

Hesperiidae of Vietnam, 9.¹
Three new species and one new subspecies
from the subfamily Pyrginae

(Lepidoptera, Hesperiidae)

by

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Summary: Four new taxa of the Pyrginae from North, Central and South Vietnam are described and illustrated: *Celaenorrhinus phuongi* spec. nov., belonging to the *C. maculosa* (C. & R. FELDER, [1867])-group, *Darpa inopinata* spec. nov., similar to *D. striata minta* EVANS, 1949; *Tagiades hybridus* spec. nov., related to *T. gana* (MOORE, [1866]) and *T. parra* FRUHSTORFER, 1910; *Gerosis tristis gaudialis* subspec. nov. The zoogeographical peculiarity of the area is briefly discussed.

***Celaenorrhinus phuongi* spec. nov.**

(colour plate XIX, figs. 1, 2)

Holotype ♂: North Vietnam, Bac Can Province, Xuan Lac Commune, Lung Li Top 860 m, 1.V.2001, leg. BUI XUAN PHUONG.

Holotype MSU.

Description

Male (colour plate XIX, figs. 1, 2).

Antennae plain brown, with a wide (wider than in any other species of the group) whitish ring before club. Palpi yellow below. Wings rather rounded, ground colour very dark brown. Abdomen striped. Forewing upperside: no yellow basal striping, only a suffusion near base; white subapical spots small, that in space 6 being the largest and produced towards termen; spots in spaces 4–5, sized as subapical ones, directed to termen (not to tornus as in other species of the *maculosa*-group); cell spot broad; the spot in space 3 approximate to the spot in space 2, the latter being slightly smaller than the cell spot and trapezium-shaped; white basal dot distinct. Hindwing upperside: spots rather tawny than yellow, considerably reduced; yellow basal striping faint.

Underside: usual pattern of the *maculosa*-group well developed; no yellow striping on forewing; hindwing spots pale tawny, better expressed than on the upperside, sharply outlined. Fringes of forewing brown, whitish in space 1b; those of hindwing chequered brown and yellow.

Length of forewing 20.5 mm.

¹ For (8) see DEVYATKIN, A. L. (2000): Three new species of *Celaenorrhinus* HÜBNER, 1819, with notes on the *C. maculosa* (C. & R. FELDER, [1867])-*oscula* EVANS, 1949 group (Lepidoptera, Hesperiidae). – *Atalanta* 31 (1/2): 205–211.

♂-genitalia (fig. 1): Tegumen short, rather narrow, with rectangular shoulders; uncus at its base slightly narrower than tegumen, widely bifurcate distally; gnathos long and narrow, its branches almost parallel; clasp elongate, narrow, with a robust inner costal lobe which is densely and finely spined; cuiller with two short dorsal teeth at and before apex. Manica long and narrow, bifurcate, with its branches thin and evenly tapered, without spines; aedeagus broad, longer than clasp, with a single strong and long cornutus; saccus broad, somewhat spoon-shaped.

The new species is very similar in appearance to *C. inexpectus* DEVYATKIN, 2000 and *C. maculosa* (C. & R. FELDER, [1867]) (differing in termen-directed spots 4–5 on forewing and reduced spots on hindwing), but is strikingly different in the male genitalia, especially in the presence of a costal lobe (as in some genera of the *Halpe*-group, for instance) on clasp, which seems to be so far unique in this group. The general shape of manica and clasp recalls the genital armature of another, rather distant geographically, species of the group, viz. *C. major* Hsu, 1990 (Taiwan), as it is illustrated in SHIROZU (1967) (under the name *C. oscula* EVANS).

The species is named after its collector, Mr. BUI XUAN PHUONG, whose field work has contributed a lot to the knowledge of the butterfly fauna in Vietnam.

***Darpa inopinata* spec. nov.**

(colour plate XIX, figs. 3, 4)

Holotype ♂: Central Vietnam, Thua Thien Hue Province, district Phong Dien, loc. Khe Lau, 17.VI.1998, leg. A. L. MONASTYRSKII.

