



New records of pyraloid moths (Lepidoptera: Pyraloidea) in the Andaman and Nicobar Islands, India

Новые находки огнёвкообразных бабочек (Lepidoptera: Pyraloidea) на Андаманских и Никобарских островах в Индии

B.S.K. Rao & C. Sivaperuman

Б.С.К. Рао, С. Шиваперуман

B. Sumit K. Rao , Zoological Survey of India, Andaman & Nicobar Regional Centre, 11 Horticulture Rd., Haddo, Port Blair 744102, Andaman & Nicobar Islands, India. E-mail: sumitkumarb3850@gmail.com

Chandrakasan Sivaperuman , Zoological Survey of India, Andaman & Nicobar Regional Centre, 11 Horticulture Rd., Haddo, Port Blair 744102, Andaman & Nicobar Islands, India. E-mail: c_sivaperuman1@rediffmail.com

Abstract. Data on the distribution of 20 species of moths from the families Crambidae and Pyralidae in the Andaman and Nicobar Islands, India, are presented, with notes on their host plants and general distribution. Of these, 19 species, as well as the genus *Pseudosacada* Singh, Kirti et Ranjan, 2020, are recorded for the region for the first time. *Agrioglypta excelsalis* (Walker, 1866) is recorded for the first time for India. Most of the listed species are important agricultural and forest pests.

Резюме. Представлены данные о распространении 20-и видов бабочек из семейств Crambidae и Pyralidae на Андаманских и Никобарских островах в Индии, с замечаниями об их кормовых растениях и общем распространении. Из них 19 видов, а также род *Pseudosacada* Singh, Kirti et Ranjan, 2020 указаны для региона впервые. Впервые для Индии приводится *Agrioglypta excelsalis* (Walker, 1866). Большинство обсуждаемых видов – серьезные вредители сельского и лесного хозяйства.

Keywords: India, Andaman and Nicobar Islands, agricultural and forest pests, distribution, new records, Pyraloidea, Crambidae, Pyralidae

Ключевые слова: Индия, Андаманские и Никобарские острова, вредители сельского и лесного хозяйства, распространение, новые находки, Pyraloidea, Crambidae, Pyralidae

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Introduction

The present study was conducted in the Andaman and Nicobar Islands of India, situated in the Bay of Bengal. These groups of islands are the surface of a long ridge which extends from the Arakan Mountains of western Myanmar (Burma) in the north to Sumatra in the south (Bandopadhyay & Carter, 2017). In recent years, only a few investigations have been carried out on the diversity

of micromoth fauna in the Andaman and Nicobar Islands. The islands have distinct and unique composition of species. Generally, they have less species diversity than neighbouring continental areas, but they are significantly rich in endemics (Karthigeyan, 2020). The small size of the islands limits the size of populations, and their isolation creates evolutionary distinctiveness (Losos & Ricklefs, 2009). Investigations with some focus on pyraloid moths from these archipelagos include

works of Moore (1887), Hampson (1896, 1898), Bhattacharya & Mandal (1976), Bhattacharya (1977), Mandal & Bhattacharya (1980), Bhuvanavar (1991a, b, 1992), Veenakumari & Prashanth (2009), and Rao & Sivaperuman (2020). The data presented in this paper will improve our current knowledge on the distribution and diversity of pyraloid moths in the archipelagos.

Material and methods

The adult moths were collected in 2018–2021, using conventional light trap methods with 160 W mercury light placed in front of a white cotton sheet. The lamps were powered by a Honda EP1000 generator for four hours after dusk. The moths were killed in situ using killing jars with ethyl acetate vapours. The traps were placed in different habitats, viz. a primary evergreen forest, edges of a secondary deciduous forest, a littoral forest, and agricultural lands. The identification of the species was based on a comparison of the collected material with published descriptions, illustrations and available type specimens. All the specimens collected are deposited at the National Zoological Collection of the Zoological Survey of India, Andaman and Nicobar Regional Centre, Port Blair (ZSI ANRC). Photos of the species listed in the article, taken on the basis of the collected material, are available as an electronic supplementary material (see the section “Addenda”).

