

Ethnobotanical potentials and conservation of plant diversity in olumo rock tourists centre Abeokuta, Ogun state

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Abstract

The study investigates the Ethnobotanical inventory of Olumo Rock tourist centre in Abeokuta, Ogun State. Olumo rock is a geotourist site capable of promoting recreation, tourism and improving the economics of Abeokuta in particular and Ogun State in General but the documentation of plant inventory in the study area is scanty. Therefore, percentage frequency, part used for medicinal purposes and their families were investigated. e inhabitant of the study area using, five respondents in which majority of the respondents there were females 4 (80%) while only 1 (20%) was male. Thirteen plants belonging to 11 families namely; Bombacaceae, Asclepiadaceae, Euphorbiaceae, Moraceae, Bignoniaceae, Nephrolepidaceae, Meliaceae, Moringaceae, Rosaceae, Piperaceae and Solanaceae. Meliaceae and Moraceae had highest frequency 2 (15.38%) while Bombacaceae, Asclepiadaceae, Bignoniaceae, Nephrolepidaceae, Moringaceae, Rosaceae, Piperaceae, Euphorbiaceae and Solanaceae had the least 1 (7.69%) species. Shrubs and tree were the most abundant habits while herbs were rare. Some of the plants were used to cure Malaria, Abdominal pains, Sexually Transmitted Infections, Fertility, Leprosy, Pregnancy Booster and Diarrhea. The study concluded that Olumo rock is a great tourist center capable of international recognition and will surely be of great assistance to students/researchers and tourists if the management which is richly endowed with flora resources will label the species found in the centre using this work.

Keywords: ethnobotanical, potentials, conservation, diversity, tourist centre

Introduction

Olumo is a popular tourist attraction. It provided protection to the Egba people when they needed it, and is now held in high esteem by the members of the clan (Jimoh, 2012) [2]; Ayodeji (2014) [1]. The mountain, one of the most popular tourist destinations in Nigeria, sits in the heart of Abeokuta – a name which means “Under the rock” in the Yoruba language; it has a height of 137 metres above sea level (Kola, 2014) [3].

The land surface of the town and its shape are made of rocks. The vegetation of Abeokuta can be described as coastal forest and mangrove. Olumo Rock is a tourist center globally known and well visited by tourists. Ethnobotany is the study of a region's plants and their practical uses through the traditional knowledge of a local culture and people. An ethnobotanist thus strives to document the local customs involving the practical uses of local flora for many aspects of life, such as plants as medicines, foods, and clothing. The study of ethnobotanical plants is of great importance and its medicinal values cannot be over emphasized. On this basis, the study will be helpful in gathering information about the plant species in Olumo Rock and their medicinal uses. However, few or no ethnobotanical information has been documented about the natural environment like Olumo rock. It is on this basis that the ethnobotanical survey was carried out.



Plate 1: Olumo Rock Tourists' Centre

Materials and Methods

The study covers the ethnobotanical inventory of Olumo Rock, located off Alatisse between Ikija and Ikereku neighbourhoods of Abeokuta. Olumo rock sits in the ancient city centre of Abeokuta, Ogun State. The study seeks to investigate the floral species found in the study area and medicinal uses of floral species found in the study area. This study describes a botanical inventory of Olumo Rock tourists’ centre. The area is known for dense vegetation in the tropical rainforest with its high humidity and heavy rainfall (over 2032mm/80 inches) and uniformly high temperature (27⁰C/80⁰ F).

Method of Data Collection

The inventory was conducted to gather information on plants growing in the tourists’ centre through direct interview with one of the workers and four traditional cleric women found in the area were involved in the study to gather data on medicinal uses of plants.

An extensive botanical identification of the plants was done. A walk-through survey used by Starr and Starr (2003) was adopted.

Pictures were also taken for visual documentation. Data were analysed using descriptive statistics.

Plant species were documented, and were grouped into economic, medicinal and food plant species. The characteristics of the available plants were categorized according to their families, growth habit and uses.

Botanical names, families, common names, growth habit, life span and utilization of the plant species were determined. The major part of the interviews were focused on the local names of medicinal plants identified, Plant parts used, remedy preparation methods, materials used during preparation, condition of preparation, storage method, additives/ingredients used during preparation and administration, dosages administered, and route of administration. The curator helps in examining the number of occurrence of each plant identified, their habits and habitats.

