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ENVIRONS ECHO

A multi-disciplinary bi-annual, peer-reviewed and research international journal that deals with the issues of shaping, re-ordering and articulation of the built environment among other similar disciplines with the aim of generating new knowledge. Published by the Faculty of Environmental Sciences, Alex Ekwueme Federal University, Ndufu-Alike, Abakaliki, Ebonyi State, Nigeria.

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EDITORIAL

With the inclement economic stress in which academics and researchers now find themselves, we have cause to thank God with the publication of this fifth edition of Environs Echo Journal – July 2024 Vol.3, No.1. This is a result of the resilience of various subscribers of articles to push forth needed information to advance extant knowledge in the diverse disciplines. I therefore congratulate all of this discerning spirit for growth and educational advancement inspite of the debilitating state of affairs in the economy.

This edition did not compromise standard and the essence of breaking new ground in the search for new knowledge. The content is thus packaged with interesting discourses that promote scholarship in contemporary society for your delight. We therefore call on the Readership, Scholars and researchers for patronage in order to sustain the continuous publication of this journal.

Thank You.

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AN ASSESSMENT OF THE STRUCTURAL AND CULTURAL PERSPECTIVE OF BAMBUSA VULGARIS (BAMBOO) AND ITS UTILIZATION IN THE PRACTICE OF SCULPTURE IN NIGERIA

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Abstract

This paper examined structural and cultural perspective of *Bambusa Vulgaris* (Bamboo) with particular reference to Nigeria. The study highlights *Bambusa vulgaris* as an indigenous plant which is in abundance in Nigeria. It's segmented, tubular, hollow, elongated characteristics and lightness coupled with its tensile strength makes it a prospective medium to be desired in the sculptor's studio which hitherto has not been sufficiently considered. *Bamboo vulgaris* as a material in some Nigerian states conventionally is used for traditional architecture reinforcement framework; Agriculture - stake for yam, vegetable scaffold, ladder, fishing gears and animal snares; security - fencing, walking staff; furniture - seats, bed; utensil - cups, including musical instrument and culturally stilt performers employ them for entertainment. However, in reference to modern sculpture practice that expresses the use of varied media, there is the possibility of *bambusa vulgaris* being harnessed for sculpture. The study concludes that in Nigeria, the practice of using bamboo for sculpture is not popular, but in various traditional cultures in Nigeria, especially in the Niger Delta particularly among the Urhobos and the environs are mainly functional. It is therefore recommended that *Bambusa vulgaris* as an indigenous material is viable for sculptural expression.

Keywords: *Bambusa Vulgaris, Nigeria, Practice, Sculpture and Utilization*

Introduction

Bamboo belongs to the kingdom *Plantae*, family of *Gramineae* (*Poaceae*) and tribe (*Bambusoideae*) notes (Cronquist, 1988). Nine sub-tribes exist under *Bambusoideae* with 30 to 90 genera and from 50 to 100 species. Bamboo classification has been reported to be highly difficult with scientist opinion varying on numbers of genera and species. Ueda classified bamboo into 47 genera and 1,250 species (Ueda, 1960); McClure, classified 63 genera and about 700 species (McClure, 1996). The criteria for classification were attributed to the differences in numbers of the genera and species of bamboo.

Bamboo is widely used as material in Asia, South America and Africa, where abundant different species of bamboo grow (Plate 1). Nowadays, over 2.5 billion people worldwide use or trade in bamboo worth 4.5 billion in US \$ every year (INBAR 1999:2). For Europeans, bamboo is an exotic plant. As a material, it was even stranger before the sixteenth century when it was first introduced in Europe. But in other continents like Asia, Africa and South America, people have used bamboo in their daily life for more than thousand years; from bamboo buildings to furniture; from bamboo bridges to bamboo foods. There are sculptures as well as fishing and music instruments made of bamboo (Farrelly, 84:2).



Plate 1. Bamboo species found in Asia, South America, and Africa. (2007)
Culled from: Bamboo: Structure and Culture.

Bamboo vulgaris has numerous advantages like strength, elasticity and lightness, but also disadvantages in processing and connection. Its tube structure is very good for tensile and press loading. However, its irregular dimensions and inhomogeneous material structure are not easy to be processed by machines. Furthermore, bamboos with difficulty are complicated to be treated with nails and screws which are thus generally used for fire wood. Such confines limit the use of bamboo in the industrial perspective (Yu 2007:3).

Bamboo vulgaris as a material in some Nigerian states conventionally is used for traditional architecture reinforcement framework. In Agriculture, it is used to stake yam, vegetable scaffold, ladder, fishing gears and animal snares, security - fencing, walking staff, furniture - seats, bed; utensil - cups, including musical instrument and culturally stilt performers employ them for entertainment. However, in reference to modern sculpture practice that expresses the use of varied media, there is the possibility of *bambusa vulgaris* being harnessed for sculpture. This interest is further strengthened when one observes that *bambusa vulgaris* grows widely and spread all over the world.

