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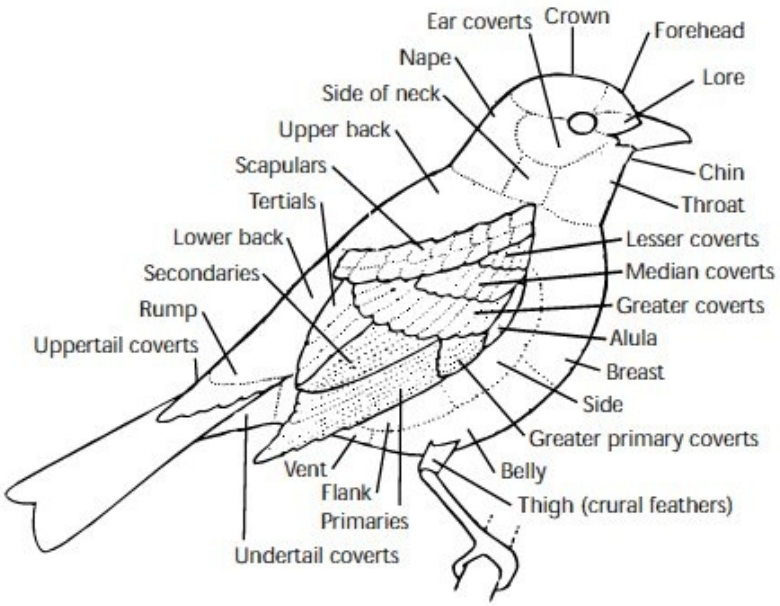

Bird Topography

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THE NIGERIAN FIELD

Volume 77, Parts 1 & 2, April-October 2012

EDITORIAL

In the list of Society Officers, Last year's journal announced a new Editor, Professor Emmanuel Asuquo Obot. He coordinated most of this issue until interrupted by his death on the DANA Air crash on June 3rd of this year. Three days before his death, he sent me an email, discussing the progress of this issue.

Our thanks to Professors I.F. Adeniyi and A.O. Isichei, long-time colleagues of Professor Obot, for writing his obituary for this issue. May he rest in peace!

This issue is coming out because the Society members rallied in the crisis. Professor Obot had already seen and cleared all the articles (except my own—prepared after his death to complete the volume). I relay his thanks and congratulations to all the contributors.

Besides the contributors, the following deserve recognition:

- the Society President, Prof. Adeniyi, as well as Vice President Joyce Lowe, for pressing me to bring this issue to completion
- Prof. Augustine Isichei, for invaluable editorial assistance
- all who submitted reports, and that in record time
- Chris Bankole and the Bookbuilders staff, for getting this printed.

This issue again shows the breadth of the Nigerian Field Society's interests: articles first on fish and aquatic plants, then over to land and its beneficial plants, along with the ingenuity of human habitation, finally into the air with its butterflies and birds.

—Joseph Kenny, O.P.

Colour frontispiece: ***Milicia excelsa*** **(iroko)** (Courtesy of Deni Bown, I.I.T.A., Ibadan)
Cover illustration: from http://www.life.illinois.edu/ib/461/External_Anatomy.pdf

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BEAUTY IN UNEXPECTED PLACES: THE TRANSFORMATION OF AN INVASIVE AQUATIC WEED

Achenyo Idachaba
Creative Director, MitiMeth, Ibadan

The infestation of the water hyacinth (*Eichhornia crassipes*), an invasive aquatic weed, occurred in some West African countries back in the early 1980s. In Republic du Benin, the weed was first noticed in 1980-81, in the Ouémé Riparian, but became an outbreak of epidemic proportions in 1985. The water hyacinth was first recorded in Ghana and Nigeria in 1984 (around Badagry Creek and Tema, respectively); In the Volta Riparian, Burkina Faso, 1991; In Mali, in the 1990s; and In Niger, 1990-94 (L. Navarro and G. Phiri, 2000).

Water Hyacinth

According to a 2004 report by the African Development Bank (AfDB), annual losses in West Africa vary from US$28-56 million for fisheries, US$4-6 million for health, US$7-14 million for hydro-energy, and US$36-76 million for agriculture as a result of invasive aquatic weeds. Water hyacinth, a natural renewable resource, can double every two weeks under ideal conditions and over time forms mats of dense floating foliage hindering marine transportation and curtailing access to water bodies. Evidence of these dense floating webs of foliage can be seen in most waterways in Nigeria (e.g. Epe, Ikorodu, Bayeku, Makoko, Igbokoda, Epe, Olugbokere, Mansa, Ikin, Lekki lagoon, Idah, Lokoja etc). The density of the weed deprives aquatic plants and fish of sunlight and oxygen, changes water chemistry,

affects flora and fauna and causes significant increases in water loss through evapotranspiration. It is considered a serious threat to biodiversity.

Once the water hyacinth appears in a body of water, it stakes a territorial claim on the body and begins to expand. Many efforts have been taken to eradicate this invasive weed in Nigeria, but these efforts have proven short-lived and will continue to prove futile due to the rapid reproductive rate of the weed unless the eradication exercises are frequently repeated with each new occurrence of the weed.

The pervasive prevalence of the weed on the waterways in Nigeria is evidence of its ability to spread very rapidly. The livelihoods of several communities dependent on the waterways have been diminished due to curtailed access to waterways as a result of the invasion of water hyacinth (L. Navarro and G. Phiri, 2000). The presence of the water hyacinth renders navigation of the waterways by marine vessels treacherous and also damages outboard engines of speed boats (*THISDAY*, 2012). The best control measures are frequent manual removal, biological control or chemical treatment with the use of herbicides. However, the long-term effect of the latter management technique on marine life could be detrimental.

There are several beneficial uses that can be derived from harvested water hyacinth. These beneficial uses include organic fertilizer, livestock feed, biogas, charcoal briquettes and art-crafts.

Organic Fertilizer

The microbial decomposition of the water hyacinth produces pathogen-free compost which can be applied directly to the soil. The produced compost increases soil fertility and crop yield and generally improves the quality of the soil. Most importantly it is a low cost alternative to other NPK fertilizers.

Livestock Feed

The use of water hyacinth in animal feeds in developing countries could help solve some of the nutritional problems that exist in these countries. Research carried out by Polprasert et al. (1994), mixed water hyacinth plants with molasses and pig manure at the ratios of 85:10:5 (% wet weight) and was found to be optimum for silage production. The silaging period was 28 days and the silaged products contained 16% protein and 18% dry matter, suitable for use as animal feed. In certain parts of Asia where poverty is rampant and the weed is in abundance, it is actually prepared as food for human consumption.

Biogas

The use of water hyacinth in the production of biogas for cooking would be a preferable alternative to firewood, considering that Nigeria is under the threat of deforestation. Anaerobic digestion of the weed takes place over a period of time during which methane

gas is generated, captured and recovered for use as a cooking fuel, electrification or for powering an engine to provide shaft power. The residue from the digestion process is also a fertilizer rich in nutrients. A pilot project conducted in Niger (Almoustapha et. al, 2009) utilising water hyacinth and fresh rumen to generate biogas for cooking fuel. In this pilot project, six discontinuous-type digesters i.e. buried tanks made of reinforced concrete measuring 5m3 were designed to provide the anaerobic environment essential for the bacterial activity that produces the biogas. It also included the installation of three storage gasometers. Other design options that could be employed to produce biogas include continuous reactors fed with liquid substrates to provide continuous output (GRET, 1979) or sequencing batch reactors which is a hybrid of the dis-continuous and continuous reactors. The discontinuous method is most applicable because water hyacinth is a solid organic substrate (lignocellulosic) and not liquid in nature.

Charcoal Briquettes

The production of charcoal briquettes from water hyacinth through a carbonizing process will result in the conservation of dwindling forest areas. It is estimated that for every 1.3 hectares of water hyacinth removed from the lakeside, 0.14 hectares of forest plantations are saved. The Ecosystems Research and Development Bureau in the Philippines, Legacy Foundation and , the City of Naga amongst others have utilized water hyacinth to make biomass fuel briquettes. In the City of Naga project, four machines were utilized for making the briquettes and they include a dewatering machine, mixer, hammer mill and charcoal briquetting apparatus.

Art Crafts and Paper

The water hyacinth could be used for particle board manufacture, biodegradable plates and art-crafts such as home décor items (lampshades, baskets, frames etc) and accessories (bags, jewelry etc). Several countries in East Africa and Asia with water hyacinth infested waterways have created cottage industries specialized in using this weed for handcrafts. For example, the City of Naga in the Philippines has a livelihood and entrepreneurship project revolving around water hyacinth development. The project is designed to benefit over 70 families in the Mabolo and Tinago barangays.

Converting Water Hyacinth into Eco-friendly Household Products

How can urban and rural communities address the environmental problem caused by water hyacinth and in the process generate income for community households? To answer this question, MitiMeth, a local Social Enterprise based in Ibadan, Nigeria chose to look at the least capital intensive method to transform this invasive aquatic into an economic advantage through innovative use. Instead of seeing the water hyacinth as a pervasive problem with no viable solution, the enterprise saw an opportunity to transform this durable natural renewable resource.

The environmentally beneficial use of the water hyacinth will empower men and women who would otherwise suffer economic losses due to the infestation of the weed in their waterways and creates opportunities for small business enterprises around the riparian / lakeside regions. Furthermore, the business model can be replicated any water hyacinth-infected areas in Nigeria and the rest of West Africa. At present the Enterprise harvests the aquatic weeds from waterways in Idah in Idah LGA (Kogi) and Bayeku in Igbogbo LGA (Lagos). In Idah, there is a myth surrounding the weed and many locales believe the weed is poisonous and has the potential to kill if touched or transported. Apart from the current efforts of the Enterprise in Idah, the weed is not being harvested or transformed. In Bayeku the weed is called a “gossip bearer” and is typically left alone on the waterways to carry out its “gossiping” activities.

One of the primary purposes of any social enterprise in water hyacinth development is to achieve a developmental impact by empowering men and women in the affected lakeside

and riparian communities to use their weaving skills to transform the water hyacinth into multi-purpose baskets, frames and small furniture pieces. The harvesting, drying and weaving of water hyacinth can be an income-generating activity for men and women within the affected communities. In our case we mobilize and support communities to harvest water hyacinth and improve their income through the harvesting and production of water hyacinth products. The benefits of converting the water hyacinth to functional products are twofold: the weed infestation and congestion in the waterways and river/lake banks would be dramatically reduced, while the income for riparian/lakeside community men and women would increase. In addition, the potential climate change impact from decomposing weeds is reduced.

Freshly harvested weed

Invasive Aquatic Weed Harvesting

The starting point for converting water hyacinth to beneficial use is to harvest the aquatic weed. There are a few ways in which water hyacinth can be harvested from the waterways. They can be harvested mechanically or manually (hand weeding). While mechanical removal would seem to be the most efficient method, it is a costly option in terms of acquisition, operations and maintenance. The mechanical equipment requires skilled labour

to operate and maintain. According to research conducted by Alimi (1990), estimated mechanical harvesting costs range from NGN38,500 – NGN50,000 per square kilometer of water surface. Suffice it to say, almost 22 years have passed since the study was carried out, so we can expect that the cost of mechanical harvesting would have multiplied. Given the capital-intensive nature of mechanical harvesting, manual hand weeding by fishermen, community residents and hired labour is the most viable option for riparian / lakeside communities.

Air drying weeds on pavement (Idah)

Harvesting and Processing

The most suitable water hyacinth weeds for weaving have stems with lengths more than 12 inches. Such identified mature weeds are then harvested and de-stemmed i.e. the roots and the leaves removed. The cut stems are then air-dried out in the open for 2 – 3 days till the stems became golden brown and there is no evidence of water content. Depending on the condition of the harvested weeds and the climatic conditions, the dried stems were then washed in a light solution of caustic soda and slightly air-dried. The dried golden brown

weeds were then considered ready to be transformed into various types of hand woven crafts. Actual transformation of the weed i.e. weaving and framing of products currently takes place in Ibadan where the enterprise has engaged and trained underemployed and unemployed men and women in addition to skilled artisans. The intent is to increase the number of communities where harvesting activity has potential and build capacity within to transform the weed at harvest source which entails educating the communities and helping them to overcome their fears surrounding handling of the weed.

