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SOME NEW AND UNRECORDED
LYCAENIDS-SPECIES FROM
JAPAN, COREA AND FORMOSA.

By

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The major butterflies from Japan, Corea and Formosa are mostly studied and published, but among the minor species, especially in the family *Lycaenidae*, I find still not a few new ones. In this paper I shall describe 5 new species and 2 subspecies from Formosa. In Corea I have collected only 2 new subspecies. The European *Lycaenids*-species which inhabit in Japan differ more or less in colour, in marking, or in size, so as to erect some different subspecies or forms; some of them being remained unstudied till now, so I shall describe 4 new subspecies and 3 aberrations in this occasion. At the same time I want to enumerate one unrecorded species from the central Japan, and simultaneously to describe the either of sexes which was not known to the scientific world.

Rapala hirayamana n. sp. (Pl. II, fig. 6, ♀)

♀. Wings dark purplish blue, marginal lines being narrowly black; cilia fuscous, tipped with testaceous, while that of the secondaries from vein 3 to the anal lobe traversed in the middle by a white line; termen of the primaries nearly straight, scarcely excurved below the apex; the terminal end of vein 3 to the secondaries somewhat produced; tail short, yellowish brown, tipped with white; anal lobe oval, scarlet, with fuscous scales and a black pupil in it near the termen; cilia with fuscous scales on the periphery. Underside yellowish brown, the discocellulars defined on both sides by dark brown; postmedial line dark brown, defined externally by grey, that of the secondaries becoming W-shaped near the tornus; marginal line narrowly fuscous, that of the secondaries between veins 3 and 2 defined by white; an ocellar spot in the interspace 3 to the secondaries red, with a black pupil in it towards the termen; at the end of interspace 1^b with numerous bluish white scales; anal lobe black, fringed with fuscous scales, mixing some orange; inner margin at the external $\frac{1}{3}$ narrowly orange, defined inwardly by black, mixing some white scales; at $\frac{2}{3}$ part of the vein 1^b with a black spot, defined inwardly by white. Palpi white, the 3rd joint being black. Frons testaceous yellow. Legs fuscous, tarsi ringed

with white.

Exp.—♀ 39 mm.

Hab.—Formosa (Horisha); one female specimen was collected in April, 1921, by S. HIRAYAMA.

This resembles somewhat *R. liliacea* NIR.* from Horisha, but in my species the anal lobe of secondaries is scarlet red and much larger in the wing expanse.

Rapala horishana MATS. (Pl. II, fig. 3, ♀)

Rapala horishana MATS., Thous. Ins. Jap. Addit. III, p. 601, pl. XLVII, fig. 4, ♂ (1919).

The female is new to the science.

♀. Differs from the male as follows:

Wings pale blue, costa and termen of the primaries being broadly fuscous; terminal margin of the primaries somewhat more amplified and resembling rather that of *R. varuna* HORSF. Underside pale greyish brown, all the bands broader, distinctly defined by white; the ocellar spot at the end of interspace 2 smaller; the fuscous patch at the end of interspace 1^b more conspicuous owing to the paler ground colour.

Exp.—♀ 38 mm.

Hab.—Formosa; one female specimen was collected by T. TAKAMUKU and sent me for identification. I have 4 male specimens from Formosa, but the female seems to be rare.

Zephyrus quercivora STGR. (Pl. II, fig. 17, ♀)

Thecla quercivora STGR., Mém. Rom. III, p. 137, t. 6, f. 2 a, b (1887).

This was originally described from Amur-land. I have received a single male specimen from Prof. I. SUGITANI, which was taken at Mt. Daisen in the Prov. Hoki. The named Professor has collected a few specimens of this species at the same mountain, but it seems to be rare. Rev. BARKLEY at Matsue reported me that he has collected also some specimens of the same species at the same locality. The markings of the underside of wings seem to differ considerably in this species as in the allied species *Z. signata* BTLR., so I hesitate to describe it as a subspecies, although, it differs somewhat from the Amurian species.

Hab.—Honshu (Daisen in the Prov. Hōki).

This is the first record from Japan.