Structural Perspective of Bamboo

Bamboos has the material character of wood in their stem (culms) which are very hard on the surface, grow straight and tall, reaching about 35m and diameter over 0.3m. Bamboo flowers at a long interval of 25-30years and dies after flowering. Yu (2007) opined that Bamboo's structure is an excellent example for the long process of evolution in nature. Its hollow culm proves to be one of the strongest but lightest structures in the world. The inner hollow space is divided into many small closed spaces by the nodes which strengthen the whole culm. The outer part of the culm wall consists of higher proportion of fibers whereas the inner section possess higher proportion of parenchyma and conducting cells. In the outer section the vascular bundles also have a smaller diameter than that of inner part.

With these features, Bamboo's outer surface of the culm wall is denser and harder than the inner part which also fits to the functions of both parts. The outer section protects the Bamboo plant. The hollow composition of Bamboo makes it much more resourceful in the use of its substances in contrast to hard wood.

Cultural Perspective of Bamboo

Bamboo has played a significant role in cultural development of human race and can be found in all parts of the world in daily life culture (Wang, 2001). The material bamboo has been reported by Yu (2007) as having long history of adaptable exploitation in people's daily

life and has become a bamboo culture. He perceived "bamboo culture" from three perspectives. First, as means by which local culture have been represented, transferred and developed. An example is the Japanese tea ceremony for which bamboo utensils have been used widely. Second, bamboo as a material culture refers to the various use of bamboo wood in peoples' everyday life. Lastly, bamboo is taken as purposeful in people's high cultural life (when compared to the daily culture in second perspective) for instance in bamboo poem which is assessed in different literatures like tales or poems. The Chinese painting is often accompanied with poetry and calligraphy as a whole art work. The poems written about bamboo are mainly about the natural beauty of the bamboo plant and the diverse uses of bamboo in people's daily life, characteristics of bamboo with its relation to that of the people, such as its straightness, elegance, lightness and modesty. In bamboo painting, four plants mostly painted by Chinese painters include plum blossom, bamboo chrysanthemum and orchid, the so called "four Gentlemen" in Chinese painting and bamboo philosophy. Bamboo has the connection to philosophy in China since the Tang Dynasty (618-907 AC) when bamboo began to be popular among intellectuals and Buddhist Monks. Bamboo is considered one of the most important elements of meditation.

Uses of Bamboo in Traditional Cultures

Yu (2007) identified people in Asia, Africa and Latin America who have used bamboo as a material for their daily life for thousands of years. He stated in Wu Xin, a small town Southeast China, more than two hundred bamboo objects have been recovered that were made 4,700 years ago. These objects range from bamboo woven basket, matting and fishing net and already shown handcraft. Similarly, bamboo has been utilized in construction of woven crafts in which bamboo works not only as the functional structural elements, but also represent a high aesthetic value. Studies by various scholars have documented this fact in different countries. Ranjan et al., (1986) had studied the traditional bamboo woven basket in Northeast India where nowadays, these bamboo crafts are still kept in a way. Again, Hans Sporry's collection of traditional bamboo crafts from Japan has shown to Europe for the first time, how wonderful this material can be treated in numerous bamboo objects as shown in plates 2 and 3 (Brauen, 2003).



Plate. 2. Traditional bamboo baskets from Japan (2007) Culled from Xiaobing Yu, *Bamboo: Structure and Culture*



Plate. 3. Traditional bamboo chair, South West China (2007) Culled from Xiaobing Yu, *Bamboo: Structure and Culture*

Wang (2000) noted in China, Japan and Korea that bamboo also is a frequently used popular motif for poets and painters, philosophers. Literatures took bamboo as symbol for good personality making progress and modestly straight. These bamboos are not only useful materials for their everyday life, but also has already been developed into a so-called bamboo culture through the long time of cohabitation with the people. In developing countries where bamboo thrives, it has been used mostly to solve practical problem in house building. According to Lopez (1985), Lozada (1985), Velez and Kries (2000) and Stamm (2005), it represented this group in Latin America without accommodation. They employed bamboo for harnessing the social issue such as lack of housing. In India, Ranjan *et al.*, (1986) concentrated on the actuality of bamboo handicrafts and their new developments (Plates 4 a and b).

