

## STUDY OF FEMALE GENITALIA OF *SICCIA TAPROBANIS* WALKER (LEPIDOPTERA : ARCTIIDAE : LITHOSIINAE) FROM PAKISTAN

S. Nargis Viqar<sup>1</sup>, S. Kamaluddin<sup>2</sup> and Aliza Ali<sup>3</sup>

<sup>1</sup>Government Degree College for women, Block-M, North Nazimabad, Karachi, Pakistan

<sup>2</sup>Federal Urdu University of Arts, Science and Technology, Gulshan-e-Iqbal Campus, Karachi, Pakistan

<sup>3</sup>Jinnah Medical and Dental College, Shaheed-e-Millat Road Karachi, Pakistan

---

### ABSTRACT

*Siccia taprobanis* Walker is recorded from Pakistan and redescribed in detail with special reference to its head appendages, venation of fore and hind wings and female genitalia.

**Key Words :** *Siccia taprobanis* Walker, Arctiidae, Lithosiinae, genitalia, Pakistan.

---

### INTRODUCTION

Walker (1854) described *Siccia taprobanis* and placed it under the family Lithosiidae. Butler (1877) redescribed *Siccia taprobanis* as *Aemene taprobanis* and placed it under the family Lithosiidae recorded from Poona. Moore (1882) also redescribed genus *Siccia taprobanis* as *Aemene taprobanis* recorded from Ceylon and placed it under the family Lithosiidae. Cotes and Swinhoe (1888) have listed genus *Siccia* and two species along with *S. taprobanis* under the family Lithosiidae which was recorded from Belgaum. Chaudhry *et al.* (1966) have listed *Siccia taprobanis*, recorded from Swat and placed it under the family Arctiidae. Dennis (1975) defined two species of *Siccia* under the family Arctiidae. Skaife (1979) collected *Siccia taprobanis* from Africa and stated that the caterpillar of *S. taprobanis* has short bristles, or setae, on their bodies. Watson *et al.* (1980) listed genus *Siccia* with his type species *Siccia caffra* Walker recorded from South Africa under the subfamily Lithosiinae of family Arctiidae. Barlow (1982) gave an introduction of the South East Asian moths and as well as *Siccia taprobanis*. Hashmi and Tashfeen (1992) gave a check list of Lepidoptera of Pakistan and listed *Siccia taprobanis* under the subfamily Lithosiinae of family Arctiidae. Dubatolov *et al.* (1993) listed *Siccia taprobanis* as a member of subfamily Lithosiinae of family Arctiidae recorded from the territory of former USSR. Holloway (2001) mentioned *Siccia taprobanis* recorded from Broneo and placed it under the family Arctiidae. Kamaluddin *et al.* (2007) gave a checklist of moths of Pakistan, listed two species of genus *Siccia* along with two species i.e. *S. sordida* and *S. taprobanis* recorded from Swat, Pakistan and placed them under the family Arctiidae.

### MATERIALS AND METHOD

The adult female specimens of *Siccia taprobanis* Walker were collected with the help of light trap from Kalam, and Swat, 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 detailed examination and later individual elements of the genitalia and the associated structures were removed as required and examined. For dissection ocular grid leitz weitzler dissection microscope was used. Drawings were made on graph paper which later transferred on drawing sheet and finalized with pelican ink. All the diagrams are to the given scale.

### RESULT

Genus : *Siccia* Walker 1854

*Siccia* Walker, 1854, *List. Specimens lepid. Insects. Colln. Br. Mus.* 2: 539; Watson *et al.*, 1980, *Brit. Mus. (Nat. Hist.)* 2:179.

**Diagnostic feature**

Body very small sized not more than 25 mm in length, frons anteriorly pored, fore wings with veins R<sub>3</sub> and R<sub>4</sub> stalked, further stalked with R<sub>5</sub> then originate from upper angle of cell, hind wings with veins M<sub>1</sub> and M<sub>2</sub> widely separated, in females both apophyses are large sized, corpus bursae without cornuti.

