

## Coleopteran survey in the Kah-nyawvillage ,Chaungzon Township, Mon State

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### Abstract

A survey of beetle faunal occurrences and composition was studied in the Kah-nyawvillage,Chaungzon Township, Mon State during December 2017 to October 2018. Beetles were collected by standard trapping method and bare hand collection methods in only one site with two crops growing season. A total of 22 species of beetles representing 7 families of Cerambycidae, Chrysomelidae, Coccinellidae, Bolboceratidae, Carabidae, Scarabaeidae, and Hydrophilidae were recorded in this study. Among these families, family Coccinellidae was the most diverse beetles recorded in the study area, while the family Hydrophilidae ,Bolboceratidae and Cerambycidaewere the least diverse beetle recorded with one species only.

Keywords: Coleoptera, beetles, growing season

### Introduction

Insects are the largest group of animals in the world. The numbers of insects are more or less the same amount compared to the numbers of all other animals together. The beetles, described in the world are about four hundred thousand species and it is about 40% of total known insects of the world.

One of the most distinctive features of the Coleoptera is the structure of the wings. Most beetles have four wings, with the front pair thickened, leathery or hard and brittle, and usually meeting in a straight line down the middle of the back and covering the hind wings (hence the order names coleo-sheath, ptera-wings). The hind wings are membranous, usually longer than the front wings, and when not in used are folded up under the front wings. The front wings of a beetle are called elytra (singular elytron). The elytra normally serve only as protective sheaths: the hind wings are the only ones ordinarily used for flight. The front or hind wings are greatly reduced in a few beetles.

Beetles are found in nearly all natural habitatsincluding freshwater and marine habitats, everywhere vegetative foliage is found, from trees and their barks to flowers, leaves, and underground near roots even inside plants in galls, in every plant tissues, including dead or decaying ones (Putra, 2014). Beetles may be found in almost every type of habitat in which any insects is found, and they feed on all sorts of plant and animal materials. Many are phytophagousandpredaceous, some are scavengers, others feed on mold or fungi, and very few are parasitic. Some are sub-terranean in habit, many are aquatic or semiaquatic, and a few live as commensals in the nest of social insects. Some of the phytophagousspecies are free feeders on foliage, some bore into the wood or fruit, some are leaf miners, some attack the roots, and some feed on parts of the blossoms; any part of a plant may be fed upon by some type of beetles.

The present study was conducted with the following objectives –

- To investigate the beetle species that found in paddy fields of Kah-nyaw village, Chaungzon Township, Mon State
- To observe the recorded beetle species of Chaungzon environs

### Materials and Methods

#### Study Site

The study area was chosen as Kah-nyaw Village in Chaungzon Township between 16° 26' 36", N-97° 35' 36" E and 16° 26' 39", N-97° 35' 38" E. (Plate1 and 2)

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## Study Period

The study period was lasted from December 2017 to October 2018.



Source: Google earth, 2018

Plate 1 study site



Paddy field

(June to October)



Green gram plantation

(December to February)

Plate 2 Study site (Kahn yaw Village)

## Data collection and Methods

The data collection was made twice a month. The specimens were collected as 8:00 - 11:00 am and 4:00-6:00 pm. The materials such as a magnifier, data sheets, a camera, an insect net, plastic boxes, pocket guide were used.

The active collecting methods of (1) Hand collecting (2) Beat sampling (3) Sweep sampling and (4) Yellow-stick trap were used to collect the specimens. In selected study sites, transect line count method was used to collect the specimen.

## Specimen collection and Preservation

The collected specimens were put into the 70% ethanol for further identification. The beetles were pinned through the right side of the elytra towards the front and small species on point.

### Identification

The identification of the collected beetles specimens were followed after Fauna of British India , Andrew , (1929, 1935), Imm's (1973), Mc Gavin (2000), Putra (2014).

### Results

#### Species composition of recorded beetles

A total of 22 species belonging to 20 genera under 7 families of order Coleoptera were recorded. Among the recorded families, Coccinellidae was observed to be the highest number of species as seven species. Family Chrysomelidae was by followed six species and, family Scarabaeidae as four species, Carabaeidae as two species, were recorded respectively. Only one species were recorded as family Cerambycidae, Hydrophilidae and Bolboceratidae (Table 1 & Plate 3).