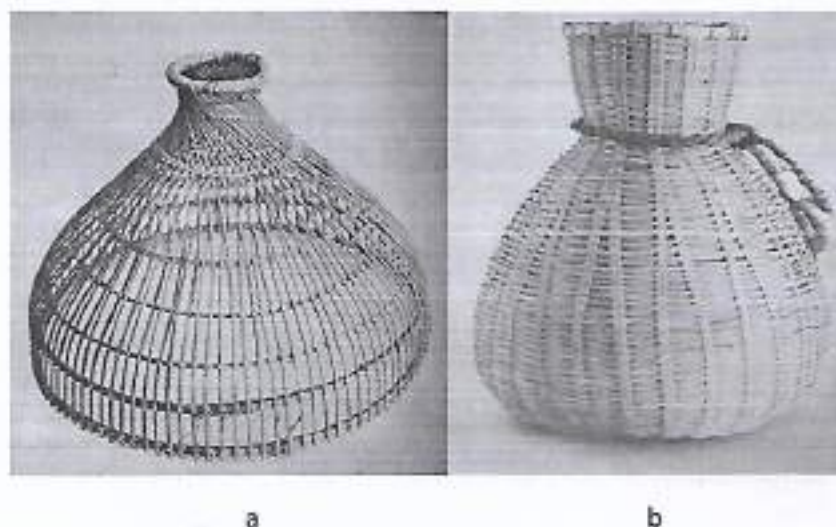


Plate. 4 a and b. Bamboo Fish Trap and fish Basket in Northwest India (2007)
Culled from Yu, Bamboo: Structure and Culture.

Yu (2007) stated that bamboo shoot in its fermented state forms an important ingredient in cuisines across the Himalayas. Further he added, in Assam, India, for example, it is called Khorisa and in Nepal, a delicacy popular across ethnic boundaries which consists of bamboo shoots fermented with turmeric oil and cooked with potatoes in a dish that usually accompanies rice (*alutama* in Nepali). In addition, bamboo is frequently used as cooking utensils within many cultures. It is also used in the manufacture of chopsticks in Asia, Africa and so on. In recent times, bamboo tools, namely brooms, knife handles, curtains, hand-bags, flower vases and ash trays to mention but a few are eco-friendly alternative to other manufactured utensils deployed or employed for various applications.

***Bambusa vulgaris* (Bamboo) Traditional Culture in Nigeria**

Bamboo grows mostly in clumps. Full-grown ones are cut down at the base and branches removed to the required functional length. According to Omiyale (2003) there is a reduction in the use of wood for scaffolds in the building industry with the use of *Bambusa vulgaris* and *Oxytenanthera abyssinica*. Furthermore, farmers use it for yam staking. In the urban areas, few restaurants are usually constructed with bamboo to enhance their aesthetic appeal. Bamboo is also used as ornaments in big hotels like, Sheraton, NICON NUGA in Abuja, Nigeria. In the south-eastern part of Nigeria where soil erosion has become a menace, bamboos are usually planted or used as fences to check or reduce the rate of water flow on the vulnerable landscape. Thus, they are commonly used for environmental re-enforcement in dilapidated areas.

The main uses of bamboo in the majority of the states of the federation are: scaffolding materials, fencing and construction, handicraft, yam stakes, building of houses, ladder and many other activities. In the construction of storey buildings, bamboo culm is the visible part of the plant that makes bamboo so distinctive as a material and the plant consists of internodes and nodes used as pillars to provide temporary support for decking.

The use of bamboo for this purpose has opened up domestic trade for bamboo culms Ogunwusi (2011) opined. In many of the rural areas, especially in Delta, Cross River and Awka Ibom States, bamboo is used locally for the production of sieves for cassava flakes (Garri) and in the construction of mud houses. In these areas, bamboo culms are used as frames to provide the skeleton for building. The mud is then used to cover the entire skeleton. Houses built this way usually have very straight walls, and they are stronger than mud houses built without bamboo.

In the South- East and South-South states of Nigeria, bamboo culms are used in the handicraft industry. The handicraft consists of engravings on the outer part of the Culm. These are used to make special items, such as cups decorative objects, and so on. Other handicrafts made from bamboo in Nigeria include baskets and toothpicks. The bamboo-based handicraft industry is not yet well developed in the country as only Ebonyi and Imo states produce handicrafts from bamboo. The use of bamboo as fuel wood is very common in some parts of Edo and Delta states.

Also in many rural communities where bamboo is available in abundance, it is used in making fences around compounds. In certain situation, the culms are split and used for fencing. Apart from these, several other uses exist only on a relatively small scale. For instance, there are some situations where bamboo is used as poles for holding aerial antenna, electric high tension wire, rafts and fishing traps (Ogunwusi, 2012).

Conclusion

The uses of bamboo in numerous cultures cannot be over emphasized. Furthermore, the increasing awareness of bamboo as an artistic medium for the creation of innovative art forms is on the rise. In Nigeria, the practice of using bamboo for sculpture is not popular but in various traditional cultures in Nigeria, especially in the Niger Delta, particularly among the Urhobos and environs, they are mainly functional. These include its use for internal reinforcement of mud houses, staking of yams, fencing, furniture etc. Its closest use to sculptural expression is when adapted in making farm scarecrows, furniture and utensils such as chairs and cups. It is therefore recommended that;

- i. *Bambusa vulgaris* (bamboo) as an indigenous material is viable and suitable for sculptural expression.
- ii. Using *bambusa vulgaris* (bamboo) in the production of utilitarian works would encourage and create economic opportunities amongst Nigerians especially the unemployed.

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