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Ethnobotany of Lubuagan: Household materials and Ornaments

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ABSTRACT

The main focus of this study is to describe Lubuagan, Kalinga. The research also aims to identify plants used for various purposes in the community. This study is particularly valuable to education because it offers a wide knowledge of the plants that are still present in Lubuagan, as well as their uses. The study uses a qualitative documentary method with the aid of a semi-structured interview guide to meet its objectives, with the community members as the primary respondents. Descriptive statistics were used to analyse collected data. Lubuagan, a municipality in Kalinga, has a total land area of 32,950 ha. It is composed of nine barangays and its land boundaries are Tinglayan, Abra, Pasil, Tanudan and Tabuk. As of the latest census, Lubuagan, Kalinga's population is 10,183, the majority of which is composed of older males. The people's main sources of income are agriculture and weaving. We identified several plants used for various purposes in the community including bamboo (piled/bida-ay), fig tree (tabbog), coconut tree, rattan, narra, acacia and fern tree. With these findings, we recommend that a parallel study be conducted in other municipalities of Kalinga to compare and contrast plants and their uses. Additionally, the identified plants can be used as learning aids in classrooms so that new generations become more knowledgeable about plants and their importance in the immediate community.

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1. Introduction

Ethnobotany is a biological discipline that addresses the relationship between people and plants. It is the study of how people use indigenous plants in culture and religion. As a multidisciplinary field of study, it investigates the cultural context of plant use and botanists' understanding of the ecological and biological traits of useful plants. Indigenous plants are those native to a region. The term ethnobotany was coined by the American botanist John William Harshberger. In 77 A.D., the Greek surgeon Dioscorides published "De Materia Medica," which was a catalogue of 600 plants found in the Mediterranean. Botany, Anthropology, Phytochemistry, Sociology, Medicine and even Agriculture are considered in the study of Ethnobotany.

Ethnobotany is an important field because it traces the development of humanity. Even the most ancient civilizations relied upon agriculture and the domestication and use of various forage, medical, fibre, and culinary plants, just as our great grandmothers identified plants to remedy children's stomach-aches and tooth-aches.

This subdiscipline of Biology is related with the culture. Most ethnic groups are giving information on their respective uses of plants in their locations or areas.

In the Philippines, there are various tribes from the north to south of the country. In the northern part of the country, the Cordillera region is home to several tribes, such as Agta, Apayao/Isnag, Applai, Ayangan, Balangao, Bontoc, Ibaloi, Ifugao, Iwak, Kalanguya, Kalinga, Kankanaey, Karao, Tingguian/Itneg and Tuwali.

This paper focuses on the tribe of the Kalingas, specifically the people from Lubuagan. Kalinga consists of different municipalities namely Balbalan, Lubuagan, Pasil, Pinukpok, Rizal, Tanudan and Tinglayan. Lubuagan is the main location of the study.

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2. Statement of the problem

The main focus of this study is to evaluate the plants in the immediate community of Lubuagan, Kalinga and their uses. Specifically, it seeks to answer the following questions:

1. How may Lubuagan, Kalinga be described in terms of:
 - a. the origin of the place,
 - b. area and location,
 - c. demographic profile, and
 - d. socio-economic status?
2. Which plants in Lubuagan, Kalinga are useful in the following categories:
 - a. body accessories,
 - b. hunting and fishing tools,
 - c. weapons and defence implements,
 - d. technological and musical instruments, and
 - e. other special functions such as house decoration and utensils?

3. Significance of the study

The study is important as it offers a wide knowledge of the plants still present in Lubuagan, Kalinga as well as their various uses. It also paved the way to the community people's deeper understanding and appreciation of the richness of their land's raw materials that could be used for different purposes such as body accessories, hunting and fishing equipment, weapons or defence implements, technological and musical instruments and other special functions. It may also be considered significant for opening avenues for the tribe to learn more about their history and culture.

4. Literature review

4.1. The current situation

As expressed in CHED's Strategic Plan for 2011–2016, the Philippine government envisions to “build the country's human capital and innovation capacity towards the development of a Filipino nation as a responsible member of the international community.”

