gold at the anal angle; the sub-marginal row of white lunules are strongly edged with black distally. The tails on 2 and 4 are very long, the outer pair being slightly spatulate, 8 mm. long.

**UNDERSIDE:**

Similar in pattern to the male, but all marks rather bolder and stronger, especially those of the outer angle of the f.-w. and all of the h.-w.

**EARLY STAGES:**

This is entirely unknown.

**DISTRIBUTION AND HABITS:**

This very distinctive *Charaxes* was only recently discovered by me in the forests along the coast of Kenya. They were first taken in the Sekoke forest, and subsequently at Rabai. They are a race of the species found in Tanganyika Territory, of which the female is still unknown. This is a rather rare species with a very restricted range. We took both male and female feeding on the fermenting sap of the Mbembakofi tree.

**MIMETIC ASSOCIATIONS:**

There is little doubt that the males enter into the association grouped around *cithaeron kennethi* and *violetta* and the females that of the *etheocles-ethalion* group.

*CHARAXES GUDERIANA RABAIENSIS*, Poulton. Pl. CIII, figs. 1-4.

Expanse: Male 55-60 mm. Female 56-65 mm. Sexes unlike.

**MALE:**

General colour black with blue and white spots. F.-w. falcate.

F.-w.: Deep blue-black, with a greenish sheen along the proximal end of costa and at basal triangle. Cell with a large white spot at apex and distal to this two white rectangular marks almost at bases of 5 and 6. A sub-marginal row of white to bluish-white post-discal spots following the outline of the wing, extends from 7 to 2, very seldom indicated even by a trace in 1b. A marginal series of double white line-spots at mid-point, increasing in size runs from 6 to 1b.

PLATE CIII.

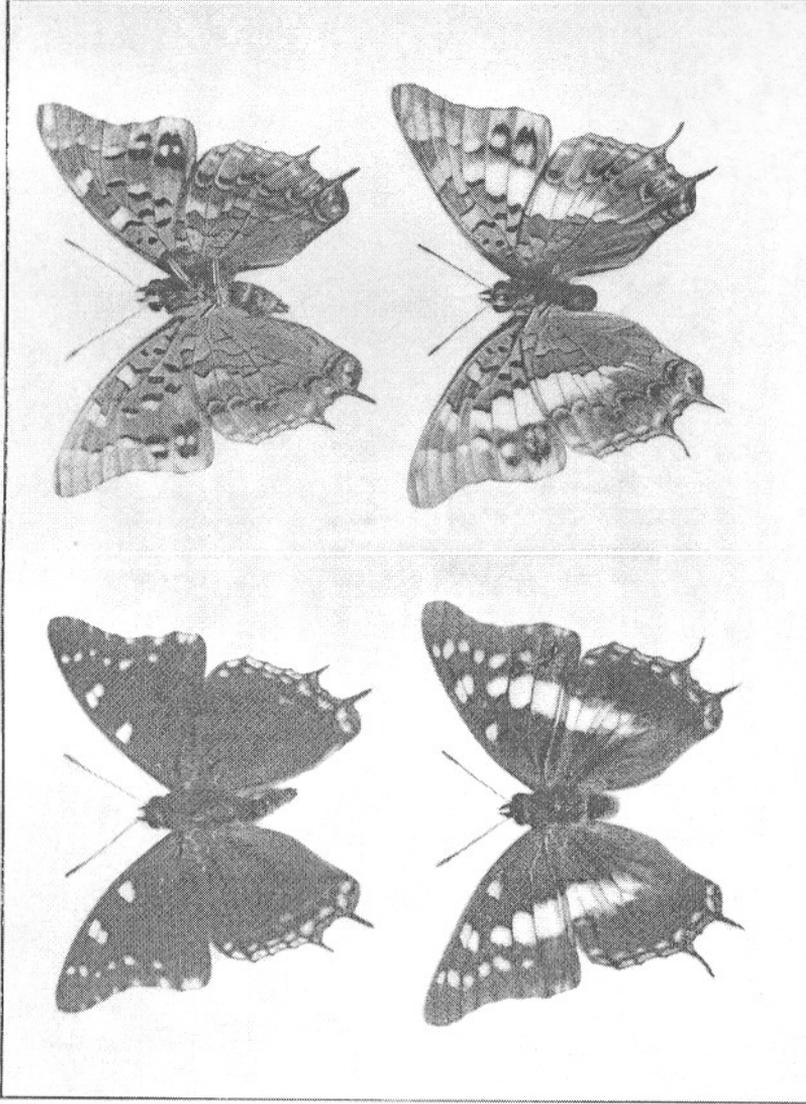


Photo: Dr. van Someren.

