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FIRST TIME RECORDED BORDERED SALLOW MOTH *PYRRHIA UMBRA* HUFN (LEPIDOPTERA : NOCTUIDAE : HELIOTHINAE) FROM SINDH, PAKISTAN, WITH ITS DIVERSITY, LIFE CYCLE AND CONTROL

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ABSTRACT

Pyrrhia umbra Hufn., is recorded for the first time from Sindh. Described in detail with special reference to its head appendages, venation of fore and hind wings and female genitalia. The systematic position and its diversity in Pakistan is also briefly discussed.

Key Words : *Pyrriha umbra*, Hufn. Noctuiidae, Heliothinae, Pakistan, diversity.

INTRODUCTION

Cotes and Swinhoe (1888) described genus *Pyrrhia* with only one species *P. marginata*, under the family Heliothidae, synonymising the species *Noctua marginata, N. rutilago, N. umbrago, Pyrrhia ruthilago, Heliothis marginata* under *P. marginata*, which were recorded from Swinhoe and Europe. Later Hampson (1894) described the genus *Pyrrhia* along-with two species including *umbra* Hufn, recorded from Europe, Japan, N.W. Himalayas and Nagas, under the family Noctuidae.

In the beginning of 20th century, Seitz (1914) described the genus *Pyrrhia* along-with five species including *P. umbra* under the subfamily Amphipyrinae of family Noctuidae. Pierce (1952) listed *P. umbra* recorded from British Islands. Helgard (1991) in field guide to Butterflies and moths described only one species *P. umbra* Hufn. Hashmi and Tashfeen (1992) listed twenty-three genera under the family Noctuidae, ignoring genus *Pyrrhia*. Kitching and Rawlins (1997) discussed the larva of *P. umbra* Hufn., under the subfamily Heliothinae of family Noctuidae.

MATERIALS AND METHOD

The adult specimens of *Pyrrhia umbra* Hufn were collected with the help of light trap from Karachi, Sindh, Pakistan and were identified with the help of standard literature. For the study of sex genital complex the abdomen was excised at the base and boiled in 10% KOH solution for about 5-minutes and then washed with tap water. The genitalia were removed from the abdomen for detail examination and later individual elements of the genitalia and the associated structures were removed as required and examined. Drawing were made using ocular grid under Leitz Weitzler dissection microscope and a graph paper, which later were transferred on drawing sheet and finalized with pelican ink. The diagrams are to the given scale.