Weaving of a product (Ibadan)

Environmental Impact and Sustainable Livelihoods

The harvesting of water hyacinth and its immediate conversion to beneficial use also mitigates greenhouse gas emissions (GHG) in the atmosphere. By reducing the heaps of cleared water hyacinth that would ordinarily be left to decompose, methane (CH4) emissions, a potent greenhouse gas, with 21 times the global warming potential as carbon dioxide (CO2) is mitigated. Products made from water hyacinth can therefore be considered eco-friendly products.

Water Hyacinth's Future in Nigeria

Water hyacinth is considered one of the fastest growing aquatic weeds and despite its economic potential as organic fertilizer, biogas and raw material in cottage industries, this writer does not suggest re-planting or transplanting the water hyacinth in any of our public waterways. Continuous efforts should be made in the harvesting and control of the existing weeds. In recent years, the AfDB financed a multinational *Integrated Management of Invasive Aquatic Weeds Project* covering Nigeria, Benin, Ghana, Mali, Niger, The Gambia, Senegal and Mauritania. The five-year AfDB project ended in December 2011, and it is interesting to note that water hyacinth infestation is still visible in many major waterways in Nigeria. The project which combined physical and biological control methods was limited to only four shared water bodies in West Africa.

The project scope in Nigeria was restricted to 1) the coasts of Benin and Nigeria and 2) the middle and upper Niger River basin whereas the current impact of the weed infestation reaches far beyond Nigeria's coast and Niger River basin. It would therefore appear that a more sustainable approach to controlling the weed would be through community-led weed harvesting (CLWH). This approach also pays for itself because water hyacinth products can

Nigerian made water hyacinth art crafts

be made and sold and revenues can also be generated by selling the harvested weed to other parties who want to utilize the plants in animal feeds, fertilizer, paper, biogas, etc. Introducing CLWH and the establishment of cottage industries in riparian / lakeside communities would help in achieving the Millennium Development Goals (MDGs). Specifically target 1B of the MDGs which aims to achieve full and productive employment and decent work for all, including women and young people and target 7A of the MDGs which aims to integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

From the handcrafts perspective, we see opportunities in the future to promote the making of specialty paper utilizing the water hyacinth in order to reduce the pressure on timber-based paper products and the need to import specialty paper products. We see opportunities to deploy locally fabricated paper pulp making machinery in the communities and set up small-scale paper making enterprises.

The number of uses from the water hyacinth listed in this paper should enable various

private, government and development agencies to see benefits of partnering in this effort and promote environmental sustainability (MDG #7). There are likely many more uses from the water hyacinth plant which should be explored by the Products Development Institute (PRODA) and the Federal Institute for Industrial Research Oshodi (FIIRO) in Nigeria.

Variety of local water hyacinth products

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THE STORY OF FISHING IN NIGERIA

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The presence of numerous water bodies, some of which are prominent rivers cutting across vast areas of land emptying into the sea, avails Nigeria the opportunity of owning significant fisheries. The history of fishing in Nigeria may be as old as mankind, wherever people live near streams, rivers, lagoons and other bodies of water, but the history of fisheries development in Nigeria is a comparatively recent one. The bulk of domestic fish production in Nigeria presently comes from the capture fisheries dominated by the artisanal fishery sub-sector which produces over 80% of the annual total. Domestic fish production (0.55 million mt) falls short of the demand (1.5million mt). Due to the threatened depletion of the natural water resources, Nigerian fishery development is gradually tending towards culture fisheries, which is centered on Clariid catfishes (Plate 2) and the Tilapias (Plate 2). Many businesses are being built round it, and Nigeria is currently the largest producer of catfish in Africa (http://www.fao.org/DOCREP/003/W7499E/ w7499ea6.htm). However, the fish supply from aquaculture is currently under-exploited.

Plate 1: The African catfish, *C. gariepinus* (Adewumi, 2005)

Nigeria is a vast country of about 160 million people (2010 estimates — http//siteresources.worldbank.org//DATA), covering about 923,768 sq. km of landmass, endowed with a coastline of 853km and over 14 million hectares inland waters. The coastline stretches from the Western border with Republic of Benin to the Eastern border with Cameroon Republic.

In 1978, Nigeria established an Exclusive Economic Zone (EEZ) which is an area beyond and adjacent to the territorial sea extending 200 nautical miles from the baseline.

Plate 2: Tilapia sp

The surface area of the continental shelf is 46,300km^2 while the EEZ covers an area of 210,900km^2 (World Resources, 1990, cited in Ezenwa, 1994), within which Nigeria exercises sovereign rights for the purpose of exploring, exploiting, conserving, and managing the natural resources. Nigeria is therefore blessed with an abundance of marine, brackish and inland water resources. The presence of numerous water bodies, some of which are prominent rivers cutting across vast areas of land emptying into the sea avails Nigeria the opportunity of owning significant fisheries.

The Nigerian fishing industry is practiced in two environments: capture and culture fisheries. Capture fisheries involves hunting for fish from the natural water bodies such as rivers, lakes, lagoons, estuaries, creeks, seas and oceans. Culture fishery is the art of fish husbandry whereby fish are kept and fed in confinement and managed to achieve quick growth and accelerated production. While the artisanal (small scale) fishing had been in existence, the history of industrial fishing in Nigeria is a comparatively recent one.

History of Fishing in Nigeria

Though reports have it that a fishing company operated from the coastal waters of Lagos long before 1915, deliberate efforts at developing the country's resources can be said to date back to the Second World War when, because of the naval blockage of the high seas, the colonial administration decided to develop the country's local resources, including fisheries. A fisheries establishment was inaugurated in 1941 as a Fisheries Development Branch of the Department of Agriculture in the Colonial Office with headquarters at Apese village in Onikan, Lagos State. A senior Agricultural officer was appointed to conduct a survey of the industry.

Plate 3: Fisher folks sorting out fish caught from a stream and a pond (FAO, 1994)

A preliminary survey was conducted of the canoe fisheries of Apese village and Kuramo waters around Victoria Island, Lagos, and a small fisheries school was established at Onikan. Small motor fishing crafts were acquired for exploratory fishing in the estuaries, lagoons and creeks. Between 1948 and 1956, major efforts were made at extending the artisanal fisheries programme to the coastal areas of Nigeria. Trawling surveys were undertaken in the vicinity of Lagos and Cameroon. An active extension service was established to demonstrate the benefits of improved fishing techniques and gear to the coastal canoe fishermen.

The period between 1952 and 1957 witnessed a considerable boom in artisanal fisheries. This has been attributed to the concentration of fishing activities on the rich virgin grounds leading to high returns for efforts, general improvements in processing, storage and distribution methods, improvements in the type of fishing crafts used, and especially the complete change over to synthetic fibre (Plate 3). The overall result was that the contribution of fisheries to the national GDP quadrupled between 1960 and 1970.

The bulk of domestic fish production in Nigeria presently comes from capture fisheries dominated by the artisanal fishery sub-sector which produces over 80% of the total (Table 1). Over-fishing and threatened depletion of the natural resources however, has made production through capture or artisanal/industrial fisheries unpredictable. The current overall estimate of fish production from all sources (2007 estimate) was 0.62 million MT, out of which aquaculture produces some 85,087 MT (Table 1). This level of production is far short of the demand (2.66 million MT). To meet this demand, all stakeholders have realized that aquaculture development and better management of the capture fisheries are the best viable option. There has been a gradual improvement of the contribution of cultured products to the overall production, from 5% to 13.8% (Fig. 1). Musa, *et al.* (2005) reported that the sub-sector contribution of aquaculture to the domestic production is an average of 6%, whereas the annual yield potential is put at 2.5 million MT. It is therefore imperative to step up fish production through aquaculture in order to achieve fish self-sufficiency for the country. Onuoha and Deekae (2006) see aquaculture principally as a way of supplementing unpredictable production through capture or commercial fisheries. Various freshwater and brackish water fish species are being cultured.

The first attempt at fish farming was in 1951 at a small experimental station in Onikan, Lagos, where different Tilapia species were cultured, though the result was not impressive. Modern pond culture started with a pilot fish farm (20ha) in Panyam, Plateau State for rearing the common mirror Carp, *Cyprinus carpio* following the disappointing results with Tilapia culture. Ever since, sufficient interest has been generated that made regional governments establish fish farms, such as Buguma in Rivers state, Abagana in Anambra state, Agodi Garden in Ibadan, Isinla in Ado Ekiti etc. Although the major species cultured include fin-fish (tilapias, catfish, and carp), catfishes of the family Clariidae are the mostly farmed fish.

Table 1: Fish production in the Nigerian water from 1985-2007
Source: FDF, 1985, 2008

YEAR	Coastal and Brackish Water	Inland Rivers & lakes	Aquaculture (Fish Farm)	Industrial Commercial
1985	140873	60510	15000	26142
1986	160169	106967	14881	25042
1987	145755	103232	15221	24900
1988	185181	112443	15764	36549
1989	171332	132168	25607	33645
1990	170459	113075	7297	25329
1991	168211	123075	15840	36226
1992	184407	99536	19770	39365
1993	106276	94900	18703	35644
1994	124117	110484	18104	30488
1995	159,201	161,754	16,619	33,479
1996	138,274	170,926	19,490	27,244
1997	175,126	185,094	25,265	27,703
1998	219,073	213,996	20,458	29,954.60
1999	239,228	187,558	21,738	31,139.40
2000	236,801	181,268	25,720	23,308.30
2001	239,311	194,226	24,398	28,378
2002	253,063	197,902	30,644	30,091
2003	241,823	204,380	30,677	33,882
2004	227,523	207,307	43,950	30,421
2005	259,831	230,763	56,355	32,595

2006	269,878	248,659	84,533	33,778
2007	260,099	244,128	85,087	26,193

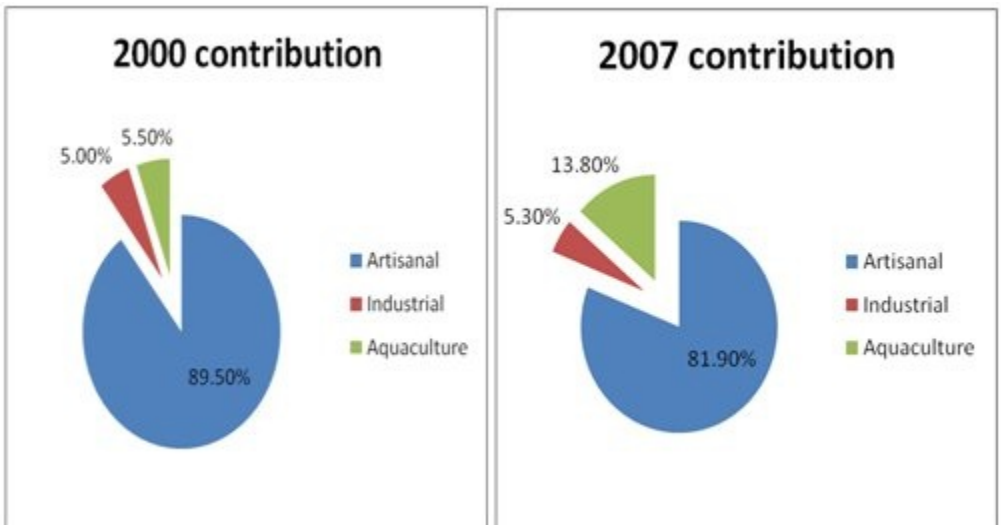

Fig. 2: Percentage contribution of various sources of fishing to the overall fish production in year 2000 and 2007

Since the propagation of *Clarias gariepinus* through hypophysation was initiated in Western Nigeria in 1973 (Elliot 1975), the procedure has been widely practiced throughout Nigeria thus leading to an increase of farm-raised catfishes from the 80's to date. The favoured catfish species include: *Clarias gariepinus*, *Heterobranchus bidorsalis*, *Clarias X Heterobranchus* (hybrid *Heteroclarias*) and *Clarias nigrodigitatus*. The Clariid fishes are highly favoured in aquaculture because of its hardiness, ability to accept a wide variety of natural food organisms and cheap supplementary feed (FAO, 2000). It is very well appreciated in Nigeria (where it is often referred to as lung fish). It was observed that of the over 30,000MT of various freshwater and brackish water fish species raised in the year 2000, catfishes were more abundant next to tilapias (Fagbenro et al, 2003).