*Charaxes guderiana rabeniensis*, Poulton.

Upper surfaces ♂ ♀.

Under surfaces ♂ ♀.

H.-w.: Deep blue-black with a series of shiny blue post-discal spots diminishing in size from 2-6, the last three almost invisible; this is followed by a sub-marginal row of blue spots, white and purple centred, double in 1c and extending to 6. The marginal series consists of five white spots, two in 7, one each in 4-6, with red dot in centre, represented in 1c and 3 as blue linear marks with golden olive central spots, double at anal angle.

#### UNDERSIDE:

F.-w.: Purply-grey with a sheen; cell with three black spots, one at base, two oblique central and with an angled line toward apex; between this and the black-lined apex is a large white area. Sub-basally in 5 and 6 are rectangular white marks, black-lined proximally; these are followed by black bars sub-basal in 1b 2, and 3 outwardly bordered with white in the latter two; in 1b and 2 are black lines more proximally placed. The post-discal series of whitish spots are lined black internally while those of 1b and 2 are widely bordered with blue-black forming "eye" spots; the spots in 1b are double and blue in colour.

H.-w.: Rather more purply than the fore-wing; traversed by a chocolate-brown zigzag bar extending from the mid-costa to the inner fold where it fades into the more greyish colour of this area; distal and contiguous to this is a more greyish and shiny line which diminishes in width to area 1c. A post-discal series of crescentic black-green and maroon marks run from the costa at 7 to the hind-angle; the marginal series of spots are orange on a whitish base, accentuated with a black line internally; the spots on the anal angle are double, of a purply-pink colour and spotted distally with black.

#### FEMALE:

F.-w.: Black-brown, paler along outer margin and more rufescent at the basal angle; cell with a large creamy spot just below costa toward apex; with a very small one at apex. Beyond this two large rectangular creamy-ochreous spots sub-basal in 5 and 6, part of the creamy-ochreous ala bar which extending from the mid area in 1a crosses the wing in diminishing width to the sub-base of 3; a series of post-discal spots arranged in a line to conform to the contour of the wing run from 7-2; the margin of the wing in the mid-intercellular area is rufescent from the apex to 3 then represented as double linear creamy marks in 1b and 2.

H.-w.: Basal triangle brownish-black, distal portion of wing brown-black at costa merging to purply-black toward the hind-angle. The fore-wing bar is continued through the hind-wing, similar in colour, but gradually reduced in width to area 2 where it merges into the greyish-brown of the inner fold. A sub-marginal row of spots runs from 7 to the anal angle; the two upper are whitish, the remainder

purply-blue with white central spot and contiguous at the hind-angle; marginal series of internervular lunular marks orange from 7-4, then greenish-blue with golden sheen; veins 2 and 4 with long black tails outlined in white; fringe along dentate margin white.

