

REDESCRIPTION OF *AMSACTA ALBISTRIGA* WALKER (LEPIDOPTERA: ARCTIDAE) FROM PAKISTAN

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Abstract

The *Amsacta albistriga* Walker is redescribed in detail with special reference to its head, venation of fore and hind wings and male genitalia from Donge Gali, Pakistan. The adult specimens of *Amsacta albistriga* Walker were collected with the help of light trap from Donga Gali, Pakistan and were identified with the help of available literature as mentioned in references. Body generally moderate sized, eyes large or moderate, frons generally rounded, maxillary palpi developed and long. This species is most closely related to *moorie* Butler in having frons anteriorly straight, maxillary palpi with 2nd segment slightly longer than 3rd segment, hind wings with vein M₂ originates from lower angle of cell, Cu₁ originates from below lower angle of cell, but it can easily be separated from the same in having maxillary palpi anteriorly directed, fore wings with vein M₁ originates from lower angle of cell, in males uncus anteriorly broad, paramere with large inner basal process, juxta broad somewhat quadrangular and by the other characters as noted in the description.

Introduction

Cotes and Swinhoe (1888) listed genus *Amsacta* and its three species along with *A. albistriga* under the family Arctiidae. Moore (1882) redescribed genus *Amsacta* and its two species under the family Arctiidae. Hampson (1892) redescribed genus *Amsacta* along with three species including *A. albistriga* under the family Arctiidae and explained only morphology and wing venations of said species recorded from Dharamshala and Nagas. Watson *et al.* (1980) listed genus *Amsacta* with its type species *Amsacta marginalis* recorded from Australia and placed the same species under the subfamily Aganinae of family Arctiidae. Hashmi and Tashfeen (1992) listed species *albistriga* of genus *Amsacta* under the family Arctiidae. The red hairy caterpillar, *Amsacta albistriga* Walker, is an important pest of groundnut, castor and cotton in India.

Materials and Methods

The adult specimens of *Amsacta albistriga* Walker were collected with the help of light trap from Donga Gali, Pakistan and were identified with the help of available literature as mentioned in references. 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. For dissection used ocular grid leitz weitzler dissection microscope and drawings were made on a graph paper, which later were transferred on drawing sheet and finalized with pelican ink. All the diagrams are to the given scale.

Result Genus: *Amsacta* Walker 1855

Amsacta Walker, 1855, *List Specimens lepid. Insects Colln Br. Mus.* 4: 804; Cotes and Swinhoe 1887, *Cat. Moths Ind. Bombyces* 1: 104;

Watson *et al.* 1980, *Brit. Mus. (Nat. Hist.)* 2: 9; Goodger and Watson, 1995, *Nat. Hist. Mus.* : 5

Diagnostic features: Body generally moderate sized, eyes large or moderate, frons generally rounded, maxillary palpi developed and long, 2nd segment longer than 3rd, generally proboscis short but some time slightly long and highly coiled, fore wings large, apically narrowed, generally subrounded, veins R₂, R₃, R₄ and R₅ stalked and originate from upper angle of cell, one anal vein (1A) is present, hind wings short, broad apically narrowed, veins R₅ and M₁ anastomosing and originate from upper angle of cell, two anal veins (1A and 2A) are present, in males tegumen large and elongated, uncus generally broad, outer and inner margin sinuated, gnathos short and reduced, paramere moderate and trilobed, theca broad, curved, membranous conjunctiva large with spine-like cornuti, in females papillae anales large, apophysis posterior well developed, ductus bursae tubular, corpus bursae large.

