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New taxa and new records of butterflies from Vietnam (4)

(Lepidoptera, Rhopalocera)

by

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Summary: Ten new subspecies from the Papilionidae, Nymphalidae and Lycaenidae families are described from the material collected in Vietnam in 2005-2010 by the author. The Vietnamese material collected in 1966-1967 by A. Bedford-Russell, deposited in the collections of the Natural History Museum (London), has also been consulted for the descriptive process. New taxa include: papilionids *Graphium sarpedon* ***islander*** **subspec. nov.**, *Graphium doson* ***robinson*** **subspec. nov.**, nymphalids *Enispe cycnus* ***vertex*** **subspec. nov.**, *Lethe monilifera* ***trungha*** **subspec. nov.**, *Euploea swainson* ***emigrantus*** **subspec. nov.**, *Cirrochroa tyche* ***anthonia*** **subspec. nov.**, *Cupha erymanthis* ***melanodotis*** **subspec. nov.**, *Neptis manasa* ***mientrunga*** **subspec. nov.**, *Calinaga davidis* ***rarus*** **subspec. nov.**, and lycaenid *Arhopala agaba* ***aborigina*** **subspec. nov.** Four more taxa belonging to the Nymphalidae family are new records for Vietnam.

Introduction: Descriptions of the new butterfly taxa is a result of intensive field surveys implemented by the Vietnam-Russia Tropical Research Centre in several protected areas of northern and central Vietnam from 2005 to 2010. Moreover, the additional material collected in Vietnam by A. Bedford-Russell (1966-1967) and deposited in the Natural History Museum in London, has been consulted during the study process. This work demonstrates that some poorly studied and isolated areas of the country still hide undiscovered butterfly taxa.

The new collecting localities include: Con Dao National Park - Con Son Is. [Paulo (=Poulo) or Pulo Condore] of the Con Dao archipelago - Ba Ria - Vung Tau Province (8°37'-48' N, 106°32'-45'). The national park is centred on an archipelago of 14 islands, the largest of which is Con Son, located about 80 km off the coast of southern Vietnam. The topography of Con Son is dominated by a granite ridge (running from south-west to north-east) which shelters the bays on both sides from strong winds. The highest point, Mt. Thanh Gia, reaches 577 m. Con Son and many islands of the archipelago are extensively forested. New butterfly subspecies have also been found in Van Ban Nature Reserve and Hoang Lien National Park (Sa Pa area) (both in Lao Cai province) demonstrating a source of unknown taxa.

Abbreviations: VRTC: Vietnam-Russia Tropical Centre (Hanoi, Vietnam)
BMNH: The Natural History Museum (London)
MNHN: Museum National d'Histoire Naturelle (Paris)

New taxa and new records
Papilionidae

Graphium sarpedon ***islander*** **subspec. nov.** (colour plate 1: 1, 2)
Holotype ♂: S. Vietnam, Ba Ria - Vung Tau Province, Con Son Island, Con Dao National Park, Thanh Gia top, 560m, 11.VI.2010, A. Monastyrskii leg.; deposited in BMNH.

Description, upperside ♂ (col. pl. 1: 1): Both wings' pattern is similar to those of other subspecies. Forewing: all recorded specimens of this population have a much narrower bluish postdiscal band and broader submarginal area. Hindwing: the greenish elongated spot in the base of cell 2 is well separated from the greenish patch within the discal cell; black basal area is much broader than in continental Indochinese populations.
Underside ♂ (col. pl. 1: 2): both wings' ground colour is dark brown; in general, the pattern is similar to that on the upperside; the blackish elongated patches in cells 2-7 are broader than in continental specimens.

Discussion: Moulton (1923) noted that the band on the forewing is narrower and more macular than in the peninsular populations. This stable distinction has been recorded in some other specimens photographed from Con Dao National Park, for example, fig. 555 in Nguyen Chi Thanh (2004).

Graphium doson robinson **subspec. nov.** (colour plate 1: 3, 4)
Holotype ♂: S. Vietnam, Ba Ria - Vung Tau Province, Con Son Island, Con Dao National Park, 27.V.2010, A. Monastyrskii leg.; deposited in VRTC, Hanoi, Vietnam.
Paratypes ♂: S. Vietnam, Con Son Is., 16.IX.1967, A. Bedford-Russell leg., BMNH (E) 2001-160.

Description, upperside ♂ (col. pl. 1: 3): Ground colour of both wings is a uniform black. The wing pattern is similar to other subspecies, however the postdiscal black area is much broader. In comparison to the continental subspecies *G. d. axion* C. & R. Felder, in the new taxon the forewing postdiscal series of greenish spots is much smaller in cells 1a, 1b and 2. These spots are well separated by the distinct black areas conjoined with vein 1b and 2. The black area between postdiscal spots within cells 1b and 2 is much broader than in continental populations. The series of basal streak-like spots within the discal cell and cells 1a and 1b is smaller and narrower. Hindwing: the subbasal white transparent patch in cell 7 is much smaller than in other subspecies; this patch is crossed with a broader blackish bar; greenish subbasal patches within the discal cell and cell 2 are much smaller than in specimens of continental populations and separated by a black area along the lower vein of the discal cell .
Underside ♂ (col. pl. 1: 4): Ground colour of both wings is blackish brown; pattern and size of all whitish patches are similar to the upperside (smaller and narrower than in continental populations); all patches with a nacre-like luster.
Seasonal specimens are similar. Length of forewing: 39-43 mm.

Discussion: Some similar elements of the wing pattern may be observed in the type specimen of *G. doson postianus* Fruhstorfer, 1902 from Taiwan. For example, greenish spots in spaces 1a and 1b are not fused; greenish subbasal patches within the discal cell

and cell 2 are separated by a black area and are much smaller than in specimens of continental populations. At the same time, on the ventral side of the forewing the series of submarginal spots in cells 1b-8 are much larger and the spots in cells 4 and 5 are often fused with postdiscal spots located in the same cells. On the upperside of the hindwing the whitish spot within cell 7 is crossed by a black bar that is much thicker than in other subspecies.