#### UNDERSIDE :

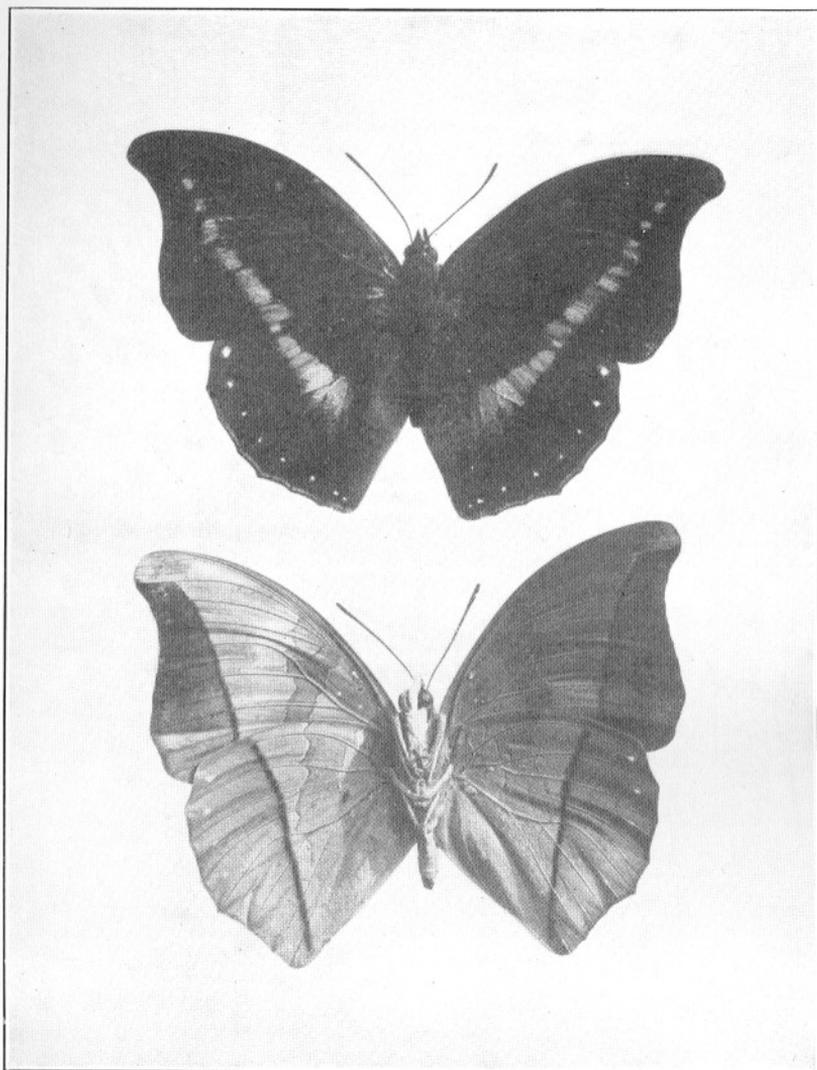
F.-w. : Ground colour grey with a shading of rufous and greenish in the cell. The cell contains three black spots outlined in white, one at base, two oblique at mid-point, distal to these a black wavy line; apex of cell outlined in black; bases of 1b and 2 crossed with black bars. The creamy marks of the upper side are here represented in paler form proximally outlined with black; the post-discal series are represented as whitish ones with rufescent shading distally those in 1b and two remain white and are broadly bordered with black, forming a marked " eye " spot.

H.-w. : Rather more rufescent grey than the fore-wing; the basal half is traversed by a broad chocolate-brown band which extends from the costa to the inner margin where it expands; distal to this band is one of white, corresponding somewhat to that on the reverse but more sharply defined proximally, and more dentate distally and abruptly tapering; there is a post-discal line of crescentic marks extending from 7 to the posterior angle, all of which are grey and maroon, with that at the angle, blue and maroon, all proximally accentuated with a black line; the marginal lines are as above, but those in 1c to 2 and 3 carry black centres.

#### EARLY STAGES :

The eggs of this species are laid on the leaves of two species of *Brachystigia*, *edulis*, and *radii* (LEGUMINOSAE). They are deposited either on the upper surface or underside, more often the former. They are creamy white, with a slight depression on the top which is fluted, the ridges being rather ill-defined. Eight to ten days elapse before the larva emerges; it eats the shell and then rests for an hour or two. The first stage colour is olive-green, with the head black, and tail whitish. When the larva becomes about 7 mm. it moults and then is green with very fine papillary marks; the head is now green also, with dark tips to the horns. At the third stage, a yellowish lateral line is developed as also dorsal ornamentation on the 6th and 8th segments. These dorsal marks are not very apparent until the last stage, when they appear as slightly raised spots arranged in the form of a triangle, the apex pointing forward, Pl. LXXVIII, fig. 2. The head is darker green than the body; rather elongate, though the facial disc is rather markedly convex, and the horns are strong, somewhat divergent, green at the bases and only slightly darker at the tip. The facial line, not very pronounced, is yellowish. The two central pair of short spines are bluish, Pl. CVII, fig. 9. The pupa is small, about

PLATE CIV.



*Photo: Dr. van Someren.*

*Charaxes porthos dummeri, Joicey and Talbot.*

Upper and under surfaces ♂.

