A New Species of the Genus *Ypthima* HÜBNER from Mindanao, the Philippines (Lepidoptera, Satyridae)

Nobuo KASHIWAI

Biological Laboratory, College of General Education, Kyushu University, Ropponmatsu, Fukuoka, 810 Japan

In December 1976 to January 1977, Mr. Akira YAMAMOTO collected several specimens of an interesting species of the genus *Ypthima* HÜBNER at Mt. Apo, Mindanao, the Philippines. The same species was also collected by Mr. Yasusuke NISHIYAMA at the same locality in 1977 to 1978 and by myself in 1978. I have studied this species not only on its external morphological characters but on its habits in the field in comparison with the known species of *Ypthima*. Recently I have come to the conclusion that this is an undescribed species of the genus. In this paper I describe the new species and give biological notes on its adult habits.

The present new species apparently belongs to the *pandocus*-group of this genus (SHIRÔZU & SHIMA, 1979) and seems to be most closely allied to *Y. sempera FELDER*, 1863, occurring in the Philippines. The discovery of a new species of the *pandocus*-group from the Philippines is very interesting in considering the phylogenetic relationships and zoogeographical distribution of the group.

*Ypthima sensilis* sp. nov.

♂. *Upperside of forewing*: Ground colour dark brown; sexual brand well developed; inner and outer discal fascia absent; submarginal fascia narrow and dark; marginal fascia obscure; rather large, narrowly yellow-ringed, bipupilled, black subapical ocellus present, inner half of the yellow ring usually screened by male brand; fringe dark brown.

*Upperside of hindwing*: Ground colour dark brown; inner discal fascia indistinct; outer discal fascia sometimes weakly developed; submarginal fascia weak, broadened from cells 5 to 3; space between outer discal and submarginal fasciae sometimes pale brown; rather large, narrowly yellow-ringed, single-pupilled, black ocellus present in cell 2; small, oval, narrowly yellow-ringed geminate ocellus present in cell 1b; small, narrowly yellow-ringed or ringless, single-pupilled black ocellus rarely present in cell 6; still small, yellow-ringed black ocellus rarely present in cell 3; fringe brown.

*Underside of forewing*: Ground colour dark brown; striaion inconspicuous, especially on basal half; inner discal fascia rarely traceable; outer discal fascia rather broadly developed, especially in cells 2 to 1b; submarginal fascia as on upperside; large, yellow-ringed, bipupilled black subapical ocellus present, yellow ring broader than on upper side; fringe dark brown.

*Underside of hindwing*: Ground colour dark brown, broadly whitish grey except

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1) Present address: Laboratory of Entomology, Tokyo University of Agriculture, Setagaya-ku, Tokyo, 156 Japan.
for anterior 1/4–1/3; striation conspicuous and very fine on the whitish area; inner and outer discal dark fasciae narrowly developed; submarginal and marginal dark fasciae rather distinct, the former broadened from cells 5 to 3 and fused with the latter forming a dark brown stripe; small, single-pupilled, yellow-ringed black ocelli present in cells 6 and 2; ocellus in cell 2 subequal in size to that in cell 6 or slightly larger; small, oval, yellow-ringed geminate ocellus present in cell 1b; fringe brown.

♀. Marking generally same as in male. Ground colour usually paler; yellow ring surrounding ocellus on upperside usually broader and more distinct than in male.

Upperside of forewing: Inner discal fascia indistinct; outer discal fascia weakly developed; space between submarginal and outer discal fasciae paler than inner portion, narrowed posteriorly; subapical ocellus larger than in male.

Upperside of hindwing: Outer discal fascia rather distinct; space between submarginal and outer discal fasciae paler than in male; ocelli in cells 2 and 1b larger than in male; small, yellow-ringed, blind or rarely single-pupilled black ocelli often present in cells 6 and 3.

Underside of forewing: Outer discal and submarginal fasciae weak; space between
submarginal and outer discal fasciae distinctly paler than inner portion, weakly and finely striated.

**Underside of hindwing:** Striation rather coarse on inside of outer discal fascia, dense on space between submarginal and outer discal fasciae.

Head covered with dark brownish hairs and some whitish ones; vertex about $1/3 \times$ as wide as head. Antenna dark brown, about $2/5 \times$ as long as forewing, apical $1/4$ slightly thickened. Labial palpus with 3rd segment about $1/2 \times$ as long as 2nd.

Forewing narrow, termen nearly straight; vein $R_1$ arising well before $r-m$ cross-vein. Hindwing rather roundish; anterior corner of termen rather angled.