Nymphalidae

Enispe cycnus v e r t e x **subspec. nov.** (colour plate 1: 5)
Holotype ♂: C. Vietnam, Kon Tum Province, Ngoc Linh Nature Reserve, 4.IV.2004, evergreen forest at 1600-1700m (A. Monastyrskii leg.), deposited in BMNH.
Paratypes 2 ♂♂: same locality and habitat as the holotype, 25.III.1998; 1.IV.2006; 1♂, C. Vietnam, Kon Tum Province, Kon Plong forest, 30.XII.2000, evergreen forest, 1300m; 1 ♂, C. Vietnam, Gia Lai Province, Kon Ka Kinh Nature Reserve, 19.IV.1999, all A. Monastyrskii leg., deposited in BMNH, MNHN (Paris), VRTC.

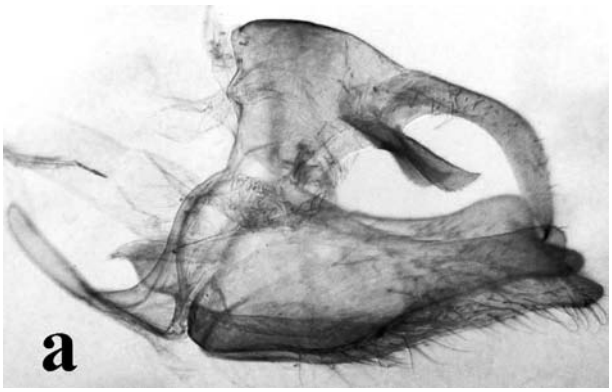
Description, upperside ♂ (col. pl. 1: 5): both wings' ground colour is dark brown. The forewing shiny bluish postdiscal band extends and tapers from the costal margin to cell 1b; part of the band in cells 1b-3 includes three arrow-shaped spots pointing inwardly; the spot of postdiscal band in cell 3 touches the well observable arrow-like spot pointed to the base of the cell; the series of three large submarginal spots in cells 1b-3 are irregular with a more or less triangular or rhomboid shape; both bluish postdiscal band and submarginal spots are often fused. The hindwing bears a series of obscure submarginal brown spots in cells 2-6 and well developed marginal brown lunulars; the basal area is clothed by long brown hairs that are slightly paler than the ground colour.
The underside of both wings has a dark ochraceous ground colour; a brown straight postdiscal band across both wings from the costa of the forewing to the tornus of the hindwing; both wings have an outward ferruginous-brown border of the basal area and an undulated outward border of the postdiscal band. Forewing: within basal and discal areas there are some darker spots; hindwing: basal and discal areas bear only one dark brown spot located within the discal cell. Length of forewing: 37-41 mm. ♀ is unknown.

Diagnosis and description: the new subspecies has a ground colour and wing pattern similar to the nominate subspecies and taxon *E. c. verbanus* Fruhstorfer. However, in the new taxon, the bluish band on the upperside of the forewing is broader and the borders of the band and submarginal spots are not as distinct as in other taxa. In comparison to the new taxon having three large submarginal spots in cells 1b-3 on the upperside of the forewing, the nominate subspecies and *E. c. verbanus* Fruhst. have four or five submarginal spots in cells 1b-5. Moreover, in other known taxa, the spot of the postdiscal band in cell 1b is much reduced or absent while in the new subspecies it is well developed.

Lethe monilifera t r u n g h a **subspec. nov.** (colour plate 1: 7-8)
Holotype ♂: N. Vietnam, Lao Cai province, Hoang Lien National Park, Cong Troi Pass (Tram Ton), 5.VII.2009, 1900-2100 m., A. Schinov leg., deposited in BMNH
Paratypes ♂: Same date, locality and habitats as holotype; deposited in VRTC

Description, upperside ♂ (col. pl. 1: 7): Both wings are elongated and the forewing is pointed at the apex; the ground colour is a uniform greyish brown. Forewing: with two distinct dark brown fasciae crossing the discal cell; the prominent dark brown postdiscal fascia has a yellowish outward area and two small subapical black ocellus-like spots in cells 4 and 5 surrounded by yellowish rings; the marginal area is slightly darker than the ground colour; the cilia are coloured greyish.
Hindwing: bears a series of black oval submarginal spots in cells 1b - 6 which are surrounded by a dark yellowish ochreous area which is much broader than in the nominative subspecies. This character is the most remarkable for the new taxon. The large round black spot in cell 2 is centred with a white pupil.
Underside ♂ (col. pl. 1: 8): Ground colour is a uniform dark yellow. The wing pattern includes spots and fasciae similar to that in the type specimen of the nominate subspecies. The forewing bears two brown bars within the discal cell and a brown streak on the distal part of the discocellular vein. The brown postdiscal fascia crosses the forewing from the costal edge to vein 2 and curves backwards to vein 1b. The submarginal brown fascia is more prominent than in the nominative subspecies. The hindwing is very similar to that in the nominative subspecies. Length of forewing 29 and 31mm. ♀ is unknown.

♂ **genitalia** (fig. 1a, b): Undoubtedly the specimens collected in Hoang Lien National Park belong to *L. monilifera* Oberthür, 1923. The pattern of genitalia structure shows high similarity to the nominative subspecies, collected in Qingchengshan (W. China) (fig. 1b) (Koiwaya, 1989). At the same time it is possible to see some differences in specimens from Vietnam: the uncus is slightly but visibly thickened in the median part after bending; the apical ventral part of the clasper is shorter; the thickened distal part of the socii is serrated.



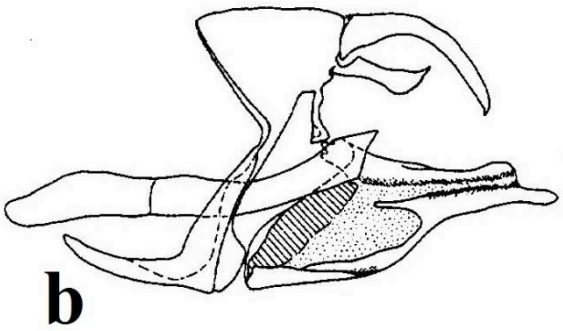


Fig. 1 a: ♂ genitalia of *Lethe monilifera* ***trungha*** **subspec. nov.**; b: ♂ genitalia of *L. m. monilifera* Oberthür, 1923 (after Koiwaya, 1989)

Diagnosis and discussion:The new subspecies demonstrates high similarity to both, *L. m. monilifera* Obth. from Siao Lou (W. Sichuan) and *Lethe manzorum* Poujade, 1884. However, the genitalia structure of *L. manzorum* Poujade figured by de Lesse (1956) shows high distinctiveness. The image from this revision has been reproduced a few times (Koiwaya, 1989; Bozano, 1999), however new original images are absent. It is remarkable that species *L. manzorum* Poujade and *L. monilifera* Obth., although having a similar wing pattern, they possess distinctive genitalia structures that demonstrate their separation from the *manzorum*-group. It is possible that the genitalia figured by de Lesse (1956) belong to another species.