20 mm., light green in colour, without any dark markings except at the anal end where at the front of the pedicle, two rows of three tubercles, ochreous in colour, the distal rather further set out than the others and larger, enclose a double forked yellow excrescence. The whole surface of the pupal case has a "frosted" appearance, accentuated on the upper margins of the wing scutae. The spiracular dots are yellowish. Pupal stage lasts a fortnight to three weeks.

#### DISTRIBUTION AND HABITS:

As already indicated in the name, the form obtained in Kenya is a race of the typical species. Both males and females differ from the nominate race. The males, in having much less blue on the hind-wing and the females in colour and size of spots. This race was described by Prof. Poulton from material sent to him by me in 1929. So far as we know, this species is limited to the coastal zone and in the Teita country, but it probably extends throughout the thornbush country where its food plant exists. We have taken it in the forests from Sokoke to Ganda. The males are seen at animal excreta and both sexes can be taken at fermenting sap from trees. They are very active and elusive insects.

#### MIMETIC ASSOCIATIONS:

The males enter into the *etheocles-etesipe tavetensis* group whilst the females strongly recall the colour of *castor flavifasciatus*, and *hansali baringana*, with the female form *aubyni* of *etheocles* also in association.

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We should now follow on with the remainder of this group, viz., *Charaxes etheocles* (s.l.) and *ethalion*. As most of the material collected is still under expert examination by Dr. Jordan of Tring I have considered it advisable to hold over the Mss. of these species until a later issue.

We will now consider the final group of which *Chx. laodice* is the type.

#### *CHARAXES PORTHOS DUMMERI*, Joicey and Talbot. Pl. CIV, figs. 1 and 2.

Expanse: 80-85 mm. General colour black with blue markings. Sexes said to be alike, but no female yet captured.

Fore and hind-wing rich blue-black. F.-w. with a large blue spot just before the cell; a bright blue ala bar crosses from just beyond the mid-point in 1a in an almost straight line toward the apex, diminishing in width, up to 5 sometimes to 6. H.-w. also with a bar of bright blue widest at mid-point 1c, crossing to costa in diminishing width; a sub-marginal row of blue spots, rather small, double in 1c extends to 7, each spot with a white centre. Marginal line of wing, bright blue. No tails, but the f.-w. falcate.

**UNDERSIDE :**

The general appearance of this is somewhat "dead leaf" like, being a greyish-brown with a slight sheen traversed by a dark brown line which crosses both wings in a line corresponding to the outer margin of the blue ala bar above. Distal to this line of the fore-wing is a strong shading of dark chestnut brown, most intense just below the apex. The mid-area of the f.-w. is traversed by a brownish bar with irregular outline of black and very narrowly white; the cell has two white black-centred spots. The hind-wing central area has a slightly indicated brownish bar outlined as in the fore-wing. The sub-marginal area carries very small white spots corresponding to those above; while the marginal line is reddish-brown.

**EARLY STAGES :**

Unknown.

**DISTRIBUTION :**

This race is found through the greater part of the forested regions of Uganda, but it is not common. Males are taken when feeding on dung and such-like unsavoury bait. The underside is strongly cryptic.

**MIMETIC ASSOCIATIONS :**

These insects are outside members of the group centring round *Ch. tiridates*, *numenes*, *etesipe*.

**CHARAXES ZELICA DEPUNCTA**, Joicey and Talbot. Pl. CV, figs. 1 and 2.

Expanse: 70-78 mm. General colour deep blue-black with blue marks. Only the male is known.

