

DIVERSITY OF BUTTERFLIES (LEPIDOPTERA: PAPILIONOIDEA AND HESPEROIDEA) OF DACHIGAM NATIONAL PARK, JAMMU AND KASHMIR, INDIA

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Being the main destination for wildlife linked tourism in the Kashmir Valley, Dachigam National Park has attained world-wide fame for its rich faunal and floral wealth. The National Park is situated 18km northeast of Srinagar. It covers an area of 141km² and is roughly 22.5km long, 8km wide and an altitude range of 1,700–>4,000 m. The National Park is divided into lower and upper Dachigam areas and is enclosed between a fold of the Zaskar range, which forms the northwest branch of the central Himalaya (Fig. 1). At its base lies the Harwan Reservoir and New Theed Village, while the surrounding mountain range is topped by Mahadev Peak. Dachigam is famous for the Kashmir Stag or “Hangul” (*Cervus elaphus hanglu*). The National Park also acts as a protected home for other floral and faunal elements, viz., Himalayan Brown Bear, Himalayan Black Bear, Musk Deer, Leopard, Hyena, birds (150 species), vascular plants (661 species) etc. (Dar et al. 2002).

No survey or study has so far been undertaken on the butterflies of Dachigam National Park. Earlier workers who have contributed to the knowledge of

butterfly fauna of Kashmir Valley like Bingham—(1905, 1907), Evans (1932), Thomas-Glover (1936), Home (1938), Das et al. (1964), Das & Verma(1965), Talbot (1939, 1947), Wynter-Blyth (1957) and Jamdar (1992)—have not mentioned any reports of butterflies from Dachigam area. Among them, Home (1938) reported seven species of butterflies from Nishatbagh, a famous tourist spot close to the national park. Also, most of the surveys/studies conducted in the park till date, have been confined to large animals like Hangul, Leopard, Wild Boar and plants (Holloway 1970; Kurt 1978; Inayatullah 1982; Mansoor 1989; Bhat et al. 2009; Charoo et al. 2009; Qureshi et al. 2009; Shah et al. 2009a,b, 2011). Keeping in view the significance of the national park, the authors made a preliminary survey of its butterfly fauna.

Materials and Methods: The butterflies were surveyed during the period April–June and September–October 2004, May–July and October 2005, June–August 2006 and May–July 2007. Adult butterflies were collected by net and identified in the field and in a few cases were collected. For identification, the works of Evans (1932), Wynter-Blyth (1957), Haribal (1992), Feltwell (2001), Kunte (2006) and Pajni et al. (2006) were followed. For common names of butterflies Wynter-Blyth (1957) and Varshney (1983) were followed.

Observations: In the present field study, 27 species of butterflies distributed in 24 genera and five families were reported (Table 1). The families include Hesperiiidae, Papilionidae (one genus, one species each), Lycaenidae (three genera, three species), Pieridae (five genera, seven species) and Nymphalidae (14 genera,



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Figure 1. Map of Dachigam National Park

15 species). Nymphalidae was found to be the most dominant followed by Pieridae, Lycaenidae, Hesperidae and Papilionidae. It was found that the butterflies of all the families except Hesperidae were mostly active from April to August. However, the family Hesperidae was active from June to October. Although a total of at least 35 species were seen in the park only 27 were identified, and the rest (which might roughly include three lycaenids, five nymphalids, one papilionid and three pierids) could not be identified. *Libythea lepita* occurred in the hundreds during the month of April and May 2006. However, such numbers were not observed in other months or years.

Most butterfly species were seen visiting flowers of *Tagetes patula* (Asteraceae). Two nymphalids namely *Junonia orithya* (Linnaeus) (Blue Pansy) and *Neptis sappho* Pallas (Pallas' Sailor) are new records and are reported for the first time from Kashmir Valley. The distribution and abundance of most families except Hesperidae was during the months of May, June and July. Hesperidae was abundant during September. *Aglais cashmirensis*, *Vanessa cardui*, *Colias fieldi*, *Pieris brassicae* and *Pontia daplidice* were the commonest butterflies throughout the study period.

Aglais cashmirensis, *Argynnis childreni*, *Hypolimnas misippus*, *Junonia orithya*, *Kaniska canace*, *Libythea lepita*, *Neptis sappho*, *Aricia agestis*, *Lampides boeticus*, *Lycaena phlaeas*, *Papilio machaon*, *Pelopidas mathias*,

Aporia soracta, *Colias fieldi*, *Gonepteryx rhamni*, *Pieris brassicae*, *P. canidia* and *Pontia daplidice* were found mud puddling on warm days. Species like *Argynnis hyperbius*, *Argynnis childreni*, *Callerebia nirmala*, *Danaus chrysippus*, *Hypolimnas misippus*, *Kaniska canace*, *Neptis sappho*, *Pararge eversmanni cashmirensis*, *Vanessa indica*, *Papilio machaon*, *Aporia soracta*, *Gonepteryx rhamni* and *Colias erate* were not frequently observed as compared to other reported species. Since the present preliminary study was mostly confined to the lower areas of the National Park, it was not possible to fully explore the butterfly wealth of the park.