List of species

During the study, 20 species of pyraloids were identified; of these, 19 have not previously been found in the Andaman and Nicobar Islands. The annotated list below provides also data on the general distribution and, if known, host plants of these species.

Order Lepidoptera

Superfamily Pyraloidea

Family Crambidae

Subfamily Spilomelinae

Arthroschista hilaralis (Walker, 1859)
(Fig. 1 as electronic supplementary material)

Material examined. **Great Nicobar I.:** Gobind Nagar Vill., rice paddies, 5 m, 07°00.326'N 93°53.343'E,

5.XI.2018, coll. B.S.K. Rao, 2 specimens; Great Nicobar Biosphere Reserve, bird watching point, primary forest, 136 m, 06°59.948'N 093°52.773'E, 24.VIII.2019, coll. C. Sivaperuman et al., 1 specimen, 15.XI.2018, coll. K.C. Gopi et al., 1 specimen.

Distribution. Australia, Bhutan, Borneo, Cambodia, India, Indonesia (Sumatra), Myanmar, Sri Lanka (Irungbam et al., 2016; Robinson et al., 1994; Evans & Crossley, 2021). New record for Andaman and Nicobar Islands.

Remark. *Arthroschista hilaralis* is a serious defoliator of *Neolamarckia cadamba* (Roxb.) Bosser, one of the dominant tree species in the Great Nicobar Islands. It was found in August and November in two habitats including the primary evergreen forests of the Great Nicobar Biosphere Reserve and nearby grasslands. Thapa & Bhandari (1976) reported that the *A. hilaralis* population in India reached outbreak levels in July–August and tended to decline in October.

Rehimena phrynealis (Walker, 1859)
(Fig. 2 as electronic supplementary material)

Material examined. **Swarajdeep I.,** Radhanagar Vill., primary forest, 43m, 12°00.182'N 92°57.529'E, 13.XI.2019, coll. B.S.K. Rao, 3 specimens.

Distribution. Australia, Borneo, China, Fiji, India, Indonesia (Sumatra), Myanmar, Nepal, New Guinea, Philippines, Sri Lanka, Taiwan, Thailand (Raha et al., 2017). New record for Andaman Islands and Nicobar Islands.

Syllepte iophanes (Meyrick, 1894)
(Fig. 3 as electronic supplementary material)

Material examined. **South Andaman I.,** Jarawa Reserve Forest, 9 km from Jirkatang Vill., primary forest, 135 m, 11°54.363'N 92°39.952'E, 18.V.2019, coll. B.S.K. Rao, 3 specimens.

Distribution. India, Indonesia (Java) (Kirti et al., 2016). New record for Andaman Islands and Nicobar Islands.

Herpetogramma cynaralis (Walker, 1859)
(Fig. 4 as electronic supplementary material)

Material examined. **North Andaman I.,** Bahadur Vill. N of Diglipur, open secondary forest edge, 50 m, 13°22.751'N 092°57.585'E, 8.I.2019, coll. B.S.K. Rao, 1 specimen.

Distribution. Australia, China, India, Japan, Korea, Malaysia, Sri Lanka (type locality), Taiwan (Kim et al., 2012). New record for Andaman and Nicobar Islands.

Remark. The species is an important pest of *Stephania japonica* (Thunb.) Miers var. *discolor* (Blume) Forman (Menispermaceae) commonly known as snake wine (Hawkeswood, 2011). This host plant is native to the Andaman and Nicobar Islands and other neighbouring Indo-Malayan countries and commonly occurs in rainforests and sheltered gullies, especially near the sea. *Herpetogramma cynaralis* was previously recorded by Kirti & Sodhi (2001) and Rose (2002) from the northeastern Indian states of Assam and Meghalaya.

Palpita palpifuloata Kirti et Rose, 1992
(Fig. 5 as electronic supplementary material)

Material examined. **Great Nicobar I.:** Afrabay Vill., primary forest, 75 m, 07°11.081'N 93°44.145'E, 16.XI.2018, coll. K.C. Gopi et al., 1 female; Gobind Nagar Vill., low arable land, 10 m, 07°00.328'N 93°53.340'E, 5.XI.2018, coll. K.C. Gopi et al., 2 males, 1 female.