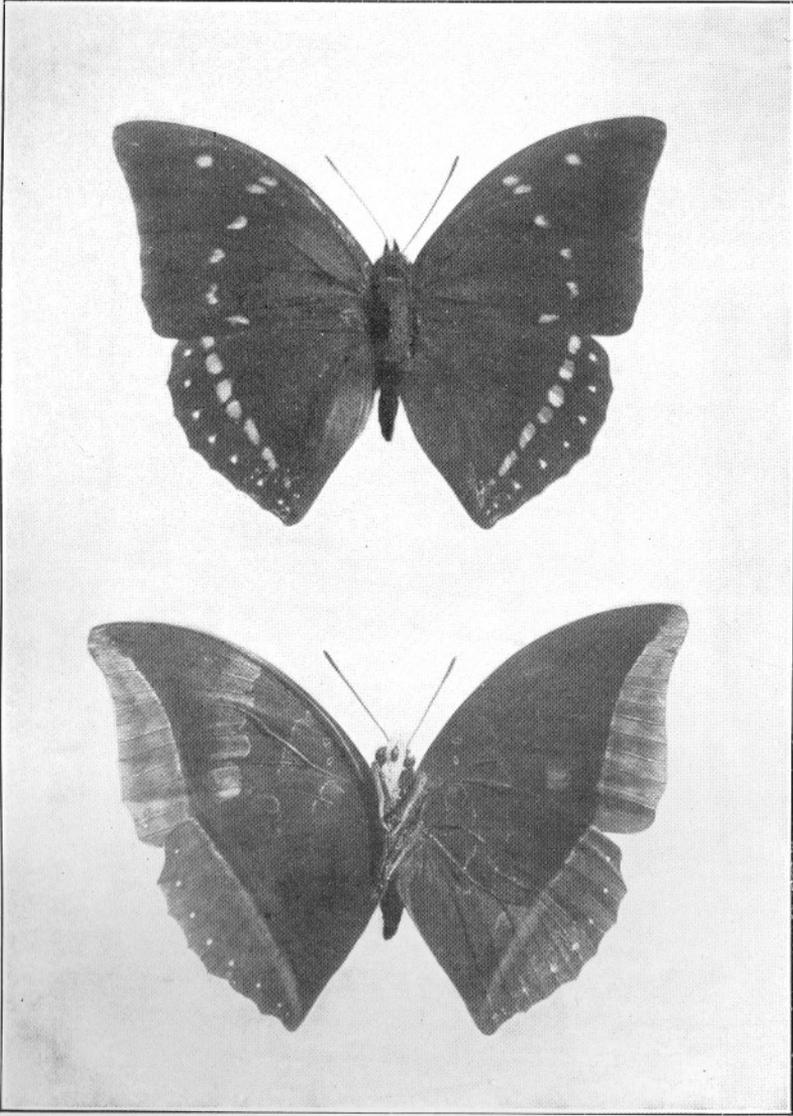
F.-w. : Deep blue-black with a very strong blue sheen at the basal angle; a blue spot at mid-point in 6; the centre of the wing crossed by a series of blue spots, sub-basal in 5 and 6 and 3, those in 2, 1b set a little further out, that in 1a rather further in so that a curve is formed.

H.-w. : Ground colour as in the fore-wing; inner fold dull brown-black; ala bar of discreet blue spots set well distal to the mid-line, those in 4 and 5 nearly circular, the others elongate. Beyond this is a submarginal row of very small yet distinct spots double and blue in 1c, the rest white with a slight tinge of blue proximally.

**UNDERSIDE :**

The greater part of the fore and hind-wings brown with a strong sheen, the distal borders of both ochreous-grey with a slightly paler wavy line in the fore-wing and a darker bar in the hind-wing. There is a large ochreous spot just beyond the mid-point in 1b; the cell has two small black spots outlined in white; the mid-area of the wing is crossed by two very narrow zigzag lines, the outer one touching the pale spot in 1b.