Etymology: This taxon is dedicated to Mr. Nguyen Trung-Ha, the President of TOGI Finance Investment Real Estate Corporation, which sponsored the monographic series 'Butterflies of Vietnam'.

Euploea swainson e m i g r a n t u s **subspec. nov.** (colour plate 2: 1-2)
Holotype ♂: S. Vietnam, Ba Ria - Vung Tau province, Con Son Island, 11.VI.2010, road to Thanh Gia top, ~250m, A. Monastyrskii leg., deposited in BMNH.
Paratypes: S. Vietnam, Con Son Is., 1 ♂, 1 ♀, 18.III.1967; 1 ♂, 2 ♀♀, 9.VII.1967, 1 ♂, 16.IX.1967, A. Bedford Russell leg., deposited in BMNH: Series Acc 11124, Drawer Rh34501, BMNH(E) 2001-160; same location as in the holotype, 4 ♂, 9.VI.2010; 2 ♂♂, 8.VI.2010; 1 ♂, 2.VI.2010; 1 ♂, 5.VI.2010; 1 ♀, 27.V.2010, forest trail; 3 ♀♀, 30.V.2010, 1 ♀, 3.VI.2010, near Con Dao town, ~70 m; 1 ♀, 29.V.2010, road to Thanh Gia top, ~250m, A. Monastyrskii leg.

Description, upperside ♂ (col. pl. 2: 1): Ground colour varies from dark brown to velvety blackish-brown. Forewing: the shape compact and it's posterior margin usually straight or only slightly convex; the scent brand in cell 1b is long (12-15 mm) and thick (~1,5 mm); the wing pattern is very variable and includes discal, submarginal and marginal whitish spots which vary slightly in size; the pattern varies from a flat uniform brown blackish colour without spots or with a single spot in cell 10 to well-developed whitish submarginal spots in cells 1b-10.
Hindwing: submarginal and marginal whitish spots vary in size and colour from dot-like and dark coloured to well developed and pure white; submarginal spots are presented in a straight line from cell 1a to cell 6; submarginal spots in cells 5 and 6, if presented, are always much smaller than in other cells; marginal spots dispose in an arched line parallel to the margin.

Underside ♂: ground colour a uniform dark brown; the wing pattern is similar to that in the upperside, however some spots are characteristic only of the underside; all veins are darker than the ground colour and distinct. Forewing: there are one or two whitish spots with a pale violet tinge in the distal part of the discal cell; a large whitish spot is always present in the basal area of cell 2; the submarginal spot in space 3 has almost the same size as in the basal area of this cell. Hindwing: the pattern is similar to that on the upperside except for a series of postdiscal whitish spots in cells 2-6 and a spot in the distal area of the discal cell; submarginal spots in cells 5 and 6 are very small or absent. Length of forewing: ♂ 44,8±1,14mm (n=10).

♀ Upperside (col. pl. 2: 2): Ground colour is a uniform dark brown. Both wings' pattern varies in a similar way to those of the ♂♂: in some individuals the pattern of white spots is either almost absent or is weakly developed; however submarginal and marginal white spots are usually slightly larger than in the ♂♂. The underside ground colour is paler than in ♂♂; both wings' pattern is similar to those of the ♂♂ though the white marginal and submarginal spots are larger. Length of forewing: ♀ 45,4±1,94 (n=9).

♂ genitalia (fig. 2) of the population from Con Son Is. has been presented previously (Monastyrskii, 2011) and demonstrates high similarity to *E. swainson butra* Staudinger, 1889 (Morishita in Tsukada, 1985: 556) from Palawan. It has been shown that the ♂ genitalia of *E. swainson* (Godart, [1824]) from Con Son Is. can easily be distinguished from the continental population of *E. algea limborgii* Moore, 1878. In particular, on the vesica of the latter species there are 21-24 small lateral cornuti and one long posterior cornutus, while in the former taxon there are 33-36 small lateral cornuti and one short posterior cornutus.

Diagnosis and discussion: It has been shown that the new taxon belongs to *Euploea swainson* Godart (Monastyrskii, 2011) but not to *E. algea* Godart (Ackery & Vane-Wright, 1984). Regarding the eight well-known subspecies distributed in the Philippines and in the vicinity of this archipelago, the new taxon demonstrates high similarity to *Euploea swainson butra* Stgr. from Palawan (fig. 2B). Generally, *E. s. butra* Stgr. has a similar wing pattern, however the whitish spots on the dorsal and ventral side of both wings are somewhat larger than in the new taxon; moreover, on the hindwing of both sexes of *E. s. butra* Stgr. the submarginal spots in cells 5 and 6 are well developed. *Euploea swainson* Godart is well known as migratory, reaching S. Japan. It is possible that Con Son Is. has been occupied by a population from Palawan.

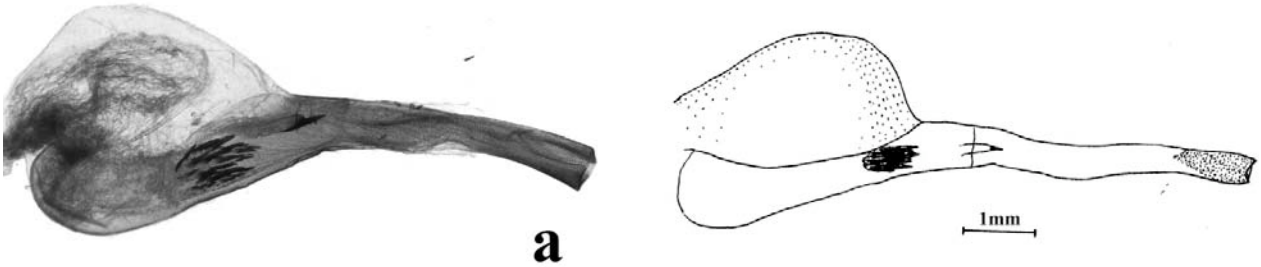


Fig. 2: ♂ genitalia of *Euploea swainson* (Godart, [1824]). A: aedeagus in *Euploea swainson* ***emigrantus*** **subspec. nov.**; B: aedeagus in *Euploea swainson butra* Staudinger, 1889 from Palawan (after Morishita in Tsukada, 1985).