A poly-culture of *C. gariepinus* and tilapia species (e.g *Oreochromis niloticus*) is also practiced. Recently, the introduction and adoption of the intensive water recirculatory system (WRS) for fish culture had made a significant contribution to the total amount of aquaculture production in Nigeria.

As artisanal industrial fishing is going on, many entrepreneurs are also going into fish farming with the result that we now have 'live' fish pools in markets all over many Nigerian metropolitan cities and towns today. Nigeria is currently the largest producer of catfish in

Africa, and the local parlance, fish pepper-soup, is readily available in many restaurants and hotels. The Federal Department of Fisheries (FDF) in 2007, estimates the total available land for aquaculture development as 1.7 million hectares, of which only 60,000 hectares are utilized. Also of the estimated aquaculture production potential of 2.5 million tons, only 85,087 tons are produced per hectare. Consequently, it is glaring that fish supply from aquaculture/industry potential is currently under exploited.

Conclusion

Fishing and the fisheries of Nigeria have grown over the years, threatening a depletion of natural water resources. The need to meet the domestic and export fish requirement of the nation has become the drive for the Nigerian fisheries development, which is gradually tending towards culture fisheries centered on Clariid catfishes. Many businesses are being built round it and Nigeria is currently the largest producer of catfish in Africa. However, the fish supply from aquaculture/industry potential is currently under exploited.

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THE GENUS ALOE IN WEST AFRICA

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It is curious to see the old name *Aloe barteri* appearing again in our journal (Okafor, 2010). It first appeared here over 50 years ago (Keay, 1957) but a few years later it disappeared into synonymy.

The first edition of the *Flora of West Tropical Africa* (Hutchinson & Dalziel, 1936) includes *Aloe barteri* as the only West African species in this genus. The name was published in 1880 by Kew botanist John G. Baker, based on a plant that had been collected in Nigeria by Charles Barter, a British gardener who participated in W. Baikie's second Niger Expedition (Baker, 1880).

A British forestry officer in Nigeria, Ronald W. J. Keay, realised that the aloes he had seen in Nigeria represented more than one species, and he made a study of them. He concluded that the type specimen of *Aloe barteri is a mixture*, consisting of a leaf of one species and an inflorescence of another. He identified the leaf as *Aloe schweinfurthii*, also published by Baker in 1880 for material collected in Sudan by German botanist Georg A. Schweinfurth.

Fig. 1. Aloe*buettneri*, in grassland in Togo

Fig. 2. *Aloe xkeayi*, in disturbed grassland on the Accra Planin, Ghana

Fig. 3. *Aloe macrocarpa*, on the Jos Plateau, Nigeria

The inflorescence he identified as *Aloe buettneri*, described in 1905 by the German landscape gardener and botanist Alwin Berger, based on a specimen collected in Togo by Oskar A. R. Büttner, a German botanist who was head of a research station in Togo. Thus Baker's *Aloe barteri* became a synonym, *pro parte*, of *A. buettneri* and *A. schweinfurthii* (Keay, 1963).

Another species was also found in Nigeria by Keay, and this he identified as *Aloe macrocarpa Todaro* var. *major* A. Berger. *Aloe macrocarpa* had been described by Italian botanist Agostino Todaro from a specimen collected in Ethiopia by German botanist Georg H. W. Schimper (Todaro, 1875). The West African variety was distinguished by its slightly larger flowers and fruits (Berger, 1908).

During his travels in West Africa, Keay found yet another distinctive plant in Ghana. This was shown to Gilbert W. Reynolds, who was travelling around Africa studying the genus, and he described it as a new species, *Aloe keayi* (Reynolds, 1963).

Thus, four taxa are recognised in the second edition of the *Flora of West Tropical Africa* (Keay, 1968). Some other names that had been published for West African aloes were absorbed into synonymy, but the accepted species were as shown below:

Aloe buettneri A. Berger (1905)
Aloe keayi Reynolds (1963)
Aloe macrocarpa Todaro var. major A. Berger, (1908)
Aloe schweinfurthii Baker (1880)

Fig. 4. *Aloe schweinfurthii*, on a rocky hill in Benin Republic

However, a later investigation of *Aloe keayi* revealed that it is a natural hybrid between *A. buettneri* and *A. schweinfurthii* (Newton, 1976). It is now known as *Aloe ×keayi Reynolds* (pro sp.). The hybrid had been brought into cultivation as an ornamental plant, and so the cultivar name *A. ×keayi* 'Akosua' was published (Newton, 1977). Also, the variety major of *A. macrocarpa* is not recognised as distinct in the latest account of the genus (Carter et al., 2011).

Keay (1968) also mentions that the medicinal plant *Aloe barbadensis* Miller is cultivated in Sierra Leone and West Cameroun. This is an ancient cultivar that is believed to have originated in the Arabian Peninsula (though it is not known to occur there in the wild today) and has spread around the tropics and sub-tropics during more than 2,000 years. The correct

name is now *Aloe vera* (L.) Burm. *f.* (Newton, 1979). It is now widely cultivated and is the basis of a large-scale industry in medicinal and cosmetic products.

Family relationships have also changed in time, especially as a result of DNA studies, and the aloes are no longer classified in the family Liliaceae. They have been variously placed in the Aloaceae or the Asphodelaceae, but according to the latest scheme they belong in the Xanthorrhoeaceae (APG, 2009).

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MEDICINAL PLANTS IN THE IITA FOREST

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Medicinal Plants in Nigeria

Medicinal plants are of vital importance in maintaining health and curing illness in both people and animals throughout Nigeria. About 85% of the population depends on traditional medicine, both of necessity and choice (Okujagu 2006). The high price of pharmaceutical drugs and shortage of trained medical personnel and facilities means that "western" medicine is not an option for most people, whereas traditional healers and herbs are readily available and affordable. Another advantage of traditional medicine, though one which is more difficult to quantify, is that it answers emotional and spiritual needs as well as physical. Those who are ill, suffering or dying need the assurance of the familiar; trust is an important and often overlooked part of the equation. It is a prerequisite of any patient-practitioner relationship and is a particularly important part of traditional medicine, where health and healing are closely connected to family and community.

This is not to say that traditional medicine is a thing of the past. Developments in pharmacology recognize that the complex chemistry of traditional herbal remedies causes fewer side effects and less drug resistance than compounds isolated or synthesized from plants. It is estimated that 300 million people are now infected with malaria parasites and that 2.7 to 3 million of them die each year as a result. Resistance to antimalarial drugs is increasing and resistant strains can have a mortality rate of 15-20%. Combining a pharmaceutical antimalarial with the Chinese herb *Artemisia annua*, which has multiple antimalarial compounds, has been found more effective in eliminating parasites and less likely to cause resistance (Spelman 2009). Most traditional herbalists would not be surprised at this; after all, human beings and beneficial plants have evolved together, resulting in what may be described as metabolic synergy.

Nigeria is a vast and complex country, with over 250 ethnic groups (Okujagu 2006) and a rich and diverse flora which includes over 7300 species of higher plants. It is therefore likely that hundreds of species are used medicinally by traditional practitioners in many different systems of healing. To give just one example, the Ifa divination and

Herb collector, Bode Market, Ibadan

healing system of Yorubaland is an ancient but well-preserved oral tradition (Jegede 2010), both in Nigeria and beyond. Today it is practiced at home and abroad, especially in Latin America and parts of the United States of America where, under the guise of Santería, some 550 herbs are now used in ceremonies and cures (Murphy 1988).

Recording this corpus of indigenous knowledge, which is largely unwritten, is a daunting task, though one that is an avowed aim of Nigeria's National Biodiversity Strategy and Action Plan. It recognizes that sustainable utilization of resources, in terms of medicinal plants, requires "the active collaboration of local communities, traditional healers, ethno-botanists and taxonomists". The aim is to compile a national database of ethno-botanical and ethno-medicinal information as a basis for regulating exploitation of a given species or habitat. The Federal Ministry of Science and Technology, through the parastatal Nigeria Natural Medicine Development Agency (NNMDA) and other key stakeholders, has made a start on documenting the country's medicinal plants. Beginning in 2006, the NNMDA, whose mission is "Promoting Traditional Medicine through Research", published a series of books describing Nigerian medicinal plants according to geopolitical zones. These volumes are the closest yet to a reference work on the subject and could provide the basis for a Nigerian herbal pharmacopoeia i.e. a comprehensive work with more accurate and detailed descriptions of plants, chemical constituents and uses according to ethnic group and region.

Supply and Demand

Though the NNMDA series is a step in the right direction, it gives no indication if a species is indigenous or introduced, little or no information on whether it is common or rare, and no guidelines on sustainable harvesting. As the climate changes and habitats are overexploited and destroyed, these categories are becoming more and more important. There is, after all, little point in describing a medicinal plant and its uses if supplies are no longer available!

The mismatch between supply and demand of medicinal plants was recognized as a serious problem over 20 years ago when the first International Consultation on Conservation of Medicinal Plants by health professionals and plant conservation specialists took place in Chang Mai, Thailand in 1988. The Chang Mai Declaration (see Appendix) called for urgent measures for all countries to halt habitat destruction, erosion of traditional health care systems and unsustainable harvesting practices, whether caused by local pressures and/or commercial interests. This meeting was a milestone that put medicinal plant conservation firmly on the agenda. Certain countries, such as China and India, have subsequently made giant strides in conserving and cultivating medicinal plants and in integrating traditional and modern medicine. However in some countries the situation has worsened, especially in sub-Saharan Africa where the effects of global warming, warfare and rising populations, often compounded by poverty, corruption and poor standards of

education and governance, make it very difficult to implement effective conservation measures. Meanwhile, global demand for medicinal plants rises steadily. Some 3000 plant species are currently in international trade, the majority wild-collected in developing countries (Brinkman and Hughes 2010). This number increases every year as "new" herbs are discovered through unprecedented levels of scientific research into phytomedicines, rising consumer demand for herbal products, and expanding sales through the World Wide web.

Though some of the most widely used medicinal herbs are common roadside plants, many are forest species that depend on a cooler, shadier environment for their survival. Forests have of course always been a resource for local people who hunt and collect edible and medicinal plants, as well as other forest products such as honey, resins, gums, construction materials, fibres and dyes. Ironically, just as we need forests more than ever to mitigate the effects of global warming and conserve biodiversity, deforestation for agriculture, timber, mining and urban expansion mean that these irreplaceable assets are rapidly becoming depleted. This problem is particularly acute in Nigeria which has an extremely high rate of deforestation; less than 10% of the land area is still forested and forests continue to decline at 3.5% per annum. Meanwhile every year the population increases at around 2%.

The IITA-Leventis Foundation Forest Restoration Project

The IITA-Leventis Foundation Forest Restoration Project began in 2010 and the first phase is for four years. It aims to replant forest in land no longer required for experimental crops and to restore degraded areas of existing secondary forest. Before planting began, six experimental areas were set up to record the growth of seedlings under different conditions. Open situations give better results than in the shade where there is competition from other trees and shrubs. During the first phase of reforestation, an area of farmland approximately 60m wide and over 1km long, beside the largest of IITA's nine lakes, is being replanted. Invasive weeds have also been cleared from open areas along forest trails and planted with trees. Over fifty species of trees have been planted, almost all of which have medicinal uses.

During the first year two nurseries were established to produce trees and other plants from seeds and cuttings collected within the IITA campus at Ibadan and at other forest areas as time and resources permit. Wildlings – self-sown seedlings that occur in places unsuitable for their development – are also a valuable source of nursery stock as by definition they are at least a year older than seedlings of the same species. Detailed records are kept of propagation methods. The nurseries hold stocks of over 33,000 plants belonging to more than 60 species which are for planting on campus and for sale.

In order to assess changes in biodiversity as replanted and restored areas of forest develop, the Project carries out surveys of birds, butterflies and medicinal plants. Sharing the information gained is done on-line as well as through publications and lectures, and by organising educational projects and events for school children in the Ibadan area.

