

INVENTORY OF SPECIES OF *MILTOCHRISTA* HÜBNER (LITHOSIINAE: ARCTIIDAE: LEPIDOPTERA) FROM NORTHWESTERN AND NORTHEASTERN INDIA

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Abstract

Inventory of sixteen species of *Miltochrista* Hübner, i.e. *andamana* Moore, *arcuata* Moore, *conjunctana* Walker, *dharma* Moore, *euprepiodes* Walker, *frigida* Walker, *humilis* Walker, *ila* Moore, *linga* Moore, *nubifascia* Walker, *palmata* Moore, *punicea* Moore, *radians* Moore, *rubricosa* Moore, *strigipennis* Herr. Schaffer and *undulosa* Walker of genus *Miltochrista* Hübner from various localities in North-west and North-east India is given.

Keywords

Inventory, Lithosiin, Lepidoptera, Miltochrista, northeastern India, northwestern India, distribution

Abbreviations

Cu₁ - Upper cubital M₁-M₃ - Median branches
R₁-R₅ - Radial branches Sc - Subcostal vein
Sc+R₁ - First radial or second subcostal

Introduction

During the course of present investigations surveys were undertaken in different localities falling in the States of Arunachal Pradesh, Assam, Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, Sikkim and Uttaranchal for the collection of moth diversity referable to the subfamilies Arctiinae and Lithosiinae of the family Arctiidae. The representatives of subfamilies Arctiinae and Lithosiinae are commonly known as tiger and foot-man moths respectively. After proper sorting, followed by examination of various morphological characters such as the labial palpi, wing venation and maculation, as many as two hundred and forty eight specimens of sixteen species referable to a lithosiin genus *Miltochrista* Hübner have been identified from relevant literature (Hampson, 1894, 1900; Daniel, 1951, 1952; Watson *et al.*, 1980; Fang, 1991). Accordingly, the

present communication deals with an inventory of these species along with distribution and altitudinal range etc. The specimens are stored at the Department of Zoology, Punjabi University, Patiala, Punjab 147002, India.

Material and Methods

The adult moths were collected with the help of a portable light trap and from tube lights fitted at petrol pumps, forest and PWD rest houses. The specimens thus collected were stretched, pinned and preserved as per techniques in Lepidopterology. The morphological characters such as labial palpi, antennae, tibiae, wing venation and maculation have been studied from dried specimens for identification.

Observations

Genus *Miltochrista* Hübner

Hübner, [1819] 1816, Verz. Bekanntter Schmett: 166

Type Species: *Miltochrista miniata* (Froster, 1771)

Diagnosis

Labial palpus short and porrect; antenna simple with cilia long in male, minute in female or bipectinated in male. Forewing with vein R₁ arising from one half to three-fourths length of cell, running along Sc; veins R₃-R₅ stalked from angle of cell; M₁ originating from upper angle of cell or from the stalk of radial veins; M₂, M₃ and Cu₁ approximated near lower angle of cell. Hindwing with vein Sc+R₁ from middle of cell; R₅ and M₁ from upper angle of cell; M₂ and M₃ from lower angle or may be stalked. Legs with tibia having short spurs, mid-tibia with one pair and hind-tibia with two pairs of spurs. Male genitalia with uncus long, narrow and sickle-shaped; fenestrula rounded; tegumen almost of equal size of vinculum; vinculum U-shaped, saccus small; valva with sacculus and costa defined, saccular projection running along major portion of valva. Female genitalia with corpus bursae membranous, signum missing, ductus bursae

guarded by genital plate, anterior apophysis shorter than posterior ones, papilla analis large with array of micro and macro setae.

Distribution

Palearctic, Ethiopian, Oriental and Australian regions.

1. *Mitochrista andamana* Moore

Moore, 1877, Proc. Zool. Soc., 1877: 597.

Material examined: One male, 11.ix.1994, Bomdila, West Kameng District, Arunachal Pradesh, 2430m; one male, 23.ix.1994, one female, 24.ix.1994, two females, 27.ix.1994, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; two females, one male, 18.ix.1994, Ukhrul, Manipur, 1060m; two females, 29.ix.1994, Jowaii, Jaintia Hills, Meghalaya, 670m; one male, 04.v.1995, Sikkim: Singtam, 600m; one male, 06.v.1995, Gangtok, 1660m; one female, one male, 08.v.1995, two males, 14.v.1995, Mangan, 1200m.

Wing expanse (half): Male: 12mm; Female: 12mm

Distribution: India: Andaman, Arunachal Pradesh, Assam, Manipur, Meghalaya, Sikkim.