Paratypes (2 ♂♂, 2 ♀♀): 1 ♂, North Vietnam, Bac Can Province, Dong Phuc Commune, loc. Lung Vi, 19.IV.2001, leg. BUI XUAN PHUONG; 1 ♂, 1 ♀, Central Vietnam, Gia Lai – Con Tum Prov., loc. Kon Ha Nung (north of An Khe), 24.I.1991, leg. N. V. BELYAEVA; 1 ♀, Central Vietnam, Quang Binh Prov., Minh Hoa distr., loc. Yen Hop, 21.III.1999, leg. VU VAN LIEN.

Holotype MSU (Department of Entomology, Moscow State University), paratypes MSU, BMNH (The Natural History Museum, London).

Description

Male (colour plate XIX, figs. 3, 4).

Upperside. Forewing: ground colour dark brown, with veins somewhat paler and obscure pale postdiscal markings; cell spot transversal, very narrow and usually divided; 5 small white spots in spaces 4 to 8, arranged S-like; 2 small white spots in spaces 2 and 3. Hindwing: ground colour dark brown with paler veins and alternating paler and darker markings in the discal area; tornal part of the wing white to vein 5, with rounded black spots at ends of veins 2, 3 and 4.

Underside. Forewing: ground colour and spots the same as on the upperside; space 1a conspicuously paler; diffuse pale markings in the postdiscal area in space 1b, sometimes also in spaces 2 and 3. Hindwing: costal part (space 8) dark brown, this colour extending along termen to vein 5; the rest of the wing white with dark brown or black subbasal, discal (between veins) and submarginal (at the ends of veins 2–4) spots. In the holotype, discal spots are much extended.

Length of forewing 17.5–18.5 mm.