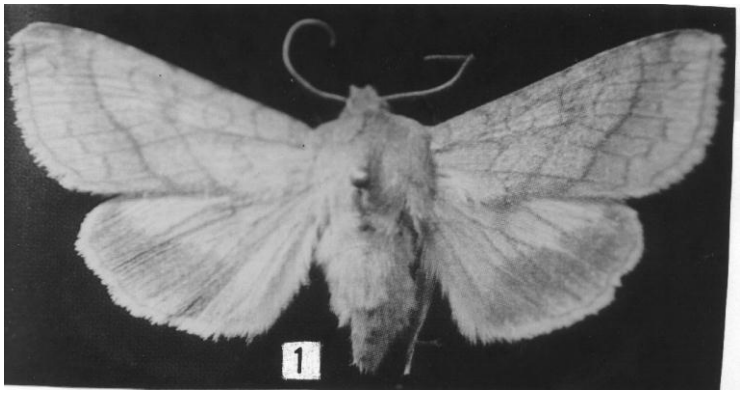
RESULT

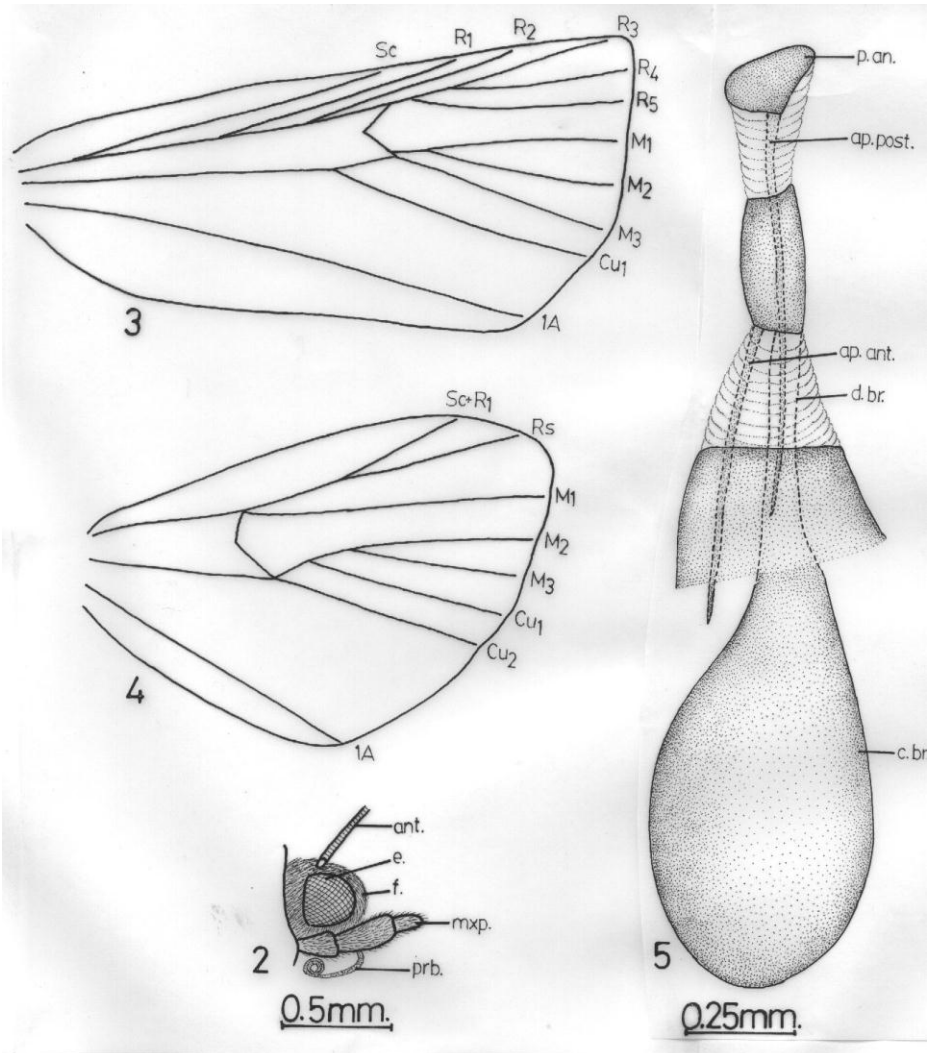
Genus : *Pyrrhia* Hubner

Pyrriha Hubner 1818, Verz. : 233 ; Hampson, 1894. *Brit. Ind. 2*:172.

Diagnostic features

Body stout, medium sized, generally brownish yellow or reddish brown, eyes moderate, nacked and without lashes, frons rounded, not produced, proboscis fully developed, palpi porrect, thickly scaled, 3rd segment very short, thorax sequarely scaled with a long sharp crest behind collar, fore wings large, apical angle narrowed, outer margin smooth with scale, hind wings with veins 3rd and 4th wide and part, all tibiae without any spines, abdomen cylindrical, without tufts, apically gradually narrowed with truncated apex, in female papillae anales moderate besets with scales, apophysis anteriors and posteriors very large, ductus bursae large, tube-like, corpus bursae very large balloon-shaped.





Figs.1-6. *Pyrrhia umbra* Hufn., 1. entire, dorsal view; 2. larvae, lateral view; 3. head, lateral view; 4. fore wings, dorsal view; 5. hind wings, dorsal view; 6. female genetalia, lateral view.

Key to the laterings: ap.ant. (apophysis anteriors), ap.post (apohysis posteriors), ant. (antenna), c.br. (corpus bursae), d.br. (ductus bursae), e. (eye), f. (frons), mx.p. (maxillary palpi), p.an. (papillae anales), 1A. (anal vein 1), Cu1 & Cu2 (cubital vein 1 and 2), M1-M3 (median vein 1 to 3), R1-R5 (radius vein 1 to 5), Rs. (radio-suctorial vein), Sc. (sub-costal vein), Sc + R1 (sub-costal and radius vein 1).

Comparative note

This genus is most closely related to *Xanthia* Ochs., having thorax with well developed crest behind the collar but it can easily be separated from the same in having thorax with a long sharp crest behind the collar, palpi large and porrect and by the other characters as noted in the description.

Type species : *Pyrrhia purpurites* Treitsehke.

Distribution: Oriental and Palaearctic regions.

