

<http://www.pjbs.org>

PJBS

ISSN 1028-8880

Pakistan Journal of Biological Sciences

ANSI*net*

Asian Network for Scientific Information
308 Lasani Town, Sargodha Road, Faisalabad - Pakistan

Distribution of Nymphalid Butterflies (Brush Footed) in District Rawalpindi and Islamabad

Arshed Makhdoom Sabir, Amir Hassan Bhatti, Muhammad Ather Rafi¹ and Anjum Suhail²

Beekeeping & Hill Fruit Pests Research Sub Station, Murree, Pakistan

¹Integrated Pest Management Institute, NARC, Islamabad, Pakistan

²Department of Agri. Entomology, University of Agriculture, Faisalabad, Pakistan

Abstract: Nymphalidae is by far the largest family of butterflies represented the world over. In the present studies from Rawalpindi and Islamabad, eight selected sites were sampled. The collected specimens were compared with the previously reported species of this family and out of 18 species, *Kallima inachus* was recorded for the first time from Pakistan.

Key words: Distribution, Nymphalids, Brush Footed, Rawalpindi, Islamabad

Introduction

Nymphalidae is the largest family of butterflies (8,400 species) represented the world over (Holloway *et al.*, 1987). The nymphalids are a group of robust butterflies that come in almost every shape and colour. Some of them are strikingly handsome with the underside of their wings generally drab and cryptically coloured. The majority of them are strong flier and love to bask in the sun. Males of this group are particularly quarrelsome and can be seen policing their territory. Some do visits flowers but they are generally more partial to over ripe fruits, tree sap and even aimed dung and urine. Mud puddling is not very popular among this group, but some species are frequently found on damp spots. The first pair of legs in these butterflies has brush-like dense tufts, but being imperfectly developed and clawless, these legs are not used for perching and walking (Gay *et al.*, 1992; Hasan, 1997).

The taxonomic studies on the nymphalid fauna of Rawalpindi and Islamabad have been made chiefly by Malik (1970), Iqbal (1978) and Hasan (1994, 1997) who described 03, 11, 05 and 12 species, respectively. For a comprehensive study of the nymphalid fauna of Rawalpindi and Islamabad, some new sampling sites are also selected which were earlier neglected.

Materials and Methods

During 1997-98, eight different sites from the district of Rawalpindi and Islamabad were selected for extensive sampling of nymphalid butterflies (Fig. 1). The specimens were collected with the help of butterfly net and killed in a cyanide bottle. These were pinned and mounted on spreading boards. All the mounted material was left on spreading boards for 4-6 days; then transferred to boxes after labeling for preservation. Naphthalene balls mounted on pins and BHC powder were used as fumigant to save the preserved specimens from the attack of insects. A revolving stage and a WILD M3B binocular microscope (X10 × 1.6X) were used for identifying the specimens. Collected specimens were compared with the laboratory collection of Integrated Pest Management Institute, NARC, Islamabad, IIBC, Rawalpindi and Department of Agri. Entomology, University of Agriculture, Faisalabad.

Results and Discussion

The following 18 species of nymphalid butterflies under 16 Genera were collected during the course of studies (Table 1). Out of these, one species (*Kallima inachus*) was recorded for the first time from Pakistan (Fig. 2, 3 and 4).

Table 1: Distribution of nymphalid butterflies in the District of Rawalpindi and Islamabad

Genus	Species	Material Examined	Habitat
<i>Atella</i>	<i>A. phalantha</i> (Drury)	Islamabad 1♀, Wah Garden 2♂	Flowers and air
<i>Sephisia</i>	<i>S. dichroa</i> (Kollar)	Murree 2♂	Mixed flora and air
<i>Aglaia</i>	<i>A. cashmirensis</i> (Kollar)	Murree 1♀	Wild flowers.
<i>Percis</i>	<i>P. hierta</i> (F.)	Islamabad 1♀, Takia Mukaram Shah (Murree) 2♂	Mixed vegetation
<i>Argynnis</i>	<i>A. hyperbius</i> (Johanssen)	Sunny Bank 1♀, Ghora Galli 2♀	Varying type of vegetation
<i>Hypolimnas</i>	<i>H. bolina</i> (Linnaeus)	Do Meil 1♂	Wild vegetation
	<i>H. missipu</i> L.	Shamasabad 1♀	Mixed vegetation
<i>Euthalia</i>	<i>E. garuda</i> (Moore)	Sunny Bank 1♂, 2♀	Mixed vegetation
<i>Limenitis</i>	<i>L. trivena</i> (Moore)	Sunny Bank 2♀	Wild vegetation
<i>Vanessa</i>	<i>V. candui</i> (Linnaeus)	Chitta Moore 1♀	Mixed vegetation of varying type
	<i>V. indica</i> (Herbst)	Sunny Bank 2♂	Different wild flora
<i>Junonia</i>	<i>J. almana</i> (Linnaeus)	Sunny Bank 1♀	Mixed vegetation
<i>Sephisia</i>	<i>S. dichroa</i> (Kollar)	Ghora Gali 1♂, Sunny Bank 1♂	Varying type of wild vegetation
<i>Polygonia</i>	<i>P. egea</i> (Cram.)	Takia Mukaram Shah 2♂	Mixed vegetation
<i>Phalanta</i>	<i>P. phalantha</i> (Drury)	Patriata 1♀	Mixed wild vegetation
<i>Argyreus</i>	<i>A. hyperbius</i> (Johanss.)	Lower Deval 1♀	Mixed vegetation of varying type
<i>Neptis</i>	<i>N. hylas</i> (Linnaeus)	Patriata 1♂	Mixed vegetation
<i>Kallima</i>	<i>K. inachus</i> (Boisid)	Shamasabad 1♂	Leaf litter



