NOTES ON *IOLAUS*, *ARGIOLAUS* AND RELATED GENERA, WITH DESCRIPTIONS OF NEW SPECIES, SUBSPECIES AND A NEW GENUS (LEP. LYCAENIDAE).

By N. D. RILEY.

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(With Plates X, XI.)

THE following notes are intended to be supplementary to the excellent account of the genera concerned given by Aurivillius in Vol. XIII of Seitz, *Macrolepidoptera of the World*. The material upon which they are based was not available to him, and in the main has only recently been received by the British Museum through the acquisition of the Oberthür collection and the gift of much material from Mr. Bethune Baker's collection. In addition to the resources of the British Museum, through the kindness of Lord Rothschild I have been able to examine the whole of the material in the Tring Museum, which has proved of the greatest assistance. Notably the hitherto unknown male of *Argiolaus maesa* was discovered in Lord Rothschild's collection, and further a number of new forms which will be found referred to below. Mr. Joicey also most kindly lent me all the types of *Iolaus* (s.l.) in his possession, and the results of the examination of these have, I hope, greatly increased any small value these notes may have had.

A good many species are here recorded from Uganda and East Africa that have previously been known only from the West Coast ; and the remarkable uniformity of the geographical variation of these races is perhaps worth indicating. The species concerned are all extremely beautiful, with brilliant blue and black upper sides and delicately marked undersides. On the West Coast the upper sides are almost invariably intense deep blue, the red markings about the anal angle of the underside of the hindwings fairly extensive and deep red in colour. On the East Coast these colours as a general rule give way respectively to pale sky-blue, often mixed with white, and much restricted, sometimes almost obsolescent orange.

Tanuetheira H. H. Druce.

From the long series of *T. timon* Fab. now in the British Museum, it is evident that H. H. Druce's *T. prometheus* is only a subspecies of *timon*. It is easily recognised in the ♂ by the more developed androconial area of the disc of the forewing, which stands out as a rather conspicuous large dark brown patch. The females are less marked marginally on the underside than in *T. timon timon*.

T. timon orientius Hulstaert (*Rev. Zool. Afr.*, xii, p. 177, 1924) is the well-marked subspecies found in Uganda. There are 7 ♂♂, 6 ♀♀ in the British Museum. The best distinguishing characters are furnished by (*a*) the greater extent of white about the anal angle of the hindwing in both sexes, and on the disc of the

forewing in the ♀, (*b*) the reduction of the red anal markings of the underside to two well-separated spots, one in 1*b*, the other in 2.

The distribution of this species, so far as indicated by the B.M. series, is :

T. timon prometheus. Sierra Leone.

T. timon timon. Gold Coast, S. Nigeria, Cameroons, Gaboon and Congo.

T. timon orientius. Uganda.

Argiolaus H. H. Druce.

1. **Argiolaus gabunica** sp. nov. (Pls. X and XI, fig. 8.)

♂. *Upperside*, deep blue, without any trace of green ; on the forewing filling the cell and reaching costa almost as far as cell-apex except for a very narrow line, only just entering base of area 3, filling half area 2 and reaching in area 1b to 1 mm. from margin ; on hindwing reaching vein 7 almost throughout its length, and vein 1b except distally, enclosing a round black submarginal spot in area 2, invaded distally by a black triangular submarginal in 1c, and separated throughout from margin only by a very narrow black line ; anal lobe red with small black dot at extremity ; oval androconial patch dull dark brown, not reaching lower margin of cell ; abdominal and costal areas grey-brown.

Underside white, forewing with costal edge and termen greyish ochreous, apex faintly suffused same colour ; no markings ; hair-pencil black. Hindwing with fine dark brown anteciliar line ; submarginal line commencing as an elongate orange spot in 6, thence narrower and grey-brown to vein 3, where swollen to a large orange patch not touching termen but just reaching discal line at vein 2 and enclosing an intensely black and rather large spot in 2, thence closely approximated to the discal line and in colour orange, expanding and becoming redder when encircling the black spot on the lobe ; the later separated from termen by white, partially surrounded by scattered violet scales ; submarginal line is continued from the upper edge of lobe as far as extremity of vein 1a ; discal line very fine, brownish, interrupted at each vein, commencing before extremity of vein 8, in areas 3–6 about four times as far from submarginal line as that is from margin, but slightly convergent to submarginal line and closely approximate to it in areas 1a, 1b and 1c and there co-extensive with it.

Frons black, white-edged. Legs white. Forewing with 12 veins.

Length of forewing, 19 mm.

Habitat. Gaboon. Type ♂, ex Crowley Coll. (B.M. Type No. Rh. 318), unique.

In the key to *Iolaus* (subg. *Argiolaus*) given by Aurivillius in Seitz (vol. xiii, p. 392) this specimen runs out to *julus* and *menas*. From both of these it can be separated by the much deeper blue of the upperside, the largely orange-coloured submarginal line on underside of hindwing by means of which the anal spot and the spot in area 2 are joined (these are divided in *julus* and *menas*), and by the inclusion in the latter of a large black spot absent in both the other species. The underside markings of this ♂ agree in the main with those of 6 ♀♀ of *aelianus* in the B.M., and I had at one time regarded it as the hitherto unrecognised ♂ of that species. But whereas in *aelianus* ♀♀ the discal and submarginal lines on the underside of the hindwing are confluent towards the costa, in the ♂ of *gabunica* they are widely separated, a difference which, in the present state of our knowledge, would seem to preclude their union as sexes of a single species.

2. **Argiolaus jamesoni** Druce.

(*a*) **A. jamesoni jamesoni** Druce.

♀. The blue of the upperside is the same as in *A. aelianus* ♀, but its outer edge is more ragged on the forewing, where also it invades the bases of areas 4 and 5 (in *aelianus* it just invades the base of area 4 only). On the hindwing upperside no trace of a discal line is present except in 1c, large black marginal spots, almost contiguous, are present in areas 1c, 2, 3 and 4, and between these and the heavy black anteciliar line (especially in areas 1c and 2) there is considerable white scaling; the orange spot above the black anal spot is markedly triangular.

Underside faintly creamy. Forewing with no marking before the prominent, thick, submarginal line which, from vein 1 to vein 3, is orange, thence dark brown and, from vein 4, fused with the similarly coloured apical area; the latter dark-brown area extends to just below vein 2, tapering to a point. On the hindwing the discal black line is as in the ♂; the submarginal line is similar, but much thicker, from vein 7 to 6 orange, from 6 to 4 mainly dark brown, but much expanded and orange at the vein, between 4 and 3 expanded to form a very large quadrate orange spot that encloses an intensely black spot larger than the anal one, orange and curved from 2 to 1c, in 1b also orange and expanded to fuse with the red mark surmounting the black anal spot, thence to inner margin very narrow and black.

Neallotype ♀ from "Cameroons" (B.M. Type No. Rh. 335), and one other.

The feature by which the female of *A. jamesoni* is most easily recognised consists of the orange expansions of the submarginal line on the underside of the hindwing, a character shown also in the ♂, but more obvious in the western than in the eastern subspecies.

(*b*) **A. jamesoni entebbeae** ssp. nov. (Pls. X, XI, figs. 6 ♂, 7 ♀).

♂. Differs from *A. jamesoni jamesoni* by its smaller size—forewing length 19 mm. as compared with 22 mm.—and pure white underside ground-colour. On the hindwing upperside the blue extends into area 6 only as a small triangular patch, whereas in *jamesoni jamesoni* it extends broadly across this area to reach vein 7; the apex of hindwing is in consequence rather more widely black than typically; androconial patch extending barely halfway across cell.

♀. *Upperside* differs from the typical ♀ in having on the hindwing a faintly indicated discal line and rather smaller black marginal spots. On the *underside* the submarginal band is orange on the forewing to above vein 3 and on the hindwing completely orange.

Habitat. Uganda, Entebbe, 1–11.ix.1911 (*S. A. Neave*), TYPE ♂ (B.M. Type No. Rh. 320) and 2 others, all males; Bopoto, Upper Congo (Rev. R. Smith), (TYPE ♀), in Tring Museum.

