

INTESTINAL HELMINTH PARASITES OF *Macaca mulatta* (ZIMMERMANN) FROM PASHUPATI (KATHMANDU DISTRICT) AND NILBARAHI AREA (BHAKTAPUR DISTRICT) OF NEPAL



A Thesis

**Submitted in partial fulfillment of the requirements for the
Master's Degree of Science in Zoology**

By

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**Submitted to
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RECOMMENDATION

This is to certify that **Mrs. Varsha Malla (Gurung)** has successfully completed the dissertation work entitled **INTESTINAL HELMINTH PARASTES OF *Macaca mulatta* (ZIMMERMANN) FROM PASHUPATI (KATHMANDU DISTRICT) AND NILBARAHI AREA (BHAKTAPUR DISTRICT) OF NEPAL** under our supervision in partial fulfillment of the requirements for the Master's Degree of Science in Zoology with Parasitology as a special paper. Her work is an original one and deserves for recommendation.

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APPROVAL

We, the members of expert committee, evaluated the dissertation work entitled, **INTESTINAL HELMINTH PARASTES OF *Macaca mulatta* (ZIMMERMANN) FROM PASHUPATI (KATHMANDU DISTRICT) AND NILBARAHI AREA (BHAKTAPUR DISTRICT) OF NEPAL** and approved that **Mrs. Varsha Malla (Gurung)** is qualified for awarding Master's Degree in Zoology with Parasitology as a special paper.

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LETTER OF APPROVAL

On the recommendation of supervisor **Dr. Ranjana Gupta** and co-supervisor **Dr. Ganesh Raj Pant** this dissertation of **Mrs Varsha Malla (Gurung)** is approved for examination and is submitted to the Tribhuvan University in Partial fulfillment of the requirements for Master's Degree in Zoology with special paper parasitology.

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ABSTRACT

A total of 202 faecal samples from *Macaca mulatta* (Rato bandar) from Pashupati and Nilbarahi areas were microscopically examined to identify the prevalence of gastro-intestinal helminth parasites. Faecal smears were prepared from fresh faecal samples and microscopically examined. About 3 gm of the dropping was also preserved separately in clean properly labelled vials containing 10% formalin. The specimens were microscopically examined after concentration for ova of intestinal helminth parasites. Out of total 202 samples, 124 (61.38%) samples were found positive for one or mixed infection of more than one helminthes and 78 (38.61%) samples were found to be negative for any helminthes. Eggs of 18 helminth species (16 nematodes, 1 trematode and 1 acanthocephala) were identified. Regarding classwise prevalence rate, out of 202 samples, the nematodes were the most prevalent with prevalence percentage 89.51% and trematode was the least prevalent with prevalence percentage 4.83%. The prevalence percentage of acanthocephala was 5.64%. Only one species of trematode that is *Dicrocoelium* sp. with 4.83% was found. Likewise only one species of acanthocephala that is *Prosthenorchis elegans* with 5.64% was found. Among nematodes *Strongyloides fulleborni* was found to be the most prevalent with 51.61% whereas prevalence with nematode *Toxocara canis* with 0.80% and *Cooperia* sp. with 0.80% were found to be the least prevalent. The prevalence rate of other species of nematodes were as follows : *Oxyuris* sp. – 11.29%, *Ascaris lumbricoides* – 10.48%, *Dictyocaulus* sp. – 7.25%, *Chabertia* sp. – 6.45%, *Toxascaris leonina* – 6.45 %, *Ostertagia* sp. – 6.45%, *Trichuris ovis* – 6.45%, *Trichuris trichura* – 5.64%, *Trichostrongylus* sp. – 4.83%, *Capillaria* sp. – 4.03%, *Oesophagostomum* sp. – 4.03 %, *Ancylostoma duodenale* – 2.41%, *Haemonchus contortus* – 2.41 %. *Cooperia* sp. – 0.80 % and *Toxocara canis* – 0.80 %. Comparatively. the prevalence percentage of intestinal helminth parasites from Rhesus monkey were found to be 64.70% in Pashupati area and 58% in Nilbarahi area. Out of all observed helminthes, one trematode *Dicrocoelium* sp. and ten nematodes namely *Strongyloides fulleborni*, *Oesophagostomum* sp., *Capillaria* sp., *Trichostrongylus* sp., *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Haemonchus contortus*, *Cooperia* sp., *Ostertagia* sp. and *Toxocara canis* were zoonotically infective.

All the Genus and Species of intestinal helminth parasites observed in the Rhesus monkey are reported here for the first time from Nepal. Whereas, *Prosthenorchis elegans* is reported for the first time in Nepal.

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ABBREVIATIONS AND ACRONYMS

IAAS	-	Institute of Agriculture and Animal Science
ADPCD	-	Animal Disease Protection and Control Division
IFP	-	Integrated Family Planning
PCP	-	Parasite Control Project
rpm	-	Rate Per Minute
AIPD	-	All India Publisher and Distributors
EPS	-	Eggs per gram
CVL	-	Central Veterinary Laboratory
sp.	-	Species
USA	-	United States Of America
mm	-	Millimetre
µm	-	Micrometer
No.	-	Number
VDC	-	Village Development Committee
T.U.	-	Tribhuvan University
ml	-	Millilitre
Jour.	-	Journal
Med.	-	Medical
Assoc.	-	Association
Inst	-	Institute
HMG	-	His Magesty Government
Nep.	-	Nepal
Vol.	-	Volume
VETCON	-	Veterinary Conference
NVA	-	Nepal Veterinary Association
gm	-	Gram
Regd.	-	Registered
Nat.	-	Natural
His.	-	History
Mues.	-	Museum
ELBS	-	English Language Book Society