

**STUDY ON BUTTERFLY FAUNA IN SOUTHERN HILLS
(CHANDRAGIRI AND CHAMPADEVI) OF KATHMANDU VALLEY,
NEPAL**



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Batch: 2070/071

A thesis submitted
In partial fulfillment of the requirements for the award of the degree of Master of Science in
Zoology with special paper Entomology

Submitted to
Central Department of Zoology
Institute of Science and Technology
Tribhuvan University
Kirtipur, Kathmandu,
Nepal.

February, 2018



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RECOMMENDATION

This is to recommend that the thesis entitled “Study on butterfly fauna in southern hills (Chandragiri and Champadevi) of Kathmandu valley, Nepal” has been carried out by Mr. Buddhi Ram Oli for the partial fulfillment of Master’s Degree of Science in Zoology with special paper Entomology. This is his original work and has been carried out under my supervision. To the best of my knowledge, this thesis work has not been submitted for any other degree in any institutions.

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LETTER OF APPROVAL

On the recommendation of supervisor “Dr. Daya Ram Bhusal, Associate professor, Central Department of Zoology, Tribhuvan University” this thesis submitted by Mr. Buddhi Ram Oli entitled “Study on butterfly fauna in southern hills (Chandragiri and Champadevi) of Kathmandu valley, Nepal” is approved for the examination and submitted to the Tribhuvan University in partial fulfillment of the requirements for Master’s Degree of Science in Zoology with special paper Entomology.

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CERTIFICATE OF ACCEPTANCE

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ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my supervisor Dr. Daya Ram Bhusal, Associate Professor, Central Department of Zoology, Tribhuvan University for his continuous supervision, support, guidance and inspiration.

I am grateful to Prof. Dr. Ranjana Gupta, Head of Department, Central Department of Zoology, Tribhuvan University for providing platform to carry out this research.

My special thanks to Natural History Museum, Swyambhu, Kathmandu, Nepal for the help in species identification.

I would like to extend my gratitude to Dr. Maan Bahadur Rokaya, Plant ecologist, Institute of Botany and Global Change Research Institute, Czech Academy of Sciences, Czech Republic for his support, guidance, motivation and arranging funds for the study from Czech Science Foundation with grant Number 14-36098G. I'm very thankful for Mr. Bimal Raj Shrestha for his suggestion during thesis writing.

I would like to thank my family, Mr. Manoj Sharma, all the friends and teaching and non-teaching staffs of Central Department of Zoology for their support.

ABSTRACT

The species diversity of butterfly varies with space and time from micro to macro scale of habitat. This study was conducted to find butterfly species distribution and diversity from different elevational gradients of Chandragiri and Champadevi hills of Kathmandu valley from June to November, 2016. Sample collection was done within the altitudinal ranges of 1550 m to 2450 m of both hills, establishing the spots at every 100 m of altitudinal belts. A total of 2293 individuals of butterflies belonging to 113 species, 71 genera and nine families were recorded. Family Nymphalidae was dominant family whereas family Acraeidae is least abundant. During field period 40 species were found rare as per their abundance. *Aglais cashmirensis aesis* was the species having higher abundance with individual number 176. Species richness was found high at the altitude ranges of 1950 m and 2050 m whereas it decreases with increase in altitudes. Butterfly species richness, abundance and diversity were lowest at upper altitude of study area. The butterfly diversity was recorded higher in southern aspect than that to northern. Species were well separated in different clusters according to the altitude and aspects. A total of 21 butterfly species were recorded as indicator species of low and high altitudes of both northern and southern aspects. Butterfly diversity was higher in autumn than in summer. Negative correlation ($r = -0.9525$) between altitude and overall wings size of butterfly community was observed. In contrast, positive correlation ($r = 0.7344$) between wing size of butterflies belonging to family Danaidae with increasing elevational gradient was recorded. Serious conservation threats such as over use of Non-timber Forest Product, forest fire, fire wood collection, coal collection and over grazing of herders were found during field period.

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LIST OF ABBREVIATIONS

Abbreviated form	Details of abbreviations	
Alt		Altitude
asl		Above sea level
DA		Discriminant analysis
GPS		Global Positioning System
m		Meter
NH		Northern high altitude
NL		Northern low altitude
NHM		Natural History Museum
NTPS		Non Timber Forest Product
Southern high altitude	SL	SH
Southern Low altitude	S.N.	Serial
Number	Sn NA	Species
richness in Northern aspect	Sn SA	
Species richness in Southern aspect		Spn
Species number		