The existing 350-ha secondary forest within the IITA campus has been protected since the late 1960s when IITA developed the Ibadan site as its headquarters but persistent poaching, before and after enclosure, has impacted on populations of wildlife and medicinal plants. Protecting the forest through increased security is now a high priority. The entire forest area has become a conservation area and no hunting or collecting is allowed. Visitors are encouraged, as are recreational activities such as hiking, photography, bird watching and adventure walks for children.

The Project also seeks to partner with other organizations and institutions which utilise the forest's resources for research and educational purposes. There are strong links with, for example, universities and research organisations in the region, the A P Leventis Ornithological Research Institute (APLORI) in Jos, the Butterfly Conservation Society, Ghana, Pro-Natura International, CERCOPAN primate research centre in Calabar, CENRAD in Ibadan and the Nigerian Field Society, resulting in a steady stream of visitors and a succession of PhD students and undergraduates on the Student Industrial Work Experience Scheme (SIWES).

What exactly is a medicinal plant?

Finding out which medicinal plants are present in the forest is the first step to conserving this valuable resource. The definition of a medicinal plant in terms of function is one that has beneficial effects on health, vitality and appearance. Plants are chemical factories powered by the sun and nurtured by the earth, upon which all other living things depend. These chemicals have a huge range of applications in curing disease, healing trauma, relieving pain, spasms and inflammation, calming distress, and preventing infection. Some control parasitic organisms, fungi, bacteria and viruses, while others are astringents that contract tissues, emollients that soothe and protect, and tonics or stimulants that improve functions. Others are pigments or scents that can change appearance and mood; body paints, cosmetics and perfumes are not only important in culture and ritual but can also offer skin protection against insects, parasites and sun. Any medicinal plant can be toxic in excess and it is the skill and experience of the healer to judge effects and side-effects. As the Swiss physician and alchemist Paracelsus (c.1493-1541) wrote: "All substances are poisons; there is none which is not a poison. The right dose differentiates a poison and a remedy."

Medicinal herbs are much harder to define as plants than they are in terms of their uses. They can be any kind of plant, from a mighty forest tree to short-lived annual, and the part of the plant used may differ widely too, from bark and root to leaves, flowers, fruits and seeds, or fluids such as sap and oils. To complicate matters further, a medicinal plant in one region may not be recognized elsewhere, or it may be used in quite different ways. In traditional medicine in parts of Africa, Prunus africana is used locally for minor ailments such as stomach ache and poor appetite while as a phytomedicine in Europe it is taken for

prostate problems. The conclusion therefore is that medicinal plants are a cultural phenomenon. They are plants with a human face, defined only by our use of them.

The Checklist of IITA Flora

Any study of medicinal plants must begin with the painstaking process of correct identification. The basis for a checklist of IITA flora was provided by research carried out at IITA in the 1970s by Dr. John Hall and Dr. David Okali (Hall and Okali 1978, 1989), as part of which they prepared an internal report on the vegetation of the two watersheds within the campus. This report includes a list of 327 species identified in an area to the south of the existing IITA forest reserve. To these records I add new records of species as I collect, photograph and identify them. The checklist currently exceeds 425 plant species of which over 380 – about 90% – have medicinal uses recorded in West Africa. It is updated quarterly and can be obtained as an Excel file on request from D.Bown@cgiar.org.

Medicinal Plants and Conservation

Alongside this ongoing survey is the task of assessing which medicinal plants are common. Many are weeds which are abundant and widespread. Then there are those species that used to be quite easy to find but are less common than they were, probably because of habitat destruction and over harvesting. Not surprisingly, many of these are rainforest species, dependent on the shade, shelter, humidity and humus-rich soils which are unique to forests. Assessing the conservation status of these species entails looking at methods of harvesting and the ecology of the plant. Some species immediately ring alarm bells if they are slow growing and destructively harvested i.e. cut down or uprooted, as is the case with many lilies, tuberous aroids, orchids, or stripped of bark or felled, as often quite unnecessarily happens with trees and shrubs. Others are inevitably 'at risk' if they need a pollinator or seed distributor that is now rare or absent. Though not immediately obvious, this means that although there are apparently healthy plants, there are few if any 'new recruits'. In IITA forest the enormous fruits of the African breadfruit, *Treculia africana*, fall to the ground and germinate as a ball of seedlings beneath the parent tree, where they cannot develop, as there are no longer forest elephants to distribute them. Other species that may fail to regenerate in spite of producing viable seed are certain members of the genus Gardenia and possibly the related genus *Rothmannia*. They produce hard, extremely durable fruits that stay on the plant unless eaten by herbivores such as elephants or antelopes.

Local demand for medicinal plants is also being researched by communicating with herb traders and collectors. The aim is to plant a demonstration garden and assess whether there are species that could easily and profitably be cultivated in the community. Cultivation in home gardens gives wild populations chance to recover, provides local employment and income, and reduces the risks involved with substitution and/or adulteration which tend to happen when the target species becomes harder to find. And lastly we need to look at methods of wild harvesting so that both plants and people can have sustainable futures.

Medicinal Plants in IITA Forest

As research progresses, the aim is to publish an identification guide to some of the interesting medicinal plants in the IITA forest. The following species are candidates for inclusion.

Alstonia boonei Apocynaceae (*awùn*). There are over 40 species of trees and shrubs in this genus, found all over the tropics. Several are important in various parts of the world for two main reasons as the common name 'fever bark' indicates. The bark of these trees is very effective at lowering temperature and in many regions is important for treating malaria. Though slightly less effective than quinine, it is better tolerated and has fewer side effects. It also acts as a painkiller, expels intestinal worms and serves as an antidote to snakebite and poisoning. Like all plants in the *Apocynaceae* family, it contains white latex and needs care when handling as it can cause blindness if it gets in the eyes. Careful removal of small patches of bark does not cause the tree long term damage whereas ringbarking (removing bark right round the trunk) and indiscriminate hacking will weaken and kill tree.

Baphia nitida Leguminosae-Papilionaceae (*ìyèròsùn*). This small tree, known as camwood, has dark red, heavy wood, used to make drumsticks, mortars and pestles and the spokes of state umbrellas to keep sun and rain from dignitaries. Economically it was once important as a source of red dye. During colonial times it was exported from West Africa to textile mills in Europe where it was ground as a pigment for dyeing wool and preparing cotton and linen for indigo dyeing. Traditionally the powdered heartwood is mixed with shea butter from the savannah tree *Vitellaria paradoxa* to ease joint and muscle pain, and to beautify the skin. It is also important as body paint for ritual purposes and, in Yorubaland, to protect against bee stings when collecting honey. Roots and leaves are also used medicinally to control bleeding and to heal wounds and sores.

***Cleistopholis patens* (salt-and-oil tree) foliage**

Cleistopholis patens Annonaceae (*apàkò*). The descriptive name patens means 'shining', as in patent leather, referring to the attractive high gloss leaves of young trees, which stand out in the bush as if varnished. This pioneer species is very fast growing, reaching 13m in 7 years, and is being planted at IITA in large numbers, especially in wet ground where it grows especially well. The Yoruba name means 'killing cough' as this tree is invoked in Yoruba incantation to cure coughs. Another common name is salt-and-oil tree as the sap looks like palm oil and tastes salty. The bark and leaves are widely used in traditional medicine, mainly to lower fever and expel intestinal parasites.

Holarrhena floribunda Apocynaceae (*ìréná*). Commonly known as the false rubber tree, this small ornamental tree occurs in drier forests and regenerating areas, often looking more like a shrub in fallow or abandoned farmland. From February to July, as the new leaves appear, it produces clusters of fragrant white flowers. These are followed by pairs of pencil-thin pods, up to 60cm long, which hang down like beans, splitting open when ripe to release hundreds of seeds that are borne away by tufts of long silky brown hairs. As the name suggests, the false rubber tree yields latex which resembles that of the real West African rubber tree, Funtumia elastica, but is inferior. Both bark and leaves contain

alkaloids that are effective in treating amoebic dysentery, diarrhoea and malaria.

Hoslundia opposita Lamiaceae (*efinrin*). This spreading shrub bears conspicuous white-stemmed panicles of orange berries. The leaves, though poisonous, are regarded as good for children's illnesses and are an ingredient of the Yoruba *àgbo* pot. This consists of a decoction of various herbs which are simmered in a clay pot. Heating the plant parts reduces toxicity. Usually three igneous pebbles are added to increase potency and food items are sometimes added for palatability, together with the blood of an animal. The herbal concoction is either drunk while warm, bathed in or inhaled while covering the head with a cloth.

Milicia excelsa Moraceae (*irókò*). Heavily exploited since colonial times for its fine timber, mature irokos are now a rarity in Nigeria. Attempts have been made to establish plantations but with little success because when young plants are exposed to high light levels and low humidity they are affected by a gall which destroys the growing point. This revered tree is dioecious; male trees bear long catkins and females produce numerous small green sausage-shaped fruits that are relished by bats and widely distributed. The seeds are tiny and very difficult to remove but germinate readily if sown fresh. Iroko bark is used medicinally to treat skin conditions. It has astringent effects and relieves pain and inflammation. Traditional Yoruba healers often add a piece of bark to medicinal preparations to increase efficacy. Iroko timber is sometimes pitted with lumps of crystalline calcium carbonate which are formed from the sap, perhaps as a result of damage to the tree. These are ground to make a cure for headaches. From a distance, iroko can be confused with Antiaris (see below).

Antiaris toxicaria subsp. *welwitschii* var. *africana* (or *Antiaris africana* as it is often referred to) *Moraceae* (*akiro* or *oro*). Commonly known as false iroko or bark cloth tree in English, this majestic tree is superficially similar to iroko with very dark green, broadly elliptic leaves. They can be told apart by their bark, which is dark grey-brown and tessellated in iroko and pale and smooth in *Antiaris*. The fruits are also different in appearance, those of *Antiaris* being small, red and velvety, with a single large seed. They attract bats and a range of other animals and birds, so that fruiting trees are often targeted by hunters. The sap of false iroko is very toxic, containing digitalis-like compounds that affect the heart and irritant substances that can cause blistering of the skin. Handling foliage and bark therefore needs care. In spite of its toxicity, false iroko has a range of medicinal uses, especially as a purge for expelling intestinal parasites and in the treatment of leprosy and hepatitis.

Mucuna sloanei Leguminosae-Papilionaceae (*ewé- ìnà*). This vigorous climbing bean has large waxy yellow flowers and ridged pods which are covered with short-cropped hairs. The hairs detach if touched or blown by the breeze, causing both mechanical and chemical irritation to skin, eyes and mucous membranes. If swallowed in sufficient quantity, they can

prove fatal; cases of poisoning by adding hairs to food have been recorded. The seeds are very toxic too, containing various alkaloids, including levodopa (often abbreviated to L-Dopa) which is used in pharmaceutical drugs to treat Parkinson's disease.

Myrianthus arboreus Cecropiaceae (*ìbisèrè*). There is no mistaking this tree with its enormous digitate leaves that reach 70cm in diameter, with leaflets up to 50cm long and 25cm across. Commonly known as the soup tree, young leaves are an ingredient of a very popular soup in southeast Nigeria. They are also used medicinally to treat dysentery and relieve fever in infants. When in bloom from January to April, the male flowers are conspicuous, being yellow and resembling branches of coral. The female flowers are insignificant but are followed by irregularly shaped chrome yellow fruits, which are 10-12cm across and contain up to 15 large seeds, each enclosed in a polygonal segment. The flesh is edible raw and the seeds, when shelled and cooked, are very nutritious, containing oil, proteins, sugars and significant amounts of cystine, an amino acid which is often deficient in the typical West African diet.

Soup trees are often a gathering place for women with small children. They often grow beside streams and their low branching, multi-stemmed habit makes an ideal playground for adventurous youngsters.

