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ADDITIONS TO THE RHOPALOCERA OF AFGHANISTAN WITH DESCRIPTIONS OF NEW SPECIES AND SUBSPECIES

by COLIN W. WYATT

In 1960 I collected in three different mountain ranges in Afghanistan, in the Koh-i-Baba Mts. during June, the Shiva Mts. in northern Badakhshan during the last half of July, and the Afghan Hindu-Kush in early August. I also had two days in the Paghman Mts. at the end of August. In these areas three main faunal divisions meet, that of Iran, mostly desert and semi-desert species, that of Turkestan with a normal continental mountain climate, and that of the Karakoram and the extension of the Himalayan Divide in N. Pakistan. The climate of Afghanistan strongly affects the latter two divisions, both having what we would consider normal rainfall. In Afghanistan, even in the high mountains, it does not rain for about five months. In 3½ months I had a shower of a few drops for about 5 minutes very late on one evening only.

The Koh-i-Baba Mts. form an isolated massif in the center, running up to about 17,000 ft., and contains several endemic species. CLENCH and SHOUMATOFF of the Carnegie Museum have worked on certain late summer material from here, but no spring material has previously been obtained. The Shiva Mts. are connected up with the glaciated peaks of Afghan Darwaz and are only separated from the Pamirs by the River Oxus, with whose fauna they have much in common. The Hindu-Kush is a vast range with many sub-ranges, and generally speaking forms the western boundary of the Chitral and Karakoram fauna, although a few species come over. A few Pamir elements come south into it, and a very few endemic Afghan forms come eastwards to it.

Descriptions and comments follow, on taxonomically important finds.

PAPILIO ALEXANOR HAZARAJATICA Wyatt, NEW SUBSPECIES

This species has not hitherto been recorded from Afghanistan, although it is known from the south side of the border, north of Quetta in Baluchistan. This area is not palæarctic, and other forms from both areas show quite marked differences. I took the species freshly emerged on the northern slope of the Koh-i-Baba Mts., unfortunately only males.

HOLOTYPE ♂: Joshanak Valley, S. of Band-i-Amir, W. Koh-i-Baba Mts., 9500 ft., 14 June 1960.

While superficially of the same size and coloration as the typical form, this race is at once distinguished as follows:—

Forewing: Black marginal band very narrow, about half the width of all other races. As a result, the yellow band between it and the submarginal is extremely wide and even, with only the faintest trace of black scaling along the veins. The submarginal band differs from all other races in being much wider near the base than at the apex, the exact opposite to the normal, with a large inward bulge between M_1 and M_3 heavily powdered with yellow scales. Central cell band normal, but center strongly powdered with yellow scales. Black bar at end of cell narrow, Length of forewing 33 mm.

Hindwing: — Basal and innermarginal black much as in type, narrower than in *maccabæus* Stgr. and even than in *orientalis* Rom. Central band strongly defined, much as in type. End cell spot small and light, not reaching to end of cell. Submarginal band greatly widened basally from M_3 , and strongly powdered basally with yellow. Marginal lunulæ large and evenly curved. Anal spot very small, the upper blue half being much larger than the lower orange half, which is even more reduced than in *orientalis*. Dividing black bar strongly defined. Tail shorter than in all other races.

Underside normal, except for width of bands, etc.

HYPERMNESTRA HELIOS ARIANA Wyatt, NEW SUBSPECIES

New record for Afghanistan, though this species also has been recorded with *P. alexanor* from same areas in Baluchistan, as *balucha* Mre., from which *ariana* is distinct.

HOLOTYPE ♂: Bamian, N. of Koh-i-Baba Mts., 8,300 ft., 4-7 June 1960.

ALLOTYPE ♀: Bamian, N. of Koh-i-Baba Mts., 8,300 ft., 4-7 June 1960.

This fine race stands between *bushirica* O. B-H. and *persica* Neub., but is larger than both, and also larger than *balucha*. While not quite as strongly marked as *persica*, it is more so than *maxima* Gr. Grsh., especially in the ♂.

Forewing: Costal spots very heavily surrounded with black. Discal spots large and almost equal in size. Red in costal spots well developed. Compared to *balucha* the antemarginal band is longer, while the end cell spot is as large as the middle spot. There is a strong tendency towards *fasciata*-markings in the female. Ground color creamy white. Length of forewing in ♂ 25 mm., in ♀ 27 mm. on average.

Hindwing: Ocelli well developed and almost always red-centered, but with strong black surrounds. This is hardly ever the case with either *bushirica*, *persica*, or *christophi* O. B-H.

Underside with rich greenish-yellow markings and large pink spots, including anal spots, within the normal range of variation; the characteristic of this form is however the very noticeable silvery sheen, or shine, on all white areas, which is most unusual.

Out of a series of 56, 2 have spots yellow, 2 have costal spots f. w. and ocelli h. w. all black, 3 have ocelli h. w. only all black, 1 has costal spots only all black. All males.

Parnassius charltonius voighti O. Bang-Haas

OTTO BANG-HAAS described this race in *Horæ Macrolepidopterologicae* I from 7 ♀ ♀, taken on the An-Suchas Pass in the Paghman Mts. just north of Kabul. In May 1959, in *Parnassiana Nova* XXVI, CURT EISNER described a single male as the presumable allotype of *voighti*, which he had obtained from the Oberthür Collection and which bore only the locality: "Afghanistan".

I took a series of 10 ♂ ♂ and 4 ♀ ♀ on the Kotandar Pass in the Paghman Mts., which is probably synonymous with the An-Suchas Pass. They are, in any case, topotypes. I could find no trace of the An-Suchas Pass on any map, even military, nor did any local people know of it. However, both Kotandar Passes, (on same divide but separated by a small peak), lead into the Surkh Valley, as shown on the map, so "An-Suchas" can probably be interpreted as "leading to Surkh".

All my males differ in almost all respects from EISNER's male, and in my opinion his male, if indeed it really came from Afghanistan, probably came from the mountains of Darwaz close to the Pamirs, since it appears to me to be most closely related to the Pamir forms *vaporosus* Avin. and *romanovi* Gr. Grsh. The greatest discrepancies between EISNER's ♂ and mine are the wing-shape (mine are much squarer), size of cell spots, reduced and black costal ocellus on h. w., the *fasciata*-band.