Results and Discussion

Plant Distribution at Olumo-Rock

Thirteen (13) plants were found at Olumo-Rock belonging to different eleven (11) families thus; Bombacaceae, Asclepiadaceae, Euphorbiaceae, Moraceae, Bignoniaceae, Nephrolepidaceae, Meliaceae, Moringaceae, Rosaceae, Piperaceae and Solanaceae (Table 1).

Table 1: Plants Distribution at Olumo Rock

S/N	Botanical name	Family name	Local name	Common name	Part used	Medicinal uses	Number of stand
1	<i>Adansonia digitata</i>	Bombacaceae	Igi ose	Baobab	Leaves, fruits, bark	Malaria, asthma, diarrhea	1
2	<i>Calotropis procera</i>	Asclepiadaceae	Bomubomu	Giant weed/ milk Sodom apple	Leaves, root, bark, latex	Diarrhea, elephantiasis, leprosy	1
3	<i>Melicia excelsa</i>	Meliaceae	Igi iroko	Iroko tree	Root, latex, bark	Antiseptic, elephantiasis, abdominal pain	1
4	<i>Newbouldialaavis</i>	Bignoniaceae	Igi akoko	Tree of life	Bark, leaves, root	Round worms, stomachache, yellow fever	1
5	<i>Nephrolepis bisserata</i>	Nephrolepidaceae	Iramu	Fern	Whole plant	Pregnancy booster	5
6	<i>Azadiracthaindica</i>	Meliaceae	Dongoyaro	Neem tree	Leaves, stem, bark, seed	Malaria	Numerous
7	<i>Ficus vogelii</i>	Moraceae	Igi odan	---	Bark, fruit, latex	Diarrhea, dysentery, boils	1
8	<i>Moringa oleifera</i>	Moringaceae	Moringa	Moringa	Leaves, seed		
9	<i>Prunus dulus</i>	Rosaceae	Eso noun	Almond	Fruit, leaves	Fertility	2
10	<i>Peperonia pellucida</i>	Piperaceae	Ewe rinrin	Pepper elder	Leaves	Abdominal pain	Numerous
11	<i>Ficus exaspirata</i>	Moraceae	Igi epin	Forest sandpaper	Bark, leaves	Leprosy	2
12	<i>Discoglypremnacaloneura</i>	Euphorbiaceae	Akika agba	Premna	Leaves	Fertility	1
13	<i>Capsicum annum</i>	Solanaceae	Ata wewe	Pepper	Fruit	Food	5

Family Distribution

Meliaceae and Moraceae had 2 (15.38%) no of species in each, and other Plant Families; Bombacaceae,

Asciepiadaceae, Bignoniaceae, Nephrolepidaceae, Moringeaceae, Rosaceae, Piperaceae, Euphorbiaceae and Solanaceae has only 1 (7.69%) no of species (Figure 1).

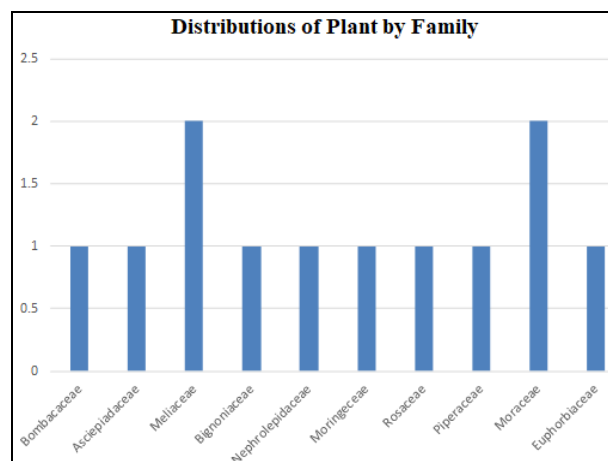


Fig 1: Plant Family distribution in Olumo Rock

Plants Distribution by Habit

The plants found in the study area are of different habits which are herbs, Shrubs, and trees. Figure 2 show that shrub and tree had the highest percentage frequency 6 (46.15%) while herbs had the least 1 (7.69%). shrubs and tree were the most abundant plant of medicinal value at Olumo Rock Tourist Centre. This shows that herbs species are not surviving in the area, this might be due to movement of people visting the place. Olumo Tourist Centre has become a global tourist centre that witness large number of tourist on daily basis. This is also supported by Verberk, (2011): “Explaining General Patterns in Species Abundance and Distributions”.