Philenoptera cyanescens syn. *Lonchocarpus cyanescens Leguminosae-Papilionaceae* (*èlú*). The Yoruba indigo vine is a large forest liana but if unable to climb because there is no support, it has a more shrubby habit. In cultivation this is an advantage as it is easily harvested. All parts yield indigo dye but usually only leaves and shoots are collected. They are pounded, fermented and dried in balls about 10cm across which are sold in markets to dye fabrics and tint the hair. Yoruba indigo contains indigotin, the same pigment as in Asian indigo (*Indigofera tinctoria*) but in smaller amounts, though this could no doubt be increased through selection. Roots and stems contain compounds with proven anti-arthritic effects. Other traditional uses include the treatment of yaws, leprosy and skin diseases.

***Piper guineense* (West African pepper) leaves & unripe berries**

Piper guineense Piperaceae (*iyèré*). West African pepper is very similar in constituents to the more familiar pepper, Piper nigrum, which has been traded from Asia since ancient times as a condiment and food preservative. Pepper also has medicinal uses, improving digestion and relieving bronchial congestion. The seeds of West African pepper are used in exactly the same ways as Asian pepper and the mild peppery leaves are added to soups and stews. The roots can be harvested as chew sticks, which are apparently popular in the Ibadan area. Vines climb quite high into the forest canopy before flowering and fruiting take place, and are often destructively harvested by pulling down the whole plant. In colonial times there were plantations of West African pepper along the coast and the King of Portugal had a monopoly over the trade. In a bid to popularize the product, he claimed it was twice as strong as Asian pepper. Unfortunately he also tried to charge twice as much, after which the trade went downhill.

Pterocarpus osun Leguminosae-Papilionaceae (*osùn*). This tree reaches 30m high and is a fine sight from August to November, with upright panicles of scented yellow flowers, followed by papery disc-shaped fruits up to 15cm across, which are the largest in the genus. This is not a regular occurrence as this species has what are known as mast years, which means that it produces abundant flowers and fruits only once every few years. Another remarkable feature is the bright red sap which is used as fake blood in painting ju-ju figures.

The heartwood contains an intense red pigment which is used in traditional African cosmetics and in more recent times as a stain in microscopy. The ground leaves are used to make the traditional black soap, *dudu osùn*, and the twigs are ingredient in Nicosan, a Nigerian herbal remedy created by the Rev. P.O. Ogunyale, which has been clinically tested and approved for the treatment of sickle cell anaemia (Nathan et al. 2009). This phytomedicine also contains seeds of West African pepper (*Piper guineense*), *Sorghum bicolor* leaves and cloves (*Syzygium aromaticum*).

Pycnanthus angolensis Myristicaceae (*àkomu*). African nutmeg is a fast-growing evergreen tree, related to true nutmeg (Myristica fragrans) which originated in the Indonesian Molucca Islands. The fruits are similar in appearance but smaller and less aromatic, splitting open when ripe to reveal a glossy brown seed inside a red aril. Their main importance is as a source of bitter, solid yellow vegetable fat which is used for making soap and candles. The seeds are so rich in oil that traditionally they were threaded and burnt as a hanging candle. They are also used medicinally to make a mouthwash for thrush and mouth ulcers, and ointments for skin diseases and joint problems.

Rauvolfia vomitoria Apocynaceae (*asoféyeje*). This small shrubby understorey tree produces tiny fragrant white flowers and clusters of bright red berries. Traditionally used to treat mental and nervous disorders and snakebite, it is also now grown commercially in some parts of West Africa for the pharmaceutical industry as a source of alkaloids. The main constituents are reserpine and ajmaline which are used in psychiatric drugs and in medication to lower blood pressure. Originally in the medicinal plant trade these alkaloids were obtained from the Asian species, *R. serpentina*, a much smaller plant that was simply pulled up by collectors, becoming so scarce that in 1997 it was protected by international legislation and India banned its export. Collectors then turned to its African relative, *R. vomitoria*, which in turn is now endangered in Ghana. Though too large to uproot easily, this species also suffers from destructive harvesting. As alkaloids are most plentiful in the bark of stems and roots, plants are often cut down or damaged so severely that they die or take many years to recover.

Solenostemon monostachys, subsp. *monostachyus Lamiaceae* (*ironòpòló*, *aránpòló*). The Yoruba name means 'generation of frogs', presumably because it grows along forest trails in damp places where frogs are likely to jump out. This annual plant of the mint family is a household remedy. It is often added to the Yoruba agbo pot to treat common minor ailments, especially in children. The whole plant, sap or leaf juice is used. The leaves are also eaten as a vegetable and it is sometimes cultivated for this purpose. Even the cooking water has medicinal uses to treat parasitic foot infections.

Sphenocentrum jolleyanum Menispermaceae (*àjò*). This small understorey shrub grows in deep shade in the forest. It has irregularly lobed leaves, minute flowers along the stems and clusters of bright orange, egg-shaped fruits with seeds surrounded by a slimy gum which was once used by school children as an adhesive for gluing paper. The fruits are refreshing to suck when trekking through the forest and suffering from fatigue. They are also made into a cough medicine with lemon juice and fruits of West African pepper (*Piper guineense*). It is *àjò* root and bark that has the most potent medicinal uses though, treating high blood pressure, breast tumours, tropical ulcers, and bleeding, but perhaps best known as an aphrodisiac for men. Chemical analysis of this plant and research into its effects show that it does indeed have potential as an African Viagra. It is also an effective anti-inflammatory.

Picking fruits of *Sphenocentrum jollyanum*

***Strophanthus hispidus*, arrow poison plant in IITA forest**

Strophanthus hispidus Apocynaceae (*isàgèrè*). This liana is the archetypal arrow poison plant of West Africa, containing glycosides that stop the heart more or less instantly. It was often planted in villages to have at hand for hunting and pruned as a shrub to give easy access to the fruits and their highly toxic seeds. Other parts, including juice, leaves, stems and root bark, are used specifically for syphilis and more widely for many other problems, from snake bite to intestinal parasites and head lice. Interestingly, research has also shown that leaf extracts control blood clotting in internal haemorrhage caused by the venom of certain snakes, so this is one cure for snake bite that might actually work. Both leaf and root extracts also have antibacterial effects, controlling *E-coli* and *Staphylococcus* infections. This is one of four Strophanthus species recorded in IITA forest, including *S. gratus* which has potential in the treatment of prostate cancer, and *S. hispidus*, a source of cardiac glycosides in the pharmaceutical industry.

Tapinanthus heteromorphus Loranthaceae (*àfòmó*). *Tapinanthus* is the largest genus of mistletoes in West Africa. These evergreen parasitic shrubs grow on various kinds of trees and are inconspicuous unless flowering, or unless the host is deciduous. In European herbal medicine, mistletoe is used mainly in the treatment of nervous complaints and certain cancers, but in African tradition the uses are dictated by the kind of host plant, even though only the mistletoe is used. When growing on *Vitex doniana* for example, mistletoe is a

***Tapinanthus sp.* (mistletoe)**

remedy for leprosy, but when on a baobab it is used for mental illness, while various other hosts confer protection against sorcery, evil spirits etc. In Senegal especially, mistletoe from various hosts is used in agriculture to protect crops and increase yields. It is an adaptable plant; at IITA we have mistletoe on the invasive alien weed *Leucaena leucocephala* which may weaken it physiologically and certainly breaks an occasional tree with its weight.

Thaumatococcus daniellii Marantaceae (*eèran*). Yoruba soft cane is a forest understorey plant that forms conspicuous large clumps over 2m high. Much less noticeable are the fruits which are borne at ground level and remain cryptically brown until fully ripe, when they turn bright scarlet. Plants are propagated mainly by division and are often cultivated in cola plantations where it is handy for wrapping cola nuts for market. The leaves are in fact a commodity in themselves, sold in bundles to wrap food items before cooking, to which they impart a pleasant flavor. The fruits contain three seeds which are not edible but are surrounded by an edible jelly. This substance is intensely sweet but has zero calories, so is enjoyed for its flavor rather than for nutritional reasons. It can be used to sweeten foods and drinks and has the effect of making anything else tastes sweet for some time afterwards. The sweetness comes from gel-like proteins which in a raw state are 2-3000 times sweeter

than sugar and when purified are 11,000 times sweeter. These proteins are therefore the sweetest known substance, natural or synthetic, and are of considerable interest to the food industry.

Treculia africana Moraceae (*afon*). African breadfruits are unmistakeable, resembling vegetable footballs about 30cm in diameter and 10kg in weight. This tree, which reaches over 25m high, occurs in drier tropical forests but usually near water, such as the banks of streams. It is sometimes cultivated or protected in villages both for its fruits and because it apparently causes "dew" – perhaps secretion of water from the leaves, technically called guttation - which keeps the ground moist. The bark and roots are ingredients in the Yoruba *agbo* pot to treat worms in children. Ground bark is also mixed with oil as a tonic body rub after illness. The fruits are edible but not very palatable and are valued mainly for their nutritious seeds. To extract the seeds, which are embedded throughout the flesh, fruits are left to rot and then soaked in water. The seeds are an important commodity in some areas, eaten raw, roasted or fried and also pounded to make a nutritious thickener for soups and stews.

Voacanga africana Apocynaceae (*ako-dòdo*). This small understorey tree has fibrous bark and white sap. Various parts are used in traditional medicine as a dressing for skin problems, such as eczema, boils, sores and scabies. Extracts are also taken internally to treat angina, kidney problems, hernia, gonorrhoea, convulsions and psychiatric disorders, and the latex is applied to tooth decay. In common with many species in the Apocynaceae family, *Voacanga* contains many different alkaloids with a wide range of medicinal applications, notably as a cerebral stimulant and cardio-tonic (Brendler et al. 2010). Some 1600 tons of seeds are exported from Ghana and Côte d'Ivoire annually, mainly to France and Germany where they are processed by the pharmaceutical industry. Research indicates that *Voacanga* has antifungal, antimicrobial and antioxidant effects which are utilized in drugs to treat debilitating illnesses such as gastric ulcers, amoebic dysentery and AIDS. One of the alkaloids, ibogaine, reduces withdrawal symptoms and cravings in alcoholics and drug addicts. The fruits are collected from the wild, often unsustainably, by cutting down trees (Koroch et al. 2009) though Cameroon started plantations and enrichment plantings in the early 1990s.

Conclusion

In 1988 the Chang Mai Declaration marked a turning point in our perception of medicinal plants as a free and apparently inexhaustible resource. Most countries now have the conservation of indigenous medicinal plants on their agenda, alongside the cultivation of those which are under threat or in great demand, especially for export. In addition to the obvious benefits of ensuring a sustainable supply of essential medicines, these strategies ensure the vitality of traditional health care systems and take the pressure off wild places to provide all the raw materials. By definition they also involve greater co-operation and

communication between all those involved in the medicinal plant supply chain i.e. growers, collectors, market traders, traditional practitioners, consumers and exporters. The net result is that there are more opportunities for leadership, training, employment and wealth creation, which form the basis of thriving communities. Standards of collection, cultivation and processing also improve, bringing more consistent information, codes of practice and better quality products which in turn give better healthcare delivery and more responsible environmental management. Nigeria, the giant of Africa and potentially the most influential country of the continent, needs many initiatives at federal, state, regional and community level to prevent further loss of forests and irreplaceable resources such as medicinal plants. The IITA-Leventis Foundation Reforestation Project is one small cog among many that have started to turn a much larger wheel of change.

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APPENDIX:

The Chang Mai Declaration
Saving Lives by Saving Plants

We, the health care professionals and the plant conservation specialists who have come together for the first time at the WHO/IUCN/WWF International Consultation on Conservation of Medicinal Plants, held in Chang Mai, 21-26 March 1988:

Recognise that medicinal plants are essential in primary health care, both in self-medication and in national services;

Are alarmed at the consequences of loss of plant diversity around the world;

View with grave concern the fact that many of the plants that provide traditional and modern drugs are threatened;

Draw attention of the United Nations, its agencies and member States, other international agencies and their members and non-governmental organizations to:

- The vital importance of medicinal plants in health care;
- The increasing and unacceptable loss of these medicinal plants due to habitat destruction and unsustainable harvesting practices;
- The fact that plant resources in one country are often of critical importance to other countries;
- The significant economic value of medicinal plants used today and the great potential of the plant kingdom to provide new drugs;
- The continuing disruption and loss of indigenous cultures, which often hold the key to finding new medicinal plants that may benefit the global community;
- The urgent need for international cooperation and coordination to establish programmes for conservation of medicinal plants to ensure that adequate quantities are available for future generations.