Male fore leg: Trochanter slightly shorter than tibia; femur about $1.5 \times$ as long as tibia; tarsus absent.

Androconia: Basal portion rather broad, narrowed at basal $1/4$; apical portion slender, feather like at apex.

Male genitalia: Tegumen in dorsal view somewhat narrow at base, broadened medially, anterior margin deeply concave medially, in lateral view about $2 \times$ as high as vinculum, produced posteroventrally, posteroventral margin irregularly serrate; a small membranous incision present on ventral margin of vinculum; appendix angularis weakly developed. Uncus rather short, about $3/8 \times$ as long as tegumen, gradually narrowed to weakly pointed apex, in lateral view weakly curved ventrally; narrow membranous slit present at base. Fenestrula indistinct. Saccus about $1/7 \times$ as long.
as ring-height, usually without ventral transverse suture. Aedeagus in dorsal view nearly straight, obliquely membranous from apex to apical 2/7, without flexed apical sclerite, in lateral view weakly curved ventrally at apical 1/3. Valva nearly as long as ring-height, broad at base, strongly narrowed before the middle; costa broad on basal 1/4, narrow and long in posterior portion, continuous to narrow rod-like ampulla+harpe which is weakly expanded at subapical portion and rather pointed at apex; anellifer occupying ventral 1/2 of basal portion of valva, narrowed posteriorly, extending to base of rod-like ampulla+harpe; sacculus indistinct. Juxta weakly sclerotized, U-shaped in posterior view. Subanal area of diaphragma weakly sclerotized.

Female genitalia: Anterior portion of copulatory cavity narrowly sclerotized, narrowed to 7th sternum. Central process of lamella antevaginalis long and slender, weakly broadened towards slightly furcate apex, each furcated apex rather pointed; lateral lobe of lamella antevaginalis narrowly developed, without minute hairs. Lamella postvaginalis in lateral view strongly curved at apical 1/3, with short membranous projection at middle. Ductus seminalis attached to ductus bursae near ostium bursae. Ductus bursae narrowly sclerotized on ventral portion near ostium bursae. Bursa copulatrix with 2 elongate signa. Membranous pouch below papillae anales short.

Forewing length: ♂, 21.4–23.0 mm; ♀, 21.8–24.2 mm.
Distribution: Mountainous regions of Mindanao, the Philippines.
Holotype: ♂, Penangudloton, Upper region of Upian River, Davao City Pro-
vence, Mindanao, Philippines, 12. iii. 1978, N. KASHIWAI leg.


Holotype and some paratypes will be deposited in the collection of the National Science Museum, Tokyo. The other paratypes will be deposited in the collection of the following institutions and in private collections: Osaka Museum of Natural History, Osaka; Biological Laboratory, College of General Education, Kyushu University, Fukuoka; Research Institute of Evolutionary Biology, Tokyo; Entomological Laboratory, University of the Philippines, Los Baños; British Museum, Natural History, London; Messrs. A. YAMAMOTO, S. TAKEI and Y. UÉMURA, and N. KASHIWAI, Tokyo.

Remarks. This species apparently belongs to the pandocus-group in having the following characters: Underside of hindwing with 3 ocelli in cells 6, 2 and 1b; forewing vein R₁ arising before r–m crossvein; valva of male genitalia narrow, long, twisted medially and pointed at apex, base of valva expanded dorsally.

This species has, however, a distinctive character which differs from the generalized character of the pandocus-group: The ventral transverse suture of the saccus of the male genitalia is usually absent in this species. As the presence of this suture was considered to be one of the synapomorphies of the pandocus-group (SHIRÔZU & SHIMA, 1979), this species seems to be most primitive in this character among the members of the group.

In the pandocus-group this species most closely resembles Y. sempera FELDER²) from Mindanao, but may be distinguished from it by the following characters in the wing markings and the male and female genitalia: Forewing narrower, ground colour darker on both sides, subapical ocellus of forewing usually larger and its yellow ring narrower, male brand more strongly developed, underside of hindwing more whitish, striae finer and ocelli in cells 6, 2 and 1b usually larger; in male genitalia, uncus slightly longer and thicker, rod-like ampulla+harpe of valva shorter and trans-

²) The Philippine species, Y. sempera, is now considered to contain two different species; one of them is relatively small, whitish in wing markings on underside and seems to prefer forest, while the other is larger, greyish and more frequently appears in sunny place than the former. These two species are very similar to each other and the distinguishing characters of Y. sensilis mentioned above may be applicable to both species, though Y. sensilis is mainly compared with the latter species in this paper. The detailed discussion concerning the specific names of these two species and the phylogenetic relationships among three Philippine species of the pandocus-group of Ypthima will be made in the other paper.
verse suture of ventral surface of saccus usually absent; in female genitalia, central process of lamella antevaginalis slender and only weakly broadened on apical portion, lateral lobe of lamella antevaginalis very weakly developed and lacking minute hairs and membranous projection of lamella postivaginalis short, broad and rounded in apical portion.

