

Beetles in Selected Barangays of Catarman, Northern Samar, Philippines

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ABSTRACT

This initial research effort was conducted to identify the beetle species in five selected barangays of Catarman, Northern Samar, and describe the environmental factors that affect the presence of beetles in the study area. It used the descriptive method of research, with the purposive sampling technique as the sampling procedure utilized.

Due to limitations of the researcher, a total of only seventeen (17) beetle species, belonging to eleven (11) families, were found present in different sampling sites. The most abundant of the beetle species individual was *Harmonia axyridis*, constituting 76.14% of the total number of beetles in the study area, while the least abundant were *Alaus sp.*, and *Diphucephala sp.*, each with only one (1) individual present, accounting for a relative abundance of only 0.46%.

The air and soil temperature range between 27°C to 29°C. Grasses, trees, shrubs, and herbs were the common vegetation present in the study sites where beetles were found. This implies that environmental factors were conducive for the beetles to thrive in the area. The presence of different beetle species indicates the study area has a diverse beetle fauna, albeit it is only a small fraction of the total beetle species listed in the country. It is imperative that conservation efforts should be strengthened by the LGU in order to conserve not only the beetle population in the study area, but other organisms, both flora and fauna, as well.

KEYWORDS: beetles, Coleoptera, Catarman, Northern Samar

INTRODUCTION

In Haldane's day, estimates of the number of beetle species were in the tens of thousands. Currently, the estimates range to about 350,000 species, accounting for about 20 percent of all hexapod species. Their small size, an average length ranging from 4–5 millimeters, has ensured that their activities mostly go unnoticed, but sheer numbers of species, make them important members of all terrestrial and freshwater ecosystems, being important food items for numerous species of reptiles, birds, small mammals, and fish. Beetles are also important agricultural and forestry pests, with numerous species being injurious to crops, trees, and stored products. Their most important beneficial roles, as pollinators and as recyclers of nutrients, are activities which ensure the health of ecosystems (Ashworth, 2001).

Beetles have "sheathed" wings (*elytra*), for the past 285 million years, while their hind wings, made of membrane and does the actual "flying", are a later development (245 million years ago), at least for the 90% of beetle species in the suborder Polyphaga. Their hind wings are much bigger than their elytra, sometimes sticking out from under these covers when flying beetles land (Grimaldi and Engel, 2005).

The Philippine tiger beetle fauna presently includes 139 species, 120 (86.3 %) of which appear to be endemic to the archipelago, which makes the Philippines the seventh richest country of the world in absolute numbers of species, the fifth in percent number of endemic tiger beetle species (Cassola, 2011). A rapid survey of tiger beetles conducted by Anzano and Cabras (2016) in two protected landscapes of Davao Region reported a total of five (62.5%) endemic species, of which 60% are Philippine endemics, while 2 (40%) are endemic to Mindanao. Two species, *Heptodonta lumawigi* and *Cylindera (Eugrapha) excisa*, were first provincial records in Compostela Valley, raising its tiger beetle fauna from twelve to fourteen. Ecologic data were also presented for the species as well as the threats that they experience in both protected landscapes, providing baseline data of tiger beetles for both protected landscapes. Conservation measures should be conducted to preserve the tiger beetles. Strengthened implementation of protection in both protected landscapes against mining, illegal logging, slash and burn farming and human settlements should also be done (Anzano and Cabras, 2016).

OBJECTIVES OF THE STUDY

Specifically, the study aimed to:

1. identify the different species of beetles in selected barangays of Catarman, Northern Samar;
2. determine the abundant species and the relative abundance of beetle species present in the study area; and,
3. describe the environmental factors that affect the

Presence of beetles in the study area in terms of:

- 3.1. Air temperature;
- 3.2. Soil temperature;
- 3.3. Habitat; and,
- 3.4. Vegetation (Grassland, forest, woodland, coconut trees, or rice field)

METHODOLOGY

This study was conducted in the Municipality of Catarman, Northern Samar, a first-class municipality and the capital town of Northern Samar, Philippines, subdivided into 55 barangays (Catarman Municipal Profile, 2016).

It used the descriptive method of research, purposively sampling and collecting beetle species using an insect net. Each species was identified, quantified, classified, and placed in a container for preservation purposes.

