BOND BETWEEN PLANTS AND PEOPLE – COVALENT OR NON-COVALENT?

My voyage into the world of Botany started in 1985. Coming from humble background, I was assisted to change my desired course (Medicine and Surgery) to Botany because I was eager to gain admission that year. After a year in Botany, I resisted the attempt by my helper to change from Botany back to Medicine and Surgery for two main reasons: I believed in God and that I would be successful in life as a Botanist. I didn't want to repeat part one because I was already in my 200 level.

My roommates in Attic 5 and 6 Awo Hall, when I was in Part 2 and 3, usually make jest of me, they were fond of asking me what I would end up doing as a Botanist, but I strongly believe in God. God started the world as a Botanist and completed it as a Botanist. After the creation of the Earth, In Gen. 1 verse 11, God said "Let the Earth bring forth grass, herb yielding seed and fruit tree yielding fruit after its kind, whose seed is in itself, upon the earth and it was so". Moreover, after the formation of Man from dust of the ground (Gen. 2 verse 7), immediately in verse 8 God planted a Garden in eastward of Eden and there He put the Man whom He had formed. In the new Heaven, Paradise, New Jerusalem in Rev. 22verse 2 is the Tree of Life which bare twelve manners of fruits, and yielded its fruits every month, and the leaves of the tree were for the healing of the nations. All these are biblical evidences that there is a bond between Plants and People.

Plants provide an inevitable source of livelihood to humans and are the key pillars that hold and maintain the survival of any ecosystem, yet despite their importance they are often poorly appreciated (Nodza *et al*., 2013). The relationship between plants and people needs to be mutual because of the important and beneficial roles of plants to humans (Folorunso *et al*., 2018).

During the course of my study, I realized that all other disciplines make use of plants, either directly or indirectly during their research activities. This further informed me that plants are very important and therefore should be studied. No wonder God placed so much emphasis on plants. Today, there are so many people who are employers of labour because they know how to use plants. As a graduate of Botany, what is required is to settle down, start a business with the knowledge of Botany and be an employer of labour. There are so many areas where Botany can be applied in our daily activities. Some of these applied courses are now in Botany Department curriculum.

My Passion for Plant Taxonomy

The field trip to Idanre Hill in 1988, kindled my interest in Plant Taxonomy which is about Identification, Classification and Nomenclature. During the trip, our Lecturers who were Taxonomists and Ecologists were very active, they assisted us very well during the trip. They informed us that each plant has its peculiar characteristics for their identification. Mastering the peculiar characteristics of each plant would then facilitate their identification. Wrong identification of plants could lead to wrong or inappropriate use of drugs.

The expectation of people from any Botany Graduate is that they should know names of plants which they believe can cure their ailments. Plants have their individual characteristics with which they could be identified and named. Plants can only be correctly used to cure diseases and for other purposes when they are well known and could be identified. People suffer ignorantly when they lack the knowledge of the right plant to be used for a particular ailment. When we know the usefulness of these plants, we will then be serious about their protection and conservation. To facilitate plants identification, they have been grouped into families based on their characteristics. The knowledge of these characteristics will then help any interested individuals to identify plants to the family level.

I developed interest in Plant Anatomy from my 300 level when I registered a course titled Plant Anatomy I. I had it in my mind that this course would be useful to study the internal structures of plants since I could no longer study internal structures of human beings. Plant Anatomy reveals some salient microscopic characters which are used for plant taxonomy.

Mr Vice Chancellor sir, this is the reason most of my publications emanated from anatomical and taxonomical studies. Recently, with the knowledge of the fact that plants and people are inseparable. I continued my research activities in ethnobotany and landscaping.

My Research Activities

My research activities focused largely on strengthening the bond between plants and people. This I tried to do by making identification of plants seamless to people. I tried to use both the vegetative (leaf, stem and root) and the reproductive (flowers, fruits and seeds) parts of plants for identification.

Electrophoretic techniques for identification and classification have become a useful tool in studies of genetic variability in plants. The taxonomic significance of leaf and seed proteins, using gel electrophoresis have been discussed in most of my studies (Adelusi *et al*., 2004, Folorunso and Olorode, 2006; Folorunso *et al*., 2006; 2012; Folorunso and Adelalu, 2015, Teniola *et al*., 2021). Electrophoresis is used to compare protein distribution of the wild relative of plants to the cultivated ones. Wild species of cultivated crops have been frequently used as an important source of genetic diversity in a variety of breeding programs.

Manihot glaziovii has unique protein bands between 5.0 and 5.9 cm. It remains to be established whether hybridization of this wild cassava with *M. esculenta*, will in addition to increasing the protein content, also confer resistance to insects, diseases and drought (Folorunso *et al*., 2006). Similarly, okra is one of the commonest and cheapest sources of vegetables. It is interesting to note that the basal portion of the fruit is usually discarded by a large number of okra consumers. For high crude fibre and carbohydrate, the base of either of *Abelmoschus esculentus* and *A. moschatus* provides a good source (Adelusi *et al*., 2006).

I worked a lot on the family Annonaceae. Members of this family are of great economic importance. Their medicinal values are enormous but unfortunately, they are underutilized by Nigerian people, probably because they cannot identify them (Folorunso and Olorode, 2002, 2006 a and b, 2007, 2008) and Folorunso, 2011.

Apart from using both the vegetative and reproductive parts to facilitate identification, I domesticated some of the species of Annonaceae in Obafemi Awolowo University Campus. Some of them have grown up to tree now and their fruits are being consumed by people, examples are *Cleistopholis patens*, *Annona muricata* (Soursop), *Annona reticulata* (Custard Apple) and *Monodora tenuifolia*.

In 2011, I got a Tetfund grant to domesticate *Annona* species in Kwara State University. This together with other grants attracted to the University by colleagues led to the celebration of Academic Excellence

in September, 2011. An honorary award was presented to me in recognition of Research Excellence. The primary aim of the project was to make *Annona* fruits easily accessible and affordable to an average Nigerian citizen. Annonas being a multipurpose tree with nutritional values as food and a source of medicinal and industrial products. *Annona reticulata* represent the best source of protein intake when compared with the other three species of *Annona*. It could be used as protein supplement in countries where protein deficient diet is common and also processed to be used as animal feed (Folorunso and Modupe, 2007). *Annona squamosa* (Sugar Apple) has the highest crude fibre content (Folorunso and Modupe, 2007). In humans, a higher fiber diet exerts beneficial effects by aiding water retention during passage of food along the gut and thereby producing larger and softer faeces. A higher fibre diet is associated with reduced incidence of cancer of the colon, cardiovascular disease and diabetes mellitus (Daryl *et al*., 1990). The high fat content in *Annona senegalensis* (the savanna species of *Annona*) when consumed by the Nomadic people and their cattle serves as an efficient source of energy and as thermal insulator in the subcutaneous tissue (Daryl *et al*., 1990).