The discal line on the hindwing underside in *A. jamesoni* is obsolescent, consisting of a series of short internervular lines running parallel with the margin and at a distance of about 3 mm. from it. Closely approximated to this, and therefore some distance removed from the margin, runs a strongly developed *completely orange submarginal line.* This is a very distinctive feature of the species and one of considerable value for identification purposes. The underside

ground-colour of the type-specimen of *jamesoni* is creamy ; the white along the costa of the forewing on the upperside is much exaggerated in Druce's figure, consisting really of a few scattered white scales amongst many others that are blue.

3. **Argiolaus parasilanus** Rebel.

(*a*) **A. parasilanus divaricatus** ssp. nov. (Pls. X, XI, figs. 4 ♂, 5 ♀.)

♂. *Upperside*, rather pale greenish, faintly shining blue. Forewing : area 12 with a few pale greenish scales at base, then hoary grey, shading into the black of remainder of costal area, apex and termen ; blue extending over anterior cell edge only as far as vein 12, barely into base of area 5, rather more in area 4, occupying basal two-fifths of area 3 and three-fifths of area 2, in 1b reaching to 2 mm. from termen ; cilia dark brown. Hindwing : the circular shining dark brown sex-patch extends to lower edge of cell, it is centrally lighter brown ; abdominal area and costa broadly dark grey, the latter extending, and becoming black rather broadly (at least 1 mm.) to vein 4, thence more narrowly to anal lobe ; the blue area extends broadly (5 mm.) across area 6 to reach vein 7 throughout its breadth ; a submarginal black dot in area 2 and another larger and triangular in 1c ; anal lobe red, black at its extremity ; cilia white, basally grey.

Underside, creamy, with faint ochreous tinge. Forewing very slightly infuscate along costa, termen and at apex ; a prominent but fine dark brown discal line from vein 7 to vein 1, distant 5 mm. from termen at vein 7, 3 mm. at vein 2, slightly curved, an ill-defined much interrupted submarginal dark line nearer to margin than to discal line, and an extremely fine light brown anteciliar line ; cilia light grey proximally, darker distally ; hair-pencil black. Hindwing : discal line perfectly straight from its origin at vein 8 (at 2 mm. from extremity) to centre of area 1c where, at a point 1 mm. distant from submarginal line, it turns to run parallel with inner margin to vein 1a ; submarginal line well-developed, conspicuous, orange, in an even curve from vein 7 (1 mm. from margin) to inner margin just above lobe, slightly expanded distally first in area 2, where it bears a minute black point on its outer edge, and then again in 1b ; a fine black anteciliar line ; lobe crimson, surrounded inwardly by a ring of violet scales and enclosing a black spot at its extremity.

♀. *Upperside*, pale but bright powdery blue, most intense towards the bases of the wings. Forewings : the boundaries of the blue area exactly in the male ; faintly whitish about the cell-end. Hindwing : the black border much wider than in ♂, 3 mm. at vein 6, 1 mm. at vein 5, expanding again in 1c ; the discal line of underside repeated above in the form of short black lines in areas 1c to 5.

Underside exactly as in the ♂, except for a fine and very faint line along forewing discocellulars.

Frons black, white-edged. Legs white.

Length of forewing, ♂ and ♀ 19 mm.

Habitat. Kenya Colony : Nandi Plateau, 5,700–6,200 feet, May 30–June 4, 1911 (*S. A. Neave*), Type ♂ (B.M. Type No. Rh. 317) ; Yala R., S. edge Kakumga Forest, 4,800–5,300 feet, May 21–28, 1911 (*S. A. Neave*), Type ♀ (B.M. Type No. Rh. 319) ; Uganda, Buddu, W. shore L. Victoria Nyanza, 3,700 feet, Sept. 19–25, 1911 (*S. A. Neave*), 1 ♀.

In the West Coast region occurs a local race of this species that may be known as :

(*b*) **A. parasilanus mabillei** ssp. nov. (Pls. X, XI, figs. 2 ♂, 3 ♀.)

♂♀. Differ from *parasilanus divaricatus* in their slightly larger size, much deeper blue upperside and more ochreous undersides. The ♂ has a larger central light brown patch in the androconial area on the hindwing ; the female is devoid of any trace of white and is more broadly black bordered. On the *underside* the discal line on the hindwing is slightly less divergent from the submarginal, and the latter is considerably expanded in area 2, there almost enclosing a much larger black spot ; and above the lobe, and between these two points it partially reaches the discal line.

Habitat. Portuguese Congo, Landana, April–May (ex coll. Oberthür ex coll. Mabille), TYPE ♂ (B.M. Type No. Rh. 321) ; " Afr. occ." (ex. coll. Oberthür, ex coll. Mabille), TYPE ♀ (B.M. Type No. Rh. 322) ; Gaboon, 1 ♂ (ex coll. Oberthür).

The prominent orange submarginal line and the strongly divergent discal line on the hindwing underside should serve to distinguish this species at once. It is most closely related to *A. paneperata* Druce, differing from that species principally in the direction of the markings just mentioned.

(*c*) **A. parasilanus parasilanus** Rebel (Pls. X, XI, fig. 1 ♂.)

Since the above was written Professor Rebel has most kindly lent me the type of his *I. parasilanus* for examination, and I find that it is not only closely related, as I expected, to what I had called *divaricatus*, but actually conspecific with it. It may be conveniently compared with the description of ssp. *divaricatus*, the following differences being noted :

Upperside, the blue rather deeper in tone, almost as in ssp. *mabillei*, rather less extensive anteriorly on the forewing and decidedly so on hindwing ; black margin of hindwing 3 mm. wide at vein 6, about twice as wide throughout as in ssp. *divaricatus* ; the blue area only occupying a triangular area at base of area 6 ; androconial area not reaching lower edge of cell, 4·5 mm. long (6 mm. long in *divaricatus*). *Underside* purer white ; discal lines of both wings thicker, browner ; submarginal line of forewing thicker, evenly curved, orange ; submarginal line of hindwing more widely separated from margin, orange ; spot in area 2 very slightly large than in *divaricatus*, red, with only a few black scales.

That part of Aurivillius's key to *Argiolaus* which includes the species so far dealt with may be amended as follows :

o Upperside coloration blue, sometimes slightly greenish.
§ Blue coloration extending fully into area 12.
‡ Hw. underside without submarginal line, discal line faint.
1. Upperside colour bright sky-blue without green shimmer *menas*
2. Upperside colour darker, at certain angles with strong green shimmer . . . . . *julus*
‡‡ Submarginal line present.
1. Submarginal line complete, orange, very closely approximate to discal line . . . . . *jamesoni*

2. Same line grey, or only orange in area 6 and from area 2 to anal lobe, well separated from discal line.
   (*a*) Upperside colour bright sky-blue without green shimmer, no submarginal spot on hw. ups. . *menas*
   (*b*) Upperside colour darker, at certain angles with strong green shimmer; hw. ups. with submarginal black spots . . . . . *gabunica*

§§ Blue colour not extending broadly into area 12, hw. with black submarginal spots in 1b and 2.
1. Hw. underside with discal and submarginal lines diverging widely towards costa, submarginal line orange . . . . . *parasilanus*
2. Same lines subparallel; submarginal line grey (rarely orange) between veins 3 and 7.
   (*a*) Thick black marginal line on hw. underside from anal lobe to vein 3 . . . . . *schultzei*
   (*b*) At most some dusky subfusion in this region . *paneperata*

oo Upperside coloration distinctly green . . . . . *calisto*

4. **Argiolaus poecilaon** sp. nov. (Pls. X, XI, fig. 9♂.)

♂. *Upperside* as in *A. laonides* but practically devoid of any tinge of green; outline of blue area on forewings as in *laonides*, but approaching the termen rather more closely in area 1a. The hindwing is without black submarginal spot across vein 2, and the blue extends broadly to vein 7, leaving a wide (2 mm.) black apical mark; androconial area accordingly restricted and not extending beyond the end of the cell.