Tajuria regechiana n. sp. (Pl. II, fig. 4, ♀)

♀. Primaries black, at the dorsum below vein 2 deep black; with a large

*NIREI, Zool. Mag. Tokyo, Vol. XXXII, p. 377 (1920).

oblong, bluish patch; a narrow marginal line deep black; cilia fuscous, at the apex, being brownish.

Secondaries black, at the inner margin greyish, with a long bluish patch, which extends from the costa to vein 3, ending at about 2.5 mm. before the termen; at the base with a few long greyish and near the inner margin, below the median vein with numerous long greyish and brownish hairs; at the anal angle with 2 long tails, that of the outer being filamentous, black, tipped with white, while that of the inner dark brown, mixing orange and white scales, the latter being tipped with white; the interspace between these tails scattered with a few pale bluish scales; a low protuberance at the end of vein 3 and thence to anal lobe provided with a narrow deep black marginal line; cilia fuscous, mixing some brownish and white scales; anal lobe oval, black, with some orange, blue and white scales.

Underside of the primaries reddish brown, with black, brown, white and orange lines; the discocellulars somewhat paler than the ground colour; post-medial line black, defined externally by white, internally by orange, somewhat incurved at both ends; submarginal line brown, excurved before the costa.

Underside of the secondaries nearly the same with that of the primaries, except the postmedial line which becomes zigzag near the inner margin, broken at veins 1^b and 2; anal angle broadly bluish grey, being scattered with white scales; in the interspace 2 near the termen with a deep black spot, defined internally by orange; anal lobe black, defined internally by blue, anteriorly by orange, posteriorly by white. Marginal line of both wings narrowly dark brown, cilia fuscous, with some white scales. Palpi white beneath, the 2nd joint at apex on the back and the 3rd black. Frons white, with a patch in the disk and a small spot at the base of rostrum black. Legs white, checkered with black.

Exp.—♀ 40 mm.

Hab.—Formosa; one female specimen was collected on the 26th of July, 1925, by T. UCHIDA at Rengechi near Horisha.

This resembles closely *T. caeruleae* NIREI* from Horisha (Formosa), but in my species no bluish colour in the cell of primaries and much larger in the wing expanse.

***Virachola kuyaniana* MATS.** (Pl. II, fig. 10, ♂)

Virachola kuyaniana MATS., Thous. Ins. Jap. Addit. III, p. 626, pl. XLVIII, fig. 25, ♀ (1919).

The male is new to the science.

♂. Differs from the female as follows:

* NIREI, Zool. Mag. Tokyo, Vol. XXXII, p. 375 (1902).

Primaries dark blue, at the costa and termen broadly fuscous; cilia black, mingling some white scales; termen nearly straight, scarcely excurved above the middle; a long fringe at the middle of dorsum whitly grey.

Secondaries concolorous with the primaries, at the costa more broadly fuscous, at the termen narrowly, and at the inner margin broadly, fuscous, cilia nearly the same with that of the primaries. Underside with nearly the same markings as in the female, being somewhat darker, so that the white lines which define the fuscous bands are more conspicuous.

Exp.—♂ 26–30 mm.

Hab.—Formosa; one male specimen was collected on the 12th of July, 1925, by T. UCHIDA at Tamaho near Nijitaka and another buttered male on the 17th of August, 1921, by SHIRAI at Musha near Horisha.

Arhopala uchidae n. sp. (Pl. II, fig. 7, ♂)

In the form of wings closely allied to *A. birmana asakuræ* MATS., but in the markings of primaries rather to *A. ganesa* MOOR.

♀. Primaries dark brown, with a large purplish blue patch at the basal region, which extends from the base to the middle of interspace 2, filling in the cell and the bases of interspaces 1, 2 and 3, with a black spot at the discocellulars.

Secondaries concolorous with the primaries, scattering a few bluish scales at the basal $\frac{1}{3}$, with a bluish marginal line at the lower half of termen; tail slender, whitly grey at the apex. Underside of the wings resembles much that of *A. ganesa* MOOR., the paler patch of the primaries at the dorsum near the tornus whiter, the fuscous bands which are defined by white distinctly broader; that of the secondaries darker, so that the chain-like white lined bands broader and conspicuous. Palpi white, the 3rd joint, the apex of the 2nd and the base of the 3rd dorsally black.