Cirrochroa tyche a n t h o n i a **subspec. nov.** (colour plate 2: 3-4)
Holotype ♂, S. Vietnam, Ba Ria - Vung Tau province, Con Son Island, 9.VII.1967, A. Bedford-Russell leg. deposited in BMNH.
Paratypes 8 ♂♂, ♀♀, the same locality as the holotype: 1 ♂, 28.V.2010; 2 ♂♂, 29.V.2010; 2 ♂♂, 1.VI.2010; 1 ♂, 2.VI.2010; 1 ♂, 8.VI.2010; 1 ♀, 27.V.2010; 1 ♀, 29.V.2010; 1 ♀, 1.VI.2010, all A. Monastyrskii leg.; 1 ♂, 18.III.1967; 9.VII.1967; 1 ♀, 13.IX.1967, 1 ♀, 18.III.1967 A. Bedford-Russell leg.

Description upperside ♂ (col. pl. 2: 3): Ground colour of both wings is a uniform yellowish ochraceous colour and more intense than in continental subspecies of *C. tyche rotundata* Butler, 1879. Black markings, including discal fasciae, submarginal lunules and postdiscal spots on the hindwing, are well developed.
Underside: both wings' pattern and ground colour are similar to the upperside, but paler; discal striae have blackish borders; black postdiscal spots are well developed on both wings.

Upperside ♂ (col. pl. 2: 4): ground colour is a uniform dark brown with a distinct purple tinge. Beyond the discal black zigzagged fascia there is a whitish band which is broad on the forewing and narrower and interrupted on the hindwing;
Underside: both wings are well marked; the ground colour is a pale greyish brown with a purple tinge while *C. tyche rotundata* Btl. has yellowish tints.

♂ genitalia (fig. 3B): The ♂ genitalia of the new subspecies (fig. 3B) reveals similarities to subspecies *C. tyche aurica* Eliot, 1978 (fig. 3A) and *C. tyche rotundata* Btl. (fig. 3C). However, the club-like apical part of the harpe is longer; the harpe in the bend of the club is thinner than in other subspecies.

Diagnosis and discussion: Several characters of both sexes of the new taxon are similar to *C. tyche aurica* Eliot, distributed on Aur, Tioman and Pemanggil Islands. At the same time it is possible to see some stable differences. For example, the hindwing discal, postdiscal and submarginal black fasciae are thinner and the postdiscal black spots in cells 1b-7 are smaller than those in *C. tyche aurica* Eliot. Moreover, the distal club-like part of the harpe has a more elongated shape that is a distinctive character of the new subspecies.

Etymology: The new taxon is named in honour of British collector Anthony Bedford-Russell who discovered it for the first time.

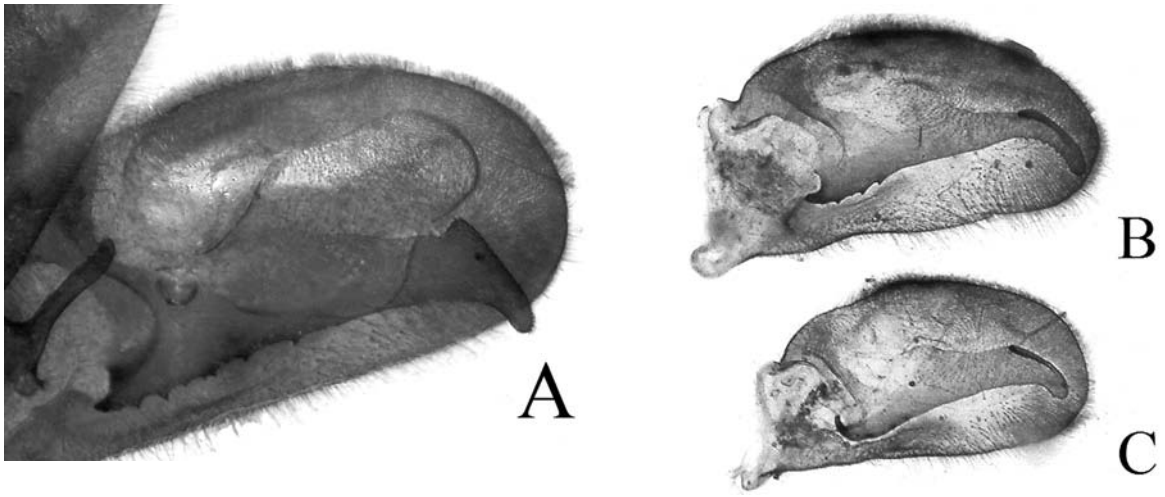


Fig. 3: ♂ genitalia (right clasper in lateral view) of *Cirrochroa tyche* Felder, 1861. A: *C. t. aurica* Eliot, 1978 (holotype); B: *C. t.* ***anthonia*** **subspec. nov.** (paratype); C: *C. t. rotundata* Butler, 1879.

Cupha erymanthis melanodotis **subspec. nov.** (colour plate 2: 5)
Holotype ♂: S. Vietnam, Ba Ria - Vung Tau Province, Con Son Island, Con Dao National Park, 10.VI.2010, A. Monastyrskii leg.
Paratypes: 8 ♂♂, S. Vietnam, Ba Ria - Vung Tau Province, Con Son Island, Con Dao National Park, 29.V.-10.VI.2010, A. Monastyrskii leg; 2 ♀♀, S. Vietnam, Ba Ria - Vung Tau Province, Con Son Island, Con Dao National Park, 9.VI.2010, 11.VI.2010, A. Monastyrskii leg.