Underside as in *laonides* except that the forewing is without the broad blackish suffusion that occupies areas 1a and 1b in that species, and that on the hindwing the black spots in area 2 and on the anal lobe are reduced to mere dots, the orange that in *laonides* surrounds and connects them being confined to a faint circle round each spot.

♀. *Upperside* lighter blue than in ♂, especially distally. On the forewing the blue occupies the same area as in the ♂. On the hindwing its anterior margin is evenly rounded and barely extends above vein 6; a dark and fairly wide submarginal line from anal lobe to vein 3. *Underside* like that of the ♂, but the forewing marginal band rather wider towards apex, and the submarginal orange line on the hindwing more prominent. (This female is in better condition than either of the males.)

Frons black, edges white. Legs grey, not banded.

Length of forewing, 15–17 mm. (♂ and ♀).

Habitat. Uganda, Entebbe, 1–11.ix.1911 (*S. A. Neave*), 2 ♂♂, including Type (B.M. Type No. Rh. 323); Entebbe, Sept. 1900 (Allotype ♀ in J. J. Joicey coll.).

It is possible to regard this as an eastern subspecies of *A. laonides*, but the entire absence of the black suffusion in areas 1a and 1b of the underside of the forewing, so prominent a feature of *laonides*, seems rather to militate against this opinion.

5. **Argiolaus catori** B. Baker.

(*a*) **A. catori catori** B. Baker (Pls. X, XI, fig. 10 ♀.)

♀. Similar to the female of ssp. *cottoni* (see below) except that the forewing blue area is devoid of white suffusion, the general tone of the blue is rather darker, the black spots in 1c (marginal) and 2 (submarginal), the former not present in *cottoni*, are here large and prominent, almost touching. On the *underside* of the forewing the apical area is noticeably more darkened than in the ♂ or in *cottoni*, being suggestive of *laon* or *laonides*, and discal and submarginal lines are both present or indicated, both grey brown in colour, and very closely approximated ; on the hindwing the markings are as in the male, except that the discal line is rather better developed and the spot in area 2 is larger and inclined to be orange rather than red—in 2 specimens from Sierra Leone it includes a black spot.

Habitat. Ivory Coast (*Cremer*), 1918 (ex Oberthür coll.) ; (Neallotype ♀, B.M. Type No. Rh. 325). Also in B.M. from Sierra Leone (2 ♀♀ ex Hewitson coll., labelled *belli*), and " W. Africa " (1 ♀ ex Godman and Salvin coll.).

The females of *A. catori catori*, chiefly on account of the markings of the underside, are extraordinarily suggestive of the ♀ of *E. laon*, with which indeed they had formerly been confused in the B.M. The uppersides are quite different. The two females from Sierra Leone bear prominent black spots in the orange marks on the hindwing undersides in area 2 ; in this respect they are atypical, but the four females of ssp. *cottoni* available (see below) exhibit the same variation.

A. catori catori is represented in the Cameroons, the Congo and Uganda by the subspecies *cottoni* B. Baker. *Cottoni* differs from *catori* in having a much wider black apical area to the forewing above, and a complete and fairly strongly marked discal line on the underside of the hindwing. The females may be characterised briefly as follows :

(*b*) **A. catori cottoni** B. Baker (Pls. X, XI, fig. 11 ♀.)

♀. *Upperside*, forewing black with a large powdery blue area (basally greenish) occupying the cell (except antero-distally), $\frac{1}{4}$ of area 3, $\frac{1}{2}$ area 2, area 1b to within 2 mm. and 1a to within 3 mm. of termen ; in areas 3, 2, the neighbouring part of 1b and the distal half of cell mainly replaced by white. Hindwing powdery grey-blue, the costa to vein 5 and upper edge of cell, the abdominal area and part of 1c grey ; a diffuse dark submarginal spot in 2 ; indications of a faint discal line placed at little inward of that on underside ; and lobe black, with a few green scales. *Underside* as in ♂.

Neallotype, ♀, Uganda, Toro, Daro or Durro Forest, 4,000–4,500 feet, 25–29 Oct., 1911 (*S. A. Neave*) (B.M. Type No. Rh. 324). Two other ♀♀ and 1 ♂ from same locality also, and 1 ♀ from Katanga, Lunganda R., 3,000 feet, 15.xi. 1903 (*H. Cookson*).

6. **Argiolaus lukabas** H. H. Druce.

Iolaus julius Staud., *Iris*, iv, p. 146, 1891 (July).
Argiolaus lekanion H. H. Druce, *Ann. Mag. N.H.* (6), viii, p. 144, 1891 (Aug.).

Through the kindness of Mr. J. J. Joicey I have been able to examine the types of *lukabas* and *lekanion* and have come to the conclusion that both are referable to the species described by Staudinger as *julius*. Both types are in

very poor condition, tattered and rubbed, and in neither is the red submarginal line on the hindwing underside visible, which may be the case even in fresh specimens. The type of *lukabas* (from Gambia) differs from all the other ♂♂ of this species I have seen in having the red spot in area 2 of hindwing underside minute. The four black submarginal spots (upperside) to which Druce refers may be present, or reduced to a single spot in 1c, both of which conditions, together with the intermediate stages, are shown in Sierra Leone males.

Further material from Gambia is needed before it can be decided whether the species is divisible into two subspecies.

7. **Argiolaus silas** Westw.

This widely distributed and comparatively common species has a number of well-marked subspecies.

(*a*) **A. silas silas** Westw. (**Thecla nega** H.-S.).

This is the race of the extreme south. In the ♂ there is, in all the material available, a well-developed red submarginal spot on the upperside of the hindwing in area 2. In the ♀ the hindwing has the red submarginal band extending broadly to vein 6 as a rule, but sometimes reduced in width in areas 4 and 5, never abruptly cut off at vein 3. The red submarginal line of the hindwing is very frequently carried forward on the forewing as well in both sexes (29 examples out of 37 show this feature).

Cape Colony, Transvaal and Natal.

(*b*) **A. silas silarus** H. H. Druce.

The type came from Delagoa Bay. In the males the submarginal spot in area 2 is black. The ground-colour of the females, as in *A. silas silas*, is blue with a slight whitening of the area about the cell-apex; the submarginal red band ceases abruptly at vein 3.

Southern Port. E. Africa and Mashonaland.

Mt. Mlanje in Nyasaland produces a remarkably interesting mixed race. The 5 males in the B.M. are all slightly different, having red or black submarginal spots or none at all. The females, however, fall into three well-marked groups: 3 are like typical *silarus* (March, April and May), 3 like typical *lalos* (April, May, June), and the 7th not separable from typical *silas* (June). Any possibility of considering these three forms as seasonal variations is precluded by the recorded times of occurrence. Their existence side by side without intermediates (the series is, of course, only a very short one, however) suggests that they may represent three distinct species; it is more probable, however, that the controlling factors that elsewhere maintain the distinctive features of the three subspecies are lacking at Mt. Mlanje.

(*c*) **A. silas lasius** Suffert.

The name *lasius* was given originally to an entirely blue female (*i.e.* without white discal area) from the north end of L. Nyasa. Females so coloured occur, to the exclusion of the other forms, from L. Nyasa northward through the interior of Tanganyika Territory into the Kavirondo district of Kenya Colony.

Kavirondo to N. Lake Nyasa; ? N. Rhodesia.

(*d*) **A. silas lalos** H. H. Druce.

A very well-marked subspecies, confined principally to the coast belt, and characterised by the mainly white upperside of the female. As a rule even areas 3 to 5 of the hindwing upperside are submarginally more or less white. In the B.M. from Zanzibar, Mombasa, Uchweni (nr. Witu), nr. Maungu, Kibwezi and Ndara Hills.

Kenya and Tanganyika coastal regions.

(*e*) **A. silas crawshayi** Butler.

The ♀ type is dark blue with the submarginal red spots of the hindwing confined to areas 1c and 2 and quite small. It may represent a distinct subspecies restricted to Mt. Elgon and the Kikuyu escarpment; certainly it differs markedly from the ♀♀ of *A. silas lalos* and *A. silas lasius*.