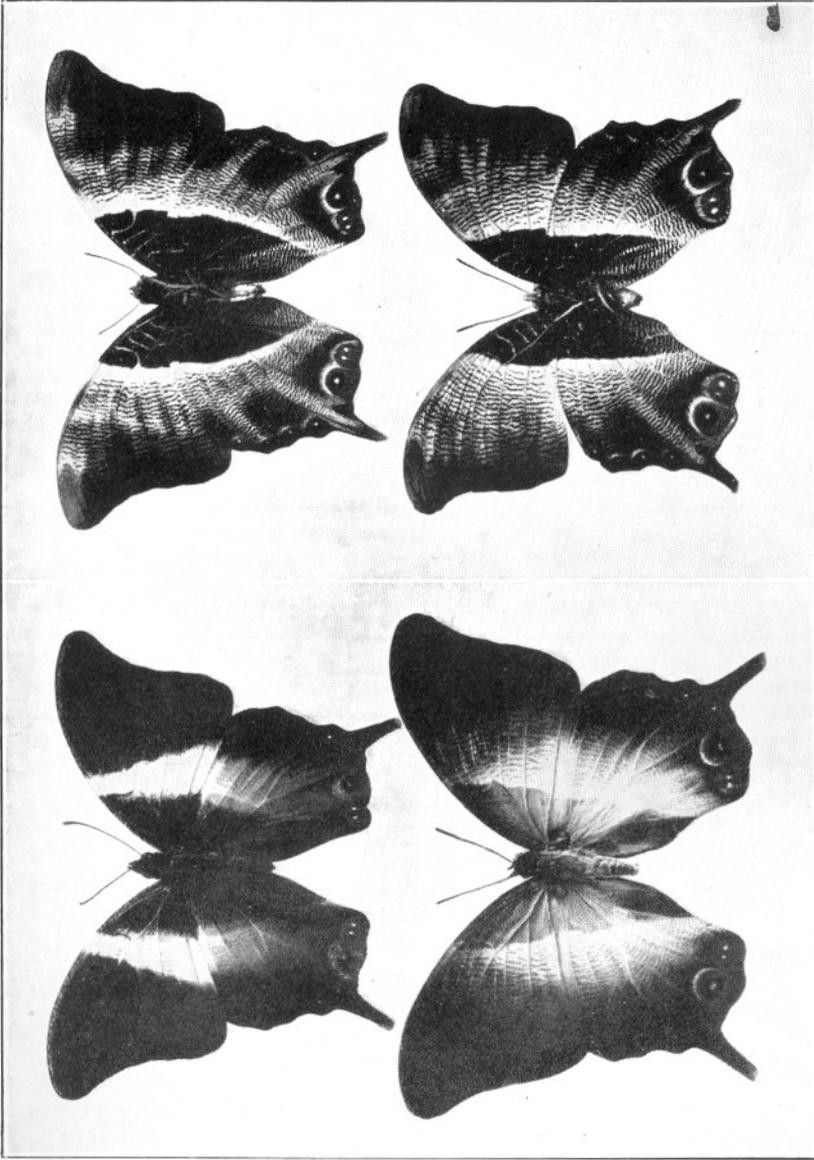
PLATE CV.



*Photo: Dr. van Someren.*

*Charaxes zelica depuncta*, Joicey and Talbot.  
Upper and under surfaces ♂.

PLATE CVI.



*Palla usheri interposita*, Joicey and Talbot.  
Upper surfaces ♂ ♀.  
Under surfaces ♂ ♀.

The distal pale area of the h.-w. carries sub-marginal white or very pale lilac spots, one in each cellule. The anal angle is produced out there are no "tails."

We have no specimens of the female, and according to Seitz this sex is unknown.

**EARLY STAGES:**

Unknown.

**DISTRIBUTION:**

Throughout the forests of Uganda to Elgon and Nandi. This *Charaxes* is a race of the nominate form of West Africa and the Congo. It differs principally in the reduction in the blue markings and the absence of the sub-marginal line of blue of the hind-wing. It is entirely a forest species and keeps to the thicker areas, but can be readily attracted to bait of various kinds. The underside is procrptic, strongly resembling a dead leaf.

*PALLA USSHERI INTERPOSITA*, Joic. and Talbot. Pl. CVI, figs. 1-4.

Expanse: 75-83 mm. in the male, 75-90 mm. in the female. Sexes unlike.

F.-w.: Greater part of the wing deep brown-black; basal triangle olive; the intervening area taken up by a conspicuous white bar extending from the mid-area of the hind-margin to the costa, distal to the apex of the cell. This bar which is wider at the base and tapers to the costa is tinged with violet distally and with blue proximally; the proximal border is incised at the apex of the cell by a black line. The distal border, especially in 1b and 2, carries wavy greyish lines.

H.-w.: Basally olive merging through rufous to the broad orange bar which traverses the wing from the costa to the area between the anal angle and the long broad tail at vein 4. Distal to this, the wing is black-brown. A double white spot is present at the anal angle; a black, white-centred spot sub-marginal in 2, and a brown "eye" spot in 4.

