Distribution Patterns and Observations on the Influence of Environmental Factors on Selected Lizard Species of Mts. Palaypalay-Mataas na Gulod National Park, Luzon Island, Philippines

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ABSTRACT

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STATEMENT OF THE PROBLEM:

1. What are the species of lizards present in Mt Palaypalay-Mataas na Gulod National Park?

2. What factors influence the patterns of distribution of the lizard species in the study area?

3. What are the environmental factors that possibly affect the distribution patterns of selected species of lizards in the study area?

SCOPE AND DELIMITATION:

This study focused in determining the diversity and distribution of lizards in Mt. Palaypalay-Mataas na Gulod National Park, Ternate Cavite, Luzon Island, Philippines. The study was conducted in the months of January to March 1999.

METHODOLOGY:

Sampling was concentrated on existing trails in the forest and along Palikpikan Stream having an elevation range of 200 to 500 m above sea level. Data collection involved day and night sampling with an average time of 10 hrs per day by two to three persons starting from January to March 1999. Two sampling techniques were employed namely, microhabitat sampling and time-constrained searches.

MAJOR FINDINGS:

The following findings resulted from this investigation:

1. Thirteen species were recorded to occur in Mt. Palaypalay-Mataas na Gulod National Park representing four families; Family Gekkonidae with six species, one is endemic; Scincidae with four species three of which are endemic; Agamidae with two species both of which are endemic and Varanidae with one endemic subspecies.

2. Factors that influence the patterns of distribution are as follows:

2.1 Elevation – As elevation increases, species diversity decreases. It was observed that species like *G. gecko. M. multicarinata borealis* and *S. j. jagori* have wide distribution ranges as these species were observed at all elevation levels in the study area. Species like *Gonocephalus sp., Gonydactylus platyurus* and *V. salvator marmoratus* have elevation preferences because these species were observed only at certain elevations. Ten out of the 13 recorded species were observed to occur at elevation range of 200 to 300 m above sea level.

2.2 Habitat – Three habitats were determined, forest, stream and human habitation. Species were observed to have habitat overlaps. Eleven species are forest dwellers, five are stream dwellers and six prefer human habitation.

2.3 Microhabitat – Five distinct microhabitats were observed. These were, trees, rocks, forest litter, fallen logs and man made structures. It was observed that *M. multicarinata borealis, S. j. jagori, Hemidactylus frenatus, Cosymbotus platyurus, Gekko gecko, G. monarchus,* and *Gehyra mutilata* have several microhabitat preferences

as these species are found in different types of microhabitats. *Lipinia pulchella pulchella* and *V. salvator marmoratus* on the other can only be found in one microhabitat type.

3. Environmental factors such as temperature, relative humidity and sunlight were determined to have varying degrees of influence on the distribution of lizards.

3.1 Temperature – It was observed that species, *G. gecko, M. multicarinata borealis, S. j. jagori,* and *L. p. pulchella* have ideal temperature requirement. Respectively, for *G. gecko* it is 25°C to 27°C, 27°C to 30°C for *M. m. borealis*, 26°C to 30°C for *S. j. jagori* and 28°C to 31°C for *L. p. pulchella.*

3.2 Relative Humidity – As observed in this study, relative humidity is not a significant factor affecting lizard distribution. Data show high deviation of values ranging from ± 3.5 for *L. p. pulchella* to ± 13.3 for *G. gecko* suggesting heterogeneity. Relative humidity is less likely to influence distribution of selected lizard species.

3.3 Sunlight – Sunlight is an essential factor that affects the micro-distribution of lizards. Favorable microhabitats are not always

inhabited by lizards as the availability of sunlight may or may not be favored.

CONCLUSIONS:

1. Thirteen species representing four families are found in Mt. Palaypalay-Mataas na Gulod National Park, six for family Gekkonidae, four for family Scincidae, two for family Agamidae and one for family Varanidae.

2. Species diversity decreases as elevation increases.

3. Majority of the resident species are distributed at lower elevations.

4. Some species have wide elevation range distribution while few have limited.

5. *Lipinia pulchella pulchella* and *Gonydactylus philippinicus* have specific microhabitat requirement and habitat overlap can be observed with the rest of the detected species.

6. Temperature was determined to influence lizard distribution.

7. Relative humidity was determined to have no significant influence on lizard distribution.

8. Sunlight was observed to affect the micro distribution of lizards.

RECOMMENDATIONS:

1. Study on the microclimatic requirements of lizards in the study area should be conducted to provide information regarding the risk of habitat modification on their survival capabilities.

2. A more intensive survey covering the unexplored areas is highly encouraged to discover other species.

3. Ecological parameters like seasonality should be included so as to determine its effects on diversity and density of species.

4. Other sampling techniques should be employed in future studies to increase the possibility of discovering new species.

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