Description, upperside ♂ (col. pl. 2: 6): ground colour is dark brown with some brown tinges. Forewing: basal and subbasal areas are dark brown; there are three irregularly shaped black spots within the discal cell. The postdiscal yellowish band bears a large (~3 mm) irregular black spot in cell 1b and two round black spots in cells 2 and 3 which are much larger (1,5-2,25 mm) than in the continental populations (0,5-1 mm); the upper spot in cell 3 is usually fused with the black subapical area; the spot in cell 1b is also larger than in the nominotypical subspecies and is fused with the submarginal fascia. The inner black border of the postdiscal band is much thicker than in continental specimens.
Hindwing: the basal area is brown; the narrower postdiscal and discal areas are reddish brown; the submarginal area is brownish with an olive tinge; in continental populations the ground colour is more or less uniform brown. Generally the wing pattern is similar to that of the nominotypical and other subspecies, however the black submarginal round spot in cell 5 and the submarginal black patch in cell 7 are much larger than in other subspecies; the series of submarginal and marginal lunules are much thicker. The subbasal fascia approaches the inner postdiscal fascia in cell 4, sometimes touching it.
Underside ♂: all elements of the pattern in both wings are similar to the nominotypical and other subspecies, however the yellowish ground colour is much darker, in particular in the subapical area of the forewing, the subbasal area of both wings and the postdiscal area of the hindwing.
Forewing: the subapical area is darker than in the nominate subspecies; the black postdiscal spots are bordered with violet from the inner side of the wing; the marginal series of black lunules are prominent.
Hindwing: the subbasal, postdiscal and submarginal areas are a yellowish ochreous ground colour; the area between the zigzag subbasal fascia and the inner postdiscal black wavy line is narrower than in the continental population of *C. e. erymanthis* Drury.
Length of forewing: ♂ 22-32 mm.
♀ Upperside: ground colour and wing pattern are similar to the ♂, however the postdiscal yellowish band on the forewing upperside is slightly paler; the forewing underside postdiscal band and hindwing submarginal and marginal borders are yellowish white. Length of forewing 33 mm.

Diagnosis and discussion: The new taxon bears a unique combination of wing pattern characters as follows: 1. Very dark brown ground colour on the upperside of both wings; 2. Large size of submarginal spots in cells 1b, 2 and 3 on the upperside of the forewing; 3. Thick black postdiscal inner border on the upperside of the forewing; 4. Large black submarginal spots in cells 5 and 7; 5. Thick marginal and submarginal lunules on the upperside hindwing; 6. Dark subapical area on the underside forewing; 7. Violet border surrounding the forewing postdiscal spots from the inner side.

Symbrenthia leoparda Chou & Lee, 1994
This taxon has been found in Vietnam for the first time. The species is described on the single specimen (holotype ♂, deposited in the Entomological Museum, North-western Agricultural University, Shaanxi) that was collected on Mt. Daweishan, (Southern Yunnan), closely located to the northern border of Vietnam (Lao Cai Province). The Vietnamese population was discovered in the northern part of Hoang Lien National Park (pass Cong Troi/Tram Ton, 1900-2100m) located about 70 km south from the type locality. The discovered populations included dry season (9 ♂♂,1 ♀, March, 2007) and wet season (5 ♂♂, June, 2007) forms. Individuals of the wet season form reveal a high similarity to the holotype, collected on 12.V.1992. The wing pattern of the dry season form has some differences. For example, orange spots and bands on the upperside of both wings are much broader; the border of orange spots and bands has a character of a broken line.
At present, the taxon *S. leoparda* Chou & Lee is being revised and the data concerning its new taxonomical position are forthcoming.

Neptis manasa m i e n t r u n g a **subspec. nov.** (colour plate 2: 6)
Holotype 1 ♂: C. Vietnam, Gia Lai Province, Kon Cha Rang Nature reserve, 8.III.1999, riverine forest edge, 1000 m, A. Monastyrskii leg.
Paratypes: 1 ♂, 1 ♀, C. Vietnam, Kon Tum Province, Ngoc Linh Nature Reserve, 12.IV.2004, A. Monastyrskii leg.; 1♂, same locality 30.3.1998, A. Monastyrskii leg.; 3 ♂♂, 12 ♀♀, C. Vietnam, Lam Dong Province, Bi Doup-Nui Ba Nature Reserve, 6.-26.IV.2004, A. Monastyrskii leg.; 1 ♀, C. Vietnam, Dac Lac Province, Chu Yang Sin National Park, 27.IV.2006, D. A. Tuan leg.

Description, upperside ♂ (col. pl. 2: 6): both wings' ground colour are blackish brown with uniform dark yellow markings. The forewing upper postdiscal band in cells 6 and 5 are broad with the outer edge convex outwards; the spot in cell 5 extends slightly to cell 4; the lower postdiscal spot in cell 1b and the spot from cell 2 extending to cell 1b are sometimes fused or approach very close to each other. The submarginal yellowish fascia is clearly visible and is usually well developed in cells 1b-5. The hindwing broad discal band is expanded from the tornal to the costal edge; the postdiscal band is broader than in other subspecies; the submarginal fascia is obscure.
Underside ♂: ground colour varies from pale brown to yellowish brown. The forewing prominent subcostal spots are bluish white; the cell streak, beyond the cell and lower postdiscal spots in cells 2 and 1b is a uniform pale yellow; the upper postdiscal band is obscure, but the almost round creamy spot in cell 6 is prominent. The hindwing whitish discal band is narrower than in other subspecies, extending from the tornus to cell 6 with a distinct streak in cell 7; the discal fascia is bluish with a short but clear break (gap) after vein 4; the pale brown postdiscal band sometimes melts into the ground colour, however the bluish postdiscal fascia is well developed; the submarginal fascia is obscure or barely perceptible. Length of forewing: 31-36 mm; cp. 32,9±1,96 mm (n=6).

♀ upperside: the wing pattern of the forewing upperside is similar to that of the ♂; the hindwing bears a discal band that is not visibly expanded from the tornal to the costal edge. The pattern on the underside of both wings is almost the same as in the ♂, but the ground colour is darker. Length of forewing: 30-38 mm 32,9±1,95 mm (n=14).

♂ **genitalia** (fig. 4): Both structures from Ngoc Linh (fig. A) and Bi Doup (fig. B) demonstrate general similarity to the pattern of *N. manasa* Moore, 1858, as figured by Eliot (1969), however in both populations genitalia have a well-developed terminal hook-like process (similarly in the nominate subspecies, *N. m. antigone* Leech, 1890. and probably *N. m. narcissina* Oberthür, 1906) and a dorsal setaceous process that has only been found previously in the taxon *N. m. neohainana* Lang, Xue & Han, 2009 from Hainan, the genitalia of which has different shape of terminal process.

