

## NEW BUTTERFLY SPECIES OF THE GENUS *YPTHIMA* HÜBNER (LEPIDOPTERA : PAPILIONOIDEA : NYMPHALIDAE) FROM WESTERN HIMALAYA, INDIA

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### INTRODUCTION

The butterflies of the genus *Ypthima* Hübner are small, brown insects with weak bouncing flight. The concerned genus is represented by about 100 species distributed in the Palaetropical and East Palaearctic regions. Identification of certain species and population complexes is, in fact, an intricate problem. Consultation of relevant literature (vide Marshall & de Niveville, 1883; Moore, 1890, 1892; Elwes & Edwards, 1893; Evans, 1932; Talbot, 1947; Shirozu & Shima, 1979) has critically been made. Shirozu & Shima (*loc.cit.*) dealt with seventy three described species from Asia, South Pacific Islands and Australia. They have studied the male genitalia of as many as fifty-three species. In view of the presently studied material represented by four examples are referable to *Hübneri* group of the genus *Ypthima* Hübner. Shirozu & Shima (*loc.cit.*) included three species under *Hübneri* group i.e., *Ypthima hübneri* Kirby, *Y. ceylonica* Hewitson and *Y. kasmira* Moore. Evans (*loc.cit.*) distinguished four groups among the Indian species of this genus. His grouping was mainly based on the wing markings of the hindwing underside. In his book of the Indian butterflies Talbot (*loc.cit.*) followed mainly Evans in the grouping of the Indian *Ypthima* Hübner. This article deals with the description of a new species, viz, *Ypthima kashmirensis* sp. nov. from

Kashmir, Western Himalaya. Type specimens are deposited in the Zoological Survey of India.

### SYSTEMATIC ACCOUNT

Genus *Ypthima* Hübner

*Common name*: The Rings

1818. *Ypthima* Hübner, *Zutr. z. samml. exot. Schmett.*, 1: 17.

*Type-species*: *Ypthima hübneri* Kirby.

### Key to Indian species of *hübneri*-group of the genus *Ypthima* Hübner

1. Hindwing upperside tornal half white .....  
..... *ceylonica* Hewitson  
Hindwing upperside tornal half brown ..... 2.
2. Hindwing underside with three ocelli in  $M_3$ , Cula and Culb not fused, ocelli in  $M_3$  and Cula may fuse or not; male genitalia with vinculum longer; female genitalia with lamella postvaginalis roughly triangular ..... 3.  
Hindwing underside with three ocelli in  $M_3$ , Cula and Culb may contiguous or not, male genitalia with vinculum smaller; female genitalia with lamella postvaginalis with semicircular plate ..... 4.
3. Marginal and discal fasciae distinct on the upperside of the wings; in male genitalia, valva with digitate costal process .....  
..... *hübneri* Kirby

**Key words**: Genitalia, angular appendices, tegumen, corpus bursae.

Marginal and discal fasciae ill-defined on the upperside of the wings; in male genitalia, valva with rectangular costal process .....

.....*kashmirensis* sp.n.

4. Fasciae on the underside of forewing indistinct, uncus in male genitalia is more or less straight.....*kasmira* Moore  
Fasciae on the underside of the forewing prominent, uncus in male genitalia is weakly curved ventrally.....*rosei* Sharma

1. *Ypthima kashmirensis* sp. nov.

*Adult (Male)*: Head with frontoclypeal area clothed with brown scales and hair; eyes black, medium sized and glabrous; labial palpi obliquely upwardly directed, three segmented, middle segment long, distal segment acuminate, basal and middle segments closely appressed with black and white scales and hair; antenna 7.0 mm; club slender, orange-brown, nudum extends from the base of the club to the base of the flagellum, the latter dark brown; thorax dressed with fuscous hair and scales dorsally and brown and white, hair and scales ventrally; foreleg strongly reduced, femur longer than tibia, fringed with brown scales and hair, meso and meta legs white scaled, tibia shorter than femur, tarsus five segmented and clawed; ground colour upperside brown; forewing upperside with subapical black, bipupilled, ringed with diffuse yellow, more or less rounded, ocellus, discal and marginal fasciae obscure, brand not prominent, underside brown, with less white striations, inner and outer discal fascia obscure, submarginal fascia dark brown, subapical ocellus as on upperside but the yellow ring more prominent and broader; upperside hindwing with a single pupilled, small, weakly ringed with diffuse yellow, ocellus in Cula, small black ocelli may or may not present in  $M_3$  and Cula, sometimes all the ocelli may absent, underside brown with more white striations, inner and outer discal fascia obscure, submarginal fascia dark brown, four black, single pupilled, yellow ringed ocelli in  $R_s$ ,  $M_3$ , Cula and Culb, ocelli in  $M_3$  and Culb comparatively smaller than  $R_s$  and Cula, ocelli in  $M_3$  & Cula may contiguous or spaced.