Distribution. Borneo, southern and northeastern India, Indonesia (Sumatra), Philippines, Thailand (Inoue, 1996). New record for Andaman and Nicobar Islands.

Remark. Specimens flew abundantly to light traps. The bionomics and larval host plants are still unknown. This species was previously recorded by Kirti & Rose (1992) and Rose (2002) from the northeastern Indian states of Arunachal Pradesh and Assam.

Glyphodes onychinalis (Guenée, 1854)
(Fig. 6 as electronic supplementary material)

Material examined. **Narcondam I.,** NE coast, primary forest 5 m, 13°27.265'N 94°16.438'E, 14.V.2020, coll. Gokulakrishnan, 1 specimen.; **North Andaman I.,** Kudhirampur Vill. SSW of Diglipur, secondary forest edge, 181 m, 13°12.344'N 92°57.947'E, 11.III.2019, coll. B.S.K. Rao, 1 specimen; **South Andaman I.,** Kadkachang Vill. ENE of Ferrargunj, mixed plantation, 10 m, 11°43.706'N 92°41.643'E, 7.I.2021, coll. K.C. Gopi et al., 1 specimen.

Distribution. Africa (Prins & Prins, 2021); Australia, New Zealand; Oriental region: Hong

Kong, India, Indonesia (Borneo), Malaysia, Myanmar, Sri Lanka, Thailand (Poltavsky et al., 2018). New record for Andaman and Nicobar Islands.

Remark. *Nerium oleander* L. and *Jasminum* sp. Listed by Poltavsky et al. (2018) among the host plants of this species, can be seen in abundance in the North Andaman and the surrounding islands; however, several individuals of *G. onychinalis* were found in a primary forest of the Narcondam Islands.

Glyphodes pulverulentalis Hampson, 1896
(Fig. 7 as electronic supplementary material)

Material examined. **Great Nicobar I.:** Galathea Wildlife Sanctuary, primary forest, 45 m, 06°49.389'N 93°52.072'E, 18.XII.2019, coll. B.S.K. Rao, 1 specimen; Pilobah Locality, littoral forest, 8 m, 06°49.098'N 93°49.124'E, 20.XII.2019, coll. B.S.K. Rao, 1 specimen; Kokeyam Locality, littoral forest edge, 10 m, 06°51.078'N 93°47.919'E, 21.XII.2019, coll. B.S.K. Rao, 1 specimen.

Distribution. India, Myanmar (Nuss et al., 2003–2021).

Remark. *Glyphodes pulverulentalis* is one of the devastating pests of the mulberry tree (*Morus* sp.) in the southern states of India, namely Andhra Pradesh, Karnataka and Tamil Nadu. It was reported as a major pest of many agricultural and horticultural crops (Rahmathulla et al., 2012). Parkinson (1923) reported wild populations of mulberry *M. laevigata* from the Andaman and Nicobar Islands. Tikader & Kamble (2008) also reported the presence of diploid forms of *M. laevigata* in saline regions in the Andaman and Nicobar Island.

Patania plagiatalis (Walker, 1859)
(Fig. 8 as electronic supplementary material)

Material examined. **North Andaman I.:** Kishori Nagar Vill. WSW of Diglipur, secondary forest edge, 124 m, 13°12.208'N 92°52.368'E, 9.III.2019, coll. B.S.K. Rao, 1 specimen; Bahadur Tikrey Vill. N of Diglipur, secondary forest, 50 m, 13°22.751'N 92°57.585'E, 8.I.2019, coll. B.S.K. Rao, 2 specimens.

Distribution. India (Assam), Sri Lanka. New record for Andaman and Nicobar Islands.

Cnaphalocrocis rutilalis (Walker, 1859)
(Fig. 9 as electronic supplementary material)

Material examined. **Middle Andaman I.**, Chainpur Vill. SW of Mayabunder, paddy field, 7 m, 12°47.189'N 92°47.860'E, 17.X.2019, coll. B.S.K. Rao, 1 specimen.

Distribution. Australia, China (Hong Kong), northern India, Malaysia (Sabah), Sri Lanka, (Whitaker et al., 2014). New record for Andaman and Nicobar Islands.