Kikuyu and Mt. Elgon.

(*f*) **A. silas ituriensis** Joicey and Talbot.

Characterised at once by the yellow submarginal lines of the underside. Occurs also in Uganda (Entebbe) and Kenya Colony (Yala River).

Ituri, Uganda, Kenya.

8. **Argiolaus trimeni** Walleng.

Iolaus anesius Hulst. *Rev. Zool. Afr.*, xii, p. 177, 1924.

The range of this species, the only *Argiolaus* with the frons yellow, extends considerably beyond Transvaal. It is in the B.M. from Mashonaland (7 ♂♂), Natal (1 ♂), N.W. Rhodesia (1 ♂, 1 ♀), Katanga (1 ♀), and L. Tanganyika (1 ♂). Trimen's figure of the female is extraordinarily good.

I have little doubt that Hulstaert's *I. anesius* is the ♀ of *trimeni*. He mentions a red spot on the *upperside* of the hindwing in area 2; the only other *Iolaus* (s.l.) with orange frons that shows this feature, so far as I know, is *farquharsoni*, but the underside markings of that species do not agree with Hulstaert's description.

IOLAUS.

Iolaus carina Hew.

According to the key given by Aurivillius in Seitz (vol. xiii, p. 390), this species correctly remains in *Iolaus* as defined by Druce, and is not an *Epamera*. It is very closely allied to *I. bolissus* Hew. It falls in the fifth section of *Iolaus* in Aurivillius's arrangement.

EPAMERA.

1. **Epamera maesa** Hew. (Pls. X, XI, fig. 12 ♂.)

♂. Forewing with only eleven veins. Frons black with broad white sides. Palpi white, the 3rd segment, except narrowly beneath, and tip of 2nd segment above, black. Legs white, narrowly but conspicuously black banded. Forewing hair-pencil, on inner margin beneath, black. Hindwing androconial patch dark brown to golden brown, strongly developed, set in a large oval dark shining area that just reaches lower edge of cell and to 4 mm. from margin at vein 6.

Upperside rather dark but brilliant shining blue, of exactly the same tint and texture as in *Iolaus eurisus*. Forewing with costal area, and apex broadly, black, so that the blue area is restricted to the cell, which it completely fills, to a minute patch at the base of area 3, to the basal half of 2, and the whole of 1a and 1b except for a very narrow black margin ; the outer edge of the blue area is thus an almost straight line running from cell-apex to just below extremity of vein 2. Cilia black. Hindwing abdominal area and costal area (above vein 7) dark grey-brown ; margin very narrowly black, expanding slightly in area 6 ; lobe occupied distally by a white crescent above which, against abdominal margin, is a small black dot, separated from the white by metallic blue scales, and surmounted by a small red mark. Tails damaged, blue-black, edged with white. Cilia black, grey-tipped posteriorly.

Underside white. Forewing with the whole of areas 1a and 1b shining pale greyish but with an oval black cloud centrally in the basal half of 1b ; termen broadly dark brown, 5 mm. wide at costa to 2·5 mm. at vein 2, thence more narrowly and less clearly to vein 1 ; cilia the same colour. Hindwing : the terminal brown border is continued to vein 4, but contains some pale scaling, and is less solid ; its inner edge, the submarginal line, then forms a large irregular crimson spot in 2 bearing a minute black dot externally, is absent in 1c, forms a large irregular crimson spot in 1b above the lobe-spot, and is continued as a fine black line to end on inner margin at vein 1a ; a continuous but irregular fine black discal line runs from vein 1a to vein 2 and is represented in areas 2 and 3 by two fine lines ; markings of lobe as on upperside, but connected above as mentioned with submarginal red spot, about and upon which there is considerable metallic blue scaling ; some grey marginal shading in areas 1c and 2 ; anteciliar line and cilia brown from costa to vein 4, the former then black, the cilia white for the most part.

Length of forewing, 19 mm.

Neallotype, ♂, captured Oct. 1898 by Capt. Stevens, and one other, both from Sierra Leone, in the Tring Museum. The species also occurs in the Gold Coast, Nigeria and Uganda.

It is remarkable that the ♂ of this species, described by Hewitson in 1863, should not have been recognised before. Aurivillius in Seitz tentatively placed the species in his Group 2 of *Iolaus* (= *Argiolaus* Druce), but the characters given above show it to belong to his Group 3, of which, presumably, owing to the red markings at the anal lobe, it would form a separate section. It falls into *Epamera* in Druce's scheme.

2. **Epamera laon** Hew.

Iolaus adamsi Lathy, *Trans. Ent. Soc.*, p. 199 (1903). Nigeria.
Iolaus emma Suff., *Iris*, xvii, p. 65 (1904). Togoland.
Iolaus coelestis B. Baker, *Ann. Mag. N.H.* (9), xvii, p. 394 (1926). Cameroons.

Bethune Baker's type-specimen of *coelestis* agrees exactly with the figure of the type of *I. emma* given by Druce in *Ill. Afr. Lyc.*, pl. vii, figs. 2, 2a. The type of *adamsi*, as Lathy himself remarks, only differs from *laon* by the absence of the dark borders on the underside. As a matter of fact this difference is mainly sexual ; none of the 8 ♂♂ in the B.M. has so pronounced a border as any of the females. Moreover Lathy's type is in poor condition and may have had the

margins originally darker than they now appear to be. I consider none of these names worth even varietal rank.

(*a*) *E. laon laon* occurs in Sierra Leone, Gold Coast, Ivory Coast, Nigeria and the Cameroons. In Uganda it is replaced by :

(*b*) **E. laon stenogrammica** ssp. nov. (Pls. X, XI, fig. 13 ♂.)

♂. *Upperside* rather paler blue than in *E. laon laon*. On the forewing the blue extends more broadly in area 1b to within 2 mm. of termen, and on the hindwing is more extensive apically, reaching, in areas 5 and 6, to within 3 mm. of margin (5–6 mm. in *laon laon*). The submarginal black spots in 1c and 2 not half so wide as in *laon laon*, diffuse, and much invaded by white scaling, especially outwardly ; the discal line represented by quite narrow black lines in 1c and 2 ; anal lobe-spot small, orange, enclosing a very small black dot. *Underside*, forewing dark border less heavy than in *laon laon*, the discal line more strongly curved. Hindwing as in *laon laon*, except that the orange markings are rather reduced.

Length of forewing, 16·5 mm. (in type of *laon*, 18·5 mm.).

Habitat. Uganda, N.W. shores Victoria Nyanza, 3,800–3,900 feet, 12–15, ix.1911, 2 ♂♂ (*S. A. Neave*). (B.M. Type No. Rh. 326.)

3. **Epamera iasis** Hew.

Additional synonyms are *E. belli* Hew. and *E. sibella* Druce, the former based upon a ♀ from Sherborough Is. off the coast of Sierra Leone, the latter on a ♂ from Bitje, Ja River, Cameroons. The type of *belli* is devoid of white on the disc of the forewing, but this, though unusual, can be matched by several females in the B.M. from the mainland ; on the hindwing the blue extends practically to the margin in areas 3 and 4. The underside is that of a perfectly normal female *iasis*. It is not very remarkable that others should have failed to recognise from Hewitson's description and figure that his *belli* was merely the ♀ of his own *iasis*. The name has been in consequence wrongly applied to the species for which *pollux* Auriv. is now again available.

Druce compared his *sibella* with *bellina*, stating, however, that the frons was yellow as in *iasis*. Mr. J. J. Joicey has kindly allowed me to examine the type, and I find it quite impossible to distinguish it specifically from *iasis*. Druce's figure (P.Z.S., 1910, pl. 25) is poor. The blue of the upperside is too dull ; the discal line on the hindwing underside is unduly emphasised, that of the forewing, which is traceable, is not indicated at all ; the large pale shining patch on the hindwing is shown much too small, and the black anal spot is present, though rubbed ; no indication is given of the metallic scaling upon the red markings on the underside of the same wing. In a long series of *iasis* in the B.M. the depth of upperside colour, extent of shining patch, and faintness of underside markings can all be matched readily, and all intergrades exist.