***Pyrrhia umbra* Hufn.**
(Figs. 1-5)

Pyrrhia umbra Hufn. *Berl. Mag. 3* : 294 : Hampson, 1894. *Faun. Brit. Ind. 2*: 172.
Noctua marginata Fabr. 1775. *Syst. Ent:* 610 ; *Kleem., Beitr. 2* : P17. Figs. 6,8.
Noctua rutilage Schiff. 1776. *Wien. Verz. 86* : 4.
Noctua umbrago Esp., 1777-91, *Schmett. 4* : pl.185, figs. 7,8.
Noctua conspicua Bork. 1778-94. *Eur. Schmett. 4* : 123, no.50.
Noctua marginago Haw. 1803, *Lep. Brit.* 235, no.217.

Colouration

Body generally brownish yellow, fore wings with chestnut sub-basal line, dark ante-medial, medial and post-medial curved lines; hind wings pale with outer margin light brown, abdomen ocharaceous.

Head

Eyes moderate sized, smooth without lashes, frons broadly rounded, maxillary palpi large, anteriorly porrected, 2nd labial segment much longer than basal, 3rd segment shortest and about ½ the length of 2nd, proboscis well developed and elongated (Fig. **2**).

Fore wing

Fore wing (Fig. **3**) with apical angle sub-acute, veins Sc and R1 parallel to each other and well separated, R3 and R4 largely stalked, later anastomosing with R5 and originating from upper angle of cell, M1 and M2 stalked originating from just above the lower angle of cell, only one anal vein (1A) is present.

Hind wing

Hind wing (Fig. **4**) with veins Sc+R1 well marked and anastomosing with Rs by a large stalk, vein M1 originating from upper angle of cell, veins M2 and M3 stalked later anastomosing with Cu1 and Cu2 respectively and originating from lower angle of cell, only one anal vein (1A) is present.

Abdomen

Abdomen elongated, broad, apically gradually narrowed without tuft, apex rounded with small scales.

Body size

Body size (Fig. **1**) is 40-42 mm in wing expansion.

Female genitalia

Papillae anales moderate, somewhat triangular-shaped, posteriorly slightly convex, beset with small scales, apophysis posteriors much elongated, apex pointed and about one and half time the length of apophysis anteriors, ductus bursae moderate, narrow and tubular, corpus bursae very large balloon-like without cornuti (Fig. **5**)

Material examined

One female; Pakistan, Sindh, Karachi, on light, 15-07-1997, leg. Syed Viqar Ali, lodged at Ali Museum of Insecta, Karachi.

Comparative note

This species is most closely related to *Pyrrhia cuprea* Moore, in having general body shape, palpi porrect and thickly scaled, but it can easily be separated from the same in having eyes without lashes, head, thorax and fore

wings brownish yellow as compared to eyes with lashes, head, thorax and fore wing purplish red brown in *P. cuprea* and by the other characters as noted in the description.

Larva

Larva is covered in conical granules with minute apical spines, often yellowish colour. The full-grown larva is about 40mm long. They are leaf eater and also burrow into large pods and eat the developing seeds. The caterpillars often feed with their head. They move on the plant and may attack fourteen or more squares area during the larval period. The Pupa is about 17mm long, pupal period usually lasts 10-14 days.

Life cycle

There are six larval instars, and the total larval period usually lasts 14-24 days, but as long as fifty-one days at 17°C. Moulting normally takes place on the upper surface of leaves during daylight hours. Egg lays starts about four days after emergence and may continue for a further ten days.

Diversity

This species is recorded from Karachi, Sindh, in between the range of 21m above sea level. The population is very high during July and August and very less recorded in December and January. The temperature varies during summer 36°C and in winter 21°C, while average annual temperature is 27°C. Amount of precipitation is between 50-60 mm or sometime to about 100 mm. Average relative humidity (mean) at 1200 UTC 46%.

Control

Take cheap type of washing soap about 1-2 Lbs and dissolve it in a small quantity of water after cutting it into thin slices. During winter, water may be boiled to dissolve soap. The amount of soap to be used depends on the degree of infestation. In case of a light infestation weaker solution may sufficient. It is a weak contact poison but is very useful to control this insect.

DISCUSSION

The genus *Pyrrhia* With its five species recorded from Palaearctic and Oriental regions but not a single species recorded from Pakistan. *P. umbra* Hufin., is recorded and recognized for the first time from Karachi, Sindh, Pakistan. This species is very common in N.W. Himalayas, Japan and Europe areas.

Among five species, *P. umbra* Hufin., is closely allied to *P. cuprea* Moore., in having general body shape and head appendages, but this species is isolated from others by its apomorphies like eyes without lashes, head, thorax and forewings brownish yellow, papillae anales triangular-shaped and moderate, apophysis posteriors much elongated, corpus bursae very large balloon-like without cornuti.

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