- | | | |
|-----------------------|----------------|---------------|
| 1. Do Meil | 2. Chitta More | 3. Ghora Gali |
| 4. Lower Deval | 5. Sunny Bank | 6. Patriata |
| 7. Takia Mukaram shah | 8. Shamasabad | 9. Wah Garden |
| 10. Muree | | |

Fig. 1: Sampling sites of Nymphalid Butterflies



Fig. 2: Upper side of Leaf Butterfly



Fig. 3: Underside of Leaf Butterfly



Fig. 4: Leaf Butterfly-a resemblance to stalk and veins of a leaf

Kallima inachus (orange oak leaf or Indian leaf butterfly) constitutes, one of the most classic example of mimicry. The under side of wings is remarkably leaf-like even a midrib.

Wing Span: 3 ½ - 5 inch (92-130 cm).

Upper side of Wings

Fore wing: There is striking difference in the appearance of the upper side of the fore wing which is vividly coloured; a white spot stands out against the black apical zone; there is an orangish-yellow band and, finally, a grayish-blue basal area with contrasting white spots (Watson and Whally, 1984; Daccordi, 1987).

Hind wing: The upper side of the hind wings is largely violet gray with reddish tints, particularly evident along the costa (Daccordi, 1987).

Under side of Wings: The under side of both pairs of wings, display chesnut brown streaks, exactly extends from the tail to the apex; and from here run other even thinner dark stripes, which combine to give the appearance of the veining of a leaf (Watson and Whally, 1984; Daccordi, 1987). It appears to fly in a straight line, as soon as it alligns, it close its wings, and appears to be a dead leaf (Stanck, 1977; Mani, 1986; Carter, 1992).

Acknowledgement

We would like to thank Mr. Farooq Nasir, IIBC, Rawalpindi, for his kind help regarding literature and identification of specimens.

References

- Carter, D., 1992. Butterflies and Moths. Kydo Printing Co., Singapore, pp: 127.
- Daccordi, M., 1987. Guide to Butterflies and Moths. Simon and Schuster, Inc., New York, USA., Pages: 280.
- Gay, T., I.D. Kehimkar and J.C. Punetha, 1992. Common Butterflies of India. Oxford University Press, New Delhi, pp: 31-32.
- Hasan, S.A., 1994. Butterflies of Islamabad and the Murree Hill. Asian Study Group, Pakistan, pp: 30-40.
- Hasan, S.A., 1997. Biography and Diversity of Butterflies of North West Himalaya: Biodiversity of Pakistan. Pak. Mus. Nat. Hist., Pakistan, pp: 182-191.
- Holloway, J.D., J.D. Bradley and D.J. Carter, 1987. CIE Guides to Insects of Importance to Man I Lepidoptera. CAB International Institute of Entomology, London, UK., pp: 22.
- Iqbal, J., 1978. A preliminary report on butterflies of district Rawalpindi and Islamabad. Biologia, 24: 237-247.
- Malik, J.M., 1970. Notes on the butterflies of Pakistan in the collection of zoological survey department, Karachi. Records Zool. Survey Pak., 2: 35-42.
- Mani, M.S., 1986. Butterflies of the Himalaya. Mohan Primalani for Oxford and IBH Pub. Co., Janpath, New Delhi, India, pp: 127.
- Stanck, V.J., 1977. The Illustrated Encyclopedia of Butterflies and Moths. Octopus Books Limited, London, UK., pp: 98.
- Watson, A. and P.E.S. Whally, 1984. The Dictionary of Butterflies and Moths in Color. Peerage Boks, London, pp: 226.