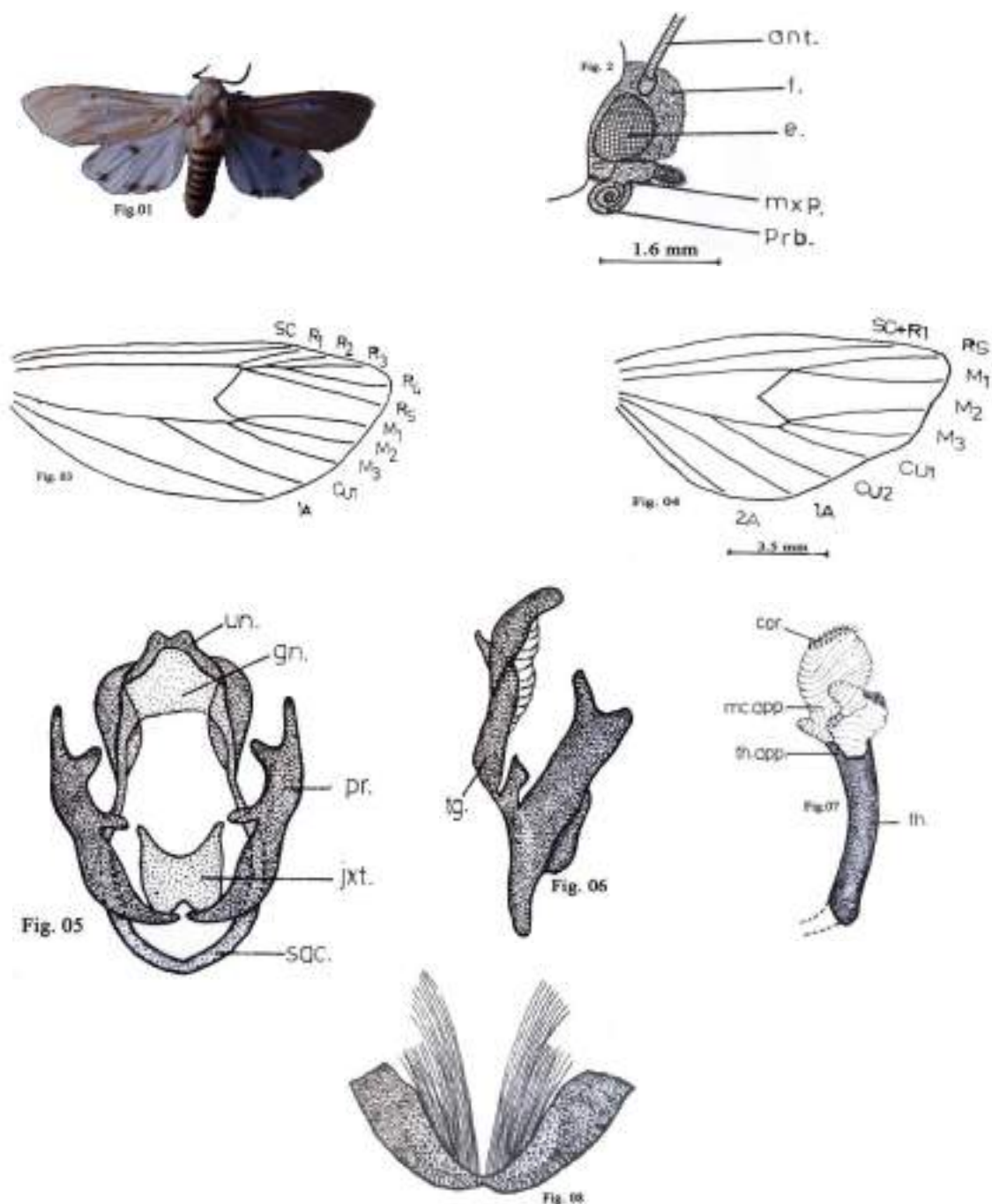


Illustration of Figures: Figs.1-8. *Amsacta albistriga* Walker., 1. Adult, entire dorsal view; 2. head, lateral view; 3. forewing, dorsal view; 4. hindwing, dorsal view; 5. tegumen, ventral view, 6.same, lateral view, 7.aedeagus, lateral view, 8. Scent brush, dorsal view.