My specimens appear superficially (except for ground color) closest to *wernickei* Kotsch, which is understandable as this is geographically the nearest race, but show very strong differences, which is natural in view of the isolation of the Paghman Mts.

This race, *voighti*, is immediately noticeable in the male for the narrowness of the submarginal and costal bands on forewing, coupled with the exaggeratedly large cell spots and the heavy adumbration at base of wing. All markings stand out more, and are more contrasting, than in *wernickei*, while the ground color is whiter and the scaling far denser. I thus feel justified in describing the male of *voighti* here, and of making one of my series the allotype, in view of the fact that mine are topotypical and also of the great discrepancies in appearance between EISNER's male and my series. For this, I hope my very good friend CURT EISNER will forgive me!

ALLOTYPE ♂: Kotandar Pass, Paghman Mts., Kabul, 10-12,500 ft., 26-28 August 1960.

Forewing: Cell spots disproportionately large, and usually joined beneath by a strong black scaling along lower vein of cell. Marginal glass-band well developed and reaching to inner margin. Submarginal band narrow and sinuous, narrower than in any of the neighboring races except *romanovi*, usually ending at M_1 , but with a grey submarginal spot separated from it in the interneural space below. *Fasciata*-band always well developed, but seldom forming a heavy black triangle below cell like the Indian races, while the hindmarginal spot is usually recognizable as a diffuse spot rather than as the end of a band. Strong dusting of black scales along inner margin from base to hindmarginal spot. Basal black dusting very strong and coming so close to cell as to strongly reduce the width of the basal white bar by cell. Ground color creamy-white, very densely scaled. Length of forewing: 31 mm.

Hindwing: Marginal glass-band clear, about 1 mm. wide, and continuous, though black scaling is sparse at veins. Submarginal band narrow and very thinly scaled, appearing grey as against the normal black. Blue ocelli four to five in number, through the fifth is usually a mere black dot. The black of these ocelli is reduced to an outer half-moon only, the inner half being thickly scaled a very pale blue, paler than usual, and appearing almost to fade into the grey submarginal band. Central ocellus small, almost round, with extremely heavy black surround, especially below, where it is so thick as to give the ocellus a slightly oval appearance. Small white center. Costal ocellus in 6 out of 10 males small and all black, and while three others show a very tiny red center to it, only one out of the 10 can be said to have a normal red costal ocellus. Anal spots always without red, although on 2 a few red scales can be seen with a lens. Innermarginal black strongly developed, reaching to, and sometimes enclosing, the end of the cell. *Siegeli*-spot beneath strong, usually also scaled with black on upper side of wing. The cell beneath is completely surrounded with black, and closed by a very heavy black bar.

PARNASSIUS TIANSHANICUS SHIVA Wyatt, NEW SUBSPECIES

This race belongs to the *superba* group and stands between *superba* Gr. Grsh. and *maureri* Avin. It is the smallest known *tianshanicus* race, almost 50% of the 90 specimens taken being the same size as the *jacquemontii* flying a bit higher up. They were taken below the so-called Kars Pass in the Shiva Mts. of N. Badakhshan, almost on the borders of Darwaz, about 2 miles west of the S. W. end of the Lake Shiva, which is marked on most maps. It is extremely variable in both size and color; I took 12 very strong f. "nigricans", some almost completely black.

HOLOTYPE ♂: Kars Pass, Shiva Mts., N. Badakhshan, 11,000 ft., 23-25 July, 1960.

ALLOTYPE ♀: same data as Holotype.

Forewing: Whole wing covered with a very characteristic grey powdering. Wide marginal glass-band to inner margin. Very light submarginal band, which in most cases fades imperceptibly into the general grey discal powdering. It often ends at M_2 , and is sometimes obsolescent. Very little basal black. Usually 3 red spots, but hindmarginal spot often black.

Hind wing: Very light marginal and submarginal bands, the marginal especially indistinct and often appearing to merge into general grey powdering. Small anal ocelli almost invariably black. Only 5 ♀♀ show traces of red in basal anal ocellus.

Length of forewing in largest ♂ 35 mm., in smallest 27 mm.; ♀♀ average 34 mm., ♂♂ 31 mm.



1) *Papilio alexanor hazarajatica* ♂ Holotype; 2) *Parnassius charltonius voighti* ♂ Allotype; 3) *P. tianschanica shiva* ♂ Holotype; 4) same, ♀ Allotype; 5) *Hypermnestrea helios ariana* ♂ Holotype; 6) same, ♀ Allotype; 7) same, ♂ Paratype, underside; 9) *Synchlloe callidice hazara* ♂ Holotype; 10) same, ♀ Allotype; 11) *Zegris fausti lucullus* ♂ Holotype; 12) same, ♀ Allotype; 13) same, ♂ Paratype, underside; 14) *Melitaea shandura apsara* ♂ Holotype; 15) same, ♀ Allotype; 17) *Boloria hegemon houri* ♂ Holotype; 18) same, ♀ Allotype; 19) same, ♂ Paratype, underside; 20) *Melitaea kuchi* ♂ Holotype; 21) same, ♂ Paratype, underside; 37) *Lycæna æolus* ♀ Holotype; 40) *Thymelicus lineola kushana* ♂ Holotype; 41) same, ♀ Allotype. [Numbers 8, 16 are omitted.]

ZEGRIS FAUSTI LUCULLUS Wyatt, NEW SUBSPECIES

New record for Afghanistan. This race is the same size as the typical form, but has a very noticeably larger red apical patch to forewing, which makes it outstandingly beautiful. This is chiefly due to a strong reduction of the black bar beneath the apical patch, at times only a thin pencilling. Cell spot smaller than in type.

HOLOTYPE ♂: Band-i-Amir, Hazarajat, N. of Koh-i-Baba Mts., 95-10, 500 ft., 9-11 June 1960.

ALLOTYPE ♀: Band-i-Amir, Hazarajat, N. of Koh-i-Baba Mts., 95-10, 500 ft., 9-11 June 1960.

The female is closer to the typical form, but contrary to the male has *less* red in apex than the typical female, and with a generally larger blackish apex. Basal black bar of apex narrower, as in male.

Beneath, the white spots of hind-wing are distinctly smaller than in the type, especially those along inner margin. The extended darker areas are a rich yellowish-green, smoother in color and with fewer striations, greener than type. Apical pink spot to forewing is both narrower and shorter than in type, with distally a strong powdering of green and black scales.