Orchids are good flagship species and possible good environmental indicators (Cribb and Croix, 1996). They contribute immensely to the national economy of Hawaii, Malaysia, Singapore and Thailand, whereas in Nigeria there is little information about orchids. The greatest challenge for the utilization of orchids in Nigeria for both scientific and aesthetic purposes is the absence of simple identification keys devoid of the usual highly technical details of taxonomy (Jayeola and Folorunso, 2002). The existing keys are too technical to be used by non-taxonomists such as foresters and horticulturists. During my work on the floral morphology of the genus *Polystachya* in the Orchidaceae family, simple and non-technical characters were searched for their identification. This work discovered four species that are new to West Africa, namely; *P laxiflora*, *P ramulosa*, *P. odorata* var. novum and *P. camaridiodes*. These have not been listed in any West African floral before this study. Another six species, namely, *P. sacata*, *P. bifida*, *P. adansoniae*, *P. tesselata*, *P. kameruensis* and *P. polycheatae* are all new records for Nigeria, having not been previously recorded before this study (Jayeola and Folorunso, 2002). Single Linkage Cluster Analysis was used on the lip of the genus *Polystachya* in Nigeria to delimit the species into their traditional sections. It is evident from the study that reproductive characters are much better

than the vegetative characters earlier used by Kraenzlin (1926) in the distribution of *Polystachya* species into their sections (Folorunso and Jayeola, 2009).

My work contributed to the use of foliar anatomy in taxonomy, specifically in establishing the taxonomic relationship and differences between the two species of *Andropogon* (Folorunso and Olaniyan, 2009). Another species of Poaceae of great economic importance is *Cymbopogon* commonly known as Lemon Grass. To ensure seamless identification of *Cymbopogon*, I determined the patterns of variations in its epidermal characteristics and assessed their value in species identification and classification (Folorunso and Oyetunji, 2007).

The physical and morphological characters observed in plants are the repercussion of the various endogenous characters among which are the anatomical characters (Folorunso *et al*., 2018). Anatomical characteristics have continued to be useful as a tool for species classification and identification, most especially when only sterile samples are available (Passos *et al*., 2009). In some of my research works, I used anatomical characters for identification of plant species. The use of wood characters in the identification of species has become very relevant and necessary, most especially when reproductive characters which are used contemporarily for species identification are not available and there is need for immediate identification of samples (Folorunso and Awosika, 2013). Wood anatomical characters revealed useful taxonomic characters for the species of Bignoniaceae in Nigeria. Diagnostic characters that delimit each species were also reported.

We used anatomy to resolve the problems of species delimitation in processed wood samples. This work encompasses 10 popular timber species distributed in seven families and representing the spectrum of timber diversity in West Africa (Jayeola *et al*., 2009).

The grains of the ten woods studied vary from coarse or rough to smooth with lustrous or glossy surface. Four species of the 10 species studied are coarse, three possess hard texture, five are fairly hard while two are soft. *Terminalia ivorensis* and *Triplochiton scleroxylon* are coarse grained while *Antiaris toxicaria, Khaya ivorensis, Mansonia altissima, Milicia excelsa* and *Tectona grandis* are smooth grained and lustrous. Fig. 1-5 provide illustrations of characteristic tissues of the timber species.

Table 1: List of commonly used timber species of Nigeria considered in the study

Name of species	Local common names	Wood characteristics	Family
Afzelia africana	Apa (Yoruba)	Hard, tough and heavy, coarsely grained with lighter streaks, banded light and dark brown Diffuse porous, aliform paratracheal parenchyma	*Caesalpinaceae*
Anogeissus leiocarpus	Ayin	Grayish outside, dark brown at the heart and very hard. Wood is ring porous, surface crystals and traumatic ducts	*Combretaceae*
Antiaris toxicaria	Oro	Wood is ring porous tyloses, and septate fibresrous,	*Moraceae*
Cordia millenii	Omo	Wood white,woodcoarse-grained, compound tyloses, fairly light and so G.	*Boraginaceae*
Khaya ivorensis	Oganwo	Wood of two bands of axial parenchyma, first class mahogany.	*Meliaceae*
Mansonia altissima	Ofun	Semi-ring porous wood, slash so G, dull white with brown streaks Semi-ring porous wood, solitary vessels and storied fibres	*Sterculiaceae*
Milicia excelsa	Iroko	Huge compound tyloses present in all vessels, wood peel turns dark brown	*Moraceae*
Tectona grandis	Teak	Wood with a dark golden yellow heart-wood, solitary vessels and storied fibres	*Verbenaceae*
Terminalia ivorensis	Idigbo	Wood is fairly coarse-grained aliform confluent paratracheal parenchyma	*Combretaceae*

It is interesting to note that in general, there is agreement in the wood structure observed in this study with that reported by Metcalfe and Chalk (1950), especially the general family characteristics. The results of this study have shown the wealth of characters in the wood of the Nigerian timber species.

At the moment, there is no method of identifying wood fragments apart from smell which is viable for fresh samples alone. The gross structure of the woods can provide potentially useful characters that could be employed to identify the Nigerian timber trees in both fresh and dry states, and even preserved and enquiry samples. While a lot of information is available on most families of trees in this area, information at both the generic and specific levels remain scanty. The woods may have a general pattern of tissue organization, arising from a common phylogeny, but in details of size, arrangement, content and number, they show clear differences.