Table- 1 Recorded species found in the study sites

No	Family	Genus	Species	Common name
1	Cerambycidae	<i>Rhytidodera</i>	<i>Simulans</i>	Long-horn beetle
2	Carabaeidae	<i>Ophionea</i>	<i>nigrofasciata</i>	ground beetle
3		<i>Clivina</i>	<i>sp.</i>	ground beetle
4	Coccinellidae	<i>Coccinella</i>	<i>transversalis</i>	Transverse lady bird
5		<i>Cheilomenes</i>	<i>sexmaculata</i>	Six-spotted Zigzag lady beetle
6		<i>Coccinella</i>	<i>sexmaculata</i>	Lady beetle
7		<i>Microspis</i>	<i>discolor</i>	Lady beetle
8		<i>Brumoides</i>	<i>suturalis</i>	Three-striped lady beetle
9		<i>Illies</i>	<i>sp.</i>	Lady beetle
10		<i>Epilachna</i>	<i>sp.</i>	Epilachna beetle
11	Chrysomelidae	<i>Aulacophora</i>	<i>foveicollis</i>	Red-pumpkin beetle
12		<i>Aulacophora</i>	<i>excavata</i>	flea beetle
13		<i>Altica</i>	<i>sp.</i>	flea beetle
14		<i>Phyllotreta</i>	<i>sp.</i>	flea beetle
15		<i>Monolepta</i>	<i>signata</i>	white spotted leaf beetle
16		<i>Dicladispa</i>	<i>armigera</i>	Rice hispa
17	Hydrophilidae	<i>Hydrophilus</i>	<i>sp.</i>	water scavenger beetle
18	Scarabaeidae	<i>Xylotrupes</i>	<i>gideon</i>	Brown Rhinoceros beetle
19		<i>Heliocorpris</i>	<i>bucephalus</i>	Large Dung beetle
20		<i>Liatongus</i>	<i>sp.</i>	Dung beetle
21		<i>Sisypus</i>	<i>sp.</i>	Dung beetle
22	Bolboceratidae	<i>Bolbohamatum</i>	<i>sp.</i>	Dung beetle