**Comparative note**

This genus is most closely related to *Miltochrista* Hubner in having body very small sized not more than 25 mm in length, frons anteriorly pored, but it can easily be separated from the same in having fore wings with veins R<sub>3</sub> and R<sub>4</sub> stalked further stalked with R<sub>5</sub> then originate from upper angle of cell, hind wings with veins M<sub>1</sub> and M<sub>2</sub> widely separated, in females both apophyses are large sized, corpus bursae without cornuti in contrast fore wings with veins R<sub>3</sub> and R<sub>4</sub> stalked and directly originate from upper angle of cell, hind wings with veins M<sub>1</sub> and M<sub>2</sub> largely stalked, in females both apophyses are small, corpus bursae with dentate rod-shaped and small dot-like cornuti in *Miltochrista* and by the other characters as noted in the key and description.

**Type of species**

*Siccia caffra* Walker 1854.

**Distribution**

Ethiopian and Oriental regions.

***Siccia taprobanis* Walker**

(Figs. 1 - 5)

*Siccia taprobanis* Walker, 1854, *Cat.* 2: 542

**Colouration**

Head, thorax and abdomen are yellow (Fig.1).

**Head**

Eyes (Fig.2) large, frons well prominent, anteriorly much produced into sub-rounded apex, maxillary palpi antero-upwardly produced, slightly passing frons, 2<sup>nd</sup> segment about 2½X the length of 3<sup>rd</sup> segments, proboscis very long and coiled.

**Fore wings**

Fore wings (Fig.3) broad, anterior margin convex, apical angle sub-acute, outer margin slightly sinuated, yellow except light brown two basal vertical twisted lines, basal spots, a median zigzag line and 8-apical spots, veins R<sub>3</sub> and R<sub>4</sub> largely stalked, later moderately stalked with R<sub>5</sub> and originate from above upper angle of cell, M<sub>1</sub> originates from upper angle of cell, M<sub>2</sub> originates from lower angle of cell, Cu<sub>1</sub> and Cu<sub>2</sub> parallel to each other, only one anal vein (1A) is present.

**Hind wings**

Hind wings (Fig.4) short, broad, anterior margin sinuated, outer margin sinuated, apical angle sub-rounded, light yellow, veins R<sub>s</sub> and M<sub>1</sub> very largely stalked and originate from upper angle of cell, M<sub>2</sub> originates from lower angle of cell, M<sub>3</sub> originates below lower angle of cell, three anal veins (1A to 3A) are present.