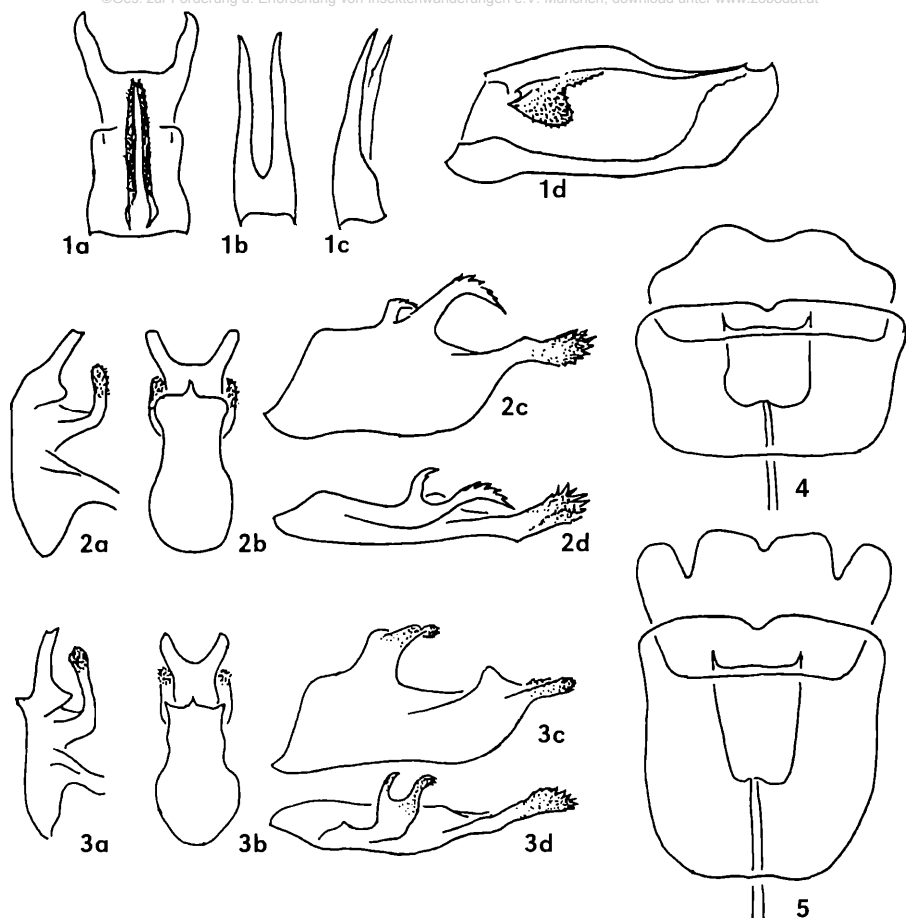


Fig. 1: *Celaenorrhinus phuongi* spec. nov., male genitalia. a – uncus and gnathos, ventral view; b – manica, ventral view; c – id., lateral view; d – right clasp. Figs. 2, 3: *Darpa* MOORE, male genitalia. Fig. 2 – *Darpa inopinata* spec. nov.; fig. 3 – *D. striata minta* EVANS. a – tegumen and uncus, lateral view; b – id., dorsal view; c – left clasp, lateral view; d – id., dorsal view. Figs. 4, 5: *Darpa* MOORE, female genitalia (shape of genital plates and ductus bursae). Fig. 4 – *Darpa inopinata* spec. nov.; fig. 5 – *D. striata minta* EVANS.

Female similar, forewing spots in spaces 2 and 3 reduced or absent; pale markings on forewing underside larger and brighter. Length of forewing 21 mm.

♂-genitalia (fig. 2): Tegumen with very small, almost inconspicuous, dorsal projections; uncus broadly bifid. Clasp with bifid harpe, the processes of the latter unequal, sharply pointed and

distally serrate; cuiller with a long distal process, expanded and serrate at the tip, a small dorsal projection being placed in the basal part of the process. Aedeagus slender, approximately as long as clasp, curved.

♀-genitalia (fig. 4): Antevaginal plate transversal, much wider than long; postvaginal plate short and broad, its distal edge wavy, without sharp incisions. Ductus bursae forming a short parallel-sided sclerotized antrum.

The new species is extremely similar in appearance to *D. striata minta* EVANS, 1949 (colour plate XVIII, figs. 5, 6), from which it can be distinguished by the following characters: forewing subapical spots dot-like (slightly elongate in *minta*); forewing spots in spaces 4 and 5 situated nearer to those in spaces 2 and 3; no trace of discal spots in spaces 1b and 2 of forewing (always present, at least as dots on the underside, in *minta*), this character being in fact the only reliable external difference between the two species; hindwing dark discal spots on the upper-side seem to be shorter (on the underside these spots are the same in both, being abnormally extended only in the holotype of the new species).

The male genitalia of *D. striata minta* (fig. 3). are very different in the respect of the valva, especially harpe and cuiller; tegumen with conspicuous dorsal horns. The female genitalia of *minta* (fig. 5) differ in having all its elements longer; postvaginal plate deeply incised (lobed), and antrum longer and proximally tapered.

Tagiades hybridus spec. nov.

(colour plate XIX, figs. 7, 8)

Holotype ♂: Central Vietnam, Thua Thien Hue Province, district Phong Dien, loc. Khe Lau, 18.VI.1998, leg. A. L. MONASTYRSKII.