Remarks: The species is reported for the first from northeastern India.

2. *Mitochrista arcuata* Moore

Moore, 1882, Lep. Ceylon. ii: 62; *Lyclene rosea* Hampson, 1891, Illust. Typical specimens Lep. Het. Colln. Br. Mus., viii: 50; *Lyclene aurora* Hampson 1891, Illust. Typical specimens Lep. Het. Colln. Br. Mus., viii: 50.

Material examined: One female, 18.ix.1994, Ukhrul, Manipur, 1060m; one male, 08.v.1995, Mangan, Sikkim, 1200m; one female, 05.v.1995, Gangtok, 1660m; one male, 15.vi.1994, Chakrata, Uttaranchal, 2100m.

Wing expanse (half): Male: 15mm; Female: 17mm.

Distribution: India: Manipur, Sikkim, Tamil Nadu (Nilgiris), Uttaranchal

Elsewhere: Sri Lanka

Remarks: All the above-mentioned localities are new records from northern and northeastern India.

3. *Mitochrista conjunctana* (Walker)

Conchylis conjunctana Walker, 1866, List specimens Lep. Insects Colln. Br. Mus., 35: 1788; *M. tessellata* Butler, 1881, III. Het., v :39.

Material examined: One female 11.ix.1991, one female, 24.ix.1994, two females, 26.ix.1994, one male, 27.ix.1994, one male, 28.ix.1994, one male, 28.ix.1995, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; one female, 08.v.1995, Mangan, Sikkim 1200m.

Wing expanse (half): Male: 10mm; Female: 11mm

Distribution: India: Arunachal Pradesh, Assam, Nagaland, Sikkim
Elsewhere: Bhutan

4. *Mitochrista dharma* Moore

Moore, 1879, Proc. Zool. Soc., 1879: 394.

Material examined: One female, 06.vii.1991, one female, 07.vii.1991, Solan, Himachal Pradesh, 1340m; one female, 28.vi.1995, Narakanda, 2700m; two males, 17.vi.2000, Sarahan, 1900m; two females, 29.ix.1994, one female, 30.ix.1994, Jowaii, Jaintia Hills, Meghalaya, 670m; one female, 06.vi.1993, one female, 07.vi.1993, Mossy falls, Mussorie, Uttaranchal, 1645m; three females, 13.vi.1994, Kempty falls, 1524m; one female, 15.vi.1994, Chakrata, 2100m; one female, 10.vi.1995, Loharkhet, 1753m.

Wing expanse (half): Male: 22mm; Female: 24mm

Distribution: India: Northwestern Himalaya - Himachal Pradesh, Uttaranchal, Meghalaya, Nagaland (Karen Hills)

5. *Mitochrista euprepiodes* (Walker)

Hypocrita euprepiodes Walker, 1862, Journal Linn. Soc., VI: 102; *Lyclene interserta* Moore, 1878, Proc. Zool. Soc., 1878: 32. Material examined: Four females, one male, 23.ix.1994, one female, 26.ix.1994, three females, 28.ix.1994, one female, two males, 10.ix.1995, one female, one male, 27.ix.1995, two males, 29.ix.1995, one male, 30.ix.1995, one female, one male, 01.x.1995, Jatinga, District Haflong, North Cachar Hills, Assam, 900m.

Wing expanse (half): Male: 15mm; Female: 16mm

Distribution: India: Arunachal Pradesh, Assam, Sikkim, Nagaland.

Elsewhere: China, Myanmar, Borneo, Malaysia, Philippines.

Remarks: Jatinga is the new distributional record for this species from Cachar Hills, Assam.

6. *Mitochrista frigida* (Walker)

Doliche frigida Walker, 1854, List specimens Lep. Insects Colln. Br. Mus., 2: 530; *Lyclene diffusa* Walker, 1862, Journ. Proc. Linn. Soc., VI: 111.

Material examined: Two females, 11.ix.1991, one female, 27.ix.1994, three females, three males, 28.ix.1995, two males, 30.ix.1995, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; one male, 14.v.1995, Mangan, Sikkim, 1200m.

Wing expanse (half): Male: 11mm; Female: 13mm

Distribution: India: Arunachal Pradesh, Assam, Sikkim, Nagaland
Elsewhere: China, Borneo, Malaysia, Myanmar.

7. *Mitochrista humilis* Walker

Walker, 1854, List specimens Lep. Insects Colln. Br. Mus., 2: 544; *Setina calamaria* Moore, 1888, Proc. Zool. Soc., 1888: 392; *Setina nebulosa* Moore, 1878, Proc. Zool. Soc., 1878: 35; *Setina dasara* Moore, 1857, Cat. Lep. Insects Mus. Hon. E.I.Co: 303.