Remark. Representatives of the genus *Cnaphalocrocis* Lederer, 1863 are the most important rice pests in various Asian countries and causes great crop losses (Khan et al., 1988).

Cnaphalocrocis poeyalis (Boisduval, 1833)
(Fig. 10 as electronic supplementary material)

Material examined. **Middle Andaman I.**, Rangat, APWD guest house, secondary forest, 80 m, 12°30.438'N 92°54.830'E, 17.X.2020, coll. B.S.K. Rao, 1 specimen.

Distribution. Africa, Australia, China, India, Indonesia, Japan, Reunion, Mauritius, Myanmar, Sri Lanka, Thailand (Varun, 2017). New record for Andaman and Nicobar Islands.

Remark. Serious pest of rice. Collected in semi-deciduous forests with adjacent plantations.

Bacotoma binotalis (Warren, 1896)
(Fig. 11 as electronic supplementary material)

Material examined. **Great Nicobar I.**, Great Nicobar Biosphere Reserve, bird watching point, primary forest, 136 m, 06°59.948'N 93°52.773'E, 26.XII.2019, coll. B.S.K. Rao, 1 male.

Distribution. India (Assam), Myanmar, Singapore (Yang et al., 2020). New record for Andaman and Nicobar Islands.

Remark. In India, the distribution of this species is limited to the northeastern states.

Omiodes barcalis (Walker, 1859)
(Fig. 12 as electronic supplementary material)

Material examined. **Middle Andaman I.**, Kalsi Vill. NW of Rangat, mixed plantation, 10 m, 12°32.296'N 92°51.643'E, 15.VI.2019, coll. B.S.K. Rao, 5 specimens.

Distribution. Malaysia and Thailand (Chaovalit & Pinkaew, 2020). New record for Andaman and Nicobar Islands.

Omiodes decisalis (Walker, 1866)
(Fig. 13 as electronic supplementary material)

Material examined. **Narcondam I.**, NE coast, primary forest edge, 25 m, 13°27.265'N 94°16.438'E, 16.XI.2020, coll. Apurba & Naveen, 1 male, 1 female, 16.XI.2020, the same collectors, 7 specimens.

Distribution. Australia, Borneo, China, India, Indonesia (Java), Japan, Sri Lanka, Thailand (Gurule, 2013; Chaovalit & Pinkaew, 2020). New record for Andaman and Nicobar Islands.

Remark. Additional nearly 153 individuals of *O. decisalis* was found on the Narcondam Island, which confirm the presence of the species in the Andaman Islands.

Agrioglypta excelsalis (Walker, 1866)
(Fig. 14 as electronic supplementary material)

Material examined. **North Andaman I.**, Tal Tikrey Vill. WSW of Diglipur, secondary forest edge, 59 m, 13°13.141'N 92°51.658'E, 10.III.2019, coll. B.S.K. Rao, 1 specimen; **Great Nicobar I.**: Gobind Nagar Vill., open cultivated area, 15 m, 07°00.326'N 93°53.343'E, 5.XI.2018, coll. B.S.K. Rao, 3 specimens; Galathea Wildlife Sanctuary, primary forest, 23 m, 06°49.389'N 093°52.072'E, 18.XII.2019, coll. B.S.K. Rao, 1 specimen; **Swarajdweep I.**, Radhanagar Vill., primary forest, 43 m, 12°00.182'N 92°57.529'E, 13.XI.2019, coll. B.S.K. Rao, 1 specimen.

Distribution. Australia, Brunei, Indonesia (Borneo, Sulawesi, Sumatra, Java), Malaysia (Sabah), Philippines (Whitaker et al., 2014). New record for India.

Subfamily **Schoenobiinae**

Donacaula dodatellus (Walker, 1864)
(Fig. 15 as electronic supplementary material)

Material examined. **Great Nicobar I.**, Gobind Nagar Vill., open secondary forest edge with rice paddies, 5 m, 07°00.326'N 93°53.343'E, XI.2018, coll. K.C. Gopi et al., 6 males, 1 female.