4. **Epamera hemicyanus** E. M. Sharpe.

(*a*) **E. hemicyanus hemicyanus** E. M. Sharpe.

Unfortunately I have not been able to discover the whereabouts of the type-specimen of this species, nor have I seen any representative of it from Uganda. Joicey and Talbot described their *Epamera pater* without reference to *hemicyanus*, comparing it in the main with *barnsi* and *mirabilis*. Their type agrees so well with Miss Sharpe's description that I have no doubt the two are conspecific.

(*b*) **E. hemicyanus kumboae** B. Baker.

Epamera kumboae B. Baker was described from a ♂ from Kumbo, Nigeria. It differs from the type of *pater* (see above) in that (1) the blue of the forewing at vein 1 is only 2 mm. distant from the termen ; (2) the dark anterior area of the hindwing extends as a triangular wedge along the margin as far as vein 4 ; (3) the dark marginal shading on the underside of the forewing is absent, together with the submarginal line ; (4) the orange markings of the hindwing are much reduced, the spot in area 2 not being connected with the lobe spot. It appears to be a subspecies of *hemicyanus*.

(*c*) **E. hemicyanus kamerunica** subsp. nov. (Pls. X, XI, fig. 16 ♂.)

In the Cameroons, at Bitje on the Ja River, a third subspecies occurs which resembles *hemicyanus hemicyanus* except that (1) the blue of the forewing at vein 1 is 4 mm. distant from the termen ; (2) the dark anterior area of the hindwing extends as a wedge as far as vein 3 ; (3) the orange markings of the underside are as in *hemicyanus kumboae*. The holotype ♂, taken during June–July 1909 (dry season) is in the B.M. (Adams coll.). Another ♂ in B.M. dated November, 1 ♂ in Tring Museum Oct.–Nov. and another Jan.–March, are all from Bitje, Ja River.

5. **Epamera farquharsoni** B. Baker.

This species is readily distinguished by the extreme expansion of the inner margin of the forewing, which far exceeds that of any other species in the genus. The wide black outer half of the forewing is also characteristic. Curiously, Bethune Baker omits all reference to the former character in his description of the insect. The tibiae are white, laterally blackened, not prominently banded with black and white as is usual in this group, the tarsi alone being banded, very delicately ; in this feature the species resembles *scintillans* and *bolissus*, *cytaeis* and *flavilinea*.

6. **Epamera bansana yalae** sp. nov. (Pls. X, XI, figs. 17 ♂, 18 ♀.)

♂. *Upperside*, forewing black, the rather pale chalky blue area reaching in the cell to origin of vein 2 only, not filling cell-apex, nor extending into costal area, on the disc only reaching vein 2 near its base, its outer edge running thence to vein 1 at 2 mm. from termen. Hindwing blue of same colour, barely reaching vein 6, but extending up to anteciliar line between vein 5 and anal lobe, thus including the submarginal dusky line ; the androconial area occupies about half the costal length, but reaches neither the base of the wing nor the lower edge of the cell ; submarginal line thickened to form an oval black spot in area 1c ; lobe half orange, half black overlaid with green scales ; a short tail at vein 3. *Underside* very pale grey. Forewing with fine brown line at cell-end ; brown discal line from 9 to vein 2, straight, rather nearer to cell-end than to termen ; a curved, finer submarginal line from vein 7 to vein 2, grey-brown ; anteciliar line grey-brown ; cilia white ; hair-pencil black. Hindwing : a line at cell-end, as on forewing ; discal line brown from vein 8, just before extremity, where it commences, to vein 2, then black, somewhat concave between vein 8 and vein 6, curved strongly in area 1c and then almost straight to inner margin ; submarginal line rather irregular, grey-brown from costa to vein 3, thence swollen to form orange spot in area 2 (outwardly bearing a black dot), broken in 1c, then orange and

deflected to touch lobe-spot before reaching inner margin ; lobe-spot black, inwardly orange, heavily dusted with metallic scales ; anteciliar line black, preceded by a greyish shade ; cilia white.

Frons orange, ventrally white. Legs conspicuously black-and-white banded.

♀. *Upperside*, the blue area much fainter, less heavily scaled than in the ♂, and extending just beyond vein 4 so as to include the bases of areas 2 and 3 ; this additional area is, however, mainly white. Hindwing costal and abdominal areas rather light grey-brown, the former extending to vein 5 and darkest where crossed by the extremities of the discal and submarginal lines ; discal lines elsewhere really barely visible except by transparency ; submarginal line large and rather diffuse, followed by a white line and a marginal diffuse dark line of its own width ; anteciliar line black. The anal portion of the wing is missing. *Underside* as in the ♂ in so far as the condition of the type permits comparison.

Habitat. Kenya Colony, Yala R., S. edge of Kakumga Forest, 4,800–5,300 feet, 21–28 May, 1911 (*S. A. Neave*) (B.M. Types No. Rh. 328 ♂ and 332 ♀) ; Mt. Kokanjero, S.W. of Elgon, 6,000–6,400 feet, 7–9, Aug. 1911, 3 ♀♀ (*S. A Neave*) ; Nandi Plateau, 5,700–6,200 feet, 30 May–4 June, 1911 (*S. A. Neave*) ; Masai Reserve, nr. Mara River, 25.v.1913, 1 ♀ (*A. O. Luckman*).

Bethune Baker's female type of *E. bansana bansana* came from the Banso Mts. in the Cameroons at an altitude of 6,000 feet. Its most striking feature is the width of the discal line on the underside. In this respect it is approached by one of the females in the B.M. from Mt. Kokanjero (S.W. of Elgon, Kenya Colony), but the other two females from the same locality and the female type of *yalae* from the Yala River, like the ♂ described above and two other males from the Nandi plateau, all have quite narrow discal lines. The resemblance of this species, in the female, to *I. bolissus* is very striking, as pointed out by Bethune Baker, but in the three species of true *Iolaus* (*eurisus*, *bolissus* and *carina*) the orange and black spot on the hindwing underside in area 2 touches the margin, whereas in *bandana* it is considerably removed from it.

7. **Epamera violacea** sp. nov. (Pls. X, XI, figs. 19 ♂, 20 ♀.)

♂. *Upperside*, hindwing and basal half of forewing rather soft, powdery, slightly violaceous blue, almost of the same shade as that of *E. sidus*, but slightly deeper and duller ; remainder black or dark grey. *Forewing* blue area occupies basal half of area 11, the cell except a small apical portion, a small triangle at base of 2, the whole of area 1b except a roughly L-shaped portion against the margin and vein 2, and the whole of area 1a ; cilia dark grey. *Hindwing* costal and abdominal areas grey-brown ; androconial patch small, pale, about 2 mm. in diameter, set in a large darker glossy area that extends to the base, but on vein 5 is 6–7 mm. distant from margin ; no discal line or submarginal line ; marginal line very close to anteciliar line, represented in area 1c by a prominent oval black spot, in area 6 and 7 by dark shades against the apex, and between these points very faintly indicated only ; lobe mainly white, black spot small and inconspicuous because overlaid by metallic scales, orange rather larger, but not conspicuous ; anteciliar line black ; cilia pale grey.

Underside white, inclined rather to greyish than to cream-colour. *Forewing* with well-marked cell bar and discal line, both slightly ochreous brown, the latter running straight from area 9 (just before extremity of vein 10) to the middle of

vein 2, then curving inwards and ending on vein 1 ; submarginal line rather darker, less well defined, interrupted at each vein, placed slightly nearer to the termen than to discal line and extending from vein 7 to vein 1 ; between the submarginal line and the termen the ground colour is somewhat greyer than elsewhere ; anteciliar line grey-brown, extremely fine ; cilia shining grey ; inner marginal hair-tuft intensely black and lying in a pearly white area. *Hindwing* cell-bar as on forewing ; discal line from costa immediately before extremity of vein 8, straight and rather thick, ochreous-brown, as far as middle of vein 3, thence narrower and wavy, and straight in general direction to the middle line of area 1c, where it becomes thread-like and black and turns to end on vein 1a just before its extremity ; submarginal line rather darker (as on forewing), arising on costa midway between discal line and apex, and converging almost to meet discal line in 1c, about vein 1b becoming orange, in area 1b deflected to touch lobe-spot, thence more prominent than elsewhere, orange, running along inner margin to terminate at vein 1a ; a minute red spot on outer edge of submarginal line in area 2 ; between submarginal line and termen some grey shading, especially in area 1c ; lobe-spot small, red, outwardly black, metallic-scaled, separated from margin outwardly by white triangular space ; anteciliar line very fine, black ; cilia pearly white ; tails black, white-edged.