Material examined: One female, 30.ix.1995, three females, 01.x.1995, Jatinga, District Haflong, North Cachar Hills, Assam, 900m.

Wing expanse (half): Male: Not examined; Female: 10mm

Distribution: India: Assam, Nagaland, Sikkim, Punjab, Tamil Nadu (Nilgiris).

Remarks: Jatinga is its new distributional record from Cachar Hills, Assam.

8. *Miltochrista ila* Moore

Moore, 1857, Cat. Lep. Mus. Hon.E. I.Co., 1857: 300; id. 1882, Lep. Ceylon. ii: 103.

Material examined: One male, one ?, 02.vii.1994, Kainchi Dham, Uttaranchal, 1800m; two females, 03.vii.1994, Ranikhet, 1830m.

Wing expanse (half): Male: 13mm; Female: 14mm

Distribution: India: Canara, Uttaranchal

Elsewhere: Sri Lanka

Remarks: The species collected for the first time from the above localities in northern India.

9. *Miltochrista linga* (Moore)

Barsine linga Moore, 1857, Cat. Lep. Insects Mus. Hon. E. I. Co., 1857: 301.

Material examined: One female, 26.ix.1994, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; two females, 06.vii.1991, one female, one male, 26.ix.1991, Solan, Himachal Pradesh, 1340m; one male, 02.viii.1994, Nauni, 1369m; four females, 07.ix.1995, twelve females, 08.ix.1995, Dharamshala, 1200m; five females, five males, 09.ix.1995, Macleodganj, 1800m; three males, 12.vi.2000, Kotkhai, 1526m.

Wing expanse (half): Male: 16mm; Female: 22-23mm.

Distribution: India: Assam, Himachal Pradesh, Sikkim.

Elsewhere: China.

Remarks: The species is being reported for the first time from Jatinga Assam.

10. *Miltochrista nubifascia* (Walker)

Barsine nubifascia Walker, 1863, List specimens Lep. Insects Colln. Br. Mus., 31: 251; Butler, 1881, Illust. Typical specimens Lep. Het. Colln. Br. Mus., v: 86; *Barsine punctifascia* Walker, 1869, Char. Undeser. Het: 9; *Lyclene indistincta* Moore, 1878, Proc. Zool. Soc., 1878: 33.

Material examined: One female, two males, 10.ix.1994, Bomdila, West Kameng District, Arunachal Pradesh, 2430m; two males, 12.ix.1994, Dirang, 1497m.

Wing expanse (half): Male: 13-15mm; Female: 14mm

Distribution: India: Arunachal Pradesh, Sikkim

Elsewhere: China

Remarks: The collection of the species from Arunachal Pradesh is its first record from northeastern India.

11. *Miltochrista palmata* Moore

Moore, 1878, Proc. Zool. Soc., 1878: 31

Materials examined: One male, 03.x.1995, Bomdila, West Kameng District, Arunachal Pradesh, 2430m; one male, 13.ix.1991, one male, 25.ix.1995, two males, 29.ix.1995, two males, 30.ix.1995, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; five females, 30.viii.1994, Ramnagar, Jammu & Kashmir, 1206m.

Wing expanse (half): Male: 14mm; Female: 16mm

Distribution: India: Arunachal Pradesh, Assam, Himachal Pradesh, Jammu and Kashmir.

Elsewhere: China.

Remarks: Ramnagar is the new distributional record from Jammu and Kashmir.

12. *Miltochrista punicea* (Moore)

Barsine punicea Moore, 1878, Proc. Zool. Soc., 1878: 29

Material examined: Two females, 10.ix.1991, one female, 25.ix.1994, one female, 27.ix.1994, two females, 28.ix.1994, two males; 28.ix.1995, one female, two males, 01.x.1995, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; two females, 14.v.1995, Mangan, Sikkim, 1200m.

Wing expanse (half): Male: 10mm; Female: 13mm

Distribution: India: Arunachal Pradesh, Assam, Sikkim

Elsewhere: China, Bhutan, Myanmar

Remarks: The availability of this species from Assam is its new distributional record.

13. *Miltochrista radians* (Moore)

Lyclene radians Moore, 1878, Proc. Zool. Soc., 1878: 30

Material examined: One male, 03.x.1995, Bomdila, West Kameng District, Arunachal Pradesh, 2430m; one male, 26.ix.1994, one male, 27.ix.1995, two females, 01.x.1995, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; two females, 13.viii.1991, Solan, Himachal Pradesh, 1340m; two males, two females, 15.vi.2000, Sangla, 2680m; two females, 16.vi.2000, Recongpeo, 2400m.