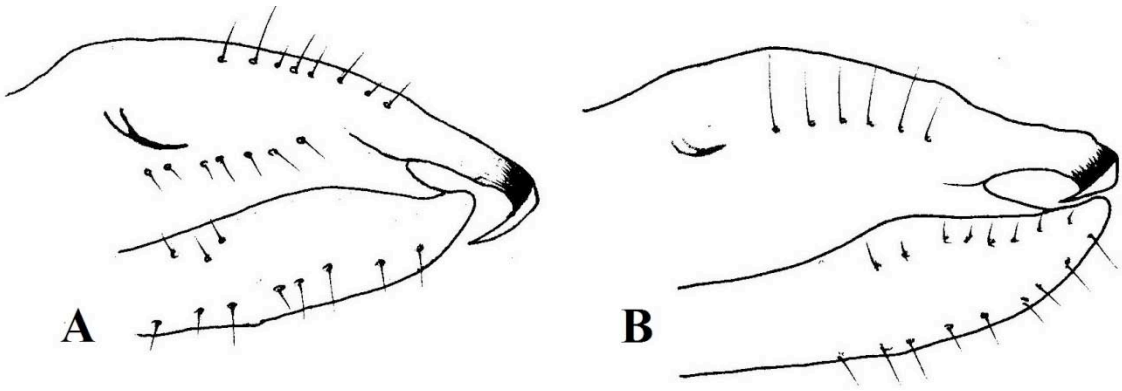


Fig. 4: ♂ genitalia (distal part of right valva) of *Neptis manasa* ***mientrunga*** **subspec. nov.** from, A: Ngoc Linh N.R., and B: Bi Doup-Nui Ba N.R.

Diagnosis and discussion: Considering the general plan of wing pattern and genitalia structure the new taxon undoubtedly belongs to *N. manasa* Moore which includes five distinctive subspecies, the specific characteristics of which are represented in Eliot (1969), Bozano (2008), and Lang et al. (2009). At the same time both sexes of the new subspecies bear some remarkable characters that distinguish it from the other subspecies: 1. On the upperside the majority of yellow markings are broader or slightly broader; 2. The underside hindwing discal band is very narrow; the discal fascia has a break (gap) after vein 4. 3. The underside hindwing postdiscal band is indistinct while the postdiscal fascia is uniquely prominent; 4. ♂ genitalia bears the hook-like terminal process and well-developed dorsal process combination which has not been found in the other subspecies.
Etymology: The name of the new subspecies means Central Vietnamese - reflecting the distribution of its known habitat.

Neptis nemorum nemorum Oberthür, 1906
2 ♂♂, N. Vietnam, Lao Cai Province, Hoang Lien National Park, Cat Cat village in the vicinity of Sa Pa town, 16.V.2008, evergreen forest, 1200m, A. Monastyrskii leg.

This species has been recorded previously in the northern part of central Vietnam (Ha Tinh Province, Vu Quang N.R.) (Monastyrskii & Devyatkin, 2003) and in the adjacent area of Xam Neua in northern Laos. All specimens demonstrate a high similarity to the nominate subspecies from western China, although the sole specimen from Vu Quang N.R. has a slightly broader discal and postdiscal band on the upperside of the hindwing and broader yellow spots in cells 2 and 3 on the forewing.

Neptis themis theodora Oberthür, 1906
1 ♂, N. Vietnam, Lao Cai Province, Hoang Lien National Park, Cat Cat village in the vicinity of Sa Pa town, 16.V.2008, evergreen forest, 1200m, A. Monastyrskii leg; 1 ♂, N. Vietnam, Lao Cai Province, Sa Pa, 23.XI.2005, 1600m, S. A. Ryabov leg.
This is the first record of this taxon from Vietnam. Specimens collected in wet (May, 2008) and dry (November, 2005) seasons demonstrate a high similarity to the subspecies *N. t. theodora* Oberthür, 1906 from Tsekou (western China), although the Vietnamese population has a slightly broader submarginal area on the underside of the hindwing.

Neptis armandia manardia Eliot, 1969
2 ♂♂, N. Vietnam, Lao Cai Province, Hoang Lien National Park, Cat Cat village in the vicinity of Sa Pa town, 16.V.2008, evergreen forest, 1400m, A. Monastyrskii leg.
This is the first record of this taxon from Vietnam. The finding of this subspecies in Lao Cai Province demonstrates the taxonomic variability of *Neptis armandia* Oberthür, 1867 in Indochina. North Vietnamese populations belong to *N. a. manardia* Eliot, which ranges Yunnan and northern Laos; other latitudinal belts are inhabited by *N. a. pila* Tytler, 1940 (South Shan States, northern Thailand and central Vietnam (Kon Tum, Gia Lai Provinces) and *N. a. morrisi* Monastyskii & Devyatkin, 2003, (central Vietnam, Da Lat plateau).

Calinaga davidis r a r u s **subspec. nov.** (colour plate 1: 6)
Holotype ♂, N. Vietnam, Lao Cai province, Van Ban district, 30.III.2005, Nam Xay river, 900 m, A. Monastyrskii leg.
Paratype ♂, N. Vietnam, Lao Cai province, Hoang Lien National Park, Cat Cat village, 1.IV.2007, 1150 m, A. Monastyrskii leg.

Description, upperside ♂ (col. pl. 1: 6): both wings' ground colour is dark grey with well-developed whitish spots and streaks having a slight greenish tinge. Forewing submarginal whitish spots are smaller than in the nominative subspecies from western China (Siao Lou); postdiscal round spots in cells 2-6 are smaller than in the nominate subspecies but are more distinct; the whitish conjugated streaks in cell 1b are prominent and suffused with scarce dark scales; the irregular whitish area within the cell is densely covered with dark scales. Hindwing postdiscal and submarginal whitish spots are smaller than in the nominative subspecies; the whitish spots at the base of cells 4 and 5 are weakly developed; the discal and submarginal whitish spots in cell 4 are absent or obscure; the whitish area within the discal cell, the dorsal area in cells 1, 1a and the lower part of cell 1b are prominent; the white streak in cell 7 is well-developed and broken into basal and discal parts.
Underside ♂: both wings' ground colour is uniform grey; the pattern includes whitish, with a slight greenish tinge, spots and streaks similar to that on the upperside. At the same time all spots and streaks have more distinct outlines and are clearly suffused with infrequent and obscure dark scales.
The thorax is clothed in dark orange hairs. Length of forewing 44 mm. The ♀ is unknown.

Diagnosis and discussion: Undoubtedly the new taxon belongs to the *C. davidis* Oberthür, 1879, the peculiarities of which have been clearly shown in its description and analysed by Leech (1892). In spite of the long distance between Chinese and Vietnamese populations, individuals of the latter country keep all the main characters of the species *C. davidis* Obth. In comparison with the nominative subspecies from some territories of western China (Moupin, Wa-ssu-kow and Chow-pin-sa) the new subspecies bears more whitish spots and streaks on a pale greyish background. In comparison with the form from central China (e.g. Chang-yang) the new taxon lacks the broad whitish spots and streaks that are often confluent in Chinese populations.