SYNCHLOE CALLIDICE HAZARA Wyatt, NEW SUBSPECIES

While I took as expected the normal-sized *hinducucica* Vrtý. in late July in the Hindu-Kush, I never expected to find the species in early June in a definitely sub-alpine and semidesert area of low hills, the northern foothills of the Koh-i-Baba Mts. I only found it on the long summit ridges, flying over hot stones and sage brush, a most extraordinary habitat for this species.

HOLOTYPE ♂: Band-i-Amir, Hazarajat, N. of Koh-i-Baba Mts., 11,400 ft., 9-11 June 1960.

ALLOTYPE ♀: same data as Holotype.

Apart from very small size, the characteristics of this race are the strongly pointed forewing in both sexes, the greatly reduced submarginal bands, and reduced cell spots. These bands in male are very faint, and the lowest spot is not really a spot, but a thin line of not very solid color. In the female the hindmarginal black spot is so reduced as to be barely indicated, while on the hindwing the marginal white spots are smaller, and the black along the veins more extensive. The basal black dusting is very greatly reduced, and there is none at end of cell.

Length of forewing: male 20 mm.; female 20 mm.

MELITÆA SHANDURA APSARA Wyatt, NEW SUBSPECIES

This extremely rare species was originally described by EVANS from the high mountains of Chitral. It is a very high altitude scree and moraine species, and in habitat and habits greatly resembles the nearctic *M.*

damœtas. I took the typical form at about 14,300 ft. in the Hindu Kush Mts., but I also took a few specimens of a strikingly different race in the Shiva Mts.

HOLOTYPE ♂ : above Kars Pass, Shiva Mts., N. Badakhshan, 12,500-14,000 ft., 22-24 July 1960.

ALLOTYPE ♀ : same data as Holotype.

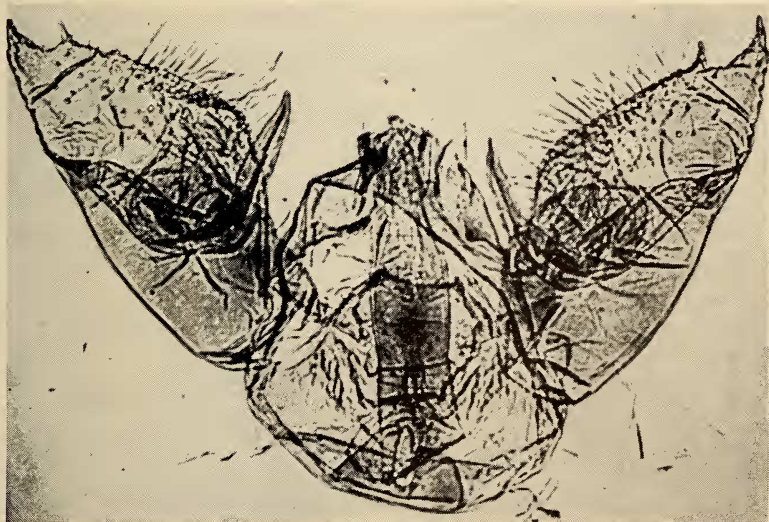
This race is of a deeper yellow than the type, and all black markings are strikingly reduced, especially on forewing, where the central band of spots is barely a third the size of that of the type. The black scaling obscuring the yellow basal areas is greatly reduced, so that these stand out strongly. The marginal band is so reduced that the antimarginal yellow spots form almost a band. The hindwing more closely approaches the type, but the submarginal band is very strongly reduced, especially towards the apex; in some males it is obsolescent, and practically lacking in the female.

The underside shows little difference other than in size of spots, but is much more yellow than in the type.

Length of forewing: ♂ 20 mm.; ♀ 22 mm.

MELITÆA KUCHI Wyatt, NEW SPECIES

This beautiful little species at first sight appears like a miniature *lutko mimetica*, which may perhaps partially explain why I took so few specimens and no females. It occurs at higher altitudes and emerges later.



Male genitalia of *Melitæa kuchi*.

HOLOTYPE ♂: Band-i-Amir, Hazarajat, N. of Koh-i-Baba Mts., 11,500 ft., 9-11 June 1960.

This species is more uniform and slightly darker in color than *lutko mimetica*, and the costal spots are reduced in size. There is a strong marginal band, especially towards the apex, which is proportionately much heavier than in *lutko*. On the hindwing, the marginal band is less dentate, as is the more strongly defined submarginal band of spots. While the black basal scaling is heavier, the black spots which *lutko mimetica* shows at outer end of the cell are here to all intents and purposes non-existent. Generally speaking the species is much more neatly and regularly marked than *lutko*.

On the underside the same applies as to forewing spotting, except that the discal and hindmarginal spots are absent. The hindwing is very similar to that of *l. mimetica*, but all markings are neater, the black edging to the bands is greatly reduced, and there are much larger white markings basally.

Length of forewing: 14 mm.

BOLORIA HEGEMONE HOURI Wyatt, NEW SUBSPECIES

I most unexpectedly came across this species freshly emerged at about 14,300 ft. in the Hindu Kush Mts., flying on almost completely barren old moraines, in company with *Melitæa shandura*. Having no previous field experience of the species, I cannot say whether this is its normal habitat, but it is so much higher than my typical series from Turkestan, that I doubt it. Due to the very different wing shape we may be dealing with a new species, related to *hegemone* as *B. græca* is to *B. pales*, but I shall have to leave further examination to a later date.

HOLOTYPE ♂: Bala Quran, Anjuman Valley, Hindu Kush Mts., Afghanistan, 14,300 ft., 4 August 1960.

ALLOTYPE ♀: same data as Holotype.

In this form the forewing is concave towards the outer angle, while in typical *hegemone* it is normally rounded. The spotting is as in *hegemone*, but all spots are larger and more distinct, with the exception of the fourth antemarginal spot which is smaller, thus giving a characteristic feature. Hindmarginal spot large, and two well-formed spots below cell. Basal black dusting almost absent. All lunule in marginal band are whitish, contrasting strongly with the main ground color; this occurs on both wings, and is most striking and unusual. The hindwing is also as in *hegemone* but squarer, with distinct anal angle and all spots larger except those of the margin which, however, is much heavier at apex and clearly encloses here a long, whitish-yellow spot. Basal black dusting greatly reduced, showing large yellow areas, but the outer basal black spots are larger. There is a marked black line along the inner margin on the male. Light spots in marginal band whitish as on forewing.