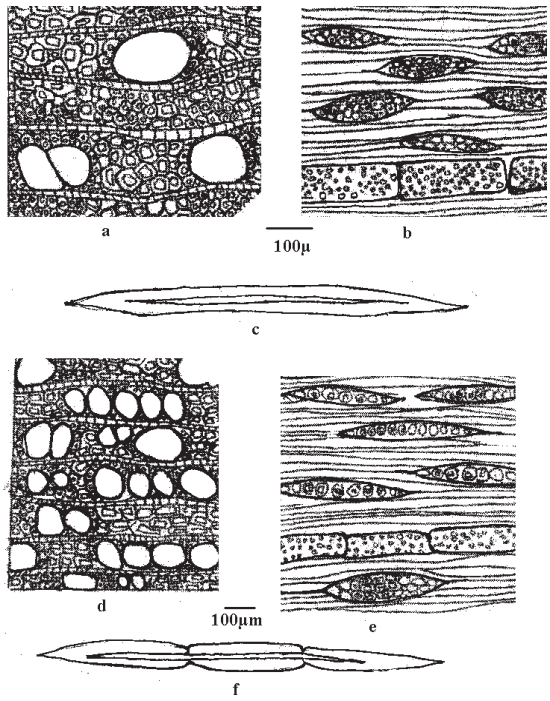


Fig. 1. a-f; a-c wood of *Afzelia africana*; d-f wood of *Anogeisus leiocarpus*

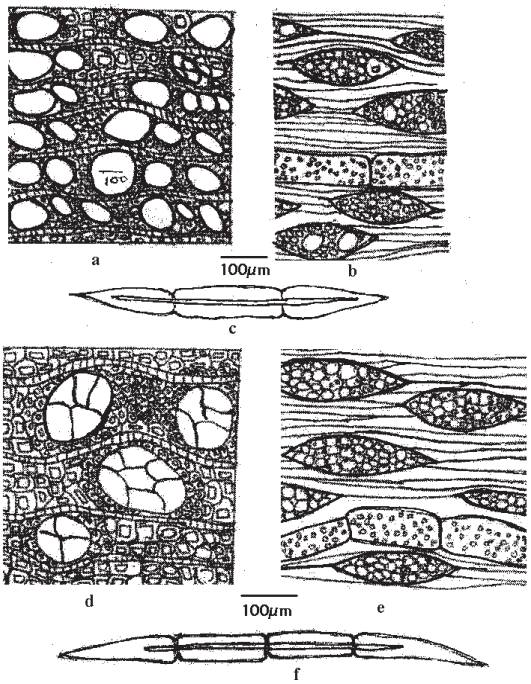


Fig. 2. a-f;a-c wood of *Anitiaris toxicaria*; d-f wood of *Cordia millenii*

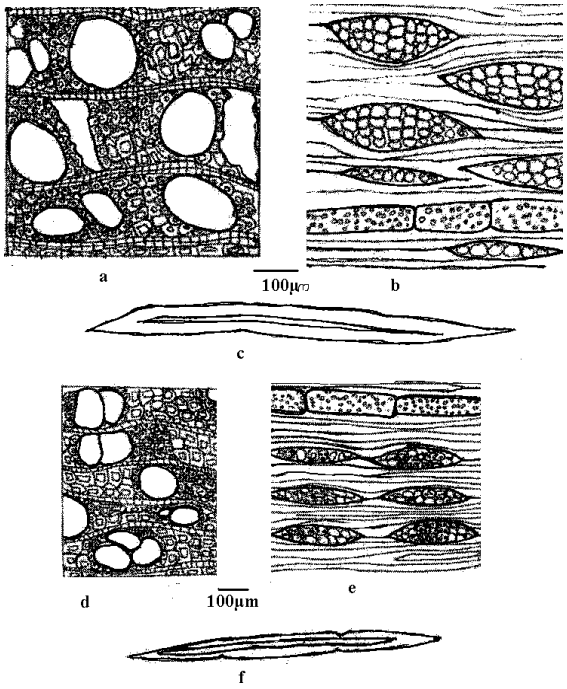


Fig.3. a-f;a-c wood of *Khaya ivorensis*; d-f wood of *Mansonia altissima*

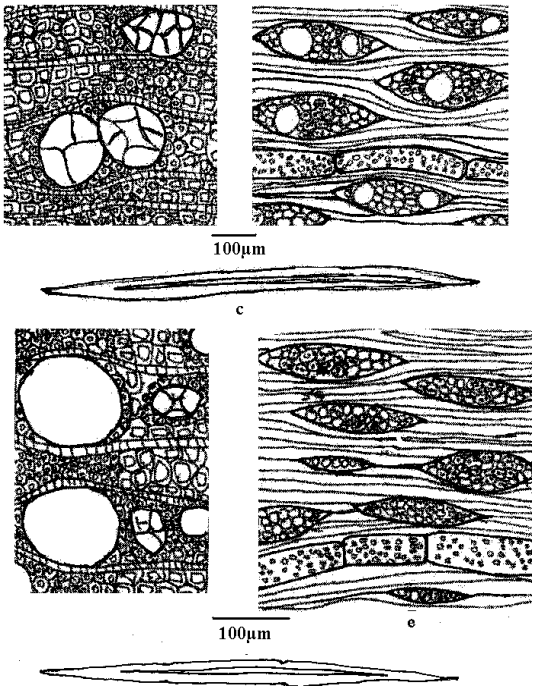


Fig.4.a-f; a-c wood of *Milicia excelsa*; d-f wood of *Tectona grandis*

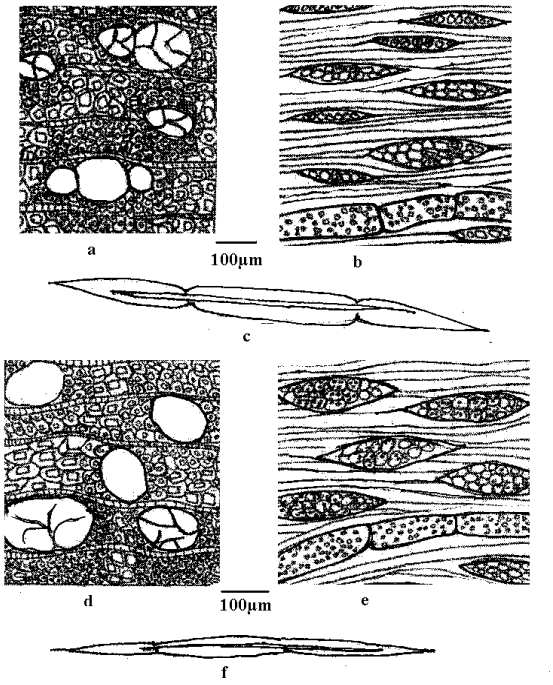


Fig.5. a-f;a-c wood of *Terminalia ivorensis*; d-f wood of *Triplochyton scleroxylon*

The striking resemblance of *Albizia* species (Ayunre) based on their macromorphological characters necessitated a study we conducted to evaluate the wood anatomical features of the genus and to assess the suitability of the wood for pulp and paper production. The study revealed diagnostic characters for the identification of the taxa. *Albizia adianthifolia*, *A. odoratissima* and *A. zygia* are recommended as good materials for pulp and paper production due to their appreciable fibre length and Runkel ratio which is less than one (1 μm) on the average. The utilization potentials of these three species will be made better if their pulp is blended with other pulpable wood species like *Gmelina arborea* and *Leucaena leucocephala* (Odiye *et al*., 2019).

The identification of some species in Bombacaceae (Araba family), causes confusion and a lot of problems; as some users mix up *Bombax buonopozense* and *Ceiba pentandra*. I therefore used leaf architectural and epidermal characteristics of the three genera of Bombacaceae in Nigeria to assess their taxonomic and diagnostic value (Folorunso *et al*., 2009). Diagnostic architectural characters that distinguish *Ceiba pentandra* from *Bombax* species are acute leaf base, pinnate camptodromous venation and veinlets branching three times. Using leaf epidermal characters, the presence of wavy anticlinal wall and cuticular striations delimit *Ceiba pentandra* from *Bombax* species. Elliptic leaf form, decurrent leaf base, toothed margin, normal petiole, primary vein size stout 2-4%, veinlets branched twice, well developed and oriented areolation are diagnostic to *Adansonia digitata* based on the leaf architectural features. The presence of stellate trichome and large stomatal size are the epidermal characters that delimit *A. digitata* from all other species in Bombacaceae. Diagnostic features of *Bombax* species were reported and similarly, the taxonomic characters for all the species in Bombacaceae were reported.