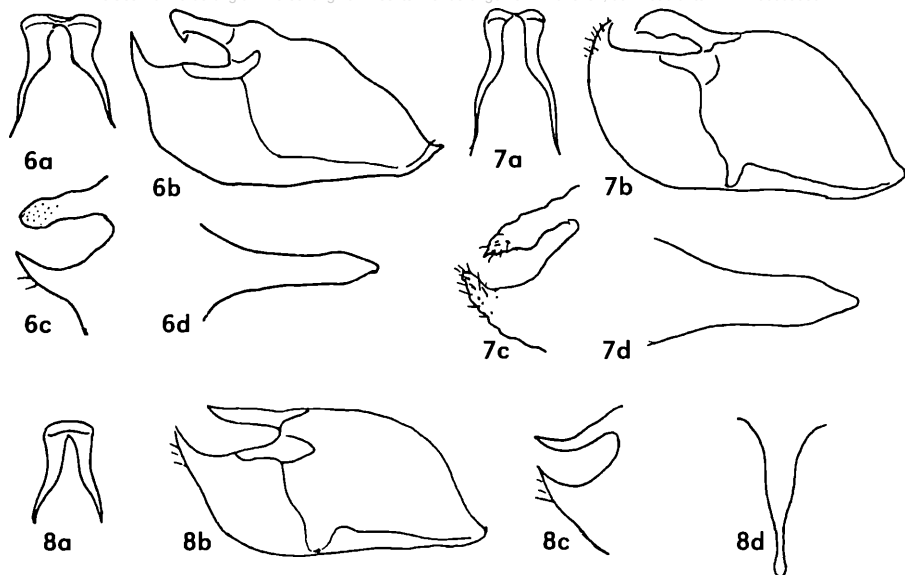
Paratypes (2 ♂♂, 3 ♀♀): 1 ♂, the same label as the holotype; 1 ♀, Thanh Hoa Province, Xuan Mu district, loc. Xuan Lien, 1200 m, 3.XI.1998, leg. A. L. MONASTYRSKII; 1 ♀, Ha Tinh Province, Huang Son Forest Complex, 160 m, lowland forest, 1.XII.2000, leg. FRONTIER volunteers; 1 ♂, same locality, 5.XII.2000, leg. FRONTIER volunteers; 1 ♀, same locality, 21.IV.2001, leg. A. L. MONASTYRSKII.

Holotype and ♀-paratype – MSU, ♂-paratype – BMNH.

Description

Male (colour plate XIX, figs. 7, 8).

Upperside. Forewing: ground colour brown with obscure dark basal and discal markings; 3 very small subapical white spots in spaces 6 to 8, that in space 6 being slightly displaced towards termen. Hindwing: ground colour the same as on forewing, with obscure dark markings in the basal half; conspicuous dark spots in spaces 3 to 6, the latter (obscure in the holotype) being placed nearer to termen than to the origin of vein 7, as in *T. gana* (MOORE, [1866]); pure white tornal area reaching vein 4 narrow, with its inner border sharp and straight and with 3 black spots at the ends of veins 1b, 2 and 3, that on vein 1b being rather large and diffuse; dark area in the tornal half of the wing suffused bluish; veins 2 and 3, crossing the white area, conspicuously dark.



Figs. 6-8: *Tagiades* HÜBNER, male genitalia. Fig. 6 - *Tagiades hybridus* spec nov. (Khe Lau); fig. 7 - *T. parra gala* EVANS (Cuc Phuong); fig. 8 - *T. gana sangarava* FRUHST. (Khe Lau). a - uncus (ventral view); b - left clasp (lateral view); c - end of clasp (front view); d - saccus (dorsal view).

Underside. Forewing: ground colour the same as on the upperside, the dark markings being clearer. Hindwing: most part of the wing white with a bluish tinge, more distinct towards the base, this colour almost reaching vein 6 at termen and origin of vein 8 at base; all dark spots nearly black, sharply defined, those of the tornal area with a tendency to being connected along margin.

Length of forewing 21 (holotype) to 23 mm.

Female. All markings the same as in male; wings broader.

Length of forewing 24.5-26.5 mm.

♂-genitalia (fig. 6): Tegumen with marked shoulders; tip of uncus expanded and slightly scalloped. Cuiller of clasp with very prominent and sharply pointed dorsal process; harpe rather long, curved inwards, its distal end rounded and slightly serrate. Aedeagus longer than clasp, slender, its proximal end bulbous.