The female resembles the male, with much less difference between the sexes than in *hegemone* type.

On the underside the spotting is proportionately as above, but the apical area of forewing has the ground color a pale straw-color, contrasting with rest of wing; in *hegemone* from Turkestan the ground color beneath is unicolorous. On the hindwing there is a greenish tinge about the base, and all the markings which in *hegemone* are brown are here a light orange, while the submarginal pale band is more

suffused with the pale straw-color. The light, whitish markings of *hegemone* are here not only distinctly whiter, but silvery.

Length of forewing: ♂ 22 mm.; ♀ 22 mm.

PARARGE EVERSMANNI SHIVA Wyatt, NEW SUBSPECIES

HOLOTYPE ♂ : Shiva Mts., N. E. Badakhshan, 9,000 ft., 20 July 1960.

ALLOTYPE ♀ : same data as Holotype.

Noticeably smaller than the typical form and much less heavily marked in female, so that the two sexes are very similar. Markings similar to type, but marginal black of all wings reduced. Black cell spot considerably thinner and of almost even width throughout, *not* extended into cell along upper vein as in type. This also applies to female, though less obviously.

Beneath, pattern similar to type but whole coloration is paler. On forewing all black markings are smaller and neater, border narrower below apex and color of apex much lighter, a pale brownish grey. Hindwing, pattern similar, but whole wing is of a general pale grey appearance, as against brown in the type. Median band very light yellowish-grey, strikingly bordered with very dark brown. In type this border is hardly visible. Outer edge of band less jagged, and lacks the sharp white "tooth" jutting in towards cell, this being replaced by an indentation, which is often distributed evenly over the interneural space below as well. Base pale grey. All white markings stand out far less than in type.

Length of forewing: ♂ 22 mm.; ♀ 24 mm.

Karanasa voighti O. Bang-Haas

This species was described by OTTO BANG-HAAS in *Horæ Macrolepidopterologicae* I: p.50, from one unique female, as a race of *K. huebneri* Feld. AVINOFF and SWEADNER, in "The Karanasa Butterflies", *Annals Carnegie Museum* 32: p.47, classify it as a good species, in the *bolorica* group. *K. voighti* and its race *nigrocellata* Av. & Sw. is only known from the two isolated but adjoining ranges of the Paghman and Koh-i-Baba Mts., which show several faunistic affinities.

HEYDEMANN (*Zeits. wien. ent. Ges.* 39: 394) described one of two males taken by DELERE in Nouristan, N. E. Afghanistan, as the allotype of "*huebneri*" *voighti*. However, it is clear from both his description and illustration that this male is either a *pamira* or *bolorica* form, and I would classify it under *bolorica hodja* Av. & Sw. This form flies in a closely adjacent area of the Hindu Kush, and I took a series myself in the same range as the Nouristan part of the Hindu Kush, with which HEYDEMANN's male agrees, although from the illustration his is more brightly marked, but he remarks that his two males differ. This may well be the case, as his were almost certainly taken on the S. E. slope, while mine were on the N. W. slope. I took a series of topotypes of *K. voighti* in the Paghman Mts., one male of which I therefore describe as the true allotype of the species.

ALLOTYPE ♂ : Kotandar Pass, Paghman Mts., Kabul, 12,000 ft., 27 August 1960.

Forewing: Band a dirty orange-yellow, fading imperceptibly into a dirty pale yellow immediately below apical ocellus, which bears a minute white pupil. Paler in cell, with a tendency to form a pale orange smear at end of cell. Outer edge of yellow band slightly scalloped. Usually two ocelli, but the lower is often reduced in size, and in one of my males is absent.

Hindwing: Marginal band very wide, wider than in *bolorica*. Yellow band a uniform dirty orange, becoming obscured towards anal angle. Outer edge very strongly dentate, the marginal band projecting inwards along the veins in long, sharp teeth. Inner edge evenly curved except for indentation opposite end of cell. Whole basal half of wing evenly colored.

Underside: The great characteristic of the male *voighti* as against all other *Karanasa* known to me, is the very unicolorous underside of the hindwing. The normal light inner edging to the central band, which is so distinct in *pamira* and to a lesser degree in *bolorica*, is so strongly suffused with brown that the entire band is rather inconspicuous. *The white scaling is absent from the veins*, in complete contradistinction to HEYDEMANN's figure. This is a most noticeable feature. There is sometimes traces of it only on the marginal band, and along the submedian, but none on the inner three-quarters of the wing. The powdering of black scales is very light and even, so that the wing appears very smooth in color and not brightly variegated as in the other species. Black striations reduced to a minimum, being few even in basal area. Edges of marginal band lightly but definitely outlined in greyish brown. In some specimens there is a general reddish-brown tone to the entire hindwing.

Forewing beneath has light band straw yellow, deeper in lower half with discal and basal area very evenly pale brown, lighter in cell which bears a few faint striations. Faint darker bar to close cell, but outer edge of median band has to all intents and purposes no dark border (*cf.* HEYDEMANN's figure). The same applies to marginal band, which is very narrow, pale greyish-brown, only weakly dentate along inner edge and only extremely faintly outlined by hair-like darker brown edging. Dark striations at base few and faint.

Length of forewing: 23 mm.

KARANASA PAMIRA KOTANDARI Wyatt, NEW SUBSPECIES

The most amazing *Karanasa* form described is *K. p. haslundi* Av. & Sw. from the Koh-i-Baba Mts., which I took just emerging in late June. I was surprised to find a similar form in August in the Paghman Mts., in spite of the close affinities of these two ranges. Unfortunately I only took males.

HOLOTYPE ♂ : Kotandar Pass, Paghman Mts., Kabul, 11-12,500 ft., 25-28 August 1960.

Very close to *haslundi*, but smaller. Coloring is identical on upperside. Compared to *haslundi*, the inner edge of marginal band is very strongly dentate, projecting in large, even triangles into the deep orange-brown of the band, Veins across red band outlined in black. Single very large ocellus with minute white pupil. Hindwing unicolorous dark brown, although the pattern of the marginal band beneath shows through more distinctly than in *haslundi*.