Exp.—♀ 30 mm.

Hab.—Formosa (Horisha); one male specimen was collected on the 20th of July, 1925, by T. UCHIDA.

Lycaena (Phengaris) ***atroguttata formosana*** n. subsp.

(Pl. II, fig. 10, 2 ♀)

Differs from the typical specimen as follows:

♂. Primaries white, at the basal $\frac{1}{3}$ bluish; 7 black spots on the upper-surface, which are not those of the undersurface seen through the transparency of wing; 2 more small spots in the middle of interspace 1^b; termen broadly black, with 2 or 3 white spots in it near the tornus.

Secondaries with 5 black spots, respectively 2 in the interspace 6, 2 in

each 3, 4, 5, one in 2; a marginal series of black elongated black spots, other spots being those of the underside visible through transparency of the wing. Underside with much larger black spots, especially those of the median series to the secondaries being much elongated.

♀. Differs from the male in having more bluish wings, lacking black spots except a small speck on the discocellulars to the primaries; the apex and termen black, the latter becoming narrower towards the tornus. The dark spots of the underside being visible through the transparency of wing.

Exp.—♂ 40, ♀ 50 mm.

Hab.—Formosa; one male specimen was collected on the 25th of July, 1925, at Mashitarun, and one female on the 6th of the same month at Horisha (?) by my collector.

A. E. WILEMAN has described var. *daitozana* WILEM. (Ann. Zool. Jap. Vol. IV, p. 323, 1908), but it is a good different species.

Lycaena euphemus kazamoto oiwakeana n. ab. (Pl. II, fig. 16, ♂)

Differs from subsp. *kazamoto* DRUC. as follows:

♂. Primaries at the basal $\frac{1}{3}$ bluish, with a darker spot in the cell above the median fold, in a certain light darker postmedial and submarginal bands being obsoletely visible.

Secondaries with an obsolete darker spot-series on the postmedial region, thence to the base being bluish; in the cell with a roundish fuscous spot; both discoidal spots large and of an oblong form. Underside of the primaries with an elongated fuscous spot in the cell above the median fold.

Exp.—♂ 40 mm.

Hab.—Honshu (Oiwake); one male specimen was collected on the 3rd of August, 1910, by the author.

Lycaena euphemus daisensis n. subsp. (Pl. II, fig. 8, ♀)

Differs from the typical specimen as follows:

♂, ♀. Primaries pale bluish; the discoidal spot narrower towards the hind angle of cell; in the cell sometimes with a black spot; the black spots in the postmedial series larger and elongated; a black speck at the submedian fold near the base of vein 2; the terminal black band much broader.

Secondaries with 6 oval black spots in a series, a spot also in the cell; termen somewhat narrower than that of the primaries, with a series of paler spots in it, being distinct in the interspace 1, 2, 3. Underside of the primaries pale grey, the male with a small spot in the cell below the median fold; 2 spots in the interspace 1^b at the postmedial region.

Exp.—♂, ♀ 44-48 mm.

Hab.—Honsiu (Daisen in the Prov. Hōki); 4 (2♂, 2♀) specimens were collected on the 17th of August, 1925, by the author.

Lycaena euphemus jezoensis n. subsp. (Pl. II, fig. 14, ♂)

Differs from the typical specimen as follows:

♂. In the primaries with a somewhat excurved series of 6 elongated spots at the postmedial region, each spot being nearly in the same length, the spots at the end being somewhat smaller; a black bar at the discocellulars; 5 black spots on the secondaries in an excurved row, the discoidal spot being narrower and of a lunular form; the fuscous termen of the primaries somewhat narrower than that of the secondaries. Underside nearly the same, except having one spot in the cell below the median fold and 7 spots in the postmedial series, of which 5 spots are nearly in a straight oblique line.

♀. Nearly the same with that of the typical specimen, except with 2 or 3 black spots on the primaries.

(Exp.—♂, ♀ 37–39 mm.)

