

## BUTTERFLIES OF NANDA DEVI NATIONAL PARK – A WORLD HERITAGE SITE

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### Introduction

Nanda Devi National Park is located within the high mountainous ranges of Garhwal Himalayas in the upper catchment of river Alaknanda, the eastern tributary of river Ganga. The mountainous basin of Nanda Devi falls within the jurisdiction of Chamoli District and its eastern and southern boundaries fall in Bageshwar and Pithoragarh districts of Uttaranchal, respectively. Nanda Devi is the second highest peak (7,817 m amsl) in India and considered the world's second toughest peak to climb.

### Study site

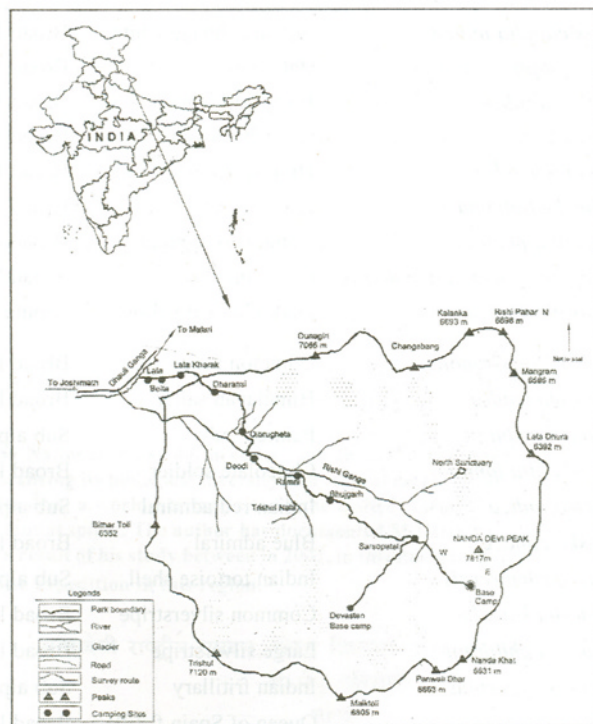
Nanda Devi is one of the important sites of wilderness and a hot spot of biodiversity in the Himalayan region. The entire area was declared as the Nanda Devi National Park (NDNP) in 1982. Further, in January 1988 the area was notified as the second Biosphere Reserve of India and designated as the Nanda Devi Biosphere Reserve (NDBR). Realising the importance of its rich biological diversity and occurrence of several rare and endangered floral and faunal species, the NDBR was notified as the World Heritage Site by UNESCO in December 1988 (Fig. 1).

The total area of present NDBR is 5,860.69 km<sup>2</sup> with 712.12 km<sup>2</sup> core area comprising both the national parks (Negi, 2002). The NDBR is located at Latitude N 30°08' to 31° 02' and Longitude E 79°12'-80°19' with large altitudinal range from 1,800m to 7,817m amsl with unique topography, climate and soil supporting diverse ecosystems, habitats, communities and species richness. The higher proportion of endemic species in the area signifies the conservation of the reserve. The reserve supports over 1,000 species of plants including bryophytes, fungi and lichens and about 520 species of fauna including mammals, birds, reptiles, amphibians, fishes, insects and molluscs and annelids (Samant, 2001).

Initial faunal surveys were mainly conducted by Lamba (1985, 1987), Tak and Kumar (1983a, b); Tak and Lamba (1984, 1985); Tak (1986) and Arora *et al.* (1995). Baidur (1993) and Joshi *et al.* (1999) also documented the butterfly diversity of NDBR.

Further, a scientific and ecological expedition in Nanda Devi National Park was undertaken with scientists and experts from different organizations and they studied the floral and faunal diversity of the

Fig. 1



Study site in Nanda Devi National Park

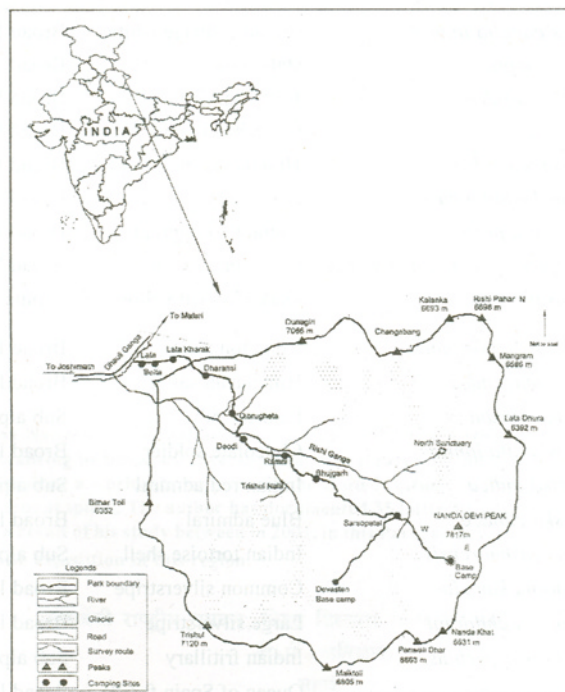
Table 1

*Butterflies recorded in Nanda Devi National Park*  
(26 August - 14 September, 2001)

Family	Species	Common Name	Habitat
1	2	3	4
Papilionidae	<i>Papilio machaon</i>	Yellow swallowtail	Sub alpine forest
	<i>Parnassius hardwickei</i>	Common blue apollo	Alpine pastures
	<i>Papilio polyctor polyctor</i>	Common peacock	Broad leaved forest
Pieridae	<i>Pieris brassicae</i>	Large cabbage white	Broad leaved forest