Underside hindwing uniformly duller, central pale band strongly adumbrated with dark scales so that it is very indistinct, the white outer half more grey than in

haslundi. White scaling along veins very greatly reduced and not noticeable, especially in basal half of wing. Marginal band very wide, the inwardly projecting teeth only thinly bordered with dark brown. The general appearance is duller and more uniform than *haslundi*. This appears to be a parallel development to that of *voigti v. supra*. Forewing also duller, marginal band a pale grey-brown, very lightly bordered with dark inwardly. Much pale scaling at apex. Central area of wing a dirty orange-brown, not a rich glowing brownish-red as in *haslundi*, darker towards base. There are no black lines on outward edge of median band, so that it is not divided in two as in *haslundi*.

Length of forewing: 25-26 mm.

KARANASA PAMIRA TWOMEYI Wyatt, NEW SUBSPECIES

This race is very close to *alpherakyi* Avin. from the E. Pamirs, but was taken in a sub-range of the Hindu-Kush well to the west and south of the Pamirs. About 120 miles further north I took the very different *K. p. kafir* Av. & Sw. in the Shiva Mts. of N. Badakhshan. Flying with *twomeyi* I took *K. bolorica hodja* Av. & Sw.

HOLOTYPE ♂ : Bala Quran, Anjuman Valley, Hindu Kush, 11,000 ft., 3-6 August 1960.

ALLOTYPE ♀ : Bala Quran, Anjuman Valley, Hindu Kush, 11,000 ft., 3-6 August 1960.

Male forewing: Marginal band narrow and very slightly dentate on inner edge. Basal area evenly dark grey-brown, but with a tendency in some males to be suffused with yellowish basally. Lighter in cell, with suffuse orange spot at end. Band ochreous, very variable; usually distinctly paler along inner edge, an ivory-yellow, but this color sometimes suffuses outwards across whole band. Outer half usually orange except around apical ocellus. All ocelli with faint white pupils, except occasionally in lower ocellus when this is reduced in size.

Male hindwing: Marginal band moderately dentate, less than in *kafir* but similar to the *bolorica* forms. Basal half of wing uniformly greyish-brown. Band pale ivory-yellow, but often suffused with orange in outer half. Very variable in width, and in one specimen the outer lower two-thirds of band are obscured with brown scaling from the marginal band. Inner and outer edges moderately dentate.

Female forewing: Marginal band narrow, with tendency towards obsolescence towards inner angle, and often suffused with orange scaling from band in center. Whole basal area of wings strongly suffused with orange, with yellowish scaling at base. Median band very variable, but usually appears merely as a suffused darker outer edging to basal orange suffusion, although always strongly marked at cell. Ocelli smaller than in most *Karanasa* females, faintly white pupilled.

Female hindwing: As in male but slightly wider and more suffused with orange, or at times with reddish-brown.

Underside of both sexes similar, although in female the central pale band is more obscured and the general tone of wing paler and more uniform, with black markings less distinct. Male forewing: Narrow marginal band, wider at inner angle, pale grey with very thin but distinct inner black border, moderately dentate. Band as on upperside but duller. Basal area almost concolorous with band, but with the median band faintly indicated in grey or orange-grey; in male this is distinctly separated from light band, but in female very indistinct. Very few basal striations in male, more in female. Hindwing: general tone greyish-brown (warmer in female),

with pale marginal band which is darker towards fringe and inwardly bordered with thin dark brown line, moderately dentate. Central band with paler inner half sometimes fairly distinct; in male, and usually in female, this is suffused with grey-brown. Median band pale, only rarely standing out distinctly, lightly edged with dark on both sides. Base pale grey with many fine, and a few larger striations, in some males barely different in color to median band, and in female the same. Veins pale ochreous grey.

Length of forewing: ♂ 26 mm.; ♀ 28 mm.

Karanasa bolorica hodja Avinoff & Sweadner

This race was described in "The *Karanasa* Butterflies" by AVINOFF and SWEADNER (*Annals Carnegie Museum* 32: p.52) from 5 males collected in the Chodja Mahomet Range, N. E. of the Hindu Kush. The female was unknown. This summer I took a series of both sexes in the range immediately opposite the Chodja Mahomet, just across the narrow valley. In climate the two ranges are identical, and also apparently in composition, and harbor other restricted species in common, so I hereby designate one female as the allotype of *K. bolorica hodja*.

ALLOTYPE ♀; Bala Quran, Anjuman Valley, N. E. Hindu Kush Mts., Badakhshan, 11-12,500 ft., 3-6 August 1960.

Upperside as in the male, except that the bands are all of a deeper and more uniform orange except around the apical ocellus. Underside similar to the male, but more washed-out looking. On the forewing the outer edge of the median band is only extremely faintly and interruptedly delineated by a faint brown hairline, while on hindwing the markings are less clear cut, the black edgings to marginal and median bands fainter, while the hindwing as a whole has the appearance of being faintly but evenly dusted with dark scales.

Length of forewing: 23 mm.

PARALASA ASURA Wyatt, NEW SPECIES

This new species and the next fall slightly out of the normal facies of the genus, and would remind one of the genus *Argentina* Riley, were it not for the marked sexual dimorphism.

HOLOTYPE ♂: Bala Quran, Anjuman Valley, Hindu Kush, 13,000 ft., 3-6 August 1960.

ALLOTYPE ♀: Bala Quran, Anjuman Valley, Hindu Kush, 13,000 ft., 3-6 August 1960.

Male above deep sooty black. Apical ocellus indistinguishable except for small white pupil, which is larger than in the next described species. Forewing distinctly elongated, fringes checkered with white. Hindwing sooty black, scarcely scalloped, anal lobe slight. Fringes checkered with white. Beneath, forewing blackish brown suffused with dark chestnut down to M_1 and extending well into cell. Very large black apical ocellus with large white pupil. Marginal dark area very wide, strong

yellow ring round ocellus. Hindwing dark grey-brown, strongly powdered with yellowish scales. Faint trace of median band, and six distinct but small *white* submarginal dots.

Female as in male, but with large pale chestnut suffusion on disk from end of cell, where it is cut off sharply, down to M_1 , where it is still some 4 mm. wide. Apical ocellus small, black and without pupil, surrounded by a wide and very diffuse yellow ring. Hindwing dark greyish-brown, not scalloped, anal lobe vestigial. Fringes to both wings mainly grey, with only faint powdering of white between veins on hindwing, and hardly at all on forewing. Beneath similar to male but paler, and with more extended and paler suffusion. Small apical ocellus white-pupilled and surrounded by a large and clear yellow ring. Hindwing strongly powdered with yellow scales, dull wide unicolorous median band fairly well indicated, submarginal row of white dots very faintly indicated indeed, except for the apical and post-anal dots. Base dark, same color as median band.