Distribution. China, India, Indonesia (Bali, Java, Sulawesi, Sumatra), Japan, western Malaysia, Myanmar, Philippines, Sri Lanka, Thailand (Robinson et al., 1994; Chen & Wu, 2014). New record for Andaman and Nicobar Islands.

Remarks. *Donacaula dodatellus* was profusely collected in a place with *Actinoscirpus grossus* (L.F.) Goetgh. et D.A. Simpson, one of the known host plants of this species.

Family **Pyralidae**

Subfamily **Pyralinae**

Pseudosacada flexuosa (Snellen, 1890)
(Fig. 16 as electronic supplementary material)

Material examined. **North Andaman I.**, Kudhirampur Vill. SSW of Diglipur, primary forest edge, 181 m, 13°12.344'N 92°57.947'E, 11.III.2019, coll. B.S.K. Rao, 2 males.

Distribution. Northeastern (Sikkim, Meghalaya, Mizoram, Nagaland) and southern (Karnataka) India, Myanmar, Nepal, Vietnam, (Singh et al., 2020). New record for Andaman and Nicobar Islands.

Remark. Host plant is unknown. Not only the type species, but also the genus *Pseudosacada* Singh, Kirti et Ranjan, 2020 is recorded in the Andaman and Nicobar Islands for the first time.

Endotricha albicilia Hampson, 1891
(Fig. 17 as electronic supplementary material)

Material examined. **Long I.**, Sigmendera, secondary forest edge, 21 m, 12°22.721'N 92°55.735'E, 21.X.2020, coll. B.S.K. Rao, 4 males.

Distribution. India (Sikkim, Nilgiris), Sri Lanka (Hampson, 1896). New record for Andaman and Nicobar Islands.

Subfamily **Epipaschiinae**

Termioptycha conjuncta (Warren, 1896)
(Fig. 18 as electronic supplementary material)

Material examined. **Great Nicobar I.**, Great Nicobar Biosphere Reserve, bird watching point, primary forest, 136 m, 06°59.948'N 093°52.773'E, 14.XI.2018, coll. B.S.K. Rao, 2 females.

Distribution. Borneo, China (Hainan Island), India, Taiwan (Rong et al., 2017). New record for Andaman and Nicobar Islands.

Remark. In India, *T. conjuncta* was previously known only from its type locality, Khasi Hills.

Teliphasa nubilosa Moore, 1888
(Fig. 19 as electronic supplementary material)

Material examined. **Great Nicobar I.**: Great Nicobar Biosphere Reserve, bird watching point, primary forest, 136 m, 06°59.948'N 093°52.773'E, 14.XI.2018, coll. B.S.K. Rao, 1 male, 24.VIII.2019, coll. C. Sivaperuman et al., 1 male; Galathea Wildlife Sanctuary,

primary forest, 45 m, 06°49.389'N 93°52.072'E, 18.XII.2019, coll. B.S.K. Rao, 1 male.

Distribution. China, India (Darjeeling), Taiwan (Liu et al., 2016). New record for Andaman and Nicobar Islands.

Teliphasa albifusa (Hampson, 1896)
(Fig. 20 as electronic supplementary material)

Material examined. **North Andaman I.**, Kalighat Vill. S of Diglipur, secondary forest edge, 25 m, 13°07.126'N 92°58.305'E, 13.I.2019, coll. B.S.K. Rao, 3 males, 1 female.

Distribution. China, India (Sikkim), Japan, Korea, Taiwan (Liu et al., 2016). New record for Andaman and Nicobar Islands.

Remark. *Anacardium occidentale* L., commonly known as cashew, is the known host plant of *T. albifusa*. This non-native plant was introduced in the Andaman and Nicobar Islands by the Britishers (Veenakumari & Mohanraj, 1996); it was present in abundance near the place in which the material was collected. In India, *T. albifusa* was previously known only from its type locality, Sikkim, Nagas.

Addenda

Electronic supplementary material. Illustrations of the general appearance of pyraloids collected in the Andaman and Nicobar Islands (Figs 1–20), pp. s222–s225. File format: PDF. Available from: <https://doi.org/10.31610/zsr/2021.30.2.215>

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