Conclusion: The present study is the first effort in exploring the butterfly wealth of Dachigam National Park. The permission and entry process for conducting research needs to be reviewed and simplified. While processing extension/renewal of the permission, a lot of time gets wasted which ultimately affects the outcome of such surveys.

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Table 1. Butterflies of Dachigam National Park.

	Scientific Name	Common Name	Flight Period
	Family: Hesperidae		
1	<i>Pelopidas mathias</i> (Fabricius)	Small Branded Swift	June to October
	Family: Lycaenidae		
2	<i>Aricia agestis</i> (Denis & Schiffermuller)	Orange-Bordered Argus	April to October
3	<i>Lampides boeticus</i> Linnaeus	Pea Blue	May to September
4	<i>Lycaena phlaeas</i> (Linnaeus)	Common Copper	May to September
	Family: Nymphalidae		
5	<i>Aglaia cashmirensis</i> (Kollar)	Indian Tortoiseshell	March to November
6	<i>Argynnis hyperbius</i> (Johanssen)	Indian Fritillary	May to October
7	<i>Argynnis childreni</i> (Gray)	Large Silverstripe	May to October
8	<i>Callerebianirmala</i> (Moore)	Common Argus	April to September
9	<i>Danaus chrysippus</i> Linnaeus	Plain Tiger	May to August
10	<i>Hypolimnas misippus</i> (Linnaeus)	Danaid Eggfly	May to October
11	<i>Issoria lathonia</i> (Linnaeus)	Queen of Spain Fritillary	May to September
12	<i>Junonia iphita</i> (Crammer)	Chocolate Pansy	May to September
13	<i>Junonia orithya</i> (Linnaeus)	Blue Pansy	April to October
14	<i>Kaniska canace</i> (Linnaeus)	Blue Admiral	May to September
15	<i>Libythea lepita</i> Moore	Common Beak	April to September
16	<i>Neptis sappho</i> Pallas	Pallas' Sailer	May to September
17	<i>Pararge everesmanni cashmirensis</i> Eversmann	Yellow Wall	May to August
18	<i>Vanessa cardui</i> (Linnaeus)	Painted Lady	April to November
19	<i>Vanessa indica</i> (Herbst)	Indian Red Admiral	May to September
	Family: Papilionidae		
20	<i>Papilio machaon</i> Menetries	Common Yellow Swallowtail	April to September
	Family: Pieridae		
21	<i>Aporia soracta</i> Moore	Himalayan Blackvein	April to May
22	<i>Colias fieldi</i> Menetries	Dark Clouded Yellow	April to November
23	<i>Colias erate</i> Esper	Pale Clouded Yellow	April to November
24	<i>Gonepteryx hamni</i> (Linnaeus)	Common Brimstone	April to November
25	<i>Pieris brassicae</i> (Linnaeus)	Large Cabbage White	February to November
26	<i>Pieris canidia</i> (Sparman)	Indian Cabbage White	May to October
27	<i>Pontia daplidice</i> (Linnaeus)	Bath White	April to November

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Image 1. *Aglais cashmirensis*



Image 2. *Argynnis childreni*



Image 3. Pupa of *Argynnis childreni*

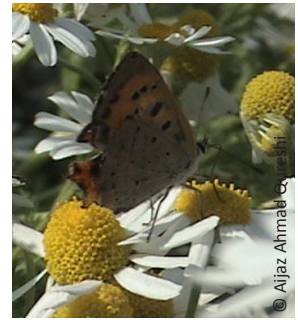


Image 4. *Lycaena phlaeas*



Image 5. *Aporia soracta*



Image 6. *Colias fieldi*



Image 7. *Colias erate*



Image 8. *Hypolimnas missipus*

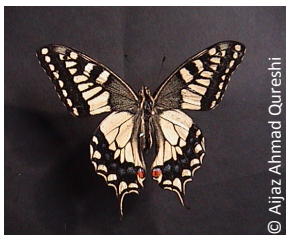


Image 9. *Papilio machaon*



Image 10. *Libythea lepita*



Image 11. *Pieris brassicae*



Image 12. *Callerebia nirmala*



Image 13. *Neptis sappho* (upperside)



Image 14. *Neptis sappho* (underside)



Image 15. *Vanessa cardui*



Image 16. *Danaus chrysippus*



Image 17. *Pieris canidia*



Image 19. *Junonia orithya*

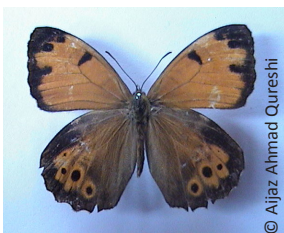


Image 20. *Parage eversmanni cashmirensis*



Image 21. *Pontia daplidice* during mating