Antenna with shaft ringed with white, knob black with faint grey area on lower (or costal) side of knob above, which becomes a white patch underneath.

Length of forewing: ♂ 25 mm.; ♀ 27 mm.

PARALASA SHAKTI Wyatt, NEW SPECIES

This species flies together with *P. asura* at its lowest levels, but is more frequent 2,000 ft. higher. While superficially very similar except in size, the two species can at once be distinguished by the antennæ.

HOLOTYPE ♂ : Bala Quran, Anjuman Valley, Hindu Kush, 14,000 ft., 3-6 August 1960.

ALLOTYPE ♀ : Bala Quran, Anjuman Valley, Hindu Kush, 14,000 ft., 3-6 August 1960.

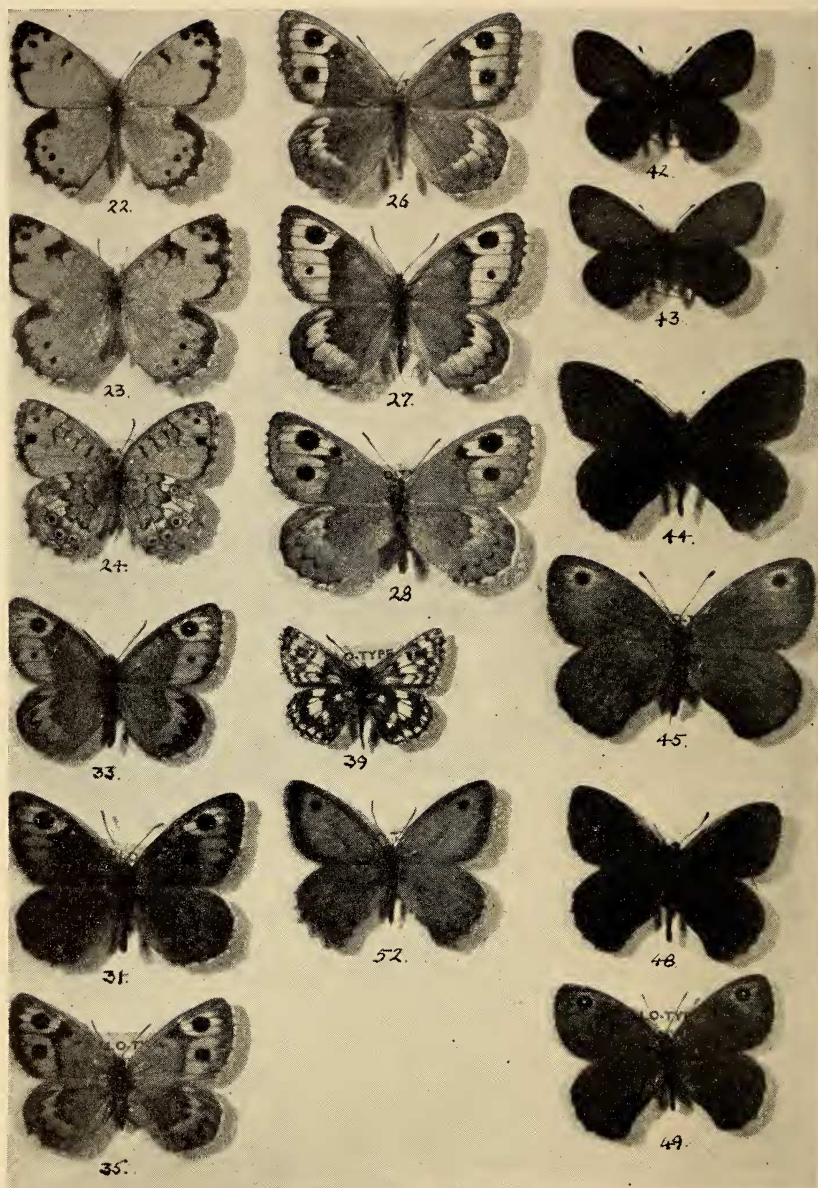
Male very square, upperside uniformly sooty black, against which the small apical ocellus can scarcely be distinguished except by its minute white pupil. Outer margin of hindwing very slightly scalloped, strong anal lobe. Fringes black, but checkered with white in central area of hindwing. A few white hairs can be seen with the lens between the veins on the forewing fringe.

Beneath, forewing blackish-grey suffused with deep chestnut brown in outer central area. Widely dark along hindmargin, moderately wide marginal band of ground color. Apex evenly dusted with yellow scales, and a strong pale yellow ring round the small apical ocellus. Hindwing beneath dark grey, uniformly dusted with yellow scales and with a very faintly indicated submarginal row of six *yellowish* dots. Median band is non-existent, but there is a slightly stronger yellowish dusting of scales in what would be the area beyond its lower half.