Lycaenidae

Arhopala agaba a b o r i g i n a **subspecies nov.** (colour plate 2: 7, 8)
Holotype ♂: S. Vietnam, Ba Ria - Vung Tau Province, Con Son Island, Con Dao National Park, forest, 70m, 3.VI.2010, A. Monastyrskii leg.
Paratypes 7 ♀♀, same data as holotype, 27.V.-4.VI.2010.

Description upperside ♂ (col. pl. 2: 7): ground colour is uniform deep blue with a black border which is broader than in the continental populations of the nominate subspecies. The hindwing submarginal area adjoined to the black border has a well-developed albescent tinge in cells 1b and 3-5.
Underside ♂: ground colour is purple brown; the subapical areas of both wings are whitened but more weakly so than in the nominate subspecies; the forewing postdiscal band of spots is nearly straight; the zigzagging of this band is not distinct. The hindwing pattern is similar to that of the nominate subspecies from southern Vietnam as described in detail by Inoue & Kawazoe (1965), however the fused spots in spaces 6 and 7 are broader than in the nominate subspecies. Length of forewing is 22mm.

♀ Upperside (col. pl. 2: 8): both wings ground colour is a dull violet blue with broad black border about 3-4 mm wide. On the forewing the end of the discal cell is dotted with black. The hindwing black border is expanded from the costal edge to the dorsum, gradually tapering.
The underside pattern is very similar to that of the ♂: the apical areas of both wings are whitened but weaker than in the continental populations. Length of the forewing is 18-22 mm.

♂ genitalia (fig. 5: A-C): The genitalia structure of the new subspecies is identical to that in the nominate subspecies from southern Vietnam as described by Inoue & Kawazoe (1965) (Fig. 5D).

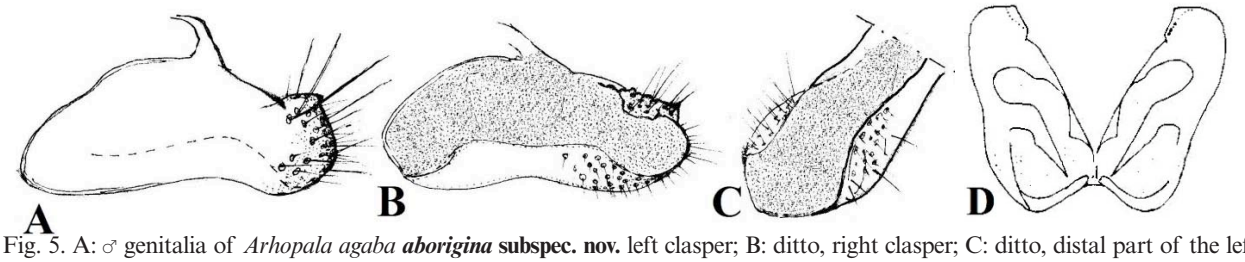


Fig. 5. A: ♂ genitalia of *Arhopala agaba* ***aborigina*** **subspec. nov.** left clasper; B: ditto, right clasper; C: ditto, distal part of the left clasper; D: ♂ genitalia of *Arhopala agaba agaba* (Hewitson, 1862) claspers in dorsal aspect (after Inoue & Kawazoe, 1965).

♀ genitalia (fig. 6A, B): Generally, the genitalia of the ♀ from Con Son Is. is similar to that of continental populations. However in the specimens analysed the signa are located facing each other, while in the nominate subspecies they are approached.

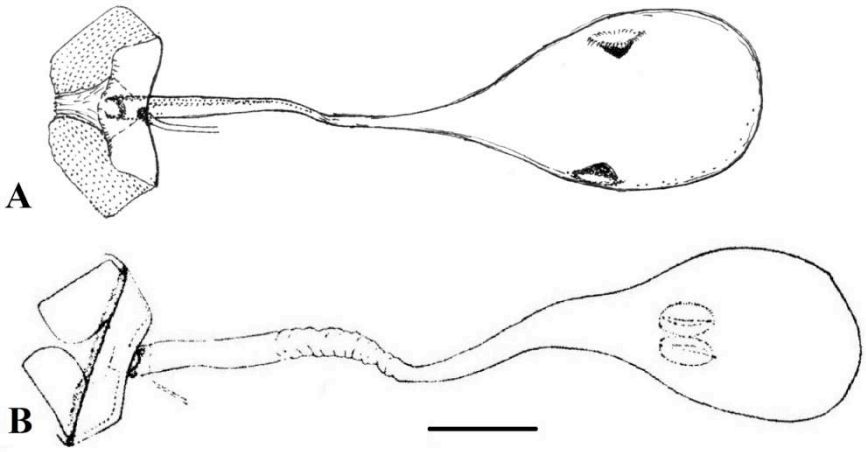


Fig. 6: A, ♀genitalia of *Arhopala agaba* ***aborigina*** **subspec. nov.**, S. Vietnam, Con Son Is.; B, ♀ genitalia of *Arhopala agaba agaba* (Hewitson, 1862), S. Vietnam (after Inoue & Kawazoe, 1965). Scale: 0,5 mm.

Diagnosis and discussion: The size of the new subspecies varies but on average both sexes are somewhat larger than individuals from the continental population, the forewing length of which is usually shorter than 20 mm. Among the distinctive and remarkable characters found in the ♂ of the new taxon may be noted the following: 1. A well-developed albescent tinge in the submarginal area within cells 1b and 3-5; 2. A reduction of whitish patches in subapical areas of both wings' underside; 3. A broader black border (>1mm) on the upperside of both wings. The ♀♀ of the new subspecies are characterised by a slightly longer forewing and duller blue violet ground colour on both wings, with a broader black marginal border on the hindwing.
In spite of *A. a. agaba* (Hew.) being distributed widely from northern India to Indochina and south to the Malay Peninsula and Sumatra, no other distinctive subspecies have yet been described. It is possible to regard the distinctiveness of the local population as being a result of the isolation of the archipelago that occurred around 6-7 thousand years ago (Voris, 2000).