♀. *Upperside* distinctly violaceous. Forewing blue area as in ♂, but with the addition of a whitish blue diffuse extension into the bases of areas 2 (half), 3 (a third) and 4 (a small patch basally only). Hindwing costal area very pale and extending fully to vein 6 ; discal line represented in areas 6 and 7 by large grey-brown spots, elsewhere indicated mainly by transparency ; submarginal line strongly developed, spots large, especially in areas 5 and 6 ; a strong marginal series of oblong spots, developed in area 1c into a large prominent oval black spot, and elsewhere most prominent in areas 5 and 6 ; otherwise as in ♂. *Underside* markings and colour as in ♂.

Frons orange ; legs white, only very faintly banded on tibiae and tarsi with dark grey. Length of forewing, ♂ 15 mm., ♀ 17 mm.

Habitat. Angola, Pungo Andongo, May and July 1875 (*A. v. Homeyer*), 4 ♂♂, 2 ♀♀ in Tring Museum ; Belgian Congo, Tanganyika District, M'pala (Guillemé), 1 ♀, in B.M. Holotype ♂ not dated ; female type dated 3.7.75.

This species is closely related to *E. bansana* B. B., with which indeed the single ♀ in the B.M. from M'pala, Tanganyika District, Belgian Congo, had been associated. The discovery of a series of 4 ♂♂ and 2 ♀♀ from Pungo Andongo, Angola, in the Tring Museum, however, clearly establishes it as a good species. The ♂♂ are deeper violaceous blue than those of *E. bansana yalae*, and the blue on the hindwing extends almost up to the costa. The females are readily distinguished by their violaceous tint ; they closely resemble those of *E. bakeri* on the upper side, but the under surfaces are quite distinct. On the hindwing underside the straightness of the discal line, the minute size of the crimson rather than orange spot in area 2, and of the lobe-spot, are characters of some use in recognising the species.

In Mr. Joicey's collection there is a ♂ from Zomba (Jan. 1921) and a ♀ from Mt. Mlanje (Feb. 1925), both in Nyasaland, that differ somewhat from Angolan specimens. The differences, however, are slight and not of the same order in both specimens, so that it is not possible to form from them an opinion as to whether or not they represent a local race.

8. **Epamera bakeri** sp. nov. (Pls. X, XI, fig. 21 ♀.)

♀. *Upperside* powdery, rather greyish blue ; margins black. Forewing with the blue occupying the whole of the cell (except the extreme apex), the basal third of area 3, basal three-fifths of area 2, and reaching to within 1·5 mm. of termen in area 1b ; cilia grey. Hindwing with abdominal area and costal area (broadly) grey-brown ; blue extending from base to anteciliar line between vein 1b and vein 6, but only attaining the latter vein in its proximal half ; discal black line distant 3 mm. from termen and parallel to it, interrupted at each vein, the lower ends of the portion in areas 2 and 3 directed distad ; submarginal spots moderately large, especially in 1c, black, and just separated from the prominent though narrow anteciliar black line by a fine line of the blue ground-colour ; lobe mainly white, but with a very small orange spot proximally and some metallic scaling ; cilia white.

Underside white. Forewing with a very delicate discal black line from vein 1 to vein 9 ; an extremely fine anteciliar line ; cilia very pale grey. Hindwing discal line very delicate and black, complete, parallel to margins ; submarginal line faint, not sharply defined, black from costa to vein 3, then thickened slightly to form a small blood-red spot, in area 1c represented by a few red scales only which connect with the lobe-spot, thence to vein 1a on margin ; anteciliar line very sharp and black, between it and submarginal line a little grey shading, especially in 1c ; cilia pale grey ; lobe as on upperside, but with considerably more red proximally.

Frons orange, narrowly edged with white. Legs not banded.

Length of forewing, 16–17 mm.

Habitat. Port. E. Africa, valley of Kola River, near Mt. Chiperone, 1,500–2,000 feet, 3.iv.1913 (*S. A. Neave*) (Holotype ♀, B.M. Type No. Rh. 333) ; Rhodesia, Luwumbu valley, Upper Luangwa, 2,500–3,500 feet, 19–26 July 1910 (*S. A. Neave*), 2 ♀♀ ; Salisbury, 15.vii.1917, 1 ♀.

9. **Epamera bellina** Ploetz.

(*a*) **Epamera bellina exquisita** ssp. nov. (Pls. X, XI, fig. 14 ♂.)

♂. *Upperside*, the blue of the forewing replaced to some extent by white about the apex of the cell and the bases of areas 2 and 3. On the hindwing the apex is broadly black (almost 3 mm. wide against 1 mm. or less in *bellina bellina*), and the space between the marginal and submarginal black spots in area 1c is completely filled by a square pure white spot. On the underside the apex of the forewing is distinctly cloudy, and the discal and submarginal lines clearly defined ; the hindwing discal line is straighter and rather bolder than in *bellina bellina*, and instead of fusing with the red (and black) submarginal spot in area 2 at vein 3 only joins it at vein 2 and is orange in this area, not red ; the red and black spot just mentioned is smaller than in the West Coast form.

Habitat. Uganda, S.E. Buddu, Tero Forest, 3,800 feet, 26–30.ix.1911 (*S. A. Neave*), 2 ♂♂, including holotype (B.M. Type No. Rh. 327).

(*b*) **Epamera bellina maris** ssp. nov. (Pls. X, XI, fig. 15 ♂.)

♂. *Upperside* as in *E. bellina bellina*, except that there is a white area on the forewing and a square pure white spot on the hindwing in area 1c as in *E. bellina exquisita*. *Underside* as in *bellina bellina*.

Described from 2 ♂♂, including Holotype labelled " San Thomé, 1926 (T. A.

Barnes)," both in Tring Museum. There is some doubt as to whether this locality is correct, as the material collected on San Thomé by T. A. Barns for Mr. J. J. Joicey contained no examples of this species. It is curious that this species should have given rise to a race in San Thomé which, in the development of the white markings of the upperside, exactly resembled the Uganda subspecies, though differing from it on the underside.

10. **Epamera scintillans** Auriv.

The known range of this species can be extended to N. Nigeria (1 ♂ in B.M.), Kenya Colony (Nasisi Hills nr. Mumias, 4,800 feet, 1 ♀, *S. A. Neave*), S. Rhodesia (Umtali, 2 ♂♂, 11–24.ix.1905, *G. A. K. Marshall*) and Mashonaland (Mazoe, 2 ♂♂, 27.xii.1924, *E. W. Lannin*).

11. **Epamera creta** Hew.

Epamera fuscomarginata J. & T., *Bull. Hill Mus.*, i, p. 91 (1921).

The type-specimen of *E. fuscomarginata* differs only from that of *E. creta* in that the blue on the forewing fills only the basal half of the cell, and the wide discal line on the underside of the hindwing is orange up to vein 6. With only the two types available and no other material it is impossible to say whether these differences are subspecific or only individual.

12. **Epamera flavilinea** sp. nov. (Pls. X, XI, fig. 22 ♂.)