♀-genitalia: Antevaginal plate very broad; postvaginal plate short, as wide as the former, its median part distally produced. Ductus bursae forming a kind of membranous antrum near ostium, otherwise narrow, with a small ring of sclerotization in the proximal part.

The new species is somewhat intermediate in the external characters between *T. gana* (MOORE, [1866]) and *T. parra* FRUHSTORFER, 1910: it differs from the former in the pure white tornal area

with black spots, and from the latter in the bluish suffusion of the hindwing. The male genitalia (fig. 6) also show intermediate characters, the harpe being blunt as in *T. parra* (however always with a slight ventral expansion in the latter, fig. 7) and the dorsal process of the cuiller bearing no microtrichia as in *T. gana* (fig. 8) (covered with microtrichia in *T. parra*, fig. 7). Uncus seems to be the widest among all 3 species. The shape of saccus seems different from that of *T. gana*, but this structure is rather variable in all *Tagiades* species.

The female genitalia are in general similar to those of *T. gana* and *T. parra* and show no reliable diagnostic characters.

The general appearance of the butterfly much recalls that of the Ceylonese taxon *T. japetus obscurus* MABILLE, 1876 (which we suspect to represent a separate species), the latter however being very different in the male genitalia and clearly belonging to the *T. japetus* (STOLL, [1781])-group.

***Gerosis tristis gaudialis* subsp. nov.**

(colour plate XIX, figs. 9, 10)

Holotype ♂: Central Vietnam, Quang Tri Province, district Dakrong, loc. Khe Ba Long, 25.VI.1998, leg. A. L. MONASTYRSKII.

Paratypes (3 ♂♂, 1 ♀): 1 ♂, Central Vietnam, Thua Thien Hue Province, district Phong Dien, loc. Khe Lau, 17.VI.1998; 1 ♂, 1 ♀, the same locality, 19.VI.1998 (all leg. A. L. MONASTYRSKII); 1 ♂, South Vietnam, Dong Nai Prov., Cat Tien National Park, 2.II.2000, leg. A. L. MONASTYRSKII.

Holotype MSU, paratypes MSU, BMNH.

Description

Male (colour plate XIX, figs. 9, 10).

Upperside. Forewing: ground colour dark brown with white hyaline spots; 5 small subapical spots in spaces 4 to 8, that in space 4 being dot-like; a small spot in cell and two small discal spots in spaces 2 (the largest) and 3, situated close to cell spot; obscure dark double spot, surrounded by paler scales, in space 1b. Hindwing: ground colour the same as of forewing; a sharply defined white discal band from costa to dorsum, tooth-like expanded in cell and space 6; dark discal spots bordering the band merged together, except two rounded spots in spaces 6 and 7, and accompanied by narrow paler scaling from the outside.

Underside. Forewing: ground colour and markings the same as on the upperside; a white dash at the middle of space 1a. Hindwing: all markings the same as on the upperside, except the postdiscal pale scaling is much reduced.

Abdomen striped.

Length of forewing 17.5–18 mm.

Female.

All markings generally the same as in the male, except an additional white spot mid space 1b (both on the upper- and underside) of forewing and much wider and evenly shaped white band on hindwing, with spots in spaces 6 and 7 more clearly separated from the ground colour on the underside. Abdomen visibly striped, but with broad and dense white suffusion opposite the hindwing band.

Length of forewing 18 mm.

♂-genitalia: Tegumen with marked shoulders (dorsal view); uncus very long and evenly curved; dorsal process of valva long, bent downwards and dentate at the end; aedeagus relatively stout, curved in the median part. General build of the genitalia is quite characteristic for this species, as it is illustrated by ELIOT (in CORBET & PENDLEBURY, 1992).

The new subspecies differs from the nominate *G. tristis* ELIOT, 1959 in the pure white and unsplit hindwing band; from all other species of *Gerosia* it differs in the male genitalia.

