

That our determination of *Iaspis* admits of no doubt, follows from Guenee's description. He calls the color "very pale testaceous grey," and the body "slender." The rest of his description falls in with our specimens, of which I took several males in the vicinity of Buffalo in July. In arranging our Noctuidæ I saw at once that Guenee's *Apamea Iaspis* could not remain in the same genus with his other species, which are mainly Hadenas, and I made it the type of a new genus. Only later I saw its affinity with Guenee's *Bryophila Palliatricula*, although so widely separated by him, and I divided it on the character of mixed and flattened scales on the thorax. I believe the genus containing *Iaspis*, *Palliatricula*, (if these two are distinct) and *Sensilis* should be placed next to *Bryophila*, but until the European species are all compared its exact value cannot be ascertained. The species are more robust and have a somewhat Hadeniform appearance. They all have a white spot attached to the t. p. line, while it is lost in the white shading of the median space in *Palliatricula*.

SPRAGUEIA PARDALIS. n. s.

Allied to *Dama*, by the orange fringes, which are flecked with black opposite the cell. Fore wings black, with a large, pale yellow oblique costal patch before the t. a. line; another on the median space enclosing a dark dot, and a smaller spot before the apex. Median lines broad, orange, only marked on the lower half of the wing. Hind wings blackish. The outer smaller pale spot on centre of primaries surmounts a little patch of orange and then some brown-black scales. These deep brown-black scales obtain below the larger median pale costal patch and cover the upper extremity of the outer median orange line. Front smooth, bulged. Collar edged with orange. Head behind, orange. Tegulæ orange within; the shoulders blue-black. Abdomen blackish, finely annulate with pale. Beneath, the body is pale yellow. *Expanse* 17 mil. Florida, several specimens collected by Mr. Roland Thaxter.

This species is more black than any of the others and is easily recognized by the pale white costal spots extending to the middle of the wing. For a discussion of the structure of *Spragueia* and allied North American genera I refer the student to a paper published in the Canadian Entomologist, Vol. XI, p. 231.

ON SOME APPARENTLY NEW FORMS OF DIURNAL LEPIDOPTERA.

BY HENRY EDWARDS.

• ANTHOCARIS COLORADENSIS. n. sp. (?)

I have long had in my possession a ♂ example of *Anthocaris*, which appears to be distinct from any known form, but I hesitated to describe it until more material might present itself.

From Dr. Bailey of Albany, I now receive a ♀ exactly agreeing with my specimen, and I have also seen other examples in the collection of Messrs. Neumoegen and Mead. I therefore offer a description under the above name. Compared with *A. ausoniedes*, Bois. of which it is possibly a variety—it has the apices more rounded, and the wings, both primaries and secondaries, broader, though the average size of the insect is a little less. The broken patch at the apex of the fore wings, is, in the present form, deep velvety black, flecked with greenish scales, while in *A. ausoniedes* it is olivaceous, with yellowish scales. The patch is also more compact, less divided by the white ground color of the wings, the apex being therefore almost wholly black, with the exception of a roundish spot, costally, and a couple of dashes marginally, of the white ground color. On the under side, the marbled pattern of the secondaries is more extended over the whole surface of the wing, thus more closely approaching the design of *A. Crensa*, and *A. Hyantis*.

The present form appears to bear the same relations to *A. ausoniedes* that *A. Belia* does to *A. ausonia* of Europe. The specimens I have examined (4 ♂ 3 ♀) were all taken in Colorado.

Types. Coll. Hy. Edwards. Dr. Jas. A. Bailey.

COENONYMPHA CALIFORNICA. Doub. n. var. *pulla*.

Entirely of a dark fawn color, with a leaden tint on the upper surface, and a blackish cloud at the base of primaries, as in the var. *galactinus*. The markings of the under side are invisible, when viewed from above. Beneath, dull brown, with a reddish tint on the discal region of the primaries, the markings very indistinct, being lost in the prevailing dark color.

1 ♂ San Mateo, Co., Cal.

Type. Coll. Hy. Edwards.

MELITÆA DWINELLEI. n. var.

Most of the California species of *Melitæa* are prone to extreme variations, and none more so than the most beautiful of all, *M. chalcon*. I have before me examples of a form, however, which is so remote from the typical specimens, and so constant in its characters, as to deserve a name. I have desired to link with it the memory of an esteemed friend, now passed away, viz: Mr. Herman Dwinelle, one of the most promising young entomologists of the Pacific coast, whose early death was a loss to science. The specimens of this butterfly were taken by Mr. Dwinelle at the McCloud fishing station, Shasta Co., Cal., and it is worthy of remark, that no examples of *Chalcon* agreeing with the form common throughout the valleys of California, were found among the insects taken in the above locality. My examples are 4 ♂. 3 ♀

Primaries very much suffused with red, which color predominates over the discal portion, and toward the apices, almost obscuring the usual white spots, or rendering them a sordid, dull

orange color. The secondaries have the marginal row of red spots clearly defined, but the sub-marginal row of white lunules, so strongly characteristic of *M. Chalcedon*, is here wholly absent, or reduced to a single row of small, white sub-ovate patches, thus leaving a broad, black field between the margin and the median band. Beneath, the upper wings are reddish over the whole surface as in *M. Chalcedon*, but the lower have a much larger space of yellowish white toward the base, the whole of the red band and blotches being more broadly edged with black.