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Colour plate 1

Fig. 1, 2: *Graphium sarpedon* ***islander*** **subspec. nov.**, holotype ♂, S. Vietnam, Ba Ria-Vung Tau Province, Con Son Island, Con Dao National Park, Thanh Gia top, 560 m a.s.l., 11.VI.2010, A. Monastyrskii leg. **Fig. 3, 4**: *Graphium doson* ***robinson*** **subspec. nov.**, holotype ♂, data as in fig. 1, 2, only: 27.V.2010. Fig. 5: *Enispe cycnus* ***vertex*** **subspec. nov.**, holotype ♂, C. Vietnam, Kon Tum Province, Ngoc Linh Nature Reserve, evergreen forest at 1600-1700 m a.s.l., 4.IV.2004, A. Monastyrskii leg. **Fig. 6**: *Calinaga davidis* ***rarus*** **subspec. nov.**, holotype ♂, N. Vietnam, Lao Cai province, Van Ban district, 30.III.2005, Nam Xay river, 900 m, A. Monastyrskii leg. **Fig. 7, 8**: *Lethe monilifera* ***trungha*** **subspec. nov.**, holotype ♂, N. Vietnam, Lao Cai province, Hoang Lien National Park, pass Cong Troi (Tram Ton), 1,900-2100 m., 5.VII.2009, A. Schinov leg.

Colour plate 2

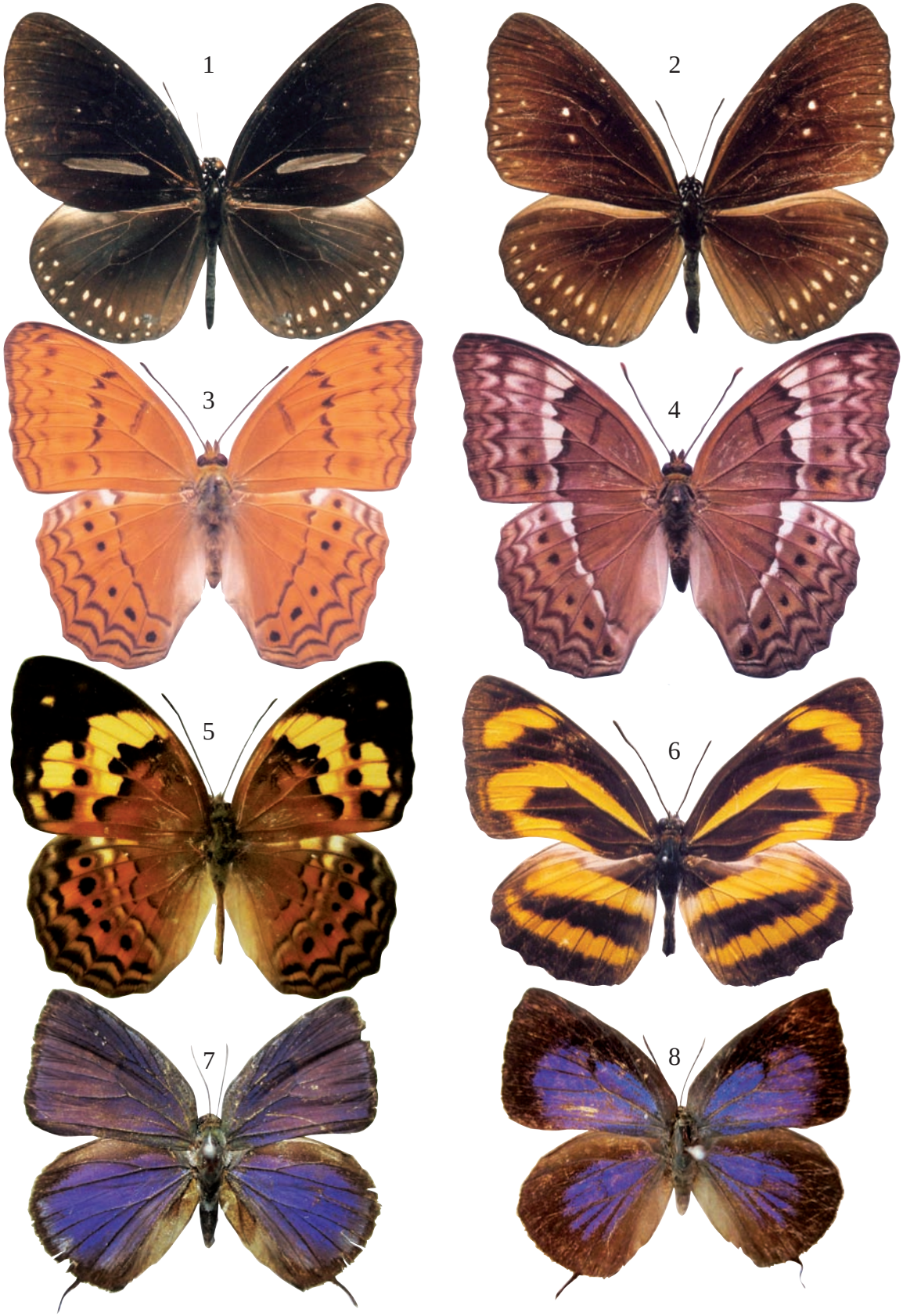

Fig. 1, 2: *Euploea swainson* ***emigrantus*** **subspec. nov.**, holotype ♂, S. Vietnam, Ba Ria-Vung Tau Province, Con Son Island, Con Dao National Park, road to Thanh Gia top, ~250m, 11.VI.2010, A. Monastyrskii leg.

Fig. 3: *Cirrochroa tyche* ***anthonia*** **subspec. nov.**, holotype ♂, same locality as in 1, 2, only: 9.VII.1967, A. Bedford-Russell leg.

Fig. 4: *Cirrochroa tyche* ***anthonia*** **subspec. nov.**, paratype ♀, same locality as in 1, 2 only: 13.IX.1967, A. Bedford-Russell leg.

Fig. 5: *Cupha erymanthis* ***melanodotis*** **subspec. nov.**, holotype ♂, same data as in 1, 2, only: 10.VI.2010, A. Monastyrskii leg.

Fig. 6: *Neptis manasa* ***mientrunga*** **subspec. nov.**, holotype ♂, C. Vietnam, Gia Lai Province, Kon Cha Rang Nature reserve, 8.III.1999, riverine forest edge, 1000 m, A. Monastyrskii leg.

Fig. 7: *Arhopala agaba* ***aborigina*** **subspec. nov.**, holotype ♂, same data as in 1, 2, only: forest, 70 m, 3.VI.2010, A. Monastyrskii leg.

Fig. 8: *Arhopala agaba* ***aborigina*** **subspec. nov.**, paratype ♀, same data as in 1, 2, only: forest, 70 m, 03.VI.2010, A. Monastyrskii leg.

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