RESULTS AND DISCUSSION

From five sampling sites, represented by different barangays of Catarman, Northern Samar which were visited every weekend at daytime and nighttime, a total of seventeen (17) beetle species were collected, pre-identified by the researcher, and authenticated by an expert. These species belong to eleven (11) families, namely: *Buprestidae*, *Brentidae*, *Cetoniidae*, *Cerambycidae*, *Coccinellidae*, *Chrysomelidae*, *Curculionidae*, *Elateridae*, *Lucanidae*, *Melolonthidae*, and *Scarabaeidae*. The beetle species were, namely: *Harmonia axyridis*, *Delphastus sp.*, *Chrysochroa fulminans*, *Chrysochus sp.*, *Aspidomorpha miliaris*, *Chalcosoma atlas*, *Aulacophora sp.*, *Oryctes rhinoceros*, *Otiorychus sp.*, *Scyphophorus acupuntatus*, *Leucopholis irrorata*, *Diphucephala sp.*, *Anoplophora sp.*, *Heterorrhina sp.*, *Nigidius amplicollis*, *Alaus sp.*, and *Pachyrhynchus sp.*

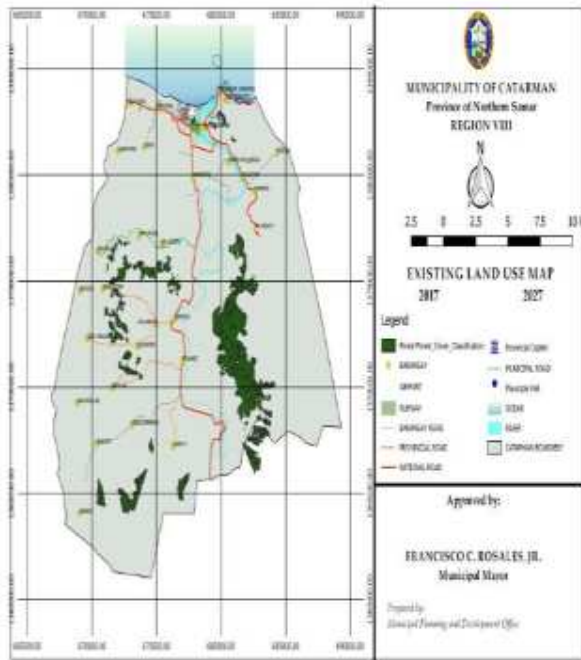


Figure 1. Map of Northern Samar



Alaus sp.



Anoplophora sp.



Plate 3. *Aspidomorpha miliaris*



Plate 4. *Aulacophora sp.*



Plate 5. *Chaicocoma Alleni*.



Plate 10. *Harmonia Axyridis*



Plate 6. *Chrysochus sp.*



Plate 11. *Heterorrhina sp.*



Plate 7. *Chrysochroa fulminans*



Plate 12. *Leucopholis irrorata*



Plate 8. *Delphastus sp.*



Plate 13. *Oryctes rhinoceros*



Plate 9. *Diphucephala sp.*



Plate 14. *Otiiorhynchus sp.*





Plate 15. *Pachyrhynchus* sp.



Plate 17. *Scyphophorus*



Plate 16. *Nigidius amplicollis*

Table 3. Prevailing Environmental factors in the study area

Environmental Parameters	Sampling sites				
	1	2	3	4	5
Air temperature	28°C	27°C	28°C	29°C	29°C
Soil temperature	29°C	28°C	29°C	28°C	27°C

Table 4. Habitat & Vegetation in the Sampling Sites

SAMPLING SITE	HABITAT	VEGETATION
Barangay Bangkerohan	Coconut trees	Grasses
Barangay Dalakit	Woodland area	Grasses, trees, shrubs,
Barangay Libjo	Rice field area	Grasses
Barangay Macagtas	Grassland area	Grasses and shrubs
Barangay Mckingley	Forest area	Grasses, herbs and shrubs

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings, it can be concluded that a diversity of beetle species was present in the study area, which implies that environmental were conducive for the beetles to thrive. Although the number of species collected were only a fraction of the total number of beetle species listed in the country, it is shown that there is a variety of species present. The researchers recommend that further studies on the influence of habitat types, vegetative cover, and other environmental parameters on the presence or absence of beetles in other barangays of Catarman, Northern Samar should be done to have a relatively complete baseline information about their existence in the locality. Further, conservation efforts should be strengthened by the LGU in order to conserve not only the beetle population in the study area but other organisms, both flora and fauna, as well.

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