Hab.—Hokkaido; not rare in Sapporo in July and August.

ab. *teshionis* n. ab. (Pl. II, fig. 18, ♀)

♂, ♀. Primaries with a series of round spots on the primaries, the discoidal bar becoming narrower towards the hind angle of cell, and somewhat excurved. Secondaries with 3 roundish spots; underside of the primaries with no spot in the cell.

Exp.—♂, ♀ 30–36 mm.

Hab.—Hokkaido (Teshio and Hidaka); 4 (1♂, 3♀) specimens were collected in July and August by S. ISSHIKI and S. ARAKAWA.

ab. *muratae* n. ab. (Pl. II, fig. 11, ♀)

♀. Primaries fuscous, with a broad bluish band on the postmedial region, in which is a series of black spots, the latter being mostly of an oval shape; secondaries with 4 roundish black spots in a series, outside with a broad broken bluish band. Underside of primaries with no spot in the cell.

Exp.—♀ 46 mm.

Hab.—Hokkaido; one female specimen was collected by the late S. MURATA in Sapporo.

Lycaena euphemus coreana n. subsp. (Pl. II, fig. 5, ♂)

Lycaena euphemus euphemia SEITZ (nec. STGR.), Gross-Schmett. I, p. 320, pl. 83 a (1909).

Differs from the subspecies *euphemia* STGR.* as follows:

* STAUDINGER, Mém. Rom. Lep. iii, p. 142, pl. XIII, fig. 6 (1887).

♂. Primaries azure blue; the discoidal bar pointed towards the hind angle of cell; the black spots at the postmedial region mostly much elongated, especially those in the 2nd and 3rd interspaces about 4 mm. long, with one roundish small spot in the interspace 1^b.

Secondaries with only 3 spots in a row at the postmedial region. Underside of the primaries with a small black speck in the cell below the median fold.

Exp.—♂ 48 mm.

Hab.—Corea; one male specimen was collected on the 10th of August by Y. HASEGAWA at Shakujōji.

This resembles more rather subsp. *daisensis* MATS., but the latter with larger spots, the broader terminal band, and more numerous black spots to the secondaries. SEITZ mentions this from Corea, but the figure which is mentioned in his classical work (l. c.) is not true *euphemias* of STAUDINGER, and truly it may have been my subspecies *coreana*.

***Lycaena argus insularis kononis* n. ab. (Pl. II, fig. 13, ♀)**

Closely allied to ab. *harae* MATS.,* but differs from it as follows:—

♀. Primaries with a roundish dark discoidal spot. Underside grey; primaries with a roundish spot in the cell, the discoidal lunule narrower anteriorly, both being defined by white; the black spots of the interspaces, and 2 in the postmedial series, each divided into 2; at the submarginal region with a series of greyish spots, defined by white on both sides. At the base of secondaries with 3 spots and the discocellular lunule black; the spots in the interspaces 6 and 7 at the postmedial series long, !-like, the rest being oval, that of 2 being somewhat elongated; at the submarginal region with a double fuscous lunule-series.

Exp.—♀ 32 mm.

Hab.—Honshū (Shimauchi in the Prov. Shinano); one female specimen was collected on the 10th of July, 1924, by H. KONO.

***Everes parrhasius kawaii* n. subsp. (Pl. II, fig. 15, ♂)**

Differs from the typical *parrhasius* F. as follows:

♂. Secondaries at the termen in the interspaces 2 and 3 with each a black roundish spot, defined by whitish blue, being not preceded by orange, and in the interspace 1^b with a black streak, being not interrupted, defined by whitish blue; other spots are not defined by paler rings. Anal orange patch shorter, not extending behind vein 2.

♀. Fuscous, no greyish tinge; anal spots in the interspaces 2 and 3 much larger, oval, with each a semicircular orange cap internally; underside nearly

*Thous. Ins. Jap. IV, p. 139, pl. LXXXVI, fig. 5, ♀ (1907).

the same with that of the female.

Exp.—♂, ♀ 24-26 mm.

Hab.—Kiu-shu (Goto); 2 (1 ♂, 1 ♀) specimens were collected on the 1st of September, 1920, by T. KAWAI at Nihonkusu.