Discussion

Apart from the great mountain plateaus which still remain largely unexplored, the narrow coastal area of Central Vietnam between the Annamite Mts. and the ocean (approximately between Thanh Hoa and Quang Nam Da Nang Provinces) has appeared to be of great zoogeographical interest. In view of the discovery of three new Pyrginae in a single locality (Khe Lau), the area of Thua Thien Hue is of particular interest. Of the 54 species recorded from this province, 3 are new species (together with *Pintara capiloides* DEVYATKIN, 1998) and 3 are new subspecies (together with *Capila lineata magna*, *Thoressa monastyrskii annamita* DEVYATKIN & MONASTYRSKII, 1999). For several taxa this area until now remains the only known places of occurrence in Vietnam, some of them being clearly eastward-oriented, otherwise distributed in Hainan and Fukien, South East China (e.g. *Bibasis miracula* EVANS, *Capila penicillatum* KIYILA FRUHST., *Seseria (dohertyi) salex* EVANS), some reaching here the northern limit of their distribution (for instance, *Potanthus omaha* EDWARDS).

It seems to be that, while the Annamite mountain corridor provides continuous distribution of the northern (Sino-Himalayan) fauna to the plateaus of Kon Tum and Da Lat, the lower coastal area is a pass for both north-eastern and southern species, representing a kind of zoogeographical boundary. Being mostly composed of low and moderately elevated limestone hills, the area of the former Bin Tri Thien Province (now Quang Binh, Quang Tri and Thua Thien Hue) and the neighbouring territory of Nghe An and Thanh Hoa Provinces due to the specificity of its natural conditions, in addition, gives home to a number of taxa which may be at present considered endemic for this zone (for example, *Celenorrhinus incestus* DEVYATKIN, 2000 and *C. kuznetsovi* DEVYATKIN, 2000). From other butterfly families, *Zipoetis unipupillata annamicus* MONASTYRSKII & DEVYATKIN, 2000 (Satyridae) and *Stichopthalma louisa eamesi* MONASTYRSKII & DEVYATKIN, 2000 (Amathusiidae), found in Pu Mat and Bach Ma, respectively, are worth mentioning.

In view of these considerations, it can be concluded that the discovery of new taxa of butterflies is still highly probable in the whole lower coastal zone of Vietnam up to the foothills of the great mountain plateaus in the south.

On the other hand, the area of South China and North Vietnam is still a rather unexplored country with respect to butterflies: thus, discovery of new species of the *maculosa*-group was considered possible in the previous paper on this species complex (DEVYATKIN, 2000).

Acknowledgements

I am greatly indebted to Dr. A. L. MONASTYRSKII, Messrs. BUI XUAN PHUONG and VU VAN LIEN (Russia-Vietnam Tropical Centre, Hanoi), Dr. N. V. BELYAeva (MSU) and FRONTIER organization

(London) for placing this valuable material at my disposal; my special thanks are due to Mr. P. R. ACKERY (BMNH) for giving the opportunity to study the types and comparative materials in the collection of the Natural History Museum.

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Explanation of colour plate XIX (p. 477):

Fig. 1: *Celaenorrhinus phuongi* spec. nov., holotype ♂. N. Vietnm, Bac Can Province, Xuan Lac Commune, Lung Li Top 860 m, 1.V.2001, leg. BUI XUAN PHUONG, upperside.

Fig. 2: Id., underside.

Fig. 3: *Darpa inopinata* spec. nov., holotype ♂. Central Vietnam, Thua Thien Hue Province, district Phong Dien, loc. Khe Lau, 17.VI.1998, leg. A. L. MONASTYRSKII, upperside.

Fig. 4: Id., underside.

Fig. 5: *Darpa striata mintia* EVANS, Central Vietnam, Gia Lai Province, Kon Ka Kinh Nature Reserve, 1100 m, 31.III.1999, leg. A. L. MONASTYRSKII, upperside.

Fig. 6: Id., underside.