**UNDERSIDE:**

F.-w.: Basal area rich chocolate-brown; the cell traversed by four black and white narrow transverse lines; the bases of 1a and 1b also crossed by a line in each. The distal margin of the brown area is outlined in black. The ground colour of the central zone of the wing is white, distally shading through grey to olive-brown at the outer margin; the marginal area including the apex is immaculate, as is also the proximal border of the white area, but the intervening zone is heavily decorated with broken vermiculations from the

costa to the hind-margin and distally bordered by a dark blackish zigzag line from the posterior angle to 5.

H.-w. : Basal area chocolate-brown distally bordered by a black line; beyond this the wing is white and shaded as in the fore-wing and similarly vermiculated. The margin is olive-brown and is separated from the vermiculated area by a black line of contiguous crescents distally bordered with white particularly in 2 where a white-centred black "eye" spot is conspicuous. The anal angle carries two white spots; 4 has a rufescent spot with white centre outlined in black while similar though smaller spots decorated 5-7. The inner margin of the wing is grey-olive transversely vermiculated in black.

#### FEMALE :

General colour orange-rufous shading to whitish proximally.

F.-w. : Central zone of wing rich orange-rufous gradually shading to yellow about the mid-areas of 1a and 1b and the base of 2 and 3; proximal to this, the wing has a bluish tinge dusted over with rufous scales in the cell; this basal area clear cut by the outline of the dark area on the underside of the wing. The whole of the yellow and orange area faintly vermiculated horizontally by darker marks from below; the distal margin of the wing brown, separated from the orange by a darker brown wavy line indenting the orange area at 4.

H.-w. : Shaded as in the fore-wing, but with rather more dark brown at the distal border of the orange zone; the marginal border is brown carrying large rufescent ocelli, one in each area, that in 2 being proximally edged with white and having a large black spot with a double bluish mark in the centre.

#### UNDERSIDE :

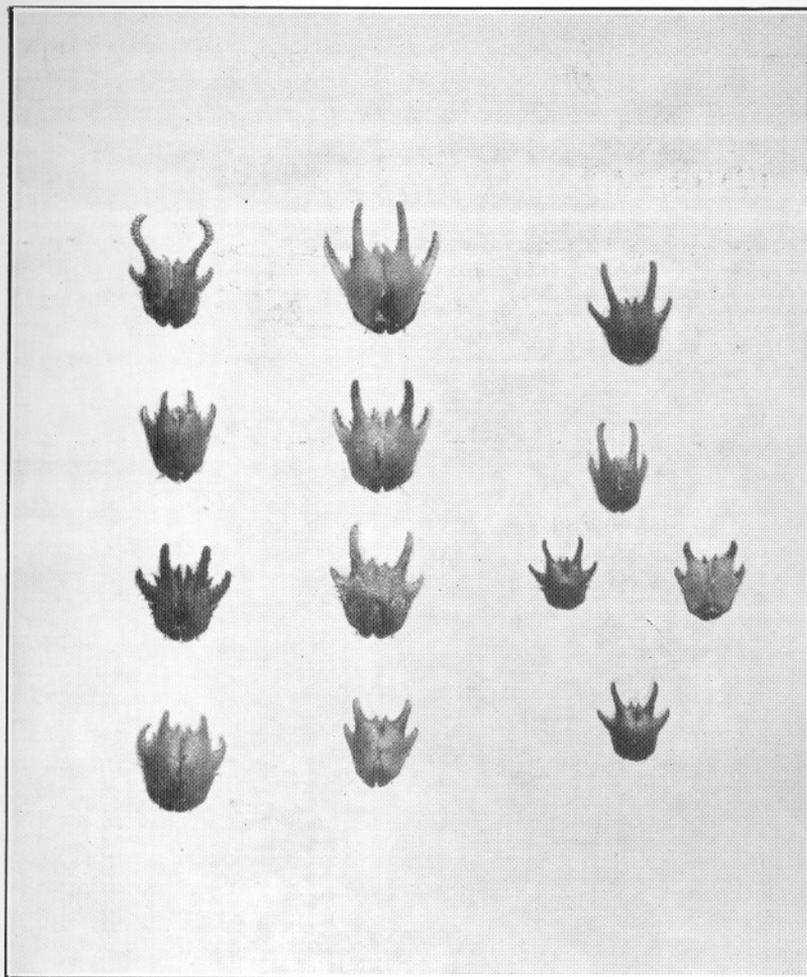
Very much as in the male, but the white ground areas more extensive and the marginal brownish areas lighter brown.