The characters used in identifying plant species include flowers, leaves, bark, thorns and fruits. However, the *Acacia* species are difficult to identify because of the infrequence with which they are in flower. The annual burning of the savanna which deprives them of mature leaves, or damage other organs (Jayeola and Folorunso, 2010). However, fruits of *Acacia* are persistent all year round, even when leaves are lost following either burning or senescence (Jayeola and Folorunso, 2010). During

our study on the *Acacia* species in Nigeria; of the 31 *Acacia* species studied, 3 species namely; *A. auriculiformis*, *A. auricularis* and *A. schweinfurthii*, represent new records for Nigeria. We attributed these new additions to the flora, to migrations arising from nomadic culture (Jayeola and Folorunso, 2010).

Ipomoea are good flagship species and possible good environmental indicators. The high variability in *Ipomoea* species has created identification problems. Therefore, to improve the identification and classification of this relatively poorly known genus, numerical taxonomic studies were conducted on thirty-six species of *Ipomoea* found in South Western Nigeria (Folorunso *et al*., 2013). The presence of cuticular striations delimit the *Ipomoea* species into two main groups: This is noticeable in *I. carnea*, *I. intrapilosa*, *I. asarifolia*, *I. mauritiana*, *I. aquatica*, and *I. involucrata* (Folorunso, 2013). Cuticular striations are special architectural structures on the epidermal surfaces of these species and could be performing vital protective functions. Stomata type separates the *Ipomoea* species into two groups. The presence of brachyparacytic stomata is diagnostic in *I. batatas* (Anamo), *I. carnea*, *I. intrapilosa*, *I. asarifolia*, *I. nil*, *I. mauritiana*, *I. aquatica*, *I. triloba*, *I. alba* and *I. involucrata*; the remaining species have paracytic stomata type (Folorunso, 2013).

Tithonia diversifolia and *Chromolaena odorata* are invasive plants capable of displacing other plants in their habitat (Muoghalu and Chuba, 2005). The characters responsible for invasiveness are the presence of: large stomatal size, low stomatal Index, coiled trichomes, more sclerenchyma cells, more parenchyma cells, large vessel diameter and prominent medullary rays (Folorunso and Awosode, 2013). Interestingly, these characters are abundant in both *Tithonia diversifolia* and *Chromolaena odorata* which are the invasive species in this study but traces of some of these characters are noted in *Aspilia africana* (a non-invasive species), implying that in the nearest future, it may be manifesting these invasive traits (Folorunso and Awosode, 2013).

Similar reports from literature tag *Ludwigia* as an invasive species, they are known to be invasive in most parts of the world, serving as a threat to native plant species and blocking navigational channels (Oziegbe and Faluyi, 2011). Foliar and stem anatomical characters for the identification of nine

species of *Ludwigia* were carried out. This is envisaged to facilitate the management of invasive *Ludwigia* species and to reduce the fluctuations in their taxonomic classifications (Folorunso *et al*., 2014). A new hypothetical name was suggested for the delimitation of *Ludwigia decurrence* A and *L. decurrence* B in the study of crude protein electrophoresis of *Ludwigia* and its taxonomic implication (Folorunso and Adelalu, 2015).

Dracaena mannii in the forest behind Botany Department in Obafemi Awolowo University began to manifest the characteristics of an invasive plant. Only one individual of the parent *Dracaena mannii* was initially found in the forest, this parent plant profusely reproduced itself while displacing other plants in the forest (Folorunso and Adifagbade, 2016). As a result of its habit, many stands of *Dracaena mannii* are now profusely growing in the forest.

I have travelled to Europe, Asia countries and some parts of Africa to present and discuss my works with colleagues. In 2013, I travelled to University of Plymouth in UK for an international conference. Before the commencement of the conference, I spent some days in the Lab. Of Dr. Roy, to learn how to use Scanning Electron Microscope (SEM). I then use SEM for my samples on *Annona* species and the work was published in a reputable journal (Folorunso, 2014). It was this trip that gave me the opportunity to visit Old Trafford in Manchester as a Manchester United fan during my stay for some days with one of my students.

Fig. 6 and 7: *Dracaena mannii* the Invasive Species in the Forest Behind Botany Department, Obafemi Awolowo University Campus.

Fig.8: *Dracaena arborea* the Non-invasive Species

Ethnobotany is the study of how people classify, manage and utilize plants. It is defined as "local people's interaction with the natural environment. Ethnobotanically, *Thaumatococcus daniellii* (known as Ewe Iran in Yoruba) and *Megaphrynium macrostachyum* (Ewe Gbodogi), have multipurpose usefulness among local people, ranging from cultivation as fetish plant in Gabon to wrapping and boiling food with the leaves in Ghana as well as Nigeria Ojekale *et al*., 2007). There is confusion in the taxonomy of both *Thaumatococcus daniellii* and *Megaphrynium macrostachyum* and this has not helped in their cultivation despite their over exploitation. This has affected their populations negatively and if this continues, might results in their extinction (Folorunso *et al*., 2017). The problems associated with the inability to cultivate these species have led to the use of nylon for food wrapping by some food vendors and you know, this can cause health problems for our people. Macro and micro anatomical characters that could be used for the identification and classification of these two species were reported. The study also attempted to create awareness on the need to conserve these economic plants because some of them are becoming rare species in our environments (Folorunso *et al*., 2017).

I was invited for oral presentation, entitled "Ethnobotanical Study of Domesticated Plants in Ile-Ife, Ilesa and Osogbo Areas of Osun State" in the symposium titled "Interpretation of plants to the public" at the XIX International Botanical Congress (IBC 2017) held at the Shenzhen Convention and Exhibition Center in Shenzhen, China, in 2017. International Botanical Congress (IBC) is the pick of Botanical conferences worldwide. It holds every seven years. This is the congress during which plants are named and where plants names are changed if there is any need. As a result of this presentation, I received An Excellent Scholar Award (Category A) both in cash and kind, in Shenzhen, China, the venue of the conference in 2017. This work was published also in a reputable journal (Folorunso *et al*., 2018).

Ethnobotanical data gathered from our study on the species of Asteraceae revealed that they are hidden wealth of nature (Table 2); they have several traditional uses which are edible, ornamental and medicinal, and have not been thoroughly and widely explored (Odelade *et al*., 2024). These

ethnobotanical data will be valuable for ethnomedicinal studies. Conservative measures are therefore recommended to prevent the endangered and decreasing species from going into complete extinction.

Plants are continually gaining recognition, thereby increasing the number of plants used by man both locally and internationally. However, as the demand for plants increases, the rate of depletion of tree species in the Biological Garden of Obafemi Awolowo University is becoming alarming (Dada and Folorunso, 2023). There is no up-to-date information about the availability of plant species within the Garden including their exact locations and the morphological characteristics used for their identification. This creates confusion and makes research cumbersome for plant users. Our work on the checklist of tree species in the Biological Garden of OAU (Dada and Folorunso, 2023) has provided an overview of the tree species growing in Obafemi Awolowo University (Table 3 and 4; and Figure 12). The floral richness between the current study and the previous survey was also reported. However, decrease in the species richness can be prevented by controlling the indiscriminate felling of trees and other means of vegetation degradation (Dada and Folorunso, 2023).