We, the members of the Chang Mai International Consultation, hereby call upon all people to commit themselves to Save the Plants that Save Lives.

REMINISCENCES OF STUDYING BUTTERFLIES IN NIGERIA

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A recently published paper on IITA, Ibadan by Bown *et al* (2011) in The Nigerian Field brought back memories of my time in Nigeria from 1978 to 1981. Then I was employed by Shell Petroleum Development Company of Nigeria as a geologist in Lagos. I spent a second period from 1987 to 1989 in Port Harcourt, in eastern Nigeria.

I was a member of the Lagos branch of the Nigerian Field Society (NFS), and regularly made weekend field trips with family, friends and colleagues to various sites in western Nigeria within easy reach by road from Lagos. These visits included the forested areas of Ilaro, Olokemeji and IITA, Ibadan. We made several day trips to IITA and also on one occasion stayed for a weekend. There I recorded and studied butterflies in the secondary forest in the vicinity of the lake area. These observations, over a very limited period, in the 28 species recorded at IITA are shown in Table 1. The butterfly species is shown with its collection number and date recorded. This applies to the three tables in the paper.

The paper by Bown *et al* (2011) mentioned the neighbouring previously forested areas of Ilaro and Olokemeji, which unfortunately seem now to have disappeared. In my time, these sites were still extensively covered with good mature secondary forest with sizeable trees etc. and were excellent sites for all fields of natural history. Colleagues were very interested in the bird life whilst I preferred to observe and record the presence of butterflies. My observations of both these sites, with species numbers being 34 and 35 respectively for Ilaro and Olokemeji, are given in Tables 2 and 3, which help to highlight the similarity in species found at all three sites. In total, some 81 different species were recorded at these three sites over a very limited number of days spent in the field. One will note that the Olokemeji list contains two observations from May 1989 when I again made a visit to this area of Nigeria.

Thirty years ago there were still good secondary forested areas nearer to Lagos such as Agbara and Isheri. These sites had some similarity in species to the previous Ibadan area sites, but differences were noticeable. Further afield, the Lagos branch of the NFS made a weekend field trip to the Omo forest. There the butterfly population was sufficiently distinct from the other areas previously mentioned. This is believed to be due to the Omo forest's covering a much larger area and having a greater diversity of trees with a good mix of primary and secondary forest types.

Studying butterflies during the period I was in Nigeria was initially quite difficult, because of a lack of good quality publications. I initially referred to Williams (1976), Boorman (1970) and the nine part series by Boorman (e.g. Part 1 in 1957) issued by Ibadan University Press. Then in 1980, D'Abrera published his book, *Butterflies of the Afro-*

tropical Region, which gave a very extensive and comprehensive review of butterflies likely to be encountered in Nigeria. Later, in 1984, Ackery and Vane-Wright published their book on Milkweed butterflies which highlighted the Danainae to be found in West Africa as well as their worldwide occurrence.

I at that time tended to accept the preferred classification of butterflies as cited by D'Abrera (1980). This classification recognised distinct butterfly families such as Danaidae, Acraeidae and Satyridae. I still find that this has some merit rather than lumping all these as subfamilies of Nymphalidae. I am not a specialist entomologist and I leave that particular debate to the specialists. Without having access to the most recent publication of Larson (2005), used by Safian and Warren in Bown *et al* (2011), I can only surmise that the above persons have for good reasons accepted a different classification scheme from that put forward by D'Abrera (1980) and previous entomologists.

However, to keep a comparison with the previously mentioned paper on IITA, in this review I have kept the same classification of subfamilies as used by Safian and Warren (2011), even though I have a distinct preference for the family nomenclature. However, I do find it difficult to support the Acraea genus within subfamily Heliconiinae and prefer the subfamily Acraeinae. I also feel that the Acraea genus name should be retained for all the species rather than bringing in the subgenus Actinote name, which is more a South American genus.

Colotis Danae
http://www.online-utility.org/image/gallery.jsp?title=Colotis+danae

Looking at the table of recorded species at IITA, I can now add some seven more species to the IITA checklist, including *Papilio sosia (?)*, *Appias phaola*, *Colotis danae*, *Acraea eponina*, *Acraea lycia*, *Acraea penelope* and *Junonia pelarga*. I consider *Acraea pseudegina* a subspecies of *Acraea natalica* (refer D'Abrera (1980). The butterfly named as *Papilio sosia* is based on comparing the collected specimen with the photographs in D'Abrera (1980). It is noticeably different from *Papilio nireus* but not quite the exact sameness as *Papilio sosia* in the publication. I trust that all these seven species may still be found at IITA, some thirty years later.

In a similar vein, the checklists for Ilaro and Olokemeji also show additional species to the published IITA list in Bown et al (2011). Since all the three sites show many similarities to each other, it is believed to be definitely possible that with further collecting, these additional species will eventually be encountered at IITA.

Junonia pelarga
http://commons.wikimedia.org/wiki/File:Junonia_pelarga.JPG

This paper has only been a short review of butterflies recorded and studied in the early 1980's, some thirty years ago. Then I was a very keen amateur entomologist and a very strong supporter of the Lagos branch of the NFS. I have retained my membership of the NFS to this day and look forward with interest every year to a new annual publication of the NFS. This paper I would like to dedicate to another NGS member, a very good friend and colleague, Peter Alexander-Marrack who recently died (see obituary in this journal).

Table 1. Butterflies Recorded at IITA, Ibadan, 1980-1981

Family: PAPILIONIDAE	**Subfamily: Papilioninae**
Graphium policenes	Cramer,1775 (DW082 – 10/80)
Papilio cynorta	Fabricius, 1793 (DW233, 272 – 8/81, 10/81)
Papilio nireus	Linnaeus, 1758 (DW084, 273 – 10/80, 10/81)
Papilio sosia ?	Rothschild & Jordan, 1903 (DW083 – 10/80)
Family: PIERIDAE	**Subfamily: Pierinae**
Appias phaola	Doubleday, 1847 (DW091 – 10/80)

Bellenois calypso	Drury, 1773 (DW276 – 10/81)
Colotis danae	Fabricius, 1775 (DW090 – 10/80)
Nepheronia thalassina	Boisduval, 1836 (DW235 – 8/81)
Family: NYMPHALIDAE	**Subfamily: Danainae**
Danaus chrysippus	Linnaeus, 1758 (DW088 – 10/80)
Amauris damocles	Fabricius, 1793 (DW089 – 10/80)
Family: NYMPHALIDAE	**Subfamily: Acraeinae**
Acraea encedon	Linnaeus, 1758 (DW275 – 10/81)
Acraea eponina	Cramer, 1780 (DW087 – 10/80)
Acraea lycia	Fabricius, 1775 (DW284 – 10/81)
Acraea lycoa	Godart, 1819 (DW234 – 8/81)
Acraea natalica pseudegina	Westwood, 1852 (DW085 – 10/80)
Acraea penelope translucida	Eltringham, (1896) (DW086 – 10/80)
Family: NYMPHALIDAE	**Subfamily: Nymphalinae**
Ariadne enotrea	Cramer, 1779 (DW094 – 10/80)
Bebearia theognis	Hewitson, 1864 (DW280 – 10/81)
Charaxes anticlea	Drury, 1782 (DW284 – 10/81)
Charaxes etheocles	Cramer, 1777 (DW285, 286 – 10/81)
Charaxes eupale	Drury, 1782 (DW282, 283 – 10/81)
Charaxes fluvescens	Aurivillius, 1891 (DW185, 186 – 3/81)
Charaxes pleione	Godart, 1824 (DW281 – 10/81)
Charaxes protoclea	Feisthamel, 1850 (DW184 – 3/81)
Euphaedra losinga	Hewitson, 1864 (DW277, 278 – 10/81)
Hypolimnas misippus	Linnaeus, 1764 (DW093 – 10/80)
Junonia pelarga	Fabricius, 1775 (DW287 – 10/81) dsf
Neptis morosa	Overlaet, 1955 (DW279 – 10/81)

Table 2. Butterflies Recorded at Ilaro, 1980 – 1981

Family: PAPILIONIDAE	**Subfamily: Papilioninae**
Graphium leonidas	Fabricius, 1793 (DW196 – 4/81)
Papilio bromius	Doubleday, 1845 (DW197 – 4/81)
Family: PIERIDAE	**Subfamily: Pierinae**
Appias sylvia	Fabricius, 1775 (DW148 – 1/81)
Colotis evippe	Linnaeus, 1758 (DW146, 147 – 1/81)
Nepheronia argia	Fabricius, 1775 (DW149 – 1/81)

Nepheronia thalassina	Boisduval, 1836 (DW060 – 9/80)
Family: NYMPHALIDAE	**Subfamily: Danainae**
Amauris niavius	Linnaeus, 1758 (DW144 – 1/81)
Amauris tartarea	Mabille, 1876 (DW143 – 1/81)
Family: NYMPHALIDAE	**Subfamily: Acraeinae**
Acraea bonasia	Fabricius, 1775 (DW140 – 1/81)
Acraea eponina	Cramer, 1780 (DW141 – 1/81)
Acraea lycoa	Godart, 1819 (DW227 – 8/81)
Bematistes epaea	Cramer, 1779 (DW228 – 8/81)
Bematistes tellus	Aurivillius, 1893 (DW142 – 8/81)
Family: NYMPHALIDAE	**Subfamily: Nymphalinae**
Antanartia delius	Drury, 1782 (DW153 – 1/81)
Aterica gallene	Bown, 1776 (DW063, 067, 068 – 9/80)
Bebearia absolon	Fabricius, 1793 (DW064, 156 – 9/80, 1/81)
Bebearia tentyris	Hewitson, 1866 (DW157 – 1/81)
Charaxes brutus	Cramer, 1779 (DW231 – 8/81)
Euphaedra losinga	Hewitson, 1864 (DW183 – 3/81)
Euphaedra xypete	Hewitson, 1865 (DW065 – 9/80)
Euryphene simplex	Staudinger, 1891 (DW069 – 9/80)
Euyphura chalcis	Felder, 1860 (DW198 - 4/81)
Euryphura ochracea	Bartel, 1905 (DW232 – 8/81)
Hypolimnas dubius	Palisot de Beauvois, 1806 (DW062, 152 – 9/80, 1/81)
Junonia pelarga	Fabricius, 1775 (DW155 – 1/81)
Neptis alta	Overlaet, 1955 (DW066 – 9/80)
Neptis intermedia	Schultze, 1917 (DW061 – 9/80)
Phalanta phalantha aethiopica	Rothschild & Jordan (1773) (DW070 – 9/80)
Pseudacraea semire	Cramer, 1779 (DW182 – 3/81)
Pseudoneptis ianthe	Snellen, 1882 (DW154 – 1/81)
Family: NYMPHALIDAE	**Subfamily: Satyrinae**
Bicyclus sylvicolus	Condamin, 1965 (DW229 – 8/81)
Family: LYCAENIDAE	
Oxylides faunus	Drury, 1773 (DW155 – 1/81)
Telipna acraea	Hewitson, 1851 (DW230 – 8/81)
Family: HESPERIDAE	
Tagiades flesus	Fabricius, 1781 (DW150 – 1/81)