***Lycaenopsis* (Cyaniris) *coelestina kankonis* n. subsp.** (Pl. II, fig. 9, ♂.)

Differs from the typical specimen as follows:

♂. Primaries dark blue, costa and veins in a certain light silky and paler; cilia black, at the apex snowy white, mixing some black hair at the ends of the longitudinal veins.

Secondaries with a series of black spots at the termen, fusing together with the concolorous terminal line; costa and the inner margin broadly fuscous, the latter being covered with whitish grey scales at the basal half; cilia white, at the base black. Underside nearly the same with that of *coelestina* KOLL., but the greenish area at the base of secondaries more larger.

Exp.—♂ 35-36 mm.

Hab.—Formosa (Kanko); 3 male specimens were collected on the 12th of August, 1925, by T. UCHIDA, M. KONO and Y. MIWA.

***Lycaena orion coreana* n. subsp.** (Pl. II, fig. 12, ♂)

Differs from the typical specimens as follows:

♂. Primaries at the basal half lilac-blue, the discoidal spot smaller and narrower; the white submarginal line obsolete.

Secondaries with an obsolete whitish submarginal scallop-series. The inner one of the double submarginal spot-series not continuous, the boundaries of those spots being distinct; the orange postmedial band much narrower.

Exp.—♂ 30 mm.

Hab.—Corea; one male specimen in my collection which was collected on the 10th of July, 1899, its concise habitat being unknown to the author.

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摘 要

新種及び未録の小灰蝶に就て

理學博士 松村松年
農學博士

今回小灰蝶科の研究の結果三の新種、六の新亞種及び四の新異常形を發見したれば、以上歐文にて説明せり。尙は未録の一種及び未だ記載せられざる雄並びに雌各一種を記載せり。今其學名及び和名を擧ぐれば下の如し。

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|--|--------------|
| 1. <i>Lycaena atroguttata formosana</i> MATS. (n. subsp.) ♂ | ウスアオゴマダラシバミ |
| 2. do, ♀ | |
| 3. <i>Rapala horishana</i> MATS. ♀ | ホリシヤシバミ |
| 4. <i>Tajuria renechiana</i> MATS. (n. sp.) ♀ | レンゲチシバミ |
| 5. <i>Lycaena euphemus coreana</i> MATS. (n. subsp.) ♀ | ゴマシバミ亞種 |
| 6. <i>Rapala hirayamae</i> MATS. (n. sp.) ♀ | ヒラヤマシバミ |
| 7. <i>Arhopala uchidae</i> MATS. (n. sp.) ♂ | ウチダシバミ |
| 8. <i>Lycaena euphemus daisensis</i> MATS. (n. subsp.) ♀ | ゴマシバミ亞種 |
| 9. <i>Lycaenopsis (Cyapiris) coelestina kankonis</i> MATS. (n. subsp.) ♂ | カンコウシバミ |
| 10. <i>Virachola kuyaniana</i> MATS. ♂ | クヤニヤシバミ |
| 11. <i>Lycaena euphemus jezoensis muratae</i> MATS. (n. ab.) ♀ | ゴマシバミ異常形 |
| 12. <i>Lycaena orion coreana</i> MATS. (n. subsp.) ♀ | ジョウザンシバミ亞種 |
| 13. <i>Lycaena argus insularis kononis</i> MATS. (n. ab.) ♀ | シバミテフ異常形 |
| 14. <i>Lycaena euphemus jezoensis</i> MATS. (n. subsp.) ♂ | ゴマシバミ亞種 |
| 15. <i>Everes farrhasius kawaii</i> MATS. (n. subsp.) ♂ | タイワンツバメシバミ亞種 |
| 16. <i>Lycaena euphemus kazamoto otwakeana</i> MATS. (n. ab.) ♂ | ゴマシバミ異常形 |
| 17. <i>Zephyrus quercivora</i> STGR. ♂ | ダイセンシバミ |
| 18. <i>Lycaena euphemus jezoensis teshionis</i> MATS. (n. ab.) ♂ | ゴマシバミ異常形 |