Fig. 9: *Megaphrynium macrostachyum* (Ewe Gbodogi)

Fig. 10*: Thaumatococcus daniellii* (Ewe Iran)

Obafemi Awolowo University is known for its beauty and architectural design, and is commonly regarded as "Africa's most beautiful campus''. I did some works to provide a more beautiful scenery in the Biological Sciences where hedges were planted. The hedges were used to create walkway border between the two buildings of Biological Departments. To also enhance the visual outlook of Botany Department, I ensured the placement of potted plants (flower pots) around the Department. The pots were painted and the flowers in them were identified with tags. I also assisted the Department of Architecture in the identification of plants around some parts of academic area in the University. This happened when they were on the project titled" Conservation of both structures and plants in the Academic Area of OAU".

Mr. Vice-Chancellor sir, permit me to intimate you with the recent work of my team titled Biodiversity Science is improved when silent Herbaria speak'. This was funded by Harvard University Center for African Studies. Herbaria represent a global biodiversity heritage essential for botanical research and conservation assessments. Despite their importance, herbaria around the world-especially in under-resourced regions, including much of Africa-are ''silent'. Silent collections are relatively unknown, underused, and under appreciated by the global botanical community. This work was published in 2025 by wileyonlinelibrary.com/journal/ppp. I want to thank you sir, for employing a Curator in our Herbarium IFE in Obafemi Awolowo University and ever since, our herbarium has been speaking, it is no more silent.

My team in collaboration with other International Taxonomists in the world recently published a book titled 'State of World's Plants and Fungi, 2026'. This is the Digital Biodiversity Revolution published by Royal Botanic Gardens, KEW in UK. This was used to mark the tenth Anniversary of Kew's State of the World's report series and also in reflecting on the incredible advances in generating and sharing biodiversity data that have been achieved in this short period of human history. The importance of what has been achieved so far cannot be overstated.

This vast, interconnected, global meta collection of digitized specimens is an expanding source of information for understanding the geographical distribution of species in the past, present and future. Linking this biodiversity information with other measurements and models representing key environmental threats, such as climate change, agricultural expansion and deforestation, is enabling us to not only document changes but to take timely action, designing the most effective ways to safeguard biodiversity for the wellbeing of people and all life on Earth.

Administrative Experience and Community Service.

Mr. Vice Chancellor Sir, and my distinguished audience, my contributions are not limited to research alone but extend to other services within and outside the University. I have served in several capacities in this University and other Universities. At the Departmental level, I have served in almost all the Departmental committees at one time or the other. I was Acting, Head of Department between 2015 to 2016 and Head of Department between 2022 to 2024. At the Faculty level, I have served in many committees from 1999 to date. I was Vice Dean, Faculty of Science between 2016 to 2018. As Vice Dean, I have served within the University representing the Dean on several occasions. I have also served in many committees within the University as a result Vetter for other Faculties, as member sub-committee of Deans, as member Business Committee of Senate between 2022 to 2026 and as member of Senate till date. Outside the University, I am a reviewer for many reputable journals both within and outside the country.

I have served and still serving as External Examiner to several Institutions within the country. I was a collation officer for INEC, Facilitator for Population and Housing Census and Special Marshall, Federal Road Safety Corporation till date. I have also assisted in assessing colleagues to the rank of Associate Professor (Reader) and Professor in several Universities. I am a

member of different national and international professional bodies. I have had the opportunity to make positive impacts in both State and Federal Universities where I worked as a Visiting Lecturer (Kwara State University (KWASU), Malete, Ilorin; University of Uyo, Akwa Ibom and Adekunle Ajasin University, Akungba-Akoko, Ondo State).

Conclusion

There is an unbreakable bond between plants and people. We cannot do without plants. We should take care of plants around us, make efforts to know what they are used for and then conserve them. Our survival and existence become guaranteed when we have plants around us.

Conservation programs should be established to protect plants from over exploitation, habitat destruction, environmental degradation, and possible extinction. Sustainable harvesting methods should be encouraged, especially for species where roots and stem bark are extensively utilized for medicinal purposes.

Cultivation and domestication of plant should be promoted at both household and commercial levels to ensure sustainable availability of plant resources. Indigenous ethnobotanical knowledge concerning therapeutic uses of plants should be adequately documented and preserved, to prevent its gradual disappearance due to modernization and cultural transformation.

Government agencies and research institution should provide financial support for plant research and conservation programs.

Appreciation and Acknowledgement

All praises, adoration and thanksgivings belong to the Almighty God, for His support, guidance and protection from my birth to this day.

I appreciate my late parents- Madam Abigail Ilori Ayeni and Mr. Folorunso Omole for setting my foot right in life; for their support and guidance. I appreciate all my brothers, their wives and children, particularly (PTL), Lawrence Kayode Ogunyemi and (ADEX), Adeyemi Olasunkanmi Adetona for their prayers and support till this moment. To my in laws, the Awolusi of Bajimo lineage in Ijebu Jesa, particularly Elder Adebayo Awolusi, I am very grateful sir.

I am deeply grateful to Prof. Adekunle A. Adelusi for his fatherly roles in my life, particularly in securing this job as an academic, thank you sir.

The Vice Chancellor, Prof. Simeon Adebayo Bamire. is gratefully appreciated. His slogan is 'Ire O'. As DVC Academics, he played a significant role that led to the admission of my son in Geophysics, the boy graduated as one of the best in that Department. I appreciate all the principal officers for their leadership roles.

The outstanding contributions of my undergraduate and master's projects supervisor- Prof. Adeniyi Akanni Jayeola, to my academic pursuit will always remain indelible. I do not have other words to express the positive influence you have had on me as a person and my family- your contributions have been highly significant and are greatly appreciated, thank you sir. I also appreciate my Ph.D. supervisor, Prof. Omotoye Omotoopo Olorode, thank you sir.

I want to appreciate my colleagues and collaborators- Professors: Isaac Olusanjo Adewale; (Mrs) Kemi Feyisayo Akinwunmi; Rapheal Emuebie Okonji; Saheed Adekilekun; Matthew Oziegbe, Sekinat Azeez, Dr. Mrs. Abolade Oluremi Bolaji and Dr. Isa Musibau. I appreciate our ASUU Chairman, Prof. Anthony I. Odiwe for his wisdom, knowledge and support.

My gratitude goes to the DAA, Mr. M.L. Okoroafor for his support and easy access to his office during the preparation of this lecture. I am also grateful to everyone in OAU for creating a conducive environment to learn. I appreciate all lecturers and non-teaching staff in the Faculty of Science under the leadership of our amiable and hardworking Dean Prof. Yinka Adesina. I appreciate all staff and students in Botany Department.