*Contd...*

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1	2	3	4
	<i>Pieris canidia indica</i>	Indian cabbage white	Broad leaved forest
	<i>Pontia daplidice moorei</i>	Bath white	Broad leaved forest
	<i>Pontia callidice</i>	Lofty bath white	Broad leaved forest
	<i>Aporia agathon</i>	Great blackvein	Broad leaved forest
	<i>Aporia leucodice</i>	Himalayan blackvein	Broad leaved forest
	<i>Delias belladonna</i>	Hill jezebel	Broad leaved forest
	<i>Catopsilia pomona</i>	Common emigrant	Broad leaved forest
	<i>Gonepteryx rhamni nepalensis</i>	Common brimstone	Broad leaved forest
	<i>Colias electo fieldii</i>	Dark clouded yellow	Alpine pastures
Nymphalidae	<i>Neptis hylas varmona</i>	Common sailer	Broad leaved forest
	<i>Neptis mahendra</i>	Himalayan sailer	Broad leaved forest
	<i>Cynthia cardui</i>	Painted lady	Sub alpine to alpine
	<i>Precis iphita iphita</i>	Chocolate soldier	Broad leaved forest
	<i>Vanessa indica</i>	Indian red admiral	Sub alpine forest
	<i>Kaniska canace</i>	Blue admiral	Broad leaved forest
	<i>Aglais cashmirensis</i>	Indian tortoise shell	Sub alpine to alpine
	<i>Childrena kamala</i>	Common silverstripe	Broad leaved forest
	<i>Childrena childreni</i>	Large silverstripe	Broad leaved forest
	<i>Argyreus hyperbius</i>	Indian fritillary	Sub alpine to alpine
	<i>Issoria lathonia</i>	Queen of Spain fritillary	Broad leaved with conifer forest
	<i>Danaus genutia</i>	Common tiger	Broad leaved forest
	<i>Danaus chrysippus</i>	Plain tiger	Broad leaved forest
	<i>Polygonia-c album</i>	Comma	Sub alpine to alpine
	<i>Aulocera brahminus</i>	Narrow banded satyr	Sub alpine forest
	<i>Aulocera sp.</i>	Satyr	Sub alpine forest
Lycaenidae	<i>Lycaena phlaeas</i>	Common copper	Broad leaved forest
	<i>Lycaena pavana</i>	White bordered copper	Broad leaved forest
	<i>Celastrina huegeli</i>	Large hedge blue	Broad leaved forest
	<i>Heliophorus androcles moorei</i>	Azure sapphire	Broad leaved forest
	<i>Heliophorus brahma</i>	Golden sapphire	Broad leaved forest
	<i>Heliophoru sena</i>	Sorrel sapphire	Broad leaved forest



park (S/Shri Sathyakumar, Sankaran, Baidur, Rastogi, Samant and Balodi in 1993). Baidur (1993) documented 27 species of butterflies during his visit in the park area. The author surveyed the same area and documented 35 butterflies species.

The Garhwal Rifles Regimental Centre, Lansdowne (Uttaranchal) organized an expedition to the Nanda Devi Biosphere Reserve in September 2001 named 'The

Clean Nanda Devi Expedition 2001' in which the author participated from 26 August to 14 September 2001 and thus studied the butterflies of the park.

#### Observations

A total of 35 species belonging to 25 genera and four families viz. Papilionidae, Pieridae, Nymphalidae and Lycaenidae were recorded during the expedition (Table 1).

#### SUMMARY

Nanda Devi National Park, declared as such in 1982, was further made a Biosphere Reserve in January 1988. Realising its biological diversity and several rare and endangered endemic floral and faunal species, it was declared a world heritage site by the United Nations in Dec. 1988. This research supports many plant and faunal species. The author has documented 35 butterfly species belonging to 25 genera and four families, as a result of his study between in 2001, in this Park, as part of the Garhwal Rifles Regimental Centre Lansdowne expedition in this region.

#### नन्दादेवी राष्ट्रीय उपवन, विश्व विरासत स्थल की कुछ तितलियां

वी०पी० उनियाल

सारांश

नन्दादेवी राष्ट्रीय उपवन को 1982 में राष्ट्रीय उपवन घोषित किया गया और जनवरी 1988 में आरक्षित जीवमण्डल बना दिया गया तथा इसकी जैविकीय विविधता यही मिलने वाली कुछ दुर्लभ और संकटापन्न बनी हुई यही सीमित मिलने वाली पेड़-पौधों और पशुपक्षियों की जातियां मिलने के कारण युनेस्को द्वारा दिसम्बर 1988 में विश्व विरासत स्थल घोषित कर दिया गया है। इस आरक्षित क्षेत्र में बहुत सारी पादप और प्राणि जातियां पाई जाती हैं। इसके लेखक ने यहां मिलने वाली 4 कुलों और 25 प्रजातियों की 35 तितलियों जातियों को यहा मिलता प्रलेखित किया है जिसे उन्होंने अगस्त 26 और सितम्बर 14, 2001 के दौरान इस उपवन में मिलते अपने अध्ययन के दौरान देखा जो उन्होंने जीआरसी, लैंसडाऊन द्वारा किए इस क्षेत्र के अभियान के भाग स्वरूप सम्पन्न किया।

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