#### EARLY STAGES :

The eggs of this species are white or creamy and very small for the size of the insect, being only about 1mm. in diameter. They are laid singly on the leaves of a creeper, *Porana densiflora*, Hallier (CONVOLVULACEAE), Luganda name, Kiwuba woba, a vine; also on *Toddalia aculeata*, Pers. (RUTACEAE). When the eggs are first deposited, they are spherical, but very soon, the top becomes depressed, but not with regular flutings as in other species of *Charaxes*.

The egg hatches in ten days. The newly-emerged larva is brown, with a black head, and the slightest trace of tubercles in the position where eventually horns develop. A week is spent in this stage and then the first moult takes place. The larva becomes light brown with light blue-green patches along the sides and dorsum; the head now carries two short horns, slightly bifid at the tip, 2 mm. long.

PLATE CVII.



Heads of *Charaxes* Larvae.

- |                           |                                      |   |
|---------------------------|--------------------------------------|---|
| 1. <i>Ch. zingha.</i>     | 5. <i>Ch. castor flavifasciatus.</i> | 9. <i>Ch. guderiana.</i>                                  |
| 2. <i>Ch. leucretius.</i> | 6. <i>Ch. saturnus.</i>              | 10. <i>Ch. etheocles</i> female f.<br><i>van somerem.</i> |
| 3. <i>Ch. azota.</i>      | 7. <i>Ch. e. tavetensis.</i>         | 11. <i>Ch. etheocles</i> f. f. <i>carpenteri.</i>         |
| 4. <i>Ch. bohemanni.</i>  | 8. <i>Ch. e. etesipe.</i>            | 12. <i>Ch. etheocles</i> f. f. <i>cedreatis.</i>          |
|                           |                                      | 13. <i>Ch. etheocles</i> f. f. <i>etheocles.</i>          |

At the third week a brown patch develops on the dorsum and extends from the first to the sixth segment. The horns are now 4 mm. long and slightly recurved; the sides of the body show signs of a frill. In the last instar, the full development of the curious shape of the larva is reached. The colour and shape are cryptic, the colour being brown and green like a half-dead leaf; and the body having a lateral expansion or frill extending from the first to the last segment, chiefly developed and slightly curved upwards in the region of the sixth segment to the eighth, the general deceptive appearance is exaggerated. The ground colour is a light green, decorated on the dorsum with a patch of dark brownish green, which colour extends from the third to the ninth segments and is carried outward to the margin of the expanded frill.

There is in addition a very dark brown area on the edge of the first two segments. Most of the segments bear two white dorsal spots. The greater part of the under surface is a rich orange shading to pink anteriorly and posteriorly. The larva in an attitude of defence is very curious; the fore and hind part of the body are raised well above the resting surface and the fourth and fifth segments are humped up, Pl. LXXV, figs. 1 and 2; Pl. XLVIII, figs. 1-1b. The head is a dark brown or almost black, somewhat triangular in front view and surmounted by a strong pair of black recurved horns, widely bifid at the tips, Pl. LXXVI, fig. 1. The pupa is very distinctive in form and colour, being an opaque apple-green, with bold brown lines along the lateral margins of the wing cases, with finer brown lines and spots on the ventral surface and lined with dark green on the dorsum of the thorax. The abdominal segments are markedly convex ventrally and expanded laterally. The pupal stage lasts from seven to ten days in warm humid weather, but may carry on much longer if dull and cold, Pl. XLVIII, fig. 1c.

#### DISTRIBUTION :

This race of the West African species is so far as we know confined to the forests of Uganda to as far east as Elgon. It is rather local in its distribution, this being governed by the distribution of its food plant. Males outnumber the females and are readily attracted to bait, but the females are found in the sunny glades along which the food plant is growing. Both sexes have a rather weak flight, and spend most of their time basking in the sun on some high-placed spray just out of reach of a net.

#### MIMETIC ASSOCIATION :

The females undoubtedly come within the mimetic group centred around *Chx. fulvescens monitor* and *candiopæ*.

(To be continued.)