MELITÆA BARONI. n. sp. (?)

Allied to *M. Quino* Behr. of which it may be a variety. The lower side is characterised by an intense reddish color over the whole surface, sometimes attended by great suffusion, while the black lines usually found above and below the reddish maculate bands, are either wholly wanting, or very faintly defined, and except in the space surrounding the central patches of the superiors, there is no black to be seen. I have examined about 40 examples of this form from Mendocino Co., Cal., all with this peculiar system of coloration, and I have found these characters constant in every specimen, while the typical form of *M. Quino*, which *M. Baroni* resembles so closely on the upper side, has all the markings of the lower, broadly and conspicuously edged with black. It will be found quite an easy matter to separate these two species-

MELITÆA RUBICUNDA, n. var.

This is also, probably, another departure from the type of *M. Quino*, and may be its mountain form. In shape it is like *M. Quino*, and there is scarcely any appreciable difference on the lower side, but above the coloration is different. In *M. Quino*, black abounds, and overshadows both white and red. In this form red is the prevailing tint, and the submarginal bands of the secondaries are simply bands of red, cut by the nervules as in *M. Quino*, consisting of rows of spots. There is also a greater proportion of white about the base of the secondaries. My specimens, (18 in number) all agree in these characters. They are all from the Sierra Nevada, at an elevation of from 2500 feet to 7000 feet, while the typical *M. Quino* is found nearer the sea level. *M. rubicunda* approaches somewhat closely to *M. nubigena*, Behr. It is doubtless so named in many collections, but it is not so entirely suffused with red, as the latter species, while the wings are broader, with the apices more rounded.

MELITÆA ANICIA. Doubl.

This species may be known by its narrow wings, with very pointed apices, as well as by the large proportion of white on the upper surface, and the almost utter obliteration of the red sub-marginal maculate band of secondaries. A strongly marked variety is occasionally found which I designate as

MELITÆA WHEELERI. n. var.

It is wholly of a pale red ground color on the upper surface, except the base of secondaries, which are cream white. The markings are as usual, but with very little black.

2 ♂ 1 ♀. Southern Nevada. Wheeler Expd'n.

Types. Coll. Hy. Edwards.

THECLA CITIMA. n. var.

A peculiar form of *T. crysalus*, Edw., in which the orange blotches at the inner angle of the primaries, and the anal angle of secondaries are all obsolete, or at best, very faintly indicated. The whole of the upper surface, therefore, being purple and black. The ground color of the underside is ash grey, instead of fawn color, and the markings are all much less pronounced than in *T. crysalus*, the orange points of both primaries and secondaries being almost wanting.

1 ♀. Mt. Nebo. Utah. Mr. J. D. Putnam.

1 ♀. S. W. Colorado. H. K. Morrison.

Types. Coll. Hy. Edwards. B. Neumoegen.

THECLA SPADIX. n. sp.

Size of *T. Putnami*, and allied to that species. Upper side, dull mouse color, darkest at the base, with a large chestnut shade on primaries, and entirely without other markings. Beneath, the usual bands on primaries are utterly obliterated. On the secondaries is a very faint sub-median band irregularly broken, and an equally faint discal spot. The marginal band is also indistinct. The lunules of the anal angle are dull brown, enclosing 3 patches of black and white scales. There is no trace of either yellow or blue. The abdominal hairs are grayish white.

Exp. wings, 1.00 inch.

2 ♀. Tehachepi Pass, S. California. R. H. Stretch.

THECLA NELSONI. Bdv. n. var. *exoleta*

I distinguish under this name a form of *T. Nelsoni*, in which the whole of the lower surface is dull chestnut brown, with the marginal lunules of the secondaries exceedingly indistinct. The narrow white median band of secondaries, and the sub-marginal band of primaries are entirely wanting. In all other respects it resembles the typical form.

2 ♀. Big Trees, Calaveras Co., Cal.

Types. Coll. Hy. Edwards.

THECLA MUIRI. Hy. Edw. n. sp.

Allied to *T. Nelsoni*, Bdv., but undoubtedly distinct. It is smaller, with the apices of the wing not much produced. The general color is darker than that of *T. Nelsoni*, and the fringes are concolorous with the wings, instead of white. Beneath, on primaries, is a very distinct, sub-marginal white band, perfectly straight, and not curved from the costa, as in *T. Nelsoni*. It is also placed very much closer to the margin of the wing. The secondaries are blackish brown and not chestnut, as in *T. Nelsoni*,

and the sub-marginal band of white spots is more distinctly angular about the middle. It is also edged interiorly with a deep brown shade. Outside of this band, a purplish tint encloses the lunules, which are slate color, edged above with a few orange scales.