**Wing expansion**

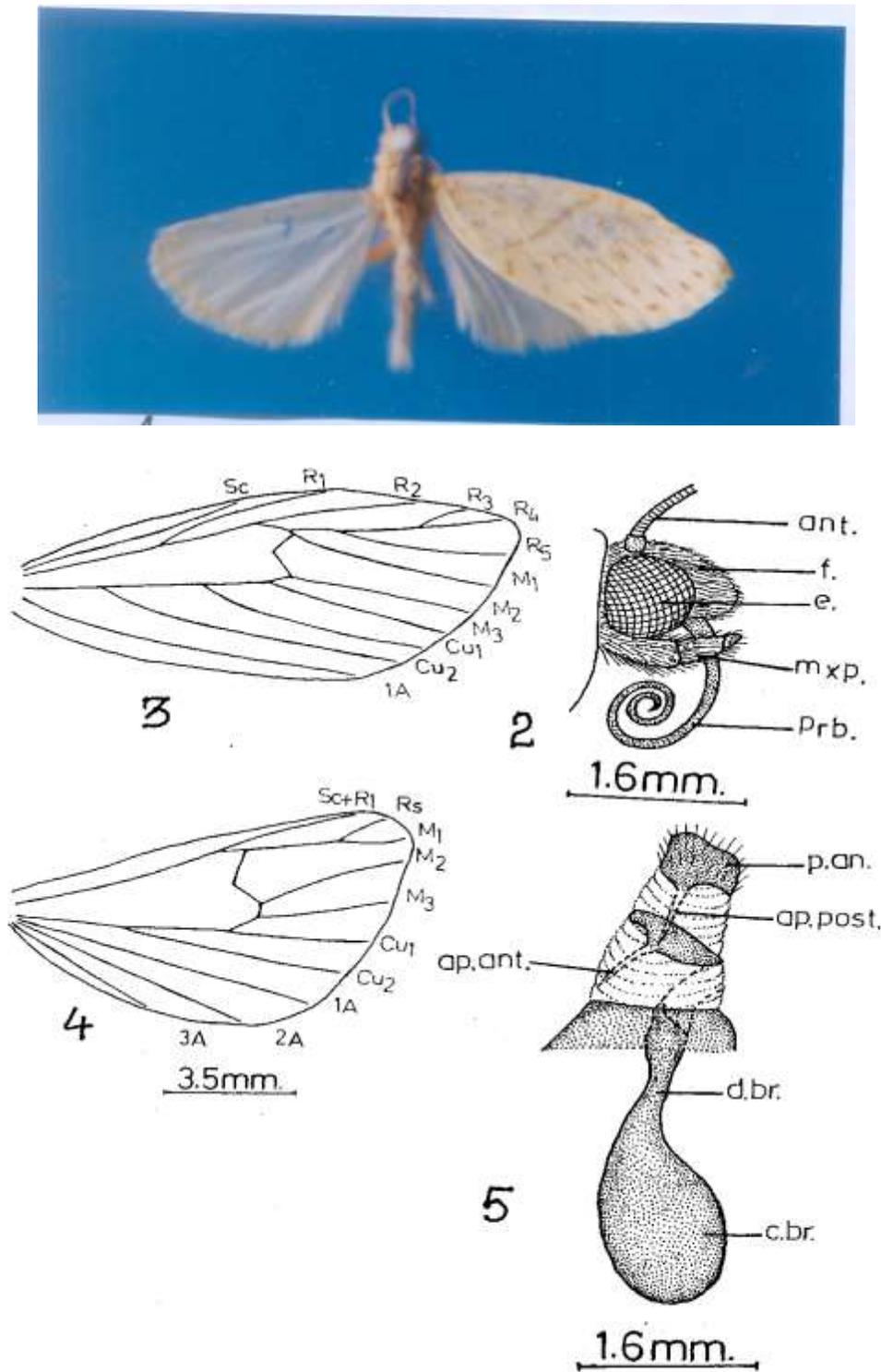
Body size is 32-34 mm with wing expansion (Fig.1).

**Female genitalia**

Papillae anales large, rectangular shaped, posterior margin sinuated, apophysis posteriors large, straight thorn-like about equal to the length of thorn-like slightly curved apophysis anteriors, lobus vaginalis strip-like, ductus bursae tubular, broad, corpus bursae large, balloon-like without cornuti (Fig.5).

**Material examined**

Four female, Pakistan: Kalam, 6.8.2001, and Swat, 8.8.2001, Aliza Ali and Syed Viqar Ali, on light, lodged at National Insect Museum, Rawalpindi and authors collection.



Figs.1-5. *Siccia taprobanis* Walker., 1. Adult, entire dorsal view; 2. head, lateral view; 3. fore wing, dorsal view; 4. hind wing, dorsal view; 5. Female genitalia.

**Key to the laterings**

ant. (antenna), e. (eye), fr. (frons), gn. (gnathos), jxt. (juxta), mcl.(membranous conjunctival appendage), mx.p. (maxillary palpi), 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).