I sincerely appreciate my secondary school mates (Ayesco) Alagbon, 1984 Set for their prayers and financial support. I appreciate Mrs Obadina Aramide Comfort for the preparation and editing of this inaugural lecture, thank you so much.

My students and friends have been wonderful for their encouragements and financial support. I am grateful to Adesina Adewole, Ibukun Edna, Johnson Ademola Idowu, Tolu Danisa, Oladapo Elizabeth Omolola, Joy Okpaloafe, Omotayo Christianah Adifagbade, Oruye Chioma Precious, Abisola Ipadeola, Isa Abdufatai, Akande Funmilola Ojuolape, Winny, Toyosi, Dayo, Esther, Eniola Funmilayo, Caleb Mayokun Dada and all the remaining students that time would not permit me to mention their names, you are all appreciated, may the Lord continue to bless you abundantly Amen.

I appreciate my darling wife- Mrs. Janet Adeleye Folorunso Nee Awolusi of Ijebu-Jesa for her prayers, love and support throughout my journey. Thank you so much for your dedication and care for the family and my beloved children- Dupe, Samuel, Joshua, John and Ayomide, you are all wonderful.

I also thank all my audience from far and near, you are highly appreciated for coming.

Thank you all for listening. GOD BLESS YOU ALL. IRE O.

REFERENCES

Adelusi, A. A., Makinde, A. M. and **Folorunso, A. E.** (2006). Comparative Studies of Physico-Biochemical Parameters in *Abelmoschus esculentus* (L) Moench and *A. moschatus* (Moench) *Research Journal of Botany* (2): 104 – 109.

Adewumi, A. O., Isa, M. O. Akinwumi, K. F. and **Folorunso, A. E.** (2025). Validating Traditional Snake repellent use through phytochemical and Antioxidant Analysis of *Andrographicpaniculata* (Burm.F) Nees and *Petiveriaalliacea* Linn. *Ife Journal of Science* 27(3):723 734.

Adoki, A. (2006). Razosphere, Carbon source, relationship between nitrogen fixation and biomass production in *Andropogon tectorumAfri., Agric Forest Journal* 3: 51 – 55.

Antonelli *et al*., (2026). State of the World's Plants and Fungi. The Digital Biodiversity. Royal Botanic Gardens, Kew, London, UK.

Armstrong, F. A. (1048). Flooring Hardwoods: their wear and anatomical structure. *Forestry Production Res. Bull land*

Azeez, S. O. and **Folorunso, A. E.** (2014). Phenology and Pollen Studies of some species of Annonaceae in Nigeria. *Ife Journal of Science* 16(2): 171 – 179.

Bradley, B. A., Blumenthal, D. M. Early, R., Grosholz, E. D., Lawler, J. J., Miller, L. P., Sorte, C. J. B., D'Antonio, C. M. Diez, J. M, Dukes, J. F., Ibanez, I and Olden, J. D. (2012). Global change, global trade, and the next wave of plant invasions. *Frontiers in Ecology and the Environment* 10: 20 – 28.

Cribb, P. J. and Croix, I. (1996). New *Polystachya* species (Orchidaceae) from tropical west and South - central Africa. *Kew Bulletin* 51 (3): 571-577.

Dada, C. M. and **Folorunso, A. E.** (2023). A checklist of Tree species in the Biological Garden of Obafemi Awolowo, University, Ile-Ife, Nigeria. *Nigerian Journal of Botany* 36(2): 149 – 164.

Daryl, K. G., Peter, A. M, Robert, K. M. and Victor, W. R. (1990). Harper's Biochemistry 22nd edition, Prentic Hall International United Kingdom

Fatanmi, E. O., Ajibade, G. A. and **Folorunso, A. E.** (2013). Phenological studies of two Varieties of *Hibiscus cannabinus* Linn. in Ile-Ife, South West, Nigeria. *Journal of Biology Agriculture and Health Care* 3(8): 49 – 56.

Folorunso, A. E. and Olorode, O. (2007). Karyotype studies in some species of the family Annonaceae, *Ife Journal of Science* 9(2): 161 – 166.

Folorunso, A. E. (2013). Taxonomic Evaluation of Fifteen species of *Ipomoea* L (Convolvulaceae) from South–Western Nigeria using foliar Micromorphological characters. *Notulae Scientia Biologicae* 5(2):156 -162.

Folorunso, A. E. and Adifagbade, O. C. (2016). Foliar Epidermal Traits of Invasive and Non-Invasive species of *Dracaena* Vand. ex L. (Dracaenaceae) in Obafemi Awolowo University, Campus, Ile-Ife, Nigeria. *Natulae Scientia Biologicae* 8(2): 216 – 219.

Folorunso, A. E. and Jayeola, A. A. (2009). Application of Numerical Taxonomy to Lip Morphology in the Genus *Polystachya* Hook (Orchidaceae) in Nigeria. *NotulaeBotanicae Horti Agrobotanici*, Cluj-Napoca 37(1): 45 – 50.

Folorunso, A. E. and Modupe, O. V. (2007). Comparative study on the biochemical properties of the fruits of some *Annona* species and their leaf Architectural study. *NotulaeBotanicae Horti Agrobotanici Cluj Napoca*: 35(1): 15 – 19.

Folorunso, A. E. and Olorode, O. (2008). Biosystematic Studies in AnnonaceaeII. Vegetative and floral morphological studies of some genera of Annonaceae in Nigeria. *Research Journal of Botany* 3(1): 1 - 8.

Folorunso, A. E. and Oyetunji, O. A. (2007). Comparative foliar epidemical studies in *Cymbopogon citratus* (STAPF) and *Cymbopogon giganteus* (HOCHST) CHIOV. in Nigeria. *NatulaeBotanicae Horti Agrobotanici Cluj* 35(2): 7 – 14.

Folorunso, A. E. (2011). Diversity in the stem Anatomy and tissues of several species of *Annona* (Annonaceae) in Nigeria. *Notulae Scientia Biologicae* 3(3): 20 – 32.

Folorunso, A.E. (2013). Taxonomic Evaluation of Fifteen species of *Ipomoea* L. (Convolvulaceae) from South-Western Nigeria using Foliar Micromorphological Characters. *Notulae Scientia Biologicae* 5(2): 156 – 162.

Folorunso, A. E. (2014). Study of Foliar Epidemical Characters and Petiole Anatomy of Four Underutilized *Annona* (L) species in Nigeria. *International Journal of Current Research* 6(11): 10013 – 10018.

Folorunso, A. E., Akinwunmi, K. F. and Okonji, R. E. (2012). Comparative studies of the biochemical parameters of the leaves and seeds of *Moringa oleifera*. Journal of Agricultural Science and Technology B2: 671-677.

Folorunso, A. E. and Adelalu, K. F. (2015). Crude protein electrophoresis of *Ludwigia* (L) species in Nigeria and its taxonomic implications. *African Journal of Plant Science* 9(9): 339 – 345.