Exp. wings. 0.85 inch.

1 ♂ 1 ♀. Mendocino Co., Cal.

Types. Coll. Hy. Edwards.

I have named this exquisite little species after my friend, John Muir, so well known for his researches into the geology of the Sierra Nevada, who has frequently added rare and interesting species to my collection.

THECLA IRUS. n. var. *Mossii*. Hy. Edw.

Upper surface entirely bright chestnut brown, a little clouded with dusky at the apices, and on the extreme margins. Fringes wholly white, and not alternately brown and white, as in *T. Irus*, and the varieties *Henrici* and *Arsace*. Tails wanting. Under side, primaries reddish-brown, darkest at the base, and brightest at the margin. From costa entirely across the wing is a sinuous white band, bent outwardly at the middle, and edged above by a deep chestnut brown shade. The secondaries have the base deep blackish-brown of uniform color, above the usual sinuous band, which is narrow, whitish, with a very large and sharp angle at the median nerve. The marginal spots are large, distinct, bright chestnut brown, 6 in number, each surmounted by a small black lunule.

Exp. wings. 0.80 inch.

1 ♂. Esquimalt, Vancouver Island. Dr. Moss.

Type. Coll. Hy. Edwards.

I have for the present regarded this as a variety of *T. Irus*, but it is quite possible that it is a distinct species; the uniform deep brown base of secondaries giving it a most peculiar appearance. It is at any rate farther removed from the typical *T. Irus*, than either *Arsace* or *Henrici*.

THECLA TACITA, n. sp.

Allied to *T. adenostomatis*, Hy. Edw. Upper surface wholly pale plumbeous, a little darker at the margin, discal patch and the nervules also deeper in shade, and very distinctly marked. Tails of secondaries very small, linear, edged with white. Near the anal angle is a small and faint ochraceous shade; fringes of both wings sordid white; lower side paler than the upper, with very faint submarginal line of blackish lunules, and a median curved line of ovate spots equally faint; there is a black spot on the fringe at the extreme anal angle, followed by a patch of bluish scales, and a very pale yellowish triangular spot, narrowly edged with black; the whole of the markings are indistinct.

Head with white line at base of the eyes, and two small

white dots at the insertion of the antennæ. Thorax and abdomen concolorous with the wings, the latter paler beneath. Tarsi ringed with white; hairs at base of legs bluish. Antennæ with white rings, club black, with the apex dull orange.

Exp. wings 1.00 inch. 1 ♂.

Mendocino Co., Cal. Mr. O. Baron.

Type. Coll. W. H. Edwards.

LYCÆNA SPECIOSA, Hy. Edw.

I had the pleasure of describing the ♂ of this beautiful little species in the Proc. Cal. Acad. Sc., Dec. 1876, but as that publication may not be accessible to the readers of PAPILIO, I copy the original description, and through the kindness of Mr. W. H. Edwards, am enabled to add that of the ♀ also, two specimens (♂ ♀) of this apparently rare butterfly having recently been taken in S. California by Mr. H. K. Morrison.

♂ "Pale silvery blue, somewhat the color of *L. melissa*, Edw., with the extreme margins black. Fringes, very broad, clear white, cut very distinctly by black at the ends of the nervules. Under-side, pale silvery gray, with a very minute round black spot on the costa, and a series of five round sub-marginal and one oblong central spots arranged almost in circular form on the disc. There is also a distinct oblong discal spot, and a smaller round one on the internal margin. The whole of the spots on the primaries are comparatively large, very distinct, and jet black, without white margins. The secondaries have one basal dot, a minute discal point and a sub-marginal row of seven small black spots, also without white margins. Fringes, as in the upper side. Antennæ, with the club unusually large, and the shaft distinctly annulated with white. Thorax and abdomen, blackish above, silvery beneath.

Exp. of wings, 0.70 inches.

Havilah, Kern County, R. H. Stretch. (1 ♂ Coll. Hy. Edw.)

I should have hesitated to describe this exquisite specie from a single specimen, but the peculiar arrangement of the spots on the lower side of the primaries, its extremely small size, and the broad and distinctly black and white fringes serve abundantly to distinguish it from any other form with which I am acquainted." Proc. Cal. Acad. Sc. 1876.

♀ Upper surface, dull smoky black, with the fringes white, alternated with black, and some bluish scales at base of wings, and sides of thorax and abdomen. Under side, pale silvery grey, with brownish irrorations, internal margin of primaries broadly blackish. The spots on the forewings are unusually large and very clearly defined.

I think this species should be placed near to *Lyc. Regia*, Bois.



Edwards, Henry. 1881. "On some apparently new forms of diurnal Lepidoptera." *Papilio* 1(4), 50–55.

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