♂. *Upperside* deep violaceous blue, sublustrous, the apical half of forewing, and the hindwing marginally very narrowly, black. Forewing basal blue area bounded by vein 12 anteriorly, occupying whole of cell except apex, basal third of area 2, a very small area at base of 3 (a few scales in base of 4 also), and area 1a and 1b to 2 mm. from margin ; its outer edge is thus convex from vein 12 to vein 2, concave from vein 3 to middle of area 1b where it is angled to run parallel to the termen ; cilia black. Hindwing costal and abdominal areas grey-brown ; androconial patch shining grey-brown, narrowly surrounded by black, not extending to wing base and distant, on vein 5, 7 mm. from margin ; apex very narrowly black, continuing as a thread-like anteciliar black line to anal lobe ; anal lobe prominently orange (as in *cytaeis*) with a small black spot ; cilia black, becoming progressively whitened from vein 3 to anal lobe.

Underside as in *cytaeis*, but the discal lines on both wings and the submarginal line on hindwing orange ; a prominent orange line across cell-end of forewing ; the submarginal line of hindwing ; underside more remote from the margin and the black spot in 2, its orange surroundings and those of the anal area all consequently much elongated.

Frons orange. Legs white, tarsi delicately black-banded, tibiae laterally darkened, not banded. Length of forewing, 16 mm.

Habitat. Bitje, Ja River, Cameroons (*G. L. Bates*) : Holotype ♂ taken during lesser rains, April–June 1910, and in Tring Museum ; another ♂, discoloured, no date, 2,000 feet, ex Bethune-Baker coll. in B.M.

This species is deceptively close to *E. cytaeis* Hew., but can at once be separated from that species by the orange bar at the end of the cell, by the size of the androconial patch. The forewings are shorter, the hindwings more produced and the whole appearance of the insect more delicate than that of *cytaeis*.

13. **Epamera cytaeis** Hew.

(*a*) **E. cytaeis cytaeis** Hew.

From Fernando Po and the Lower Congo, etc.

(*b*) **E. cytaeis leonis** subsp. nov. (Pls. X, XI, fig. 24 ♂.)

The Sierra Leone subspecies of *cytaeis* is distinguished by the absence of the wide dark, faintly shining area surrounding the androconial patch on the hindwing upperside that is present in the typical subspecies, although it may be represented by a darkening of the blue colour that occupies the area.

1 ♂, Holotype, from Moyamba, Sierra Leone, in B.M. (B.M. Type No. Rh. 334).

(*c*) **E. cytaeis caerulea** ssp. nov. (Pls. X, XI, fig. 23 ♂.)

In the Kassai district of the Belgian Congo there occurs an insect that, for the present, I can only regard as another subspecies of *E. cytaeis*.

♂. *Upperside* light sky-blue, costa, apex and termen black. On the forewing the outer edge of the blue area is fairly evenly rounded, being faintly concave only where it crosses vein 1 ; the blue occupies the whole of the cell, most of area 11, the basal half of 10, the basal half of 9, a patch at base of 6, basal third of 5 and 4, half of 3, two-thirds of 2, and the whole of 1a and 1b except a black border varying from 2 mm. wide on vein 2 to 1 mm. on inner margin ; cilia black. Hindwing costal and abdominal areas quite light grey ; androconial patch light brown, oval 3·5 mm. long, set centrally in rounded dark shining area that extends to lower edge of cell, not quite to base, and is distant almost 6 mm. from margin along vein 5 ; narrow black apex continued as a fine black anteciliar line to lobe ; lobe as in *cytaeis* ; cilia pale grey.

Underside only differs from that of *cytaeis* (the type-specimen) in being purer white, having the discal lines finer and blacker and the orange markings somewhat reduced.

Frons orange ; legs (missing) ; length of forewing 18 mm.

1 ♂, Holotype, from Luluaburg, Kassai, Belgian Congo ; in Tring Museum.

14. **Epamera aethria** Karsch (Pls. X, XI, fig. 25 ♀.)

Epamera mirabilis H. H. Druce, 1903.

♀. *Upperside* blue area almost cobalt blue, filling the cell except extreme apex, basal fifth of area 3, not quite half of area 2, and reaching in 1c to 2 mm. from termen ; it is sharply indented at the angle between vein 4 and cell ; cilia dark brown. On the hindwing the blue fills the cell, reaches vein 5 in its outer half and then runs diagonally across the base of area 5, the costa is therefore very broadly black, as well as the abdominal area ; between vein 3 and the lobe to whole margin is broadly black to a depth of 2 mm. with some blue scaling centrally ; narrow black submarginal spots in 3 and 4 ; black anteciliar line preceded by a fine white line, which is interrupted at each vein from lobe to vein 5 ; lobe black with a few green scales and a very minute orange mark proximally ; cilia mainly white.

Underside differs from Druce's figure of the ♂ type in having both discal and submarginal lines on forewing (the figure shows only the discal), and a faint line

at cell-end ; a narrower and more sharply defined submarginal line on the hindwing, and rather more marginal grey shading.

Frons orange, white ventrally. Legs conspicuously banded.

Neallotype ♀ (B.M. Type No. Rh. 329) from Fernando Po (ex Hewitson coll.), unique.

Aurivillius (in *Seitz*, p. 403) states that *E. mirabilis* only differs from *E. aethria* in lacking the bar at the end of the cell on the forewing beneath. In the type ♂, however, the bar is clearly present though faint. On the other hand Druce's figure of the type of *aethria* (*Ill. Afr. Lycaenidae*, pl. vi does not show this line. The figure given in *Seitz* (pl. 68h) of *aethria* represents exactly the underside of the type of *mirabilis*, but shows a wider black patch at the apex of the hindwing. I have no doubt, however, that the names are synonymous.

15. **Epamera barbara** Suffert (1904).

Iolaus barbara Suffert, *Iris*, xviii, p. 62 (1904) ; H. H. Druce, *Ill. Afr. Lycaenidae*, pl. vi, figs. 3, 3*a*, London (1910) (Cameroons, Victoria).

Iolaus mildbraedi Schulze, *Ent. Rund.* xxix, p. 93 (1910) ; id., *Ergeb. 2ten D. Zentral-Afrika. Exp.* i, pl. xlix, fig. 11 (1925) (S. Cameroons).

Epamera barnsi Joicey & Talbot, *Bull. Hill. Mus.* i, p. 92, pl. xv (1921) (Congo, Bafwaboli, 60 m. E. of Stanleyville).

Epamera yokoana B. Baker, *Ann. Mag. N.H.* (9), 17, p. 396 (1926) (Cameroons : Yoko).

A photographic figure of both surfaces of the type ♂ of *barbara* was published by H. H. Druce in 1910. With this I have carefully compared the type-specimens of *barnsi* and *yokoana*, and the published figure of the type of *mildbraedi*. There appears to be no means of distinguishing the uppersides of the four named forms. On the underside, according to Druce's figure, the type ♂ of *barbara* differs from all the others principally in having less brown suffusion about the apical portion of the forewing, and narrower discal lines on both wings ; in all other particulars it agrees with *mildbraedi* and *yokoana*. *E. barnsi* differs from the other three in having a much stronger development of the orange markings of the hindwing underside. None of these differences in my opinion can be regarded as specific ; the only separation that may perhaps be justifiable would divide these forms into three subspecies :

(*a*) *E. barbara barbara*. Cameroons, coast.

(*b*) *E. barbara mildbraedi* (= *E. yokoana*). Cameroons, interior.

(*c*) *E. barbara barnsi*. Congo, eastern.

16. **Epamera aphnaeoides nasisii** ssp. nov. (Pls. X, XI, fig. 26.)

♀. *Upperside.* Differs from the typical female on the upperside in having the white, faintly blue-tinted, discal area rather more extensive, occupying fully the basal thirds of areas 4 and 5 and the middle thirds of 2 and 3, on the forewing ; on the hindwing the blue is restricted to the veins and the basal area enclosed by the median stripe—the upperside in fact closely resembles the figure given by Hewitson (*Ill. Diurn. Lep.*, Suppl., pl. iv a, fig. 51), except that the submarginal line is represented only by a series of small well-separated black dots.

Underside. On the forewing only the first and second transverse yellow bands are completely black-edged, the third only so for rather less than half its length ; on the hindwing the bands are entirely devoid of black edging except for a short distance in the costal area, and the yellow marginal band extends to vein 2. All the bands noticeably wider than in the other subspecies.