Despite the recognition it has given globalization, the Philippines has maintained its cultural uniqueness by integrating culture in schools through native language, games, and other aspects of traditional culture to enhance not only learning and academic achievement but also pride in one's cultural heritage.

Beginning the 2012–2013 school year, the Department of Education used the Mother Tongue-Based Multi-Lingual Education or MTB-MLE program for kindergarten and early elementary. The program aims to foster mastery of language, culture and socio-cultural awareness, which enhance pride in the students' heritage. To date, some traditional Filipino games are integrated in postsecondary Physical Education classes. In the University of the Philippines, for instance, a PE 2 subject on “Philippine Games” is offered. The course is described as a “Definitive list of Philippine folk games with a systematic analysis of traditional games in the country.”

Some science teachers revealed that culture is not being integrated in science classes in the Philippines. Learning materials in science do not specifically include reference to culture. However, there are science teachers who, by their own initiative, mention culture as an integral part of the lesson plan. Unlike other subject areas where culture is an integral part of the lesson, sciences do not afford the same importance to culture. Culture is set aside when students begin to study science.

The challenge now is to determine how can science teachers can inculcate cultural awareness and strengthen our students' identification with their Filipino identity through science. Through this paper, we propose the integration of culture in Philippine education, specifically in the field of science through Ethnobotany.

4.2. Ethnobotanical studies in the Philippines

Ethnobotany is defined as the systematic study of how people of a particular culture and region make use of plants. Ethnobotany is an interdisciplinary field so practitioners can come from different academic or practical backgrounds and conceptualise a study of people and plants. In Ethnobotany, we see the union of natural science and anthropology. No other field better addresses this close relationship between botany and anthropology.

When our PhD class in Ethnobotany, under Dr. Luisito Evangelista, conducted field work in Lubuagan, Kalinga, we sought to understand the principles and develop the skills to do an inquiry in ethnobotany.

Kalinga is a landlocked province in northern Philippines and Lubuagan is situated in the southern part of Kalinga.

The Lubuagan people are rich in material culture. They have distinct architecture, clothing, household implements, etc. In addition, they have rich intangible cultural heritage that includes knowledge of traditional medicine using plants.

We were able to record 7 different plants used for dying or colorants, 10 for treatment of ailments or medicinal use, 2 for fuel, 4 for home decoration, 9 for supernatural healing, and 37 for food. Of these uses, 16 were endemic to Lubuagan. The use of knowledge associated with plants is threatened by changes in the environment due to infrastructure development. The loss of cultural knowledge is hastened by seeming lack of interest among children, as evidenced by the absence of apprenticeships among the younger generation. The availability of alternative products from stores and the proximity of government hospitals also contribute to decreasing interest in use of traditional or indigenous plants.

A chance interview with some school children regarding their knowledge of medicinal plants, for instance, made us realise that they have little of the indigenous knowledge that their forebearers passed down through oral tradition. This realisation made us re-examine our roles as facilitators of learning and as potential agents of cultural preservation. We went home not only equipped with experience in doing ethnobotanical studies but also inspired to introduce innovation. In the Philippines, ethnobotanical studies are not lacking. Almost every cultural group has been studied by ethnobotanists, usually with environmental and cultural conservation as their end goal. School and university libraries and the Internet are repositories of journals that publish ethnobotanical studies among others, ranging from documentation of useful plants in a particular area to studies of various uses of individual plants.

For example, in her study “The Ethnobotany of Campo Siete, Minglanilla, Cebu, Philippines,” Cielo L. Inocian of the University of the Philippines Cebu College, gathered data by conducting a total 35 interviews with selected local residents, healers, and plant enthusiasts. She then categorised the plants according to their uses: food, medicine, cash crops, construction and fuel. Seventy-five plant species were identified belonging to 35 families, and 63 genera. Medicinals have the most number of identified species with 41 species followed by 34 species for food consumption. She found that those plants from the families *Malvaceae*, *Fabaceae* and *Rutaceae* have high importance value.

In 1911, an anthropologist, Dr. Otley Beyer, together with an American Botanist, Dr. Elmer Merrill, made a comprehensive account of the economically important plants from Ifugao Province.