Holotype ♂ (Dorsal side)



Holotype ♂ (Ventral side)



Paratype ♀ (Dorsal side)



Paratype ♀ (Ventral side)

*Venation* (Figs. 1-2): Forewing cell less than half the length of the wing,  $R_1$  arising before upper angle of cell,  $M_3$  arched, mdc incurved, ldc oblique; hindwing cell more than half the length of the wing, Cula before lower angle of the cell, humeral vein(h) (precostal) vein more or less T-shaped.

Abdomen dorsally dark brown and ventrally clad with white scales.

*Adult* (Female): Foreleg well developed; forewing upperside with subpical ocellus slightly larger & more prominent; otherwise as in male.

*Male genitalia* (Figs. 3-9): Tegumen in dorsal view broad at base gradually narrowed posteriorly, in lateral view subequal to vinculum in height; uncus more or less straight, gradually tapering posteriorly, subequal in length to tegumen; sparsely setosed dorsally in the anterior half; fenestrula of a small, membranous, oval spot; appendix angularis small, weakly curved inwardly; vinculum inwardly curved, narrower dorsally, broader ventrally; saccus less than 1/3 x as long as ring; valva in lateral view broad at base, gradually narrowed towards apex; costa broad and continuous to ampulla + harpe, apex narrow and finely serrate latero-dorsally; aedeagus in lateral

view nearly straight, in dorsal view narrower at both the ends, subzone smaller than suprazone, ductus entering dorsad; juxta strongly sclerotized, V-shaped in posterior view.

*Female genitalia* (Figs. 10): Copulatory cavity broad & weakly sclerotized; lamella antevaginalis narrower anteriorly, broad at middle and strongly bifurcated posteriorly, strongly sclerotized, lateral lobes of lamella antevaginalis weakly developed, below on either side of lamella antevaginalis present more or less semicircular, weakly sclerotized plates; lamella postvaginalis narrower anteriorly and broader posteriorly, weakly sclerotized; apophysis anterioris wanting, apophysis posterioris reduced and membranous; papilla analis oblong and pilose; ductus seminalis attaching ductus bursae near ostium bursae, ductus bursae moderately long; corpus bursae more or less rounded, weakly sclerotized, signum wanting.