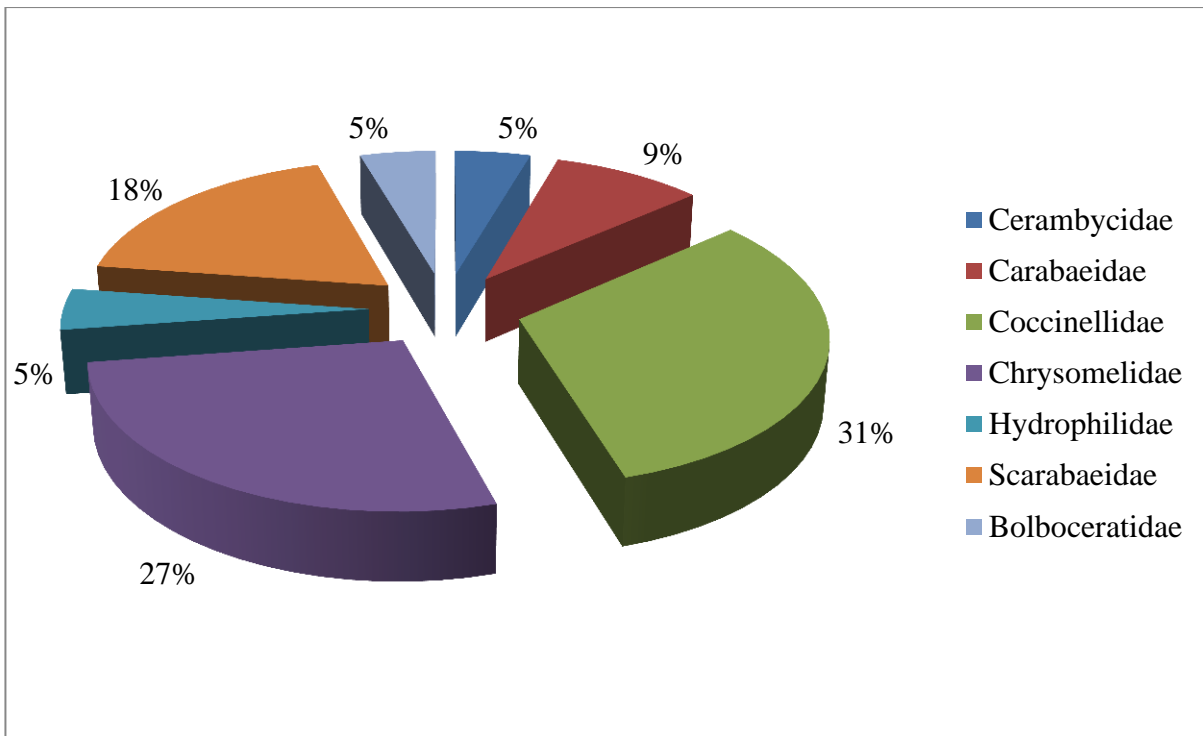


Fig. 1 Composition of recorded beetle families

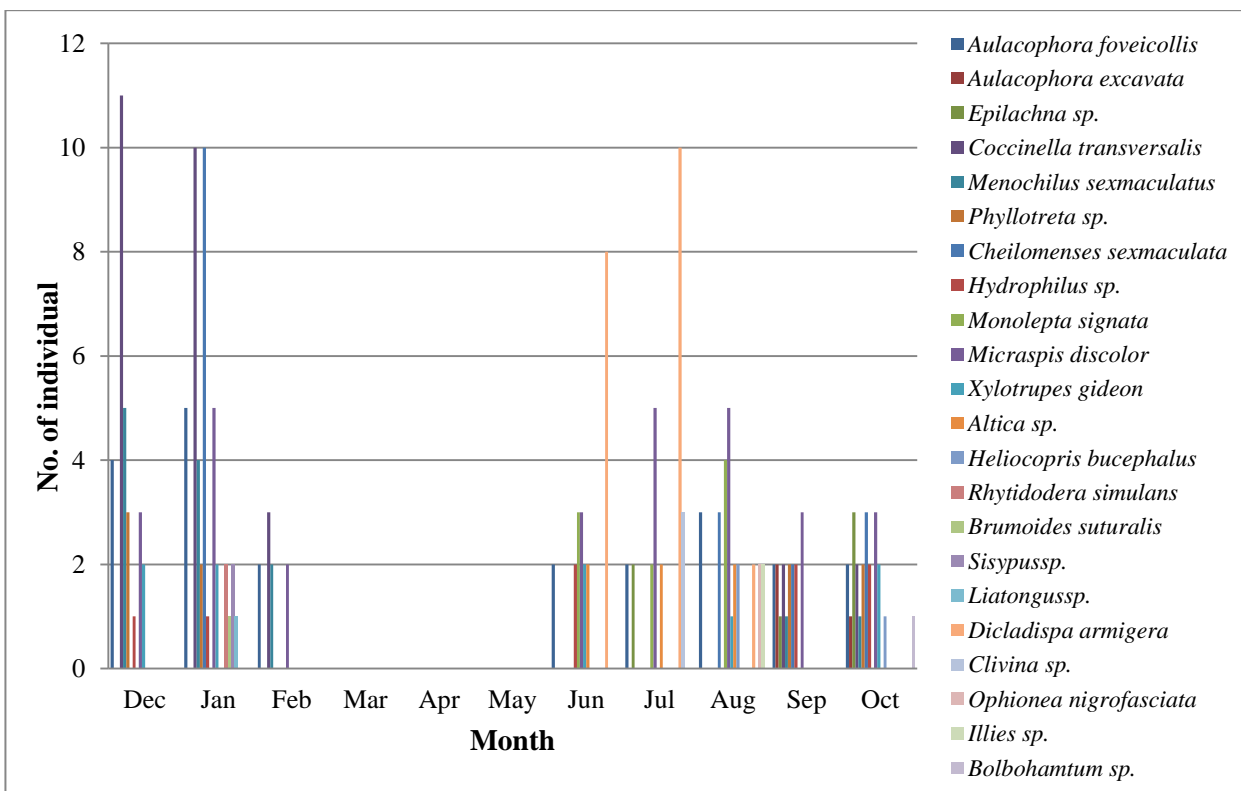


Fig. 2 Monthly recorded beetle species in study site

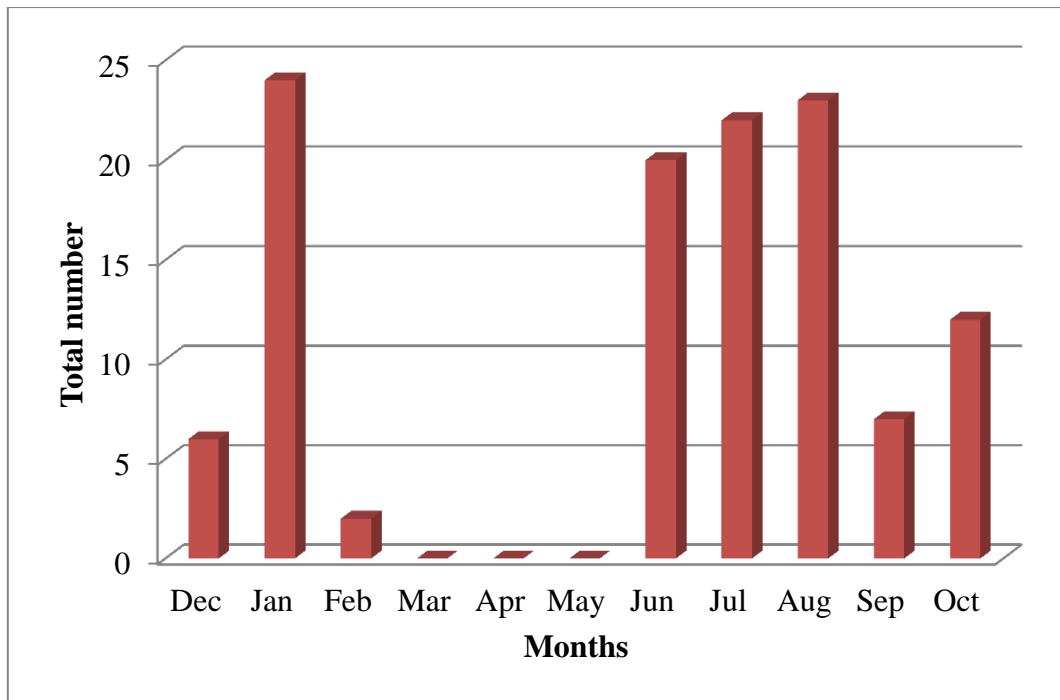


Fig. 3 Monthly total number of recorded beetles

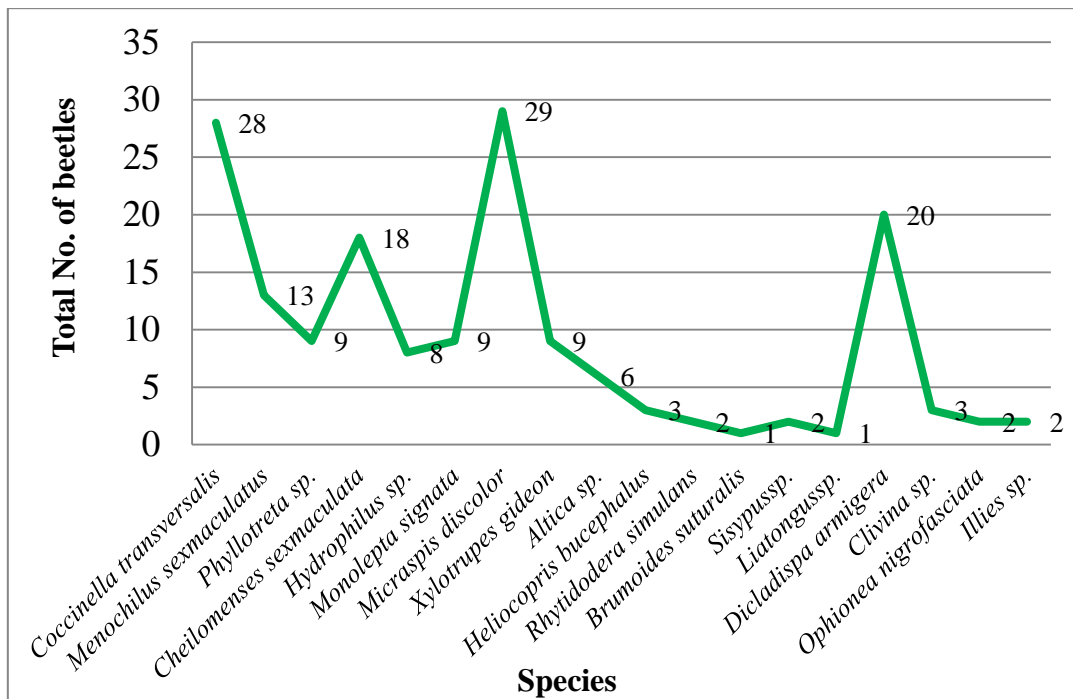


Fig. 4 Total number of recorded beetle species

In the present study, the highest percentage (32%) of beetle species was observed in family Coccinellidae and lowest percentage (5%) in family Hydrophilidae, Bolboceratidae and Ceranbycidae. (Fig.1). Highest individual number of beetles was found as *Coccinella transversalis* in December. Highest total number of beetles was found in January. The highest number of beetles was recorded as *M. discolor*. (Fig. 2,3 and 4)





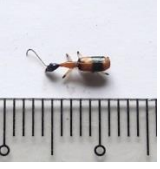






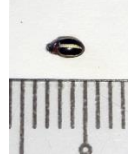










			
<i>Xylotrupes gideon</i>	<i>Heliocorpris bucephalus</i>	<i>Liatongus</i> sp.	<i>Sisypus</i> sp.
			
<i>Ophionea nigrofasciata</i>	<i>Clivina</i> sp.	<i>Rhytidoderas simulans</i>	<i>Coccinella transversalis</i>
			
<i>Cheilomenes sexmaculata</i>	<i>Micraspis discolor</i>	<i>Coccinella sexmaculata</i>	<i>Brumoides suturalis</i>
			
<i>Epilachna</i> sp.	<i>Illies</i> sp.	<i>Aulacophora excavata</i>	<i>Altica</i> sp.
			
<i>Aulacophora foveicollis</i>	<i>Dycladispa armigera</i>	<i>Monolepta signata</i>	<i>Phyllotreta</i> sp.
			
	<i>Hydrophilus</i> sp.	<i>Bolbohamatum</i> sp.	

Plate 3 Recorded beetle species

## Discussion

The present study was conducted in Kah-nyaw village, Chaungzon Township, Mon State. A total 197 individuals of beetles belonging to 22 species, 20 genera and 7 families were recorded during the study period. Khine Yee Mon (2015) recorded 15 species in Kamarwet environs, Mudon Township. Regarding the species composition, the family Coccinellidae was recorded to be the highest percentage (32%) and the second largest as Chrysomelidae (27%), the third one was Scarabaeidae (18%), followed by Carabaeidae (9%) and the lowest as Hydrophilidae, Bolboceratidae and Cerambycidae (5%) respectively. *Micraspidiscolor* was found dominant individual number of 29 and secondly followed by *Coccinella transversalis* as 28 individual number throughout the study period. *Brumoidessuturalis*, *Liatongus* sp. and *Bolbohamtum* sp. were found only one as the lowest number.

During the study period, the study area was found two growing seasons as paddy field (June to October) and Green gram plantation (December to February). The dominant period of beetles was agreed with the growing seasons. Maximum number of beetles were recorded in the month of January. The lowest number was in March, April and May as this period was coincided with the dry season.

## Conclusion

The results of present study conclude that beetles were abundant in Chaungzon and this may be due to sufficient food resources, suitable ecological factors and micro habitats. Some species of beetles was found to be the useful insects. Thus, proper management for the natural habitats is needed in ecological zones and plays a significant role in conservation of biodiversity.

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