Habits. *Y. sensilis* occurs sympatrically with *Y. sempera* at Mt. Apo, but both can be distinguished from each other not only by their wing markings but also by their adult behaviour. *Y. sensilis* has more sensitive nature than *Y. sempera*; when an observer approaches the butterfly, it flies swiftly away. The species usually lives in or around the forest. It is rarely found in open and sunny places. In contrast, *Y. sempera* is less sensitive than *Y. sensilis*, more frequently found in open places. *Y. sensilis* occasionally appears in glades to lay eggs; I once observed a female was laying an egg on an exposed root near grasses of the genus *Opismonen* (Gramineae).

Acknowledgements

I thank Mr. Akira Yamamoto of Tokyo, the first discoverer of this new species, giving me the opportunity to study this interesting butterfly. I am much indebted to Dr. Hiroshi Shima of Kyushu University, Fukuoka, for his valuable advice and kind help and this study could not be accomplished without his valuable advice. I also express my sincere thanks to Professor Dr. Takashi Shirōzu, Professor Toyohei

Fig. 4. Female genitalia of *Ypthima sempera* Felder. A: Central process and lateral lobes of lamella antevaginalis in ventral view; the right lateral lobe removed. B: Lamella postvaginalis in ventral view. C: Ditto in lateral view.
SAIGUSA and Mr. Osamu YATA of Kyushu University, Professor Hiromasa SAWADA and Associate Professor Yasuaki WATANABE of Tokyo University of Agriculture, Dr. Richard I. VANE-WRIGHT of the British Museum (Natural History), London and Dr. Yoshihiko KUROSAWA of the National Science Museum, Tokyo, for their kind guidance. I wish to thank Messrs. Yasusuke NISHIYAMA and Yoshinobu UÉMURA of Tokyo, Messrs. Yuji FUNATSU and Toshiya HIROWATARI of Kyushu University and Messrs. Toshiaki AOKI and Shuhei YAMAGUCHI of the Research Institute of Evolutionary Biology, Tokyo, who gave me opportunities to examine valuable materials.

References


抄録

フィリピン、ミンダナオ島産 Ypthima 属の 1 新種（柏井伸夫）

フィリピンのミンダナオ島から ラタンミシャノ属 pandocus 種群の 1 新種, Ypthima sensilis を記載した。本種の特徴、習性について述べ、その系統関係について考察を行った。

本種、後翅裏面 1b, 2, 6 部に LIMIT の前翅 R₅ は r-m 横脈手前基部より生じること、前翅尾部の valva は細長く、中央でねじれ、先端で尖ること、valva の基部は背方に幅広く伸長することなどの諸点から、pandocus 種群に属する。しかし本種には、つぶら前翅尾部の saccus 腹面に切れ込みを欠く、有特有の形質がみられる。Saccus 腹面の切れ辺は、pandocus 種群の固有新形質の 1 つと考えられていたもので (SHIRÔZU & SHIMA, 1979)。本種の有特有新形質に関しては、もっとも原始的な状態にあると考えられる。

本種はミンダナオ島の山地域に分布し、フィリピンに広く分布する Y. sempera FEDER（2 種を含むと考えられる）に近似し、またこれと混棲しているが、以下の諸特徴によって後者と区別される：前翅は尖り、地色はより濃いこげ茶色、前翅上部の眼状斑の黄環の基半分を覆う。後翅裏面は白色、波状稜は細かく、1b, 2, 6 各室の眼状斑は大きい。雄前翅部では、uncus はやや長く、valva の管状の ampulla + harpe は短く、多くの個体では saccus 腹面の切れ込みを欠く。雌前翅部では、lamella antevesinalis の中央突起の先端はあまり広がらずに 2 分し、lateral lobe は発達が弱く微毛を欠く。lamella postvesinalis の膣状突起は短く、幅広くその先端部は尖い。

本種は林帯で、Y. sempera に比べ観察者の接近などに対してより敏感に反応し、飛翔する。