B.M. TYPE No. Rh. 330. Holotype ♀ from Nasisi Hills, 20 miles N. of Munias, Kenya Colony, 4,800 feet, June 14–15, 1911 (*S. A. Neave*) in B.M.; another ♀ also in B.M. from Kenya Colony, Valley of Mirua, S. Kavirondo, 4,500 feet, May 12–14, 1911 (*S. A. Neave*).

The underside characters serve to distinguish this subspecies at once from typical *aphnaeoides* and its subspecies *diametra* Karsch. The latter name was based upon a ♂ from N. Usambara described as having the wings above shining blue, the orange bands on the hindwing confluent at anal angle. Karsch made no mention of a white area on the forewing upperside, stated clearly that the orange bands beneath are black-edged, but did not describe the ♀. It is therefore somewhat remarkable that Druce's figure (*Ill. Afr. Lycaenidae*, pl. viii, 1910) alleged to be from a photograph of the type of *diametra* shows an obvious ♀, apparently mainly white on the upperside, and with the middle band on the hindwing underside not confluent with the other two. Fortunately a series of 7 ♂♂ and 11 ♀♀ in the B.M. from the south-eastern district of Kenya Colony, just north of Usambara, shows that these discrepancies correspond with the normal sexual differences in the species in that area, the only disagreement being that most of the ♂♂ in the B.M. have at least a small white area on the disc of the forewing. The fusion of the transverse bands on the hindwing towards the anal angle is a highly variable character and of no taxonomic value.

PSEUDIOLAUS gen. nov.

Forewing with veins 5 and 6 widely separate at origin; 6 and 7 from cell apex; 7 to apex of wing; 8 and 9 absent; 3 four times as far from 4 as from 2; inner margin convex in proximal half and there bearing on under surface a wide tuft of long plain hairs which lie against a glabrous patch, as in many species of *Epamera*. *Hindwing* with tails at veins 1b and 2, subequal, 4–5 mm. long, the lower slightly the longer; margin excavate immediately above vein 3, giving rise to a prominent projection at vein 3, but no tail; lobe as in *Epamera*; an oval androconial patch 3 mm. long about the origin of vein 7, surrounded by a nacreous area that extends about half-way across cell towards its lower margin. Thorax and body moderately stout, head broad. Eyes naked. Frons without median furrow, broad. Palpi as normal in *Epamera*, rather slender, 3rd segment about one-third length of second, porrect. Antennae three-sevenths length of costa, with gradual club occupying about one-third of total length, segments 1½ to twice as long as broad, not readily distinguished. Legs smooth, unicolorous.

Genotype: *Pseudiolaus poultoni* sp. nov.

In the possession of only 10 veins to the forewing, this genus is most closely related to *Stugeta* H. H. Druce. It can be separated from that at once by the presence of the secondary sexual characters, which are typical of *Epamera*. The only known species is entirely *Epamera*-like in appearance and quite devoid of the rich underside markings characteristic of *Stugeta*.

Pseudiolaus poultoni sp. nov. (Pls. X, XI, fig. 27 ♂.)

♂. Upperside, forewing black, the greater part of the basal half occupied by a pale violet-blue patch, the outer edge of which is rather diffuse and runs along the basal half of the anterior edge of the cell, thence to lower cell-apex (where it is somewhat white-tinted), not extending into area 3, diagonally across

base of area 2 to a point on the median line of area 1b distant 1·5 mm. from termen ; here it is strongly recurved to end on inner margin at about 4 mm. from tornal angle ; cilia almost black ; a dark shade at cell-end. Hindwing pale violet-blue ; the costal area, just inclusive of vein 6, black ; androconial patch shining brown, surrounded by dark brown nacreous area that extends about half-way across cell ; abdominal area pale grey ; a small black spot against the margin in area 2, surmounted by orange, and a similar one on the inner half of lobe ; a linear marginal black spot in 1c ; anteciliar line black, conspicuous, preceded by a narrower white line that extends from the black lobe-spot to vein 6 ; cilia white ; tails black with white cilia.

Underside white with fine black anteciliar line and almost white cilia to both wings. Forewing with prominent but narrow orange-brown line across cell-end ; a discal line of same colour, straight, from area 10, just before termination of vein 11, to vein 1 at 2·5 mm. from its extremity ; a curved submarginal line of same colour, interrupted at each vein, roughly midway between discal line and termen but parallel with the latter and of same length as the former ; terminal area and apex slightly greyish. Hair-pencil black. On the hindwing the discal and submarginal lines are continued, the former rather irregular, sharply angled in 1c and black from about vein 2 to inner margin ; the submarginal line fuscous as far as vein 3 where it expands outwardly to form a subtriangular orange patch that joins with the oval black marginal spot in 2, broken at vein 2, thence continued irregularly to form a border to the lobe-spot and, more narrowly, to vein 1a on inner margin ; where it is orange the submarginal line bears a few scattered metallic green scales ; a greyish shade before anteciliar line, much wider in 1c than elsewhere.

Frons pale orange. Legs white to cream-coloured.

Length of forewing, 17·5 mm.

Habitat. Kenya Colony, nr. Wangi, on coast of mainland, Feb. 21–22, 1912, 2 ♂♂ including Holotype (B.M. Type No. Rh. 331).

The underside markings of this species are so deceptively similar to those of many true *Epamera* of the East Coast, e.g. *E. pollux*, *E. bansana* and the ♂ of *E. mildbraedi*, while the upperside so closely resembles that of *E. tajoraca*, especially its form *ertli* of the coast belt, that the suggestion of a mimetic association between *Pseudiolaus* and *Epamera* is very strong. I have therefore named it after Prof. Poulton, whose interest in such associations is so well known.

EXPLANATION OF PLATE X.

Fig. 1. *Argiolaus parasilanus parasilanus* ♂ . . . . . p. 378
„ 2. „ „ *mabillei* ssp. nov. ♂ . . . . p. 378
„ 3. „ „ „ „ ♀ . . . . p. 378
„ 4. „ „ *divaricatus* ssp. nov. ♂ . . . p. 377
„ 5. „ „ „ „ ♀ . . . p. 377
„ 6. „ *jamesoni entebbeae* ssp. nov. ♂ . . . . p. 376
„ 7. „ „ „ „ ♀ . . . . p. 376
„ 8. „ *gabunica* sp. nov. ♂ . . . . . p. 375
„ 9. „ *poecilaon* sp. nov. ♂ . . . . . p. 379
„ 10. „ *catori catori* ♀ . . . . . p. 380
„ 11. „ *catori cottoni* ♀ . . . . . p. 380
„ 12. *Epamera maesa* Hew. ♂ . . . . . p. 382
„ 13. „ *laon stenogrammica* ssp. nov. ♂ . . . . p. 384
„ 14. „ *bellina exquisita* ssp. nov. ♂ . . . . . p. 388
„ 15. „ „ *maris* ssp. nov. ♂ . . . . . p. 388
„ 16. „ *hemicyanus kamerunica* ssp. nov. ♂ . . . p. 385
„ 17. „ *bansana yalae* ssp. nov. ♂ . . . . . p. 385
„ 18. „ „ „ „ ♀ . . . . . p. 385
„ 19. „ *violacea* sp. nov. ♂ . . . . . p. 386
„ 20. „ „ „ ♀ . . . . . p. 386
„ 21. „ *bakeri* sp. nov. ♀ . . . . . p. 388
„ 22. „ *flavilinea* sp. nov. ♂ . . . . . p. 389
„ 23. „ *cytaeis caerulea* ssp. nov. ♂ . . . . . p. 390
„ 24. „ „ *leonis* ssp. nov. ♂ . . . . . p. 390
„ 25. „ *aethria* ♀ . . . . . p. 390
„ 26. „ *aphnaeoides nasisii* ssp. nov. ♀ . . . . p. 391
„ 27. *Pseudiolaus poultoni* gen. et sp. nov. ♂ . . . . p. 392