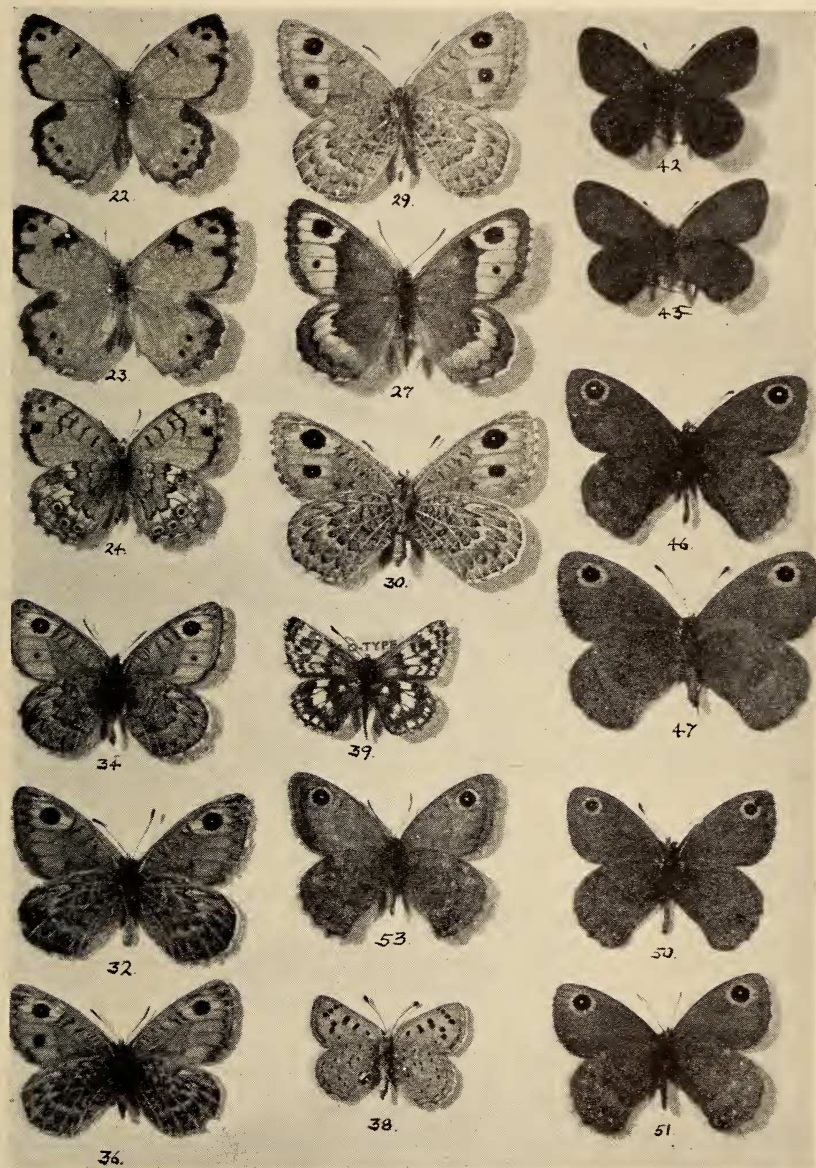
Female a dark blackish-brown with medium-sized apical ocellus, white pupilled, set in a small deep chestnut-brown patch which is suffused downwards to M_2 and faintly edged with yellow above. Hindwing dark blackish-brown, barely scalloped. Fringes of both wings greyish-white, blackish opposite ends of veins. Beneath as in male, but ocellus larger with strong pupil. Ground color paler, with chestnut suffusion lighter and extending to base of cell. Hindwing strongly powdered with yellowish, traces of median band fairly obvious, small yellow costal dot and distinct marginal row of six yellow dots, of which the anal one is double. Fringes beneath distinctly checkered.

Antenna with shaft black, knob black above and reddish beneath, with no trace of paler coloring.

Length of forewing: ♂ 22 mm.; ♀ 23 mm.



Plates 2 and 3: 22) *Pararge eversmanni shiva* ♂ Holotype UP; 23) same, ♀ Allotype UP; 24) same, ♂ Paratype UN; 26) *Karanasa pamira twomeyi* ♂ Holotype UP; 27) same, ♂ Paratype UP; 28) same, ♀ Allotype UP; 29) same, ♂ Holotype UN; 30) same, ♀ Allotype UN; 31) *K. pamira kotandari* ♂ Holotype UP; 32) same, ♂ Holotype UN; 33) *K. voighti* ♂ Allotype UP; 34) same ♂ UN; 35) *K. bolorica hodja* ♀ Allotype UP; 36) same ♀ UN; 38) *Lycæna æolus* ♀ Holotype UN; 39) *Ramburia antonia shivaensis* ♂ Holotype UP; 42) *Lyela amirica* ♂ Holotype UP; 43) same, ♀ Allotype UP; 44) *Paralasa*



asura ♂ Holotype UP; 45) same, ♀ Allotype UP; 46) same, ♂ Holotype UN; 47) same, ♀ Allotype UN; 48) *Paralasa shakti* ♂ Holotype UP; 49) same, ♀ Allotype UP; 50) same, ♂ Holotype UN; 51) same, ♀ Allotype UN; 52) *Hyponephele shivacola* ♂ Holotype UP; 53) same ♂ UN. [UP=upperside, UN=underside. Number 25 is omitted; figures 37, 40, 41 are on Plate 1; figures 22, 23, 24, 27, 39, 42, 43 are duplicated on Plates 2 and 3. These unfortunate sources of confusion were caused by reorganization of plates when certain improved photos were prepared.]

HYPONEPHELE SHIVACOLA Wyatt, NEW SPECIES

Unfortunately this species was only taken, very fresh, in the male sex. It appears to be very close to *H. susurrans* Cl. & Sh.

HOLOTYPE ♂ : Shiva Mts., 9,000 ft., 21 July 1960.

Forewing entirely a rich chestnut orange, extending to base. A wide and dark marginal band, slightly wider at base and also opposite the apical ocellus, which is small and unpupilled. Costa widely dark brown. Brand long and thin, reaching from bar of cell to submedian. Fringe grey, slightly darker at veins. Hindwing unicolorous dark greyish-brown, margin fairly strongly dentate. Fringe wide, pale grey with dark central line. Thin darker line also on ground color at base of fringe.

Forewing beneath as above, but apical ocellus large and white pupilled, surrounded by yellow ring. Discal area light chestnut orange, much lighter than above, with basal half darker. Thin brown bar from cell almost to costa. Outer angle very darkly suffused with blackish. Hindmarginal area very deep greyish-brown. Fairly wide marginal band of pale greyish brown, evenly edged internally and externally with a thin black line, straight except for angle in space above M_1 . Outer edge of orange discal area suffused with brown towards marginal band.

Hindwing a rich greyish-brown beneath, the median band being both edged and suffused with chestnut-brown. Outer edge wavy. Light yellowish-grey patch at costa, two more in spaces above cell, and two large patches below M_1 and the submedian. Largish yellowish suffusion towards apex. Traces of paler marginal band, this becoming a definitely contrasting yellowish-grey towards anal angle. One small, white-pupilled anal ocellus. Base hardly distinguishable from median band, striated with fine black lines.

Length of forewing: 23 mm.

LYELA AMIRICA Wyatt, NEW SPECIES

This curious new species comes closest to *L. macmahoni* Swinhoe from Baluchistan, but is very different. After a comparison with other closely allied species I am of the opinion that it is a retrogressive, primitive alpine form of the genus.