*Length of forewing* : Male : 15-17.5 mm

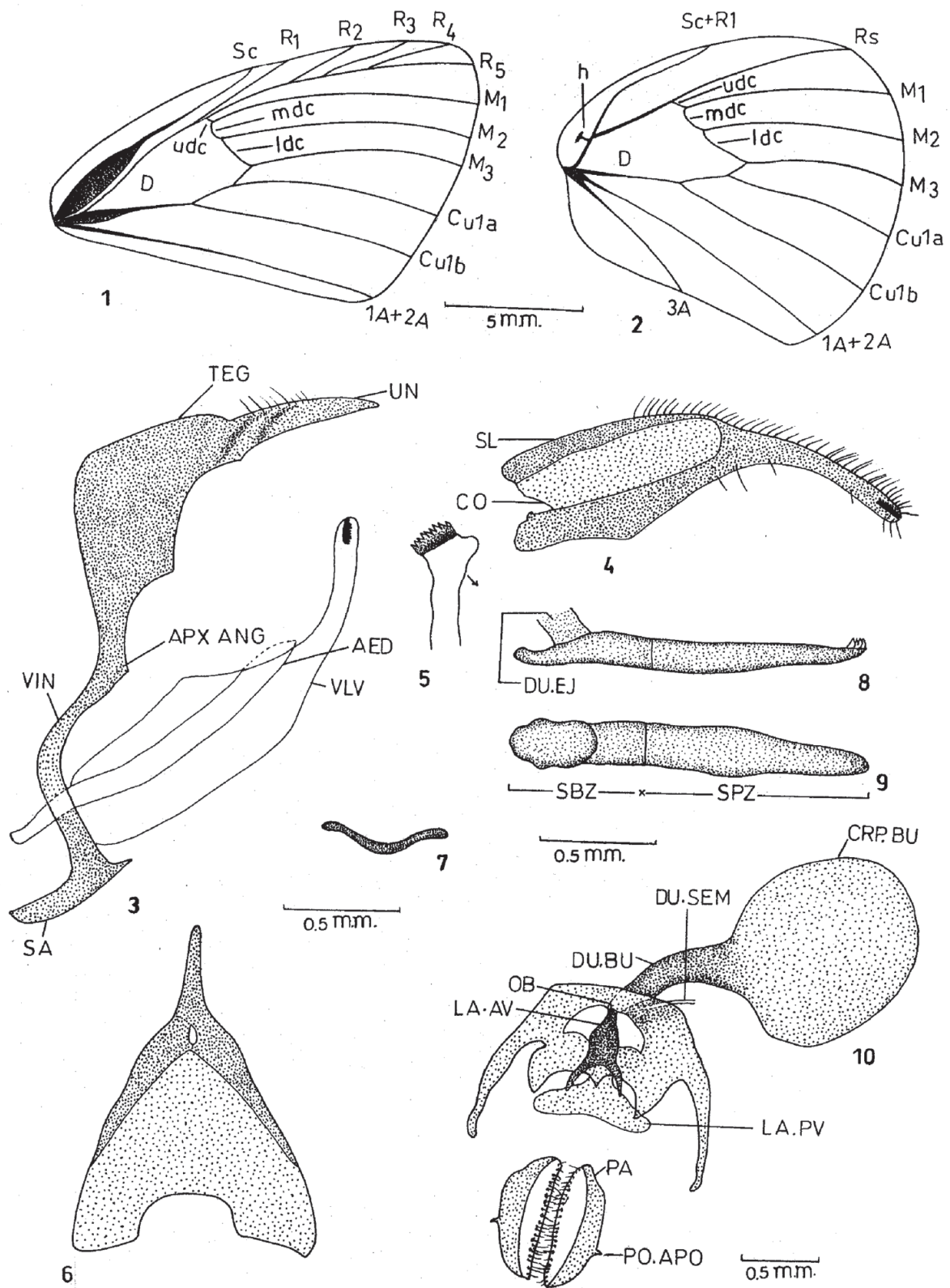
Female : 16.0 mm

*Material examined*:

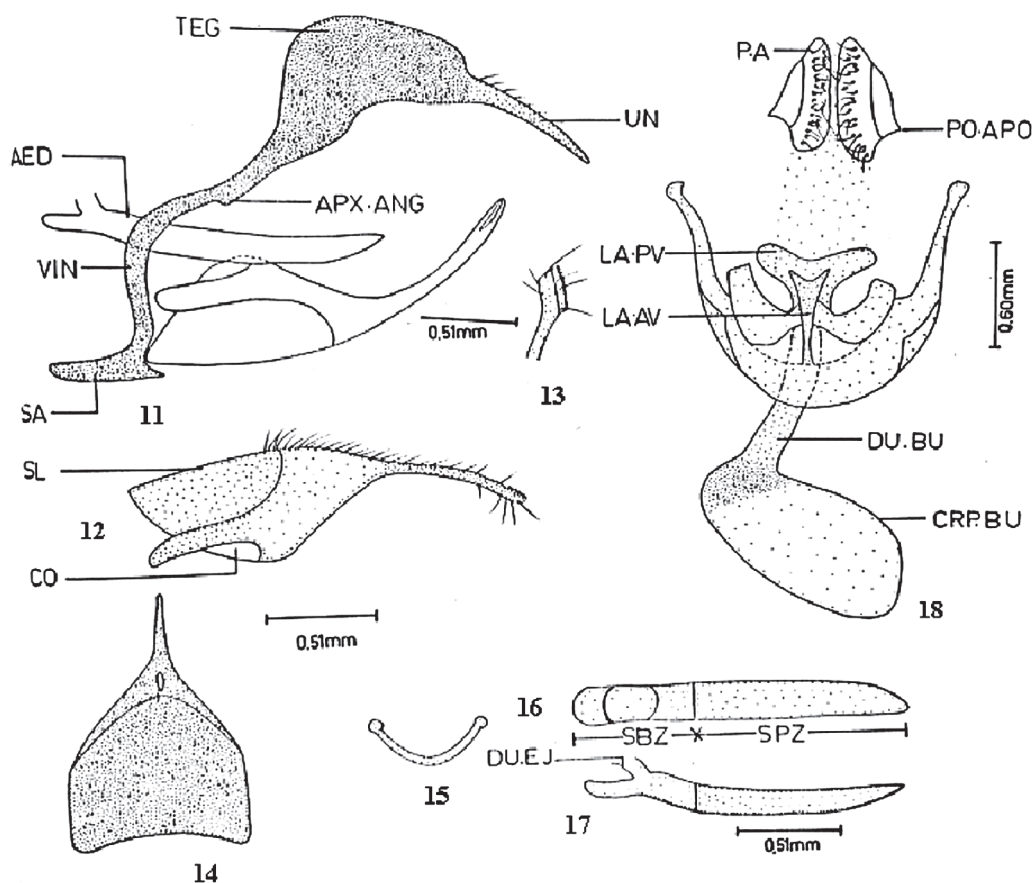
Holotype: ♂, INDIA, Jammu & Kashmir, Kashmir, 15.ix.1887 (Regd no. 6926/H9), de Niceville collections.