Folorunso, A. E. and Awosika, O. S. (2013). Use of wood characters in the identification of species of Bignoniaceae. *Nigerian Journal of Botany* 26(2): 307 – 324.

Folorunso, A. E. and Awosode, O. D. (2013). Comparative anatomy of invasive and non-invasive species in the family Asteraceae in Nigeria. *International Journal of Biological and Chemical Sciences* 7(5): 1804 – 1819.

Folorunso, A. E. and Olaniyan, O. F. (2009). Comparative foliar epidermal studies in *Andropogon gayanus* (Kunth), and *Andropogon tectorum* (Schum A. Thonns in Nigeria. *ThaisziaJournal of Botany* 19: 27 – 35.

Folorunso, A. E. and Olorode, O. (2006). Crude protein electrophoresis of some species of *Annona* in Nigeria. *Ife Journal of Science* 8(1): 15 – 18.

Folorunso, A. E. and Olorode, O. (2006). Biosystematics Studies in Annonaceae J Vegetative and Floral Morphological studies of some species of *Annona* in Nigeria. *Research Journal of Botany* 1(3): 118 – 124.

Folorunso, A. E., Saheed, S. A., Akinloye, A J. and Busari, K. M. (2017). Foliar anatomical study of *Thaumatococcusdaniellii* (Benth) and *Megaphryniummacrostachyum* (Benth) Milne – Redh in Ile-Ife. And Osogbo environs, Osun State, Nigeria. *International Journal of Biological and Chemical Sciences*, 11(5): 2456 – 2465.

Folorunso, A. E., Agboola, O. O. and Salako, O. A. (2018). Ethnobotanical study of Domesticated Plants in parts of Osun State, Nigeria, *Nigerian Journal of Botany* 3(1): 43 – 56.

Folorunso, A. E., Awelewa, O. A. and Adewale, I. O. (2006). Comparative study of Protein Profiles of the Leaves of Wild *Manihot glaziovii* Mueller and the cultivated species, *Manihot esculenta* Crantz by SDS – polyacrylamide gel electrophoresis. *International Journal of Agricultural Research* 1(1): 53-57.

Folorunso, A. E., Dada, C.M., Olaleye – Otunla, F. and Agboola, O. O. (2016). Effect of brewery, effluent on the anatomical and morphological structure of *Talinumtriangulare* (Jacq) willd. *African Journal of Plant Science*.

Folorunso, A. E., Illoh, H. C and Olorungbega, J. A. (2013). Numerical Taxonomy of some |*Ipomoea* (Linn.) Species in South West Nigeria. *Ife Journal of Science* 15(1): 63 – 74.

Folorunso, A. E., Adelalu, K. F. and Oziegbe, M. (2014). Use of foliar and Stem anatomical characters in the identification of *Ludwigia* (Linn.) species in Nigeria. *International Journal of Biological and Chemical Sciences* 8(5): 2232 – 2243.

Jayeola, A. A. and **Folorunso, A. E.** (2009). Ecological anatomy of some hydrophytes in Nigeria. *African Journal of Biotechnology* 8(14): 3377 – 3381.

Jayeola, A. A. and **Folorunso, A. E.** (2010). Use of fruits and Infructescence characters in the identification of the *Acacia* Mill. (Leguminosae) species in Nigeria. *Nigerian Journal of Botany* 23(1): 178 199.

Jayeola, A. A., Aworinde, D. O. and **Folorunso, A. E.** (2009). Use of wood characters in the identification of selected timber species in Nigeria. *NotulaeBotanicae Horti Agrobotanici Cluj-Napoca.* 37(2) 18 – 32.

Jimoh, M.A., Zosu, J.A. and **Folorunso, A. E.** (2020). Foliar Epidermal Studies of Nine *Merremia* (Dennst.) Endl. Species (Convolvulaceae) in Nigeria. *Jewel Journal of Scientific Research* 5 (1 & 2): 78 – 89.

Keatley, M. (2000). Influences on the flowering phenology on three *Eucalyptus.* Proceedings of ICB – ICUC '99, Sydney, INMO / TD No 1026, Geneva

Kerr, T. and Bailey, J. W. (1934). The cambium and its derivative tissues X structure, optical properties and chemical composition of the so-called middle lamella. *Journal of Arnold Arboretum* 15:327 – 349.

Kraenzlin, F. (1926). A monograph of the genus *Polystachya Feddes Repertorium* Beih, Vol. 39.

Machado, I.C.S., Basros, L. M. and Sanupaio, E. V. S. B. (1997). Phenology of caatinga species at Serra Telhada, P. E, Northeastern Brazil: *Biotropica* 29: 57 – 68.

Metcalfe, C. R. and Chalk, L. (1950). Anatomy of the dicotyledons Vols. I and II Clarendon, Oxford.

Muoghalu, J. I. and Chuba, D. K. (2005). Seed reproductive strategies of *Tithonia diversifolia* and *Tithonia rotundifolia*. *Applied Ecology and Environmental Research* 3(1): 39 – 46.

Morellato, L. P. C. and Haddad, F. B. (2000). The Brazilian Atlantic Rainforest. *Biotropica*spezial issue, 32, No 4b.

Nassar, N. M. A. (1985). *Manihot neusana* Nassar: A new species native to Parana, Brazil. *Canadian Journal of Plant Science* 65: 1097 – 1100.

Nodza, I. G. Abdulhameed, A. and Abdullahi, M. B. (2013). A checklist and ethnobotanical assessment of tree species of Abubakar Tafawa Balewa University (ATBU), Yelwa campus, Bauchi, Nigeria. *International Journal of Botany* 9:55-63.

Odiye, M. D., Owolabi, S. M., Akinloye, A. J., **Folorunso, A. E.** and Ayodele, A. E. (2019). Comparative wood anatomical studies in the genus *Albizia*Durazz in Nigeria and their potential for paper making. *Plants and Environment* 1(2): 70 – 82.

Ojekale, A. B., Makinde, S.C.O. and Osileye, O. (2007). Phytochemistry and antimicrobial evaluation of *Thaumatococcus daniellii* (Benth.) leaves. *Nigerian food Journal* 25 (2): 176 – 183.

Oziegbe, M. and Faluyi, J. O. (2011). Reproductive Biology of *Ludwigia leptocarpa* and *L adscendens* subsp. *Diffusa* in Ile-Ife Nigeria. *Turkish Journal of Botany* 36: 167 – 173.