Key to the laterings: ant. (antenna), e. (eye), fr. (frons), gn. (gnathos), jxt. (juxta), mcl.(membranous conjunctival appendage), mx.p. (maxillary palpi), pr.(paramere), sac.(saccus), tg. (tegumen), th. (theca), th.app. (thecal appendage), un.(uncus), 1A - 3A. (anal vein 1, 2 and 3), 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 species is most closely related to *Estigmene* Hubner in having eyes short, in males paramere with inner margin trilobed or tetralobed, in females with reduced or ill-developed apophyses, but it can easily be separated from the same in having maxillae with 2nd segment about 2_x or more than 2_x the length of 3rd segment, in males the gnathos is reduced or short in contrast maxillae with 2nd segment about 1½_x or shorter than 1½_x the length of 3rd segment, in males the gnathos is well developed in *Estigmene* and by the other characters as noted in the key and description.

Type species: *Amsacta marginalis* Walker 1855

Distribution: Ethiopian and Oriental regions

Amsacta albistriga Walker

(Figs.-)

Amsacta albistriga Walker, 1864, *Cat. Lep. Net. B. M.* 31: 303

Colouration: Head, thorax and abdomen light brown except dark brown spot at base of collar and six vertical large patches and two spots, dorso-lateral patches and ventro-lateral patches on abdomen (Fig.1).

Head: Eyes (Fig.2) moderate, frons broad, ventro-anteriorly pored, palpi large, passing frons, slightly directed ventrad, 2nd segment about 1½X length of 3rd segment, proboscis long and coiled.

Fore wings: Fore wings (Fig.3) large, apically narrowed, sub-acute, light brown except white areas on base of radius and cubital portion, dark brown spot beneath anterior angles of cell, apex of posterior angle of cell, veins R₃ and R₄ moderately stalked, later moderately stalked with R₂ shortly stalked with R₅ and originate from upper angle of cell, R₁ originates from above upper angle of cell, M₁ and M₂ anastomosing and originate from lower angle of cell, M₃ originates from below lower angle of cell, only one anal vein (1A) is present.

Hind wings: Hind wings (Fig.4) small, broad, apically narrowed, subrounded outer margin obliquely distinctly sinuated, white except dark brown one median and four apical spots, veins R_s and M₁ anastomosing and originate from upper angle of cell, M₂ and M₃ anastomosing and originate from lower angle of cell, Cu₁ originates below lower angle of cell, two anal veins (1A and 2A) are present.

Wing expansion: Body size is 46-48 mm with wing expansion (Fig.1).

Male genitalia: Tegumen (Figs. 5 & 6) large, elongated, sclerotized, saccus semicircular with broad base, without process, juxta quadrangular distal lateral margin produced into lobe, uncus broad, outer and inner margin sinuated, apex broad, sub-rounded, a thumb-like process at base of uncus, gnathos reduced, membranous, paramere moderate, trilobed, each lobe prominent and lobe-like, aedeagus (Fig.7) tubular, theca with lateral thecal appendage, membranous conjunctival appendage lobed, apical lobe large with a bunch of prominent spine-like cornuti, outer lobe moderate with a bunch of sub-apical small spine-like cornuti.

Scent brush: Scent brush consists of a pair of posterior abdominal brush (Fig.8) located on outer margin of 8th segment, each tufts bilobed, the brush of inner lobe longer than outer lobe. The median gland consists of lateral and a median cuticular flap beset with fringe of brush.

Material examined: Five males, Pakistan: Donga gali, Abbottabad, 6.8.2001 and 5.7.2003, Syed Viqar Ali, on light, lodged at National Insect Museum, Rawalpindi and authors collections.

Discussion: This species is most closely related to *moorie* Butler in having frons anteriorly straight, maxillary palpi with 2nd segment slightly longer than 3rd segment, hind wings with vein M₂ originates from lower angle of cell, Cu₁ originates from below lower angle of cell, but it can easily be separated from the same in having maxillary palpi anteriorly directed, fore wings with vein M₁ originates from lower angle of cell, in males uncus anteriorly broad, paramere with large inner basal process, juxta broad somewhat quadrangular and by the other characters as noted in the description. This species is recorded from Donga gali and Abbottabad in between the range of 2400 m 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 17^oC and in winter 1^oC, while average annual temperature is 12^oC, Amount of Precipitation between 1300-1400mm or sometimes to about 1450mm. Average relative humidity at 1200UTC 61%.

References

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