Wing expanse (half): Male: 10-13mm; Female: 12-15mm

Distribution: India: Arunachal Pradesh, Assam, Himachal Pradesh, West Bengal (Calcutta)

Elsewhere: China

Remarks: All the above-mentioned localities are new distributional records from northern and northeastern India.

14. *Miltochrista rubricosa* (Moore)

Lyclene rubricosa Moore, 1878, Proc. Zool. Soc., 1878: 30;

Lyclene curvifascia Hampson, 1891, Illust. Typical specimens Lep. Het. Colln. Br. Mus., viii: 49; *Lyclene ochracea* Hampson, 1891, Illust. Typical specimens Lep. Het. Colln. Br. Mus., viii: 51. Material examined: Two females, 11.vi.1994, two females, 12.vi.1994, Mussorrie, Uttaranchal, 2030m.

Wing expanse (half): Male: Not examined; Female: 14mm

Distribution: India: Uttaranchal, Maharastra (Bombay), Tamil Nadu (Nilgiris)

Elsewhere: China; Sri Lanka.

Remarks: The aforesaid locality is a new record from Western Himalaya.

15. *Miltochrista strigipennis* (Herrich Schäffer)

Paidia strigipennis Herrich Schäffer, 1843, Samml. Aussereur. Schmett: 437; *Lyclene discistriga* Moore, 1878, Proc. Zool. Soc., 1878: 32; *Lyclene terminata* Moore, 1878, Proc. Zool. Soc., 1878:

33; *Lyclene sinica* Moore, 1877, Ann. Mag. Nat. Hist., (4) xx: 87; *Lyclene inconsticiua* Moore, 1878, Proc. Zool. Soc., 1878: 32. Material examined: One female, 23.ix.1994, one female, 25.ix.1994, four females, two males, 26.ix.1994, one male, 27.ix.1994, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; two males, 30.vi.1995, nine males, 17.vi.2000, Sarahan, Himachal Pradesh, 1900m; one male, 17.ix.1994, Chakhabama, Nagaland, 1212 m; one female, 04.v.1995, Singtam, Sikkim, 600m; one male, 06.v.1995, Gangtok, 1660m; one male, 08.v.1995, Mangan, 1200m; one male, 12.vi.1994, Mussorie, Uttaranchal, 2030m; one female, one male, 08.vi.1995, Choukari, 2010m; one male, 09.vi.1995, ten males, 10.vi.1995, Loharkhet, 1753m; two males, 11.vi.1995, Song, 1500m; two males, 12.vi.1995, Kasauni, 1800m. Wing expanse (half): Male: 18mm; Female: 22mm. Distribution: India: Arunachal Pradesh, Assam, Himachal Pradesh, Nagaland, Sikkim, Uttaranchal. Elsewhere: China, Bhutan, Myanmar, Sumatra. Remarks: The collection of this species from the Western Himalayas is its first report.

16. *Mitochrista undulosa* (Walker)

Cyllene undulosa Walker, 1854, List specimens Lep. Insects Colln. Br. Mus., 2: 545; *Mitochrista straminea* Walker, 1856, List specimens Lep. Insects Colln. Br. Mus., 7: 1685; *Sesapa decurrens* Walker, 1864, List specimens Lep. Insects Colln. Br. Mus., 31: 255; *Sesapa excurrens* Walker, 1864. List specimens Lep. Insects Colln. Br. Mus., 31: 255. Material examined: One female, 10.ix.1991, one female, 13.ix.1991, one male; 14.ix.1991, Jatinga, District Haflong, North Cachar Hills, Assam, 900m; eleven males, seven females, 12.vi.2000, Kotkhai, Himachal Pradesh, 1526m; one female, Bhali, 2400m; one female, Jeouri, 2200m; five females, four males, Sarahan, 1900m; six males, 29.vi.1994, two females, two males, 30.vi.1994, Nainital, Uttaranchal, 1938m. Wing expanse (half): Male: 12mm; Female: 14mm

Distribution: India: Arunachal Pradesh, Assam, Himachal Pradesh, Sikkim, Uttaranchal. Elsewhere: China; Bhutan; Myanmar.

Acknowledgement

Dr. Kaleka is thankful to C.S.I.R., New Delhi and Dr. Rose to Ministry of Environment and Forests, New Delhi for financial assistance.

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