Fig. 7: *Tagiades hybridus* spec. nov., holotype ♂. Central Vietnam, Thua Thien Hue Province, district Phong Dien, loc. Khe Lau, 18.VI.1998, leg. A. L. MONASTYRSKII, upperside.

Fig. 8: Id., underside.

Fig. 9: *Gerosia tristis gaudialis* subspec. nov., holotype ♂. Central Vietnam, Quang Tri Province, district Dakrong, loc. Khe Ba Long, 25.VI.1998, leg. A. L. MONASTYRSKII, upperside.

Fig. 10: Id., underside.

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Colour plate XIX

DEVYATKIN, A. L.: Hesperiidae of Vietnam, 9. Three new species and one new subspecies from the subfamily Pyrginae (Lepidoptera, Hesperiidae). – *Atalanta* **32** (3/4): 403–410.

Fig. 1: *Celaenorrhinus phuongi* spec. nov., holotype ♂. N. Vietnm, Bac Can Province, Xuan Lac Commune, Lung Li Top 860 m, 1.V.2001, leg. BUI XUAN PHUONG, upperside.

Fig. 2: Id., underside.

Fig. 3: *Darpa inopinata* spec. nov., holotype ♂. Central Vietnam, Thua Thien Hue Province, district Phong Dien, loc. Khe Lau, 17.VI.1998, leg. A. L. MONASTYRSKII, upperside.

Fig. 4: Id., underside.

Fig. 5: *Darpa striata mintia* EVANS, Central Vietnam, Gia Lai Province, Kon Ka Kinh Nature Reserve, 1100 m, 31.III.1999, leg. A. L. MONASTYRSKII, upperside.

Fig. 6: Id., underside.

Fig. 7: *Tagiades hybridus* spec nov., holotype ♂. Central Vietnam, Thua Thien Hue Province, district Phong Dien, loc. Khe Lau, 18.VI.1998, leg. A. L. MONASTYRSKII, upperside.

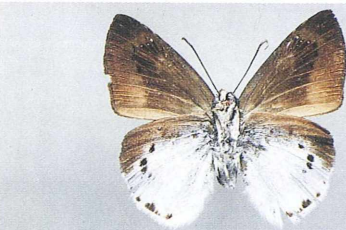
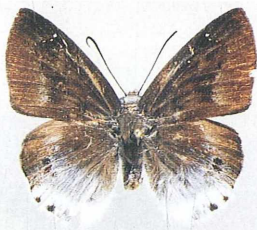
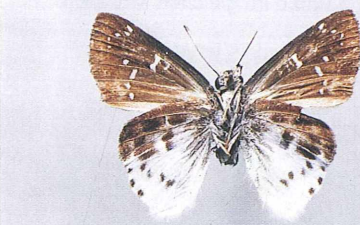
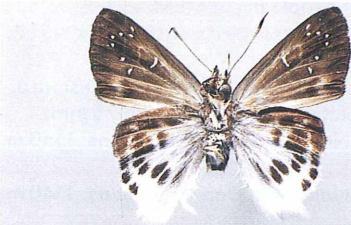
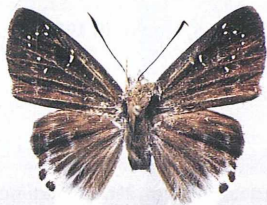
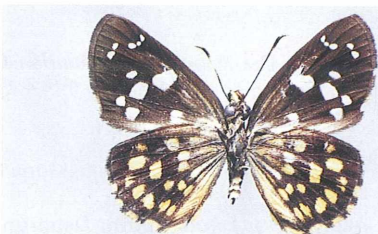
Fig. 8: Id., underside.

Fig. 9: *Gerosis tristis gaudialis* subspec. nov., holotype ♂. Central Vietnam, Quang Tri Province, district Dakrong, loc. Khe Ba Long, 25.VI.1998, leg. A. L. MONASTYRSKII, upperside.

Fig. 10: Id., underside.

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Colour plate XIX



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