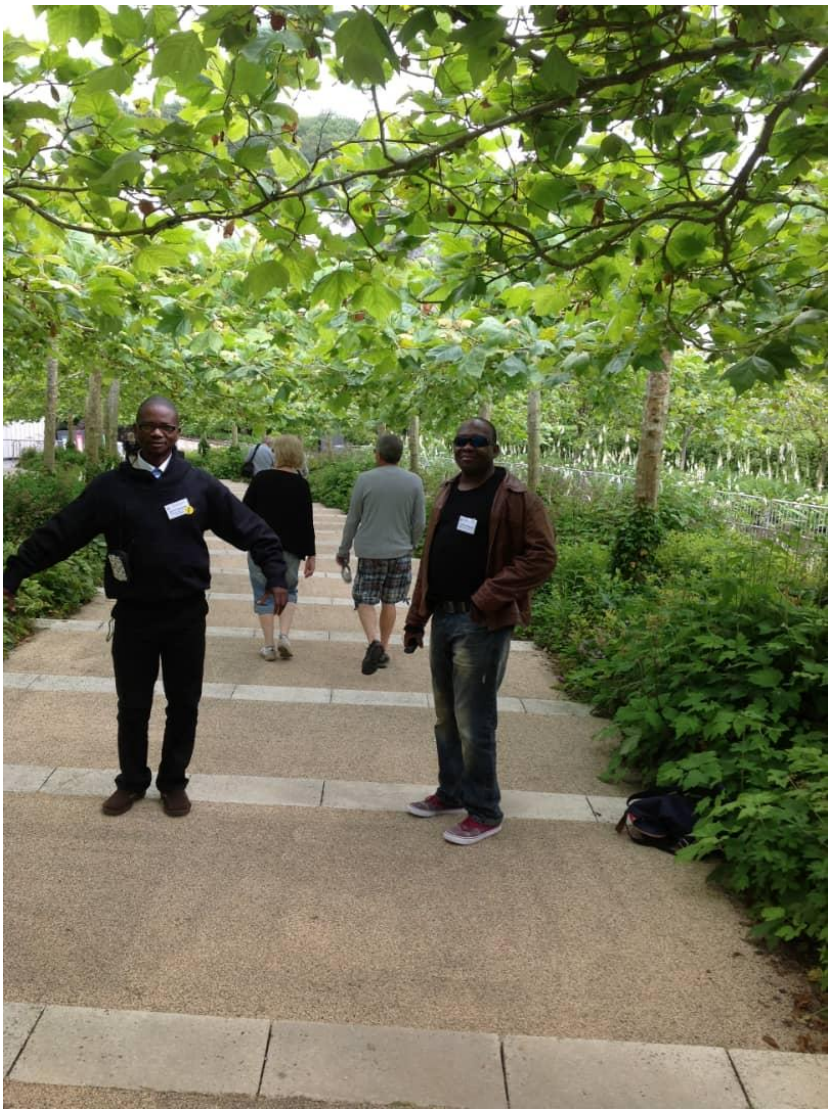
Oziegbe, M., **Folorunso, A. E.** and Ajao, D. O. (2015). Inheritance of Purple Pigmentation in *Carica papaya* Linn. (Caricaceae). *International Journal of Plant Research* 5(2): 27 – 33.

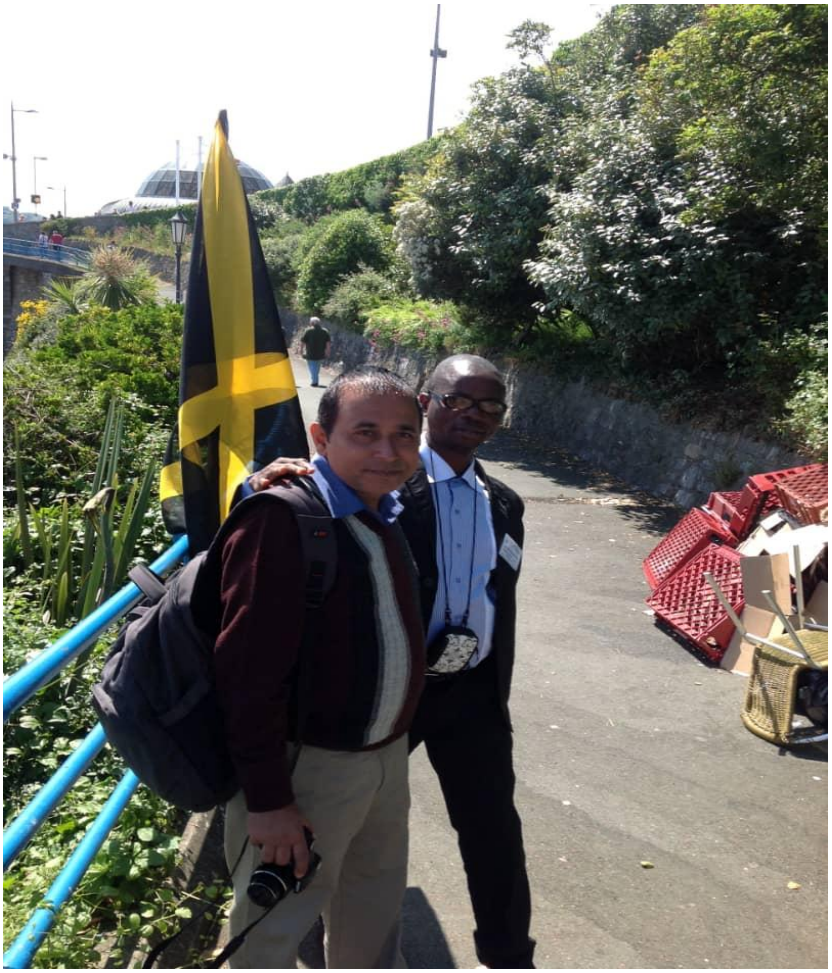
Passos, J. L., Meira, R.M.S.A. and Barbosa, L.C.A. (2009). Foliar anatomy of the species *Lantana camara* and *L. radula* (Verbenaceae). *Planta Daninha* 27(4): http://dx. Doi. org/10 1590/S0100-8358200 – 9000400007

Simoes, A. R. and Staples, G. W. (2017). Dissolution of Convolvulaceae tribe Merremieae and a new classification of the constituent genera. *Botanical Journal of the Linnean Society* 183: 561 – 586

Teniola, K. A., Bolaji, A. O., Ojo, R. A. and **Folorunso, A. E.** (2021). Crude protein electrophoresis of three varieties of *Impatiens balsamina* L. (Balsalminacege) in Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria. *International Journal of Scientific and Research Publications* 2(6): 586 – 591.

Zhigila *et al*., (2025). Biodiversity Science is improved when Silent Herbaria Speak. Plant People Planet (PPP). Wileyonlinelibrary.com/journal/ppp3. DOI:10.1002/ppp3.70091






T6-07 Interpretation of plants to the public
Mei Li
'Searching for Green Treasure in NBG ' - an interesting game to learn from plants
Abayomi Ezekiel Folorunso
ETHNOBOTANICAL STUDY OF DOMESTICATED PLANTS IN ILE-IFE, ILESA AND OSOGBO AREAS...
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Morris Dancers provide a fantastic opening to Economic Botany 2013, at Plymouth University in Plymouth, England. Stay tuned for all the fun and science!