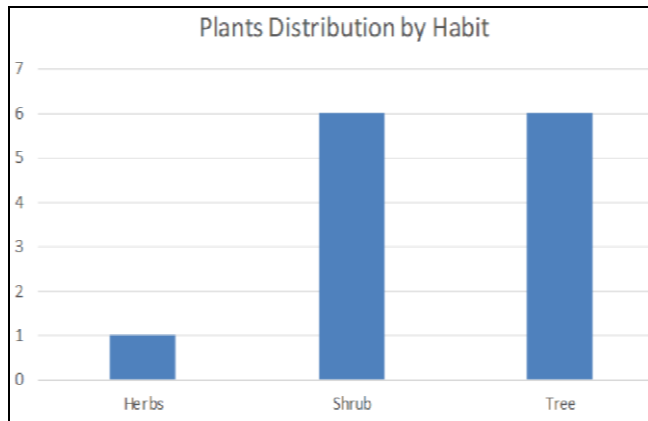


Fig 2: Plants Distribution by Habit

Plants Identification



Plate 1: *Nephrolepis bisserata*



Plate 2: *Newbouldia laevis*



Plate 3: *Capsicum annum*



Plate 4: *Adansonia digitata*



Plate 5: *Melicia excels*



Plate 6: *Peperonia pellucida*



Plate 7: *Terminalia catapa*



Plate 8: *Azadiractha indica*



Plate 9: *Moringa oleifera*



Plate 10: *Calotropis procera*



Plate 11: *Ficus vogelii*



Plate 12: *Ficus exasperata*

Plants Distribution based on Vulnerability

The researcher look further to the vulnerability of the plants species found in the study area, it was gathered that some of the plants are endangered, rare, predominant and most predominant. Results shows that majority 7 (53.85%) of the plants found at Olumo are endangered.

According to Wikipedia (2019) stated that an endangered species is a species which has been categorized as very likely to become extinct in the near future. *Adansonia digitata*, *Calotropis procera*, *Melicia excelsa*, *Newbouldia laevis*, *Ficus vogeli* and *Discogly premnocaloneura* are the plants found to be endangered in the study area. Also, there are 2 (15.38%) plant species that are considered rare. University of Bern (2018) explains that rare plant species suffer more from disease than common species.

The fact that rare species are more susceptible to attack by micro-organism living in the soil, such as fungi and bacteria, may in fact be one of the reasons they are rare. Rare plant at Olumo Rock includes *Prunus dulus* and *Ficus exasperata*. There are 2 (15.38%) of plant predominantly and most predominantly are respectively found in the study area, the predominantly plant includes *Nephrolepsis bisserata* and *Capsicum annum* and the most predominantly plants includes *Azadiractha indica* and *Peperonia pellucida*. A dominant plant species is a plant most commonly or conspicuously found in a particular ecosystem (Bern, 2018).

Table 3: Plants Vulnerability

S/N	Botanical name	Family name	Local name	Common name	Number of stand	Vulnerability
1	<i>Adansonia digitata</i>	Bombacaceae	Igiöse	Baobab	1	Endangered
2	<i>Calotropis procera</i>	Asciadiaceae	Bomubomu	Giantweed/ milk Sodom apple	1	Endangered
3	<i>Melicia excelsa</i>	Meliaceae	Igiiroko	Iroko tree	1	Endangered
4	<i>Newbouldialaevix</i>	Bignoniaceae	Igiakoko	Tree of life	1	Endangered
5	<i>Nephrolepsis bisserata</i>	Nephrolepidaceae	Iramu	Fern	5	Predominant
6	<i>Azadiracthaindica</i>	Meliaceae	Dongoyaro	Neem tree	Numerous	Most predominant
7	<i>Ficus vogeli</i>	Moraceae	Igiodan	---	1	Endangered
8	<i>Moringa oleifera</i>	Moringaceae	Moringa	Moringa	1	Endangered
9	<i>Prunus dulus</i>	Rosaceae	Eso noun	Almond	2	Rare
10	<i>Peperonia pellucida</i>	Piperaceae	Ewe rinrin	Pepper elder	Numerous	Most predominant
11	<i>Ficus exasperata</i>	Moraceae	Igi ipin	Forest sandpaper	2	Rare
12	<i>Discogly premnocaloneura</i>	Euphorbiaceae	Akika agba	Premna	1	Endangered
13	<i>Capsicum annum</i>	Solanaceae	Ata wewe	Pepper	5	Predominant