Table 3. Butterflies Recorded at Olokemeji, 1980 – 1981

Family: PAPILIONIDAE	**Subfamily: Papilioninae**
Graphium adamastor	Boisduval, 1836 (DW097 – 12/80)
Graphium leonidas	Fabricius, 1793 (DW029 – 3/80)
Papilio bromius	Doubleday, 1845 (DW249 – 8/81)
Papilio dardanus	Bown, 1776 (DW250 – 8/81)
Papilio menesthus	Drury, 1773 (DW098 – 12/80)
Papililio nireus	Linnaeus, 1758 (DW248 – 8/81) & (DW585, 586 – 5/89— two specimens recorded in May 1989)
Family: PIERIDAE	**Subfamily: Pierinae**
Appias sylvia	Fabricius, 1775 (DW027 – 3/80)
Dixeia capricornus	Ward, 1871 (DW106 – 12/80)
Dixeia cebron	Ward,1871 (DW105 – 12/80)
Eurema hecabe	Linnaeus,1758 (DW104 – 12/80)
Family: NYMPHALIDAE	**Subfamily: Danainae**
Amauris niavius	Linnaeus, 1758 (DW102, 103 – 12/80)
Family: NYMPHALIDAE	**Subfamily: Acraeinae**
Acraea alciope	Hewitson, 1852 (DW100, 101 – 12/80)
Acraea lycoa	Godart, 1819 (DW251 – 8/81)
Acraea peneleos	Ward, 1871 (DW252 – 8/81)
Family: NYMPHALIDAE	**Subfamily: Nymphalinae**
Ariadne enotrea	Cramer, 1779 (DW108 – 12/80)
Bebearia theognis	Hewitson, 1864 (DW242 – 8/81)
Charaxes anticlea	Drury, 1872 (DW238 – 8/81)
Charaxes brutus	Cramer, 1779 (DW236 – 8/81)
Charaxes cynthia	Butler, 1865 (DW239, 240 – 8/81)
Charaxes eupale	Drury, 1782 (DW237 – 8/81)
Charaxes protoclea	Feisthamel, 1850 (DW256, 257 – 8/81)
Charaxes tiridates	Cramer, 1777 (DW241 – 8/81)
Euphaedra edwardsii	van der Hoeven, 1845 (DW244 – 8/81)
Euphaedra harpalyce	Cramer, 1777 (DW111 – 12/80)
Euphaedra medon	Linnaeus, 1763 (DW107, 245 – 12/80, 8/81)
Euphaedra ravola	Hewitson, 1866 (DW246, 247, 254 – 8/81)
Euphaedra themis	Hubner, 1806 (DW112, 243 – 12/80, 8/81)
Euriphene ampedusa	Hewitson, 1866 (DW255 – 8/81)

Hamamumida daedalus	Fabricius, 1775 (DW109 – 12/80)
Hypolimnas salmacis	Drury, 1773 (DW253 – 8/81)
Mesoxantha ethosea	Drury, 1770 (DW114 – 12/80)
Phalanta eurytis	Doubleday, 1847 (DW110 – 12/80)
Psuedacraea lucretia	Cramer, 1775 (DW113 – 12/80)
Salamis cacti	Fabricius, 1793 (DW030 – 3/80)

Family: HESPERIDAE

Pyrrochalcia iphis	(DW028 – 3/80)

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DOMESTIC ARCHITECTURAL STYLES OF OṢOGBO

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Style has remained one of the principal concerns of architectural historians and theorists from many countries since the sixteenth century (Arnold, 2002). The meaning, significance, domain and the origin of style have been discussed extensively by many authors including Gombrich (1998), Szambien (1993), Genova (1979) and Schapiro (1998) to mention a few. Gombrich (1998) defined style as any distinctive and recognizable way in which an act is performed or an artefact made or ought to be performed or made. Thus style entails individually recognized intellectual grouping of elements which define some distinct objects or concepts. As an art of the ensemble architecture entails the putting together of building elements in ways which become unique across a number of buildings and at particular periods in history. Thus particular styles become associated with those distinct periods in history when building elements come together in distinct ways.

Beattie (1994) affirmed that style is one of the most common classificatory dimensions used in architecture. He also explained that style in architecture is defined when a significant number of buildings exhibit a consistent set of architectural components which are assembled according to consistently used sets of rules of combination. Buildings which display similar sets of elements which are assembled in a similar manner will display characteristics that make them belong to the same group and will easily distinguish themselves from another group. The range of architectural elements which can be used to define style is large. It includes essentially all the visible physical elements of a building including, doors, windows, roofs, floors, walls, and structural components. It is thus generally agreed by architectural historians and critics that the floor, wall and roof are the most basic elements of architecture and they are common to all architectural styles and traditions. They may therefore be examined in relation to their special characteristics and the rules of geometry, symmetry and proportion for the purpose of classification.

Implicit and explicit attempts have been made to classify buildings into ‘types’ or ‘styles’. Ojo (1967) explicitly grouped Yoruba Palaces in relation to their geographical context and described their characteristics accordingly. Marafatto (1983) implicitly grouped domestic buildings by identifying those he described as ‘Brazilian Architecture’. Aradeon (1984) in an attempt to map a history of Nigerian Architecture grouped buildings into historical styles, and Osasona (2006), identified the ‘Colonial Style’ of architecture in Ile-Ife. All these studies, except Aradeon (1984), however did not fully capture the cumulative development of styles within a specific region and time frame. The characteristics which informed the definition of style were implicit rather than explicit. In addition, while it is accepted that the most universal architectural type is domestic architecture, it is rare to focus exclusively on domestic architecture in relation to style. Brunskill (2000) for example did not focus on

domestic vernacular architecture alone, while Ojo (1967) focused only on the domestic architecture of the royals of Yoruba land. This study therefore focused on the domestic buildings in Osogbo with a view to examining them and classifying them into groups using some definite criteria embodying historical progression. It relied on the adaptation of Beatie (1994) who had suggested a number of characteristics or architectural features in the definition of architectural styles.

Osogbo: the context of the study

Osogbo is the capital of Osun State. It is situated between $7^{o}48^{1}$N and $4^{o}32^{1}$ and $4^{o}35^{1}$E. It is bounded by the Olorunda Local Government Area on the north; on the east by Obokun Local Government Area, on the west by Egbedore Local Government Area and on the south by Ede Local Government Area. It became the headquarters of Osun State in 1991, when the country was divided into thirty states and Abuja. The town has over time become a prominent centre for commerce, industry, administration and culture.

Osogbo settlement came to be in the latter part of the 18^{th} century. From that time to about 1935, the traditional core area which comprised Balogun, Ataoja, Akogun, Isale Osun and Seriki neighbourhoods covered an area of approximately 100 hectares of land (Egunjobi, 1995). By 1960 Osogbo had spread to cover such areas as Okefia, Alekuwodo, part of Isale Osun, Aiyetoro, Ajegunle Ago Wande, Oke Ayepe and Sabo. By 1975, areas like Dada Estate, Oke Osun, Ajenisuwa, Ago Coker and Ota Efun had developed. These new developments took place along the major roads that linked Osogbo with other neighbouring settlements. The most recent areas of development are found mainly along New Ikirun Road, Ibadan Road, Ilesa Road, and Ibokun Road. The highest concentration of population can be observed in the inner core.

The city of Osogbo has a rich history; first as a traditional Yoruba urban town and then later as a provincial headquarters of the British Colonial Government and presently the capital city of Osun State. This has positive implications for the domestic housing stock for settlers as well as indigenes of the town. The upgrading over time and the consequent increase in population have encouraged worthy sons and daughters of the land to return to the land to build houses while different government agencies for the same reasons had cause to invest in housing. The impact of this on the domestic building stock is the availability of different house types. One would therefore expect to find a wide variety of domestic building types that reflect this different stages of development of the town, and which will be worthy of a study of this nature. Moreover Osogbo has become a centre of Yoruba cultural practices especially in relation to the Osun-Osogbo festival.

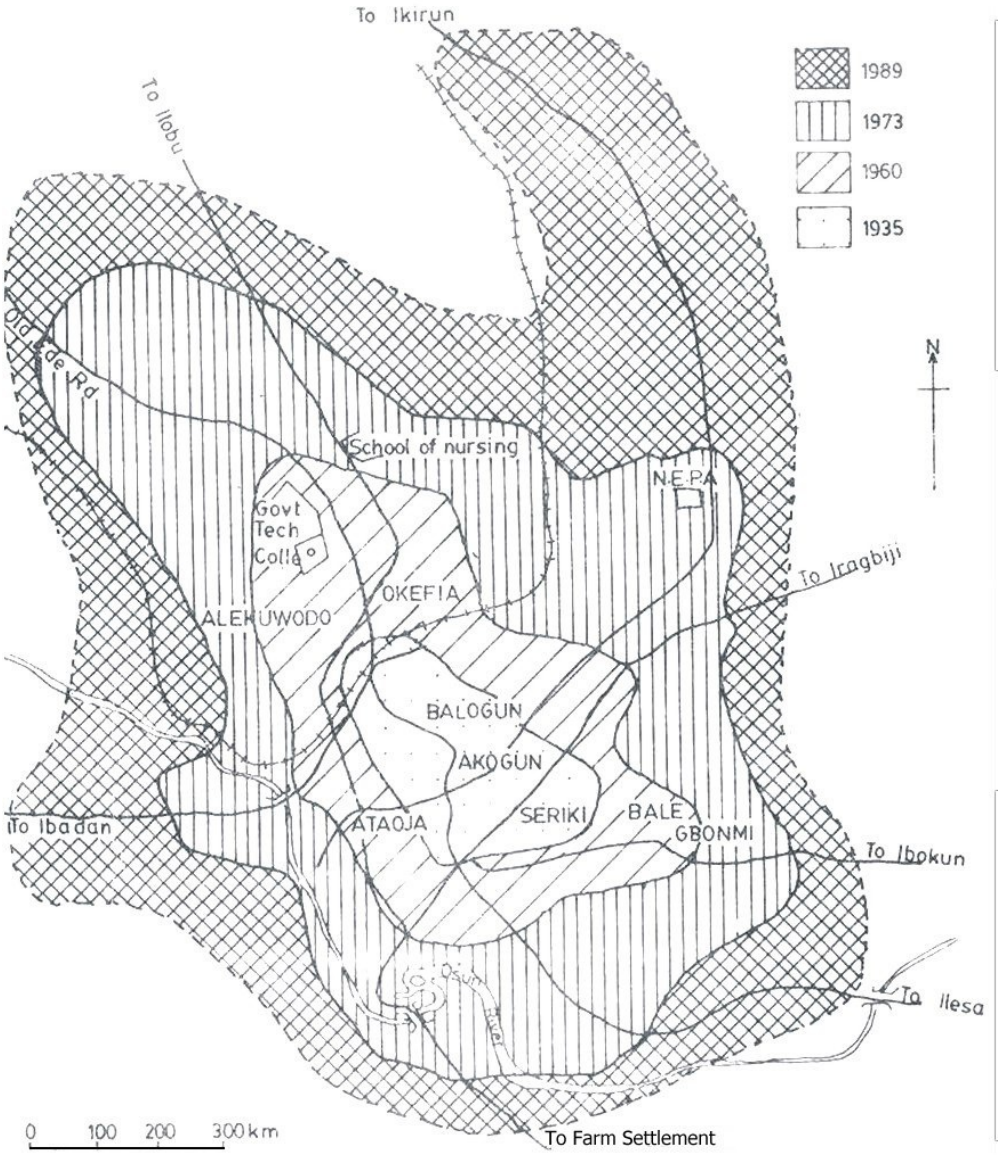


Figure 1: Osogbo: Stages of development
Source: Osogbo Local Planning Authority, Osogbo

Approach to the Study

The approach in this study was a dual (qualitative and historical) one. The buildings constituted the main unit of data collection and analysis. Data were generated through the use of interviews of informants who were selected at two levels. First, informants were selected from residences and the owners of the buildings that were documented and informants were also selected from the association of the local builders and bricklayers of the town who produced, through oral evidence the history of the buildings and the building industry in Osogbo. The buildings were purposively selected from the three residential zones of Osogbo and were analyzed using the plan form, roof form and façade to determine their architectural elements which formed the bases for their classification. Qualitative data about the buildings, their history and history of the building industry in Osogbo were obtained through the use of in-depth interviews of the selected informants.

The residential zones were selected from a map showing the historical development of the different areas of Osogbo, (Figure 1). Four main stages of development of Osogbo were identified from literature. These are the period from 1935 to 1960, the period from 1960 to 1973, the period from 1973 to 1989 and the period from 1989 to date. It can be suggested that the styles will spread across the different areas of development of the town.