HOLOTYPE ♂ : Band-i-Amir, Hazarajat, 9500-11,000 ft., 9-11 June 1960.

ALLOTYPE ♀ : Band-i-Amir, Hazarajat, 9500-11,000 ft., 9-11 June 1960.

Upperside uniformly black without any markings. Forewing without apical ocellus and with entire disc of wing flushed a rich chestnut-brown, slightly paler and more extended towards margin in female, reaching to base of wing in both sexes. Faint black bar to forewing cell in female. Antenna spatulate.

Underside exactly the same, except that all black areas are evenly but sparsely dusted with yellow scales, this being especially noticeable in the female; the underside of hindwing is absolutely unicolorous in both sexes, without any traces whatsoever of bands, ocelli or other markings. The great majority of my series of 79 have no apical ocellus on underside of forewing, although this does appear on underside only, very small and inconspicuous, in about 30% of the females and 10% of the males. It has no yellow surround whatsoever.

Length of forewing: ♂ 17 mm., ♀ 18 mm.

The species reminds one superficially of a miniature *Erebia discoidalis* on the upper side. The rich red-brown forewing does not show up on the plates. It frequents a varied habitat, from grassy slopes around the passes in the northern spurs of the Koh-i-Baba Mts., to stony slopes at its lowest altitude which are sparsely covered with spiny plants. I never met it on flat ground.

LYCÆNA ÆOLUS Wyatt, NEW SPECIES

This species appears superficially both above and below amazingly like the North American *L. snowi*, and frequents similar habitats, namely old moraines and scree slopes almost devoid of vegetation, at very high altitudes. I only took two females.

HOLOTYPE ♀: Bala Quran, Anjuman Valley, Hindu Kush Mts., Afghanistan, 14,300 ft., 4 August 1960.

Forewing deep golden orange, strongly adumbrated with black scales, especially towards apex and below cell. Below cell also finely powered with bright iridescent purple scales. These give a barely perceptible shimmer to the wing, but are clearly seen with a lens. The golden orange is everywhere extended clearly along the veins. Very large discal spot and smaller cell spot. Three large equal-sized round costal spots, two median spots and traces of a third more inwardly set beneath them. Normally wide black margin. Fringes white. Hindwing as above, but so entirely irrorated with black that the gold only shows clearly along the veins as far as the cell, and as a narrow submarginal stripe. A black discal bar and four black median spots, of which the third is strongly inset. Anal angle moderately scalloped, fringes white.

Beneath an overall soft dove-grey, but disc of forewing suffused with pale orange yellow, especially towards outer angle. Fine dark-grey marginal line, also an inner-marginal line, heavily marked in three lowest spaces, but fading out before apex. Apex dove-grey. Spotting as above. Hindwing with hairlike dark-grey marginal line and row of marginal black spots, fine and elongated. Median band of small black spots normal to the genus, but very small. Double discal spot, small spot in cell. Slightly curved line of 3 spots behind cell, two basal spots.

RAMBURIA ANTONIA SHIVAENSIS Wyatt, NEW SUBSPECIES

I was very surprised to meet with this species, very locally and in small numbers, which is I believe a new record for Afghanistan. It flew, always singly, in the approaches to the Shiva Mts., on steep stony slopes and gullies with a semi-desert type of vegetation. As both sexes are similar I illustrate only the male.

HOLOTYPE ♂: Shiva Mts., Badakhshan, 6500-8000 ft., 19-27 July 1960.

ALLOTYPE ♀: Shiva Mts., Badakhshan, 6,500-8,000 ft., 19-27 July 1960.

Similar in size to typical form, but all white markings larger. A very strongly developed marginal row of white spots, especially the two above M_1 . Five white costal spots all, but especially the lower two, much longer than in type, and with the veins noticeably less black. Strong white bar to cell. Median white spot elongated. A distinct feature is the white hindmarginal spot; in the type this shows as a large square white spot bordered outwardly by two minute white dots one above the other; in *shivaensis* it appears as one very large oblong spot, twice as long as wide, divided by a thin, angled black line. In the female, however, this is not the case and the two outer spots are absent or only faintly indicated. However, in the female all other white spots are larger and stronger than in type or *gigantea*.

Spot above hindmarginal spot very large and long. In this race these two spots, plus the large white cell spot, give the appearance of a solid white band right across wing. Usual basal indications of two white spots, but very faint in female.

Hindwing has large and distinct white marginal spots; central white spot enormously enlarged and practically incorporating the spots above and below it, the upper of which is only faintly separated from the costal spot, so that the four spots appear as a broad white band.

Beneath, the central white band is very wide and conspicuous, strongly bordered with black. Thin dark marginal band, which does not appear at all in the type and only as a few dots in *gigantea*. Basal yellow band wide, strong basal black spot. Unfortunately none of my specimens is very fresh, so that it is not possible to say whether the strong greyish color of the underside bands, showing only the faintest traces of yellow, is the normal coloration.

Length of forewing: ♂ 17 mm.; ♀ 16 mm.

THYMELICUS LINEOLA KUSHANA Wyatt, NEW SUBSPECIES

HOLOTYPE ♂ : Shiva Mts., N. Badakhshan, 8,500 ft., 21 July 1960.

ALLOTYPE ♀ : Shiva Mts., N. Badakhshan, 8,500 ft., 21 July 1960.

Male deep orange-yellow with wide black margin to forewing which runs inwards along veins for 1-2 mm., and hindmargin strongly blackish. Hindwing almost uniformly dark brown, with only the faintest trace of an orange suffusion in center. In one male hindwing is entirely dark brown. Antenna black above overall, but shaft beneath yellow to halfway up knob. Palpus evenly yellow and black above, whitish beneath at base. Brand short and faint.

Beneath, forewing orange-yellow, slightly paler towards apex, base and hindmargin widely black. Hindwing greenish-yellow, orange at costa and yellow-orange below M_1 .

Female as in male, but forewing black margin half the width, although the black scaling along veins is greater, up to $2\frac{1}{2}$ mm. long. Darkish suffusion at base of wing and along hindmargin. Strong black bar to cell. Hindwing as in male, but golden suffusion in center very much larger and more noticeable, although wing still appears as having a blackish ground color suffused gold. Black along veins and black smudge at end of cell. Beneath as in male, but main ground color strongly powdered with pale grey.

Length of forewing in both sexes: 12 mm.