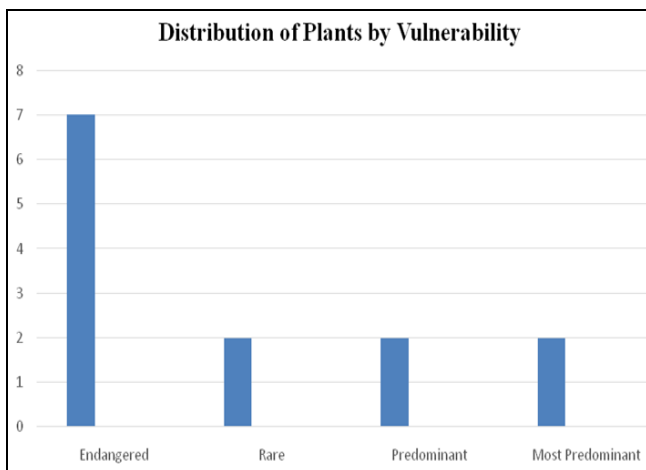


Fig 3: Distribution of Plants by Vulnerability

Herbal Preparations for Treatment of Different Ailments in the Study Area

Malaria

The leaves and bark of *Adansonia digitata* and *Azadiractha indica* boiled and the filtrate taken three times daily.

Abdominal Pain

The leaves of *Newbouldia laevix* and *Peperonia pellucida* are chewed frequently until the pain disappears

Fertility

Leaves of *Prunus dulus* and *Discogly premna caloneura* grinded and the extract been taken 2 spoonful at each night, the leaves particle mix with cooking ingredients as stew for curing infertility women only.

Leprosy

The leaves and bark of *Calotropis procera* and *Ficus exasperata* are grinded and mixed with palm oil and applied to the affected individual.

Diarrhea

The leaves and bark of *Adansonia digitata* and *Calotropis procera* are squeezed and drink directly.

Pregnancy booster

Whole plant of *Nephrolepsis bisserata* are grinded together and taken with cold pap every morning and night

Conclusion

Studies had established that conversion of biodiversity ecosystems as a result of anthropogenic activities and land

grabbing for development has brought decimation of plant species biodiversity as well as extinction of many valuable plants (Adeyemi and Jegede, 2002). The need for biodiversity conservation has been indicated among the various stake holders to reduce biological and ecological degradation in the environment. One of such conservation strategies is the establishment of botanical gardens, game banks, on-site gene banks and conservation to support and enhance sustainability of biodiversity (Okafor *et al.*, 2010). The ethnobotanical purpose of plant species cannot be over-emphasized. Compilations such as this will further bring to fore the primary functions of these plants. However, in any academic environment presence of tree species not only aid landscape beautification, but also assist in their conservation, which promotes their economic important as well as materials for teaching and research.

This paper therefore advocates that, plant inventory should be made an integral part of teaching and learning plan for creative teaching. Further study is required for the scientific and clinical validation of these indigenous claims. Tourism facilities should be improved upon to make site more attractive to tourists and citizens at large coupled with effective tourism awareness strategies and methods. The problem of transfer of knowledge from the elders to the young generation probably arose following the introduction of modern education, religious, spiritual and culture-related factors.

Therefore, it is not only essential to conserve such a wealth of information hidden among the local people but also to apply modern science and technology to meet the ever increasing requirements of humankind. Furthermore, conservation of these biological resources is very important because their sustainable use can generate higher levels of employment and income

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