The species is closely related to *Ypthima hübnerei* Kirby, however it differs from the latter species as given below:

Sl. No	<i>Ypthima hübnerei</i> Kirby	<i>Ypthima kashmirensis</i> sp. nov.
1.	Marginal and discal fasciae distinct on the upperside of the wings	Marginal and discal fasciae ill-defined on the upperside of the wings.
2.	In male genitalia: valva with digitate costal process, the serrations at the apex of the valva less prominent and the apex is not having any hump before serrations.	In male genitalia: valva with rectangular costal process, the serrations at the apex of the valva more prominent and the apex is having hump before serrations.
3.	Male genitalia: uncus slightly curved ventrally, shorter than tegumen.	Male genitalia: uncus more or less straight, subequal in length to tegumen;
4.	Suprazonal portion of aedeagus almost of same width except at posterior end.	Suprazonal portion of aedeagus broader in the middle and tapers anteriorly and posteriorly.
5.	In female genitalia, lamella antevaginalis narrow and long, slightly bifurcated at apex, less sclerotized.	In female genitalia: lamella antevaginalis narrower anteriorly, broad at middle and strongly bifurcated posteriorly, strongly sclerotized,



Figs. 1-10. *Ypthima kashmirensis* sp. nov. :1. Venation of forewing 2. Venation of hindwing  
 3. Male genitalia (lateral view) 4. Valva (Inner view) 5. Apex of valva 6. Dorsum 7. Juxta (Dorsal view) 8. Aedeagus  
 (Lateral view) 9. Aedeagus (dorsal view) 10. Female genitalia (ventral view)



Figs.11-18. *Ypthima hübnneri* Kirby : 11. Male genitalia (lateral view) 12. Valva (Inner view) 13. Apex of valva 14. Dorsum 15. Juxta (Dorsal view) 16. Aedeagus (Dorsal view) 17. Aedeagus (Lateral view) 18. Female genitalia (ventral view).

Paratypes: INDIA: Jammu & Kashmir, Kashmir, 2♂, 1♀, 15.ix.1887, (Regd no. 6925/H9, 6927/H9, 6928/H9), de Niceville collections.

Etymology: The species is named after the name of the locality from where four individuals have been collected.

Remarks: While studying the old de Niceville collections lying at Zoological Survey of India, the four examples placed under the species *Ypthima hübnneri* Kirby were sorted out on the basis of marginal and discal fasciae on the upperside of the wings belong to *Hübneri* group (Shirozu & Shima, 1979). In respect of characters such as, marginal and discal fasciae ill-defined on the upperside of the wings; the uncus, tegumen, aedeagus and the valva in the male genitalia and the corpus bursae, ductus bursae and genital plate in the female genitalia, the present species differ from

the other species of the group (Shirozu & Shima, 1977, 1979; Sharma, 2011).

### SUMMARY

New species of the genus *Ypthima* Hübner has been described from Kashmir, Western Himalaya. The male and female genitalia have also been studied and illustrations have been provided.

### Abbreviations used

1A+2A : Fused first and second anal veins, 3A : Third anal vein, AED : Aedeagus, APX. ANG. : Appendix angularis, CO : Costa, CRP. BU. : Corpus bursae, Cu1a : Upper branch of first cubital, Cu 1b : Lower branch of first cubital, D : Discal cell, DU.BU. : Ductus bursae, DU.EJ. : Ductus Ejaculatorius, DU.SEM. : Ductus seminalis, h : Humeral vein, LA.AV. : Lamella antevaginalis, LA.PV. : Lamella postvaginalis, ldc : Lower discocellular, M<sub>1</sub> : First medial vein,

M<sub>2</sub> : Second medial vein, M<sub>3</sub> : Third medial vein, mdc : Middle discocellular, O.B. : Ostium bursae, P.A. : Papilla analis, PO.APO : Apophysis posterioris, R<sub>1</sub> : First radial vein, R<sub>2</sub> : Second radial vein, R<sub>3</sub> : Third radial vein, R<sub>4</sub> : Fourth radial vein, R<sub>5</sub> : Fifth radial vein, Rs : Radial sector, SA : Saccus, SBZ : Subzonal portion of aedeagus, Sc : Subcosta, Sc+ R<sub>1</sub> : Stalk of veins Sc and R<sub>1</sub>, SL : Sacculus, SPZ : Suprazonal portion of aedeagus,

TEG : Tegumen, udc : Upper discocellular, UN : Uncus, VIN : Vinculum, VLV : valva.

#### ACKNOWLEDGEMENTS

Author is grateful to the Director, Zoological Survey of India, Kolkata for encouragement throughout and Officer-in-Charge, Northern Regional Centre, Zoological Survey of India, Dehradun for facilities.

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