

**A STUDY OF THE DISTRIBUTION AND ABUNDANCE
OF THE ADULT CULEX MOSQUITOES IN
TEN VILLAGES IN CHITWAN DISTRICT
NEPAL**

**A Dissertation
Submitted for Partial Fulfillment of the Requirements
For the Master's Degree of Science
In Zoology
With Special Paper Entomology**

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**To
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RECOMMENDATION

This is recommended that the dissertation entitled “**A STUDY OF THE DISTRIBUTION AND ABUNDANCE OF THE ADULT CULEX MOSQUITOES IN TEN VILLAGES OF CHITWAN DISTRICT**” has been carried out by Mrs. Vaijayanti Devi Neupane for the partial fulfillment of the Master’s Degree of Science in Zoology with Entomology as a special paper. This original work was conducted under our supervision. To the best of our knowledge, this dissertation work has not been submitted for any other degree.

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LETTER OF APPROVAL

On the recommendation of supervisor, Prof. Dr. Ananda Shova Tamrakar, this Dissertation Submitted by Mrs. Vaijayanti Devi Neupane entitled "**A STUDY OF THE DISTRIBUTION AND ABUNDANCE OF THE ADULT CULEX MOSQUITOES IN TEN VILLAGES OF CHITWAN DISTRICT**" to the Tribhuvan University in partial fulfillment of the requirements for Master's Degree of Science in Zoology with Entomology as a special paper.

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CERTIFICATE OF APPROVAL

This Dissertation work submitted by Mrs. Vaijayanti Devi Neupane entitled “**A STUDY OF THE DISTRIBUTION AND ABUNDANCE OF THE ADULT CULEX MOSQUITOES IN TEN VILLAGES OF CHITWAN DISTRICT**” has been approved as a partial fulfillment of requirements for the **Master’s Degree of Science in Zoology with Entomology** as a special paper.

EVALUATION COMMITTEE

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DECLARATION

I hereby declare that the work presented in this Dissertation has been done by myself, and has not been submitted elsewhere for the award of any degree. All sources of information have been specifically acknowledged by reference to the authors or institutions.

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ABSTRACT

The present study, aimed to determine the distribution of different *Culex* mosquito species on 10 village (5 VDCs) of Chitwan District, to determine the indoor and outdoor resting species presented in the study area and their relative density, to assess seasonal changes; to determine vector abundance and species composition in the study area and to determine the resting habit of mosquito species, was carried out from August-September, 2007 to March-April, 2008 in Chitwan District. During the study period, a total of 1197 *Culex* species were recorded. About 12 species were reported in post monsoon and only 5 species in pre monsoon season. A total of 718 and 479 *Culex* samples were collected from post monsoon and pre monsoon season. Highest samples (n=279) were collected from human dwelling and (n=226) from cattle shed in post monsoon and pre monsoon season respectively. Among 4 month September is most preferable month for the distribution of *Culex* species. About 12 species were recorded in September from Bramhapuri village (Patihani VDC) of Western Chitwan. *Culex quinquefasciatus* was most abundant species about 26.90% and 18.71% was recorded in post monsoon and pre monsoon season respectively. The indoor resting density (human) was highest (9.33) at 27.25°C in post-monsoon, and lowest (0.72) at 21.75°C in pre monsoon at Champanagar village. Highest indoor resting density of cattle (5.55) at 22°C in Suryapur and lowest (0.70) was in Kholesimal at 25.37°C in post monsoon. Highest outdoor density (0.22) at 22.5°C was in Kholesimal and lowest (0) at 21.5°C in Champanagar village in pre monsoon. Resting habit of *Culex mimulus* and *Cx. tritaeniorhynchus* was infinitive in post monsoon and pre monsoon respectively. Highest room density of *Cx. quinuefasciatus* (6.5) was recorded from Champanagar in post monsoon. The number of mosquitoes is positively correlated with temperature. The number of mosquitoes collected in post monsoon survey and pre monsoon survey is dependent. Effect of seasonal change, temperature, surrounding vegetation, monthly variation for distribution of mosquito species and their resting density is discussed.