The study was inductive in nature, so the buildings were identified by physical observation based on the characteristics and appearances of the buildings in the study area. For the survey, a total of 166 buildings were selected and documented (1). These were selected from the total domestic buildings in Osogbo which the Planning Office gave as 11,591 based on tenement rates. 6,004 buildings were found in the high density zones, 2,860 buildings in the medium density and 2,727 buildings in low density zones. To achieve a good spread of buildings across the zones, 107 buildings were taken from the high density 33 buildings from the medium and 26 from the low density zones. Five areas within the high density zones were selected. These included the Core, around the Oba's Palace, Gbomi, Balogun, Oke Bale and Okogun. Three areas within the medium density zones were selected. These included Alekuwodo, Isale Osun and Kola Balogun. Three areas were also selected from the low density zone. These included Okefia, outskirts of the town along Ilesa Road and Gbongan Road. The basis for selecting these areas was to account for all the periods of historical development of the town from 1935 to 1989 as indicated in the map in figure 1 and also to ensure that all the possible styles were uniformly captured. The densities also represented buildings constructed at different periods within the town as it is reflected in the map showing the historical development of the town in figure 1. This was

also confirmed by the interviews with artisans in the house-building industry. It was recognized that more recent development took place within the different residential zones and that the historical divisions were not neatly marked as presented but such buildings stood out clearly in each area and were therefore avoided.

It could be observed from figure 1 that most of the high density zone consisted of the areas developed between 1935 and 1960. The medium density zone developed within the period between 1961 and 1973. The low density zone was developed after 1973 and is found at the outskirts of the town. In selecting the buildings for documentation the major streets in the area were identified. The buildings were purposively selected along these streets until the required number was achieved. The elements observed and documented in the buildings included the roof shape, the plan form and façade. The façade consisted of the window shapes, window frames, door shape and door details and external ornamentation.

Physical and socio-physical analyses

The analysis of the buildings was based on their physical and socio-physical properties. The physical properties included the plan forms, facades and roof types. The social physical properties were related to the plan form and had to do with the level of segmentation. The concept of segmentation suggests that humans tend to segment or partition their undifferentiated continuous environment into bounded space, which can be partitioned conceptually or physically by means of walls or other physical barriers. The degree to which partitioning occurs varies from culture to culture (Kent, 1991).

Beattie's (1984) method of classification was adopted for this study. It involved using the physical components of the buildings such as the plan forms, roof forms and facades to classify them into groups. The plan forms were analyzed based on the type of access they exhibited. The facades were either formal or informal in composition with small or large windows, with or without ornamentation and with or without verandahs.

Using these three main criteria of plan form, roof type and façade, it was possible to draw up a matrix containing cells of rows representing the building properties and 166 columns representing the buildings that were documented. On further examination, it was possible to break the three main criteria of plan form, roof type and façade into sub-characteristics. The sub-characteristics of the plan form included the type of access and the level of segmentation. The roofs were grouped into the conventional forms into which they fell. The sub-characteristics of the facade included the composition of windows, ornamentation and

verandahs. On the whole, there were 25 rows representing the physical and socio-physical properties of the buildings and 166 columns representing the buildings.

				1	2	3	4	5	6	7	8	117	118	119	120	163	164	165	166
Plan form	1	courtyard																	
	2	Corridor	Single corridor	x	x	x	x	x	x	x	x	x							
			Double corridor										x						
			Multiple corridor												x				
	3	Lobbies												x		x	x	x	x
	4	Segmentation	Low	x	x	x	x	x	x	x	x								
			Medium									x	x		x				
			High											x		x	x	x	x
Roof type	5	Gable	High											x		x			
			Low									x	x		x				x
	6	Hipped	High	x	x	x	x	x	x	x	x								
			Low																
	7	Gable and hipped																x	
	9	Mono pitched/flat															x		
Façade	10	Composition	Formal	x	x	x		x	x	x				x	x		x		x
			Informal				x				x	x	x			x		x	
	11	Window																	
			Small	x	x	x	x	x	x	x	x								
			Large									x	x	x	x	x	x	x	x
	12	Ornamentation	Present		x			x	x	x									
			absent	x		x	x				x	x	x	x	x	x	x	x	x
	13	Verandah	Absent	x		x					x								
			Attached		x			x	x	x			x		x				
			Formed				x					x		x		x	x	x	x
	14	Balustrades	Absent	x		x	x		x	x	x								
			Present		x			x				x	x	x	x	x	x	x	x

Table 1: Physical and Socio-Physical Analysis

Table 1 illustrates the method showing the results of the aggregation of characteristics into distinct styles. Building number one has a single corridor access and a low segmented plan form, a high pitched hip roof, a formal composition with small windows and no ornamentation, verandah and balustrades. The one hundred and sixty sixth building has a lobby access and a high segmented plan form, a low gable roof, a formal composition with large windows and no ornamentation and with balustrades. The buildings that had similar characteristics emerged by observing the cells that were marked. For the purpose of explanation, sixteen buildings are shown in the table 1 to illustrate how the style components were related.

Many styles emerged from studying the combinations of components within the matrix created. It was observed that within the high density residential zone, the corridor access plan type with hipped roof and small windows was the most prevalent. Within the medium density zone the corridor access plan type with gable roof and large windows was the most prevalent. In the low residential zone, access type was predominantly by the lobby. All the variations of the roof form manifested; but frequently with low pitch. Façade composition was frequently asymmetrical. Window sizes were large. Verandahs were frequently formed from the plan form and the associated balustrades were either made of concrete or metal.

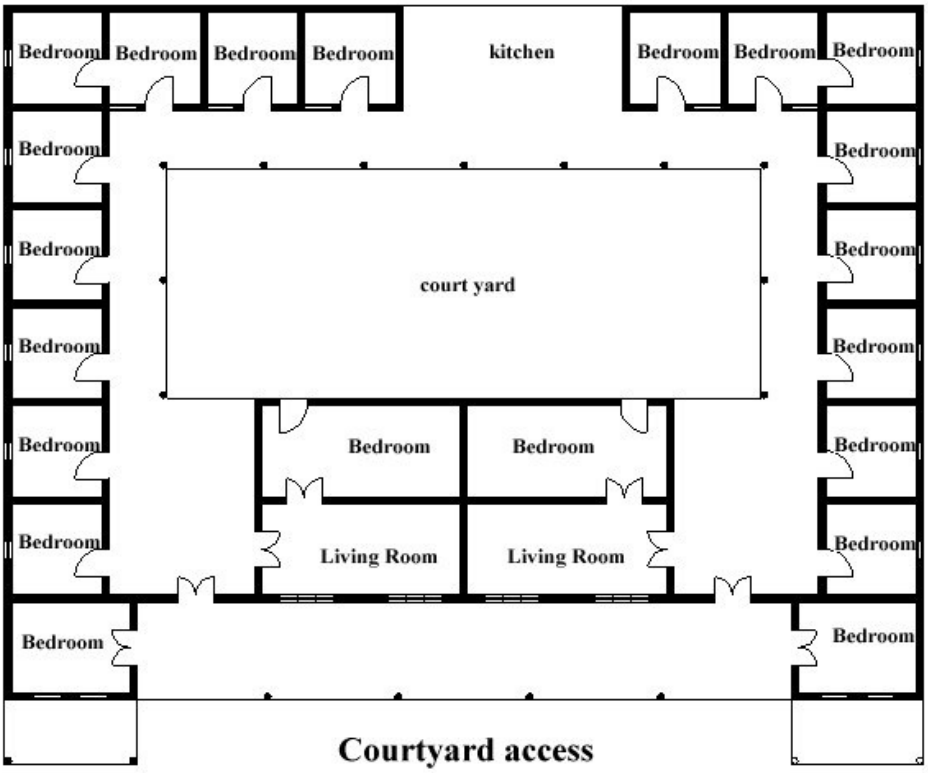
Results

The results obtained from the analyses of the data are discussed in terms of the variations in the plan forms, variations in the roof forms and variations in the facades.

The variations of the plan forms were in the type of accesses the plans possessed and the level of segmentation. Accesses into different rooms in the buildings were either by the corridor, courtyards and lobbies, as illustrated in Figure 2. The segmentation level of the plans of the buildings varied from low to high, as illustrated in Figure 3.

The roof forms were analysed based on the traditional roof forms. They included the hip roof, gable roof, the hip/gable roof and the mono pitched roof. These are illustrated in figures 4-6.

The overall composition of the facades was either formal/symmetrical or informal/asymmetrical massing or window placements. The windows were described as small or large windows, as illustrated in figures 7-8.



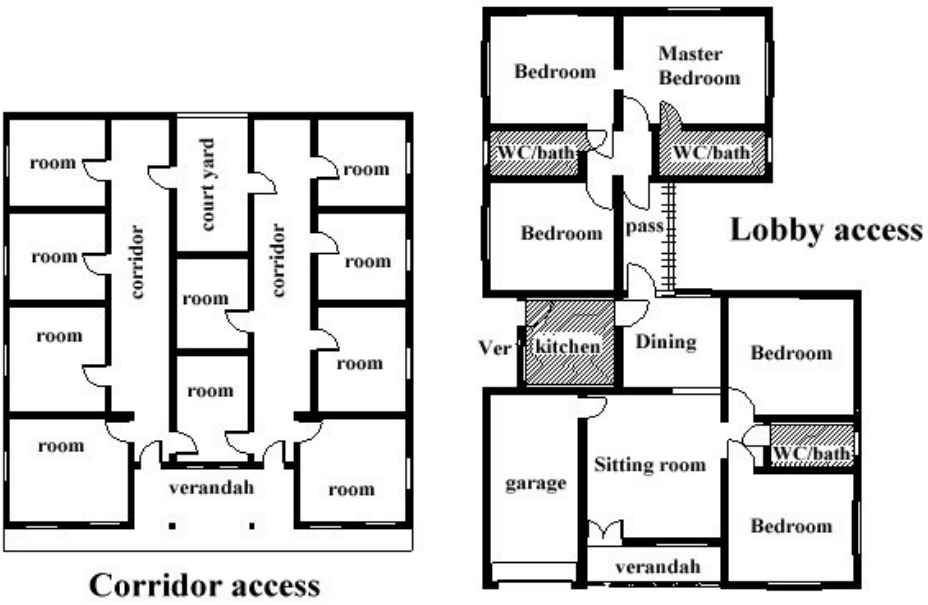


Figure 2: Plans showing access patterns

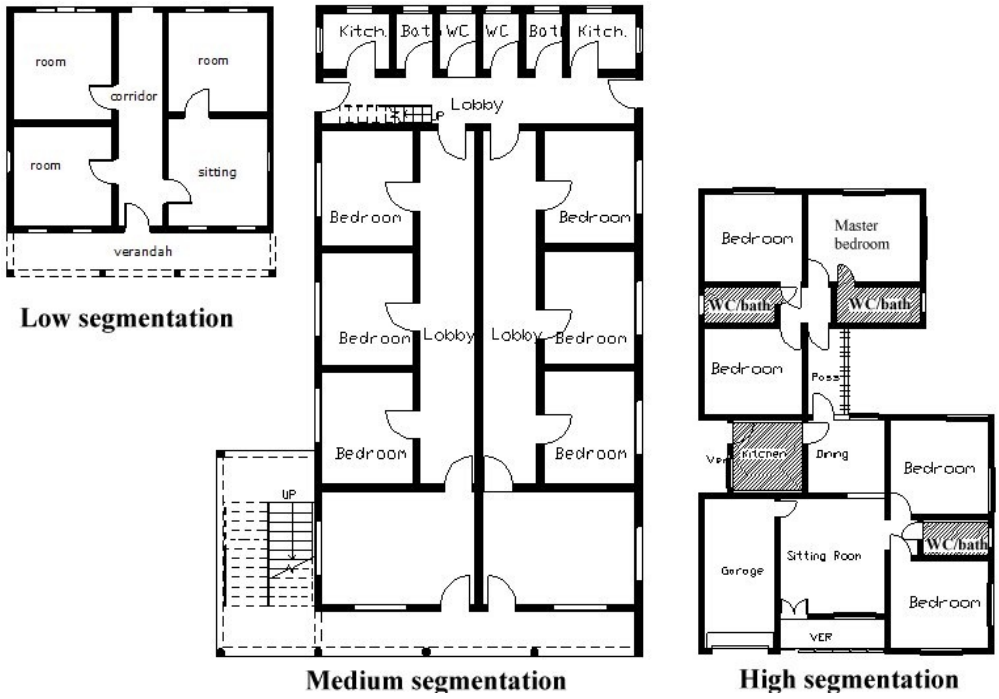