## DISCUSSION

The representatives of the genus *Siccia* Walker are distributed in Ethiopian and Oriental regions. The genus *Siccia* Walker plays sister group relationships with *Miltochrista* Hubner by their frons anteriorly pored, fore wings with veins  $R_3$  and  $R_4$  stalked, further stalked with  $R_5$  then originate from upper angle of cell, hind wings with veins  $M_1$  and  $M_2$  widely separated, in female both apophyses are large sized, corpus bursae without cornuti. From the Ethiopian and Oriental regions the genus *Siccia* comprises only 59 species viz. *Siccia adiaphora*, *albescens*, *albisparsa*, *altiguttata*, *baibarensis*, *bicolorata*, *caffra*, *cinereicolor*, *cingalesa*, *commota*, *conformis*, *cretata*, *decolorata*, *discrepans*, *duodecimpeentata*, *fasciata*, *flava*, *fukudai*, *fulvocincta*, *fumeota*, *grammophora*, *gullutosana*, *gypsia*, *humilis*, *intersperse*, *kuangtungensis*, *likiangensis*, *melanospila*, *microsticta*, *minima*, *minuta*, *modesta*, *nigra*, *nigrpunctana*, *nilgirica*, *obscura*, *pallens parvula paucipuncta*, *punctigera*, *puunctipennis*, *pustulata*, *pyralina*, *quilimania*, *quinquefascia*, *sagittifera seriata*, *sinuate*, *sordida*, *stictica*, *stigmatias*, *subcinerea*, *taiwana*, *taprobanis*, *teitaensis*, *tenebrosa*, *tripuncta* and *vnigra* which have been recorded as yet. Among these mentioned as well as recorded species of genus *Siccia* Walker only two species viz. *Siccia sordida* Butler and *Siccia taprobanis* Walker have been identified from Pakistan. The *S. taprobanis* Walker is isolated from others by its autpomorphies like maxillary palpi antero-ventrally produced, 2<sup>nd</sup> segment  $2\frac{1}{2}X$  the length of 3<sup>rd</sup> segment, in females apophysis posteriors large straight thorn-like and corpus bursae ballon-like without cornuti.

## REFERENCES

- Butler, A.G. (1877). Descriptions of several African and Australian Lepidoptera in the collection of the British Museum. *Ann. Mag. Nat. Hist.* 19 (4):458-462.
- Barlow (1982). An Introduction to the Moths of South East Asia. *Intr. Moths of South East Asia*. 305pp.
- Chaudhry, G.U., Chaudhry M. I. and Khan, S.M. (1966), Survey of insect fauna of forest of Pakistan. Final technical report *Biol. Sci. Res. Div. 1*:167 pp
- Cotes. E.C and C.C. Swinhoe (1888). A catalogue of the moths of India. *Cat. Moths Ind. Bombyces*,
- Dubatolov, Tshistjakov and Viidalepp (1993), A list of the Lithosiinae of the territory of the former USSR (Lepidoptera, Arctiidae). *Atalanta (Wurzburg). Band 24.Heft.* 165-175.
- Dennis, H. (1975), Agricultural Insect Pests of the tropics and their control, Cambridge, 517 pp.
- Hampson (1892). The fauna of British India including Ceylon and Burma. *Faun. Brit. Ind. 1*: Frances and Taylor: 490.pp.
- Hashmi, A.A. and A. Tashfeen (1992). Lepidoptera of Pakistan. *Proc. Pakistan. Congr. Zool.* 12:171-206.
- Holloway, J.D. (2001). *The Moths of Borneo, Part 7, Family Arctiidae, subfamily Lithosiinae.* 210pp.
- Kamaluddin, S., S.V. Nargis and A. Aliza (2007). Check-List of the Moth of Pakistan (Lepidoptera : Heterocera). *Int.J.Biol.Biotech.* 4(3):113-119.
- Moore, F. D. ( 1882). *The Lepidoptera of Ceylon.* London, Vol.2 pp 77-101
- Skaife, S.H. (1979), *African Insect life, Country life books and distribution*, London, 185-186.
- Walker, F. (1854). List of the specimens of lepidopterous insects in the collection of the Moth, *Brit. Mus.* 2:279-581. London.
- Watson, A., D.S. Fletcher and W.B. Nye (1980). The generic names of Moths of the world, *B.M.N.H.*, London, 2:5.

(Accepted for publication August 2008)