They emphasised the diversity of plants being utilised in the Mountain Province and made mention of the plants grown in Banawe Rice Terraces.

Pungayan and Picpican (1978) focused their study on the different rituals performed in the Mountain Province, like “Kanyaw,” which made use of certain plants.

In 1982, Sr. Mamerta Rocero researched Ethnobotany of the Itawes for her dissertation. She enumerated the different plants being utilised by this ethnic group from Cagayan Province.

There are many more documented studies on ethnobotany in the Philippines. Studies such as these are ready sources of cultural knowledge that science teachers can use to integrate a cultural dimension in their science classes.

5. Methodology

This section presents the research design, location, respondents, data gathering instruments, procedure and analysis used in the study.

5.1. Research design

The research is purely qualitative and utilised the descriptive survey/interview method. The study was also somewhat documentary in nature, as the results of the study were documented in the form of pictures and videos.

5.2. Location of the study

The study was conducted in Lubuagan, Kalinga, found in the Cordillera Administrative Region (CAR).

5.3. Respondents of the study

The main respondent of the study is one of the chieftains of Lubuagan. Some community members were also selected as informants.

5.4. Data gathering instrument

A semi-structured interview guide was used as the main data gathering instrument. Pictures and videos were also taken for additional documentation.

5.5. Data gathering procedure

Permission to conduct the ethnobotanical study was first secured by Dr. Evangelista. Upon approval, the topics for research were finalised. Then, upon arriving at Lubuagan, Kalinga, interview guides were formulated by the researchers. Next, the chieftain and some community members were interviewed. The collection of available plant materials was also performed, supplemented by pictures and videos.

5.6. Data analysis

The data collected were summarised, tabulated and analysed through descriptive statistics. This data analysis scheme is the most appropriate because the research is purely descriptive.

6. Results and discussion

The following section describes the research area in terms of variables, which include: the origin of the place, area and location, demographic location and socio-economic status.

Description of Lubuagan, Kalinga in terms of the origin of the place. Kalinga is a landlocked province of the Cordillera Administrative Region in the Philippines. It is an eleven to 12 h trip from Manila by land. Kalinga's capital is Tabuk and borders Mountain Province to the south, Abra to the west, Isabela to the east, Cagayan to the northeast and Apayao to the north. For many years, Kalinga and Apayao were considered as one; however, in 1995, they were split into two to better serve the needs of the individual tribes in the provinces. The western side of Kalinga consists of sharp-crested interlinking mountain peaks, steep slopes, isolated flat lands, plateaus and valley, while the eastern is generally rolling with gradually sloping foothills, interlocking wide tracks of flat lands and floodplains along its main rivers.

One of the municipalities of Kalinga is Lubuagan. Lubuagan was once the sub-provincial capital of Kalinga. It was the centre of education, having been the seat (until present) of the first two secondary schools, Saint Theresita's School of the Roman Catholic Church and the Kalinga Academy of the United Church of Christ in the Philippines, both founded in 1927. Most former Kalinga leaders are graduates of these two high schools. Having now only seven Barangays, Lubuagan was converted into a sixth class regular municipality by Executive Order No. 42 on June 25, 1963. Although the municipality decreased in size due to the separation of Pasil in 1968, Lubuagan still remains the socio-cultural and commercial centre of the upper Kalinga region. The national highway from Bontoc to Cagayan via Tabuk passes through the centre of this municipality. The present population comprises of 90% native Kalingas while the rest are Ilocanos and Tagalogs.

Lubuagan is derived from the archaic term “LUBUAÑGON” which means wallowing place. This is because the present site of Lubuagan Poblacion is a marshy place where both wild and domestic animals wallow in mud during warm days. Lubuagan is the fourth class municipality in the province of Kalinga. According to 2007 census, it has a population of 10,183. Lubuagan barangays include Dangoy, Mabilong, Mabangtot, Poblacion, Tanglag, Lower Uma, Upper Uma, Antonio Canao and Uma del Norte.

6.1. Description of Lubuagan, Kalinga in terms of area and location

Kalinga Province as shown on the map below has the following land boundaries: Abra, Apayao, Cagayan, Isabela and Mountain Provinces. Kalinga province is part of the Cordillera Administrative Region (CAR). One of the municipalities of Kalinga is Lubuagan. The illustration below shows the land boundaries of Lubuagan, Kalinga, as well as its barangays and total land area.

Lubuagan has a total land area of 32,950 ha and its land boundaries are the following: Tinglayan in the South, Abra in the East, Pasil in the North, Tanudan in the Southwest and Tabuk in the Northwest. It is composed of nine barangays: Western Uma, Upper Uma, Mabilong, Poblacion, Dangoy, Canao, Lower Uma, Mabongtot and Tanglag.

6.2. Description of Lubuagan, Kalinga in terms of demographic profile

Kalinga has a recorded Population Growth Rate of 0.64% from 2000 to 2007 with a total population of 182,326. Its sex ratio has been recorded as 105 males to 100 females based on a total of 93,338 males and 88,760 females. The graph below presents the percentage of population in terms of gender. In addition, in terms of age, 62% belong to the older age group and 38% to the younger age group. Specifically, Lubuagan, Kalinga's population, as of the 12th census of population (POPCEN) in 2007 conducted by the National

Statistics Office (NSO), is approximately 10,183. (Source: Baguio Midland Center Issue of January 23, 2012).

6.3. Description of Lubuagan, Kalinga in terms of socio-economic status

The main source of income of the people of Lubuagan, Kalinga is agriculture of which coffee, native tomatoes, rice and corn are the main crops. They also do weaving, especially the women.

7. Summary, conclusions, recommendation

7.1. Summary

The primary aim of this study is to describe Lubuagan, Kalinga in terms of its origin, area and location, demographic profile and socio-economic status. It also aims to identify plants present in the community that have various uses such as body accessories, hunting and fishing tools, weapon and defence implements, technological and musical instruments and other special functions such as house decoration and utensils.

This study is important to education, as it offers a wide knowledge of the plants still present in Lubuagan, Kalinga, as well as their uses.

The study utilised a qualitative documentary method with the aid of a semi-structured interview guide to meet its objectives. Pictures and videos were also taken as evidence of the findings. The main respondents are the community people of Lubuagan, Kalinga.

Appropriate data were collected and analysed with simple descriptive statistics.

As for the results, Kalinga has been found to be part of the Cordillera Administrative Region and once one with Apayao. For political reasons, the two were separated in 1995. It has the following land boundaries: Abra, Apayao, Cagayan, Isabela and Mountain Provinces. Lubuagan has a total land area of 32,950 ha. It is composed of nine barangays and its land boundaries are Tinglayan, Abra, Pasil, Tanudan and Tabuk. As of the latest census, Lubuagan, Kalinga's population has been recorded at 10,183, the majority of which are older males. The people's main sources of income are agriculture and weaving.

In terms of plants used for various purposes in the community, the following were identified: bamboo (piled/bida-ay), fig tree (tabbog), coconut tree, rattan, narra, acacia and fern tree.

7.2. Conclusion

Based on the findings of the study, the following conclusions were drawn:

- 1.a Lubuagan is one of the municipalities of Kalinga that was once part of Apayao prior to their separation in 1995 for political reasons.
- 1.b Lubuagan, Kalinga has a total land area of 32,950 ha, which are bound by Tinglayan, Abra, Pasil, Tanudan and Tabuk.
- 1.c The majority of the 10,183 community people are older males.
- 1.d The main source of income in the municipality is agriculture of which coffee, native tomatoes and rice are the main crops.
2. There are various plants in the community that are considered to be most important in terms of their uses as body accessories, for hunting and fishing, fabrication of weapons and for defense purposes, technological and musical instruments and other special functions such as house decoration and utensils. They are bamboo (piled/bida-ay), fig tree (tabbog), coconut tree, rattan, narra, acacia and fern tree.

7.3. Recommendation

Based on the findings of the study, the following is recommended:

1. Parallel studies should be performed in different municipalities of Kalinga to compare and contrast available plants in the community and their various uses.
2. Plants available in the community may be used in education so that new generations of students will be better exposed to the plants and familiar with their common uses.
3. An educational plan may be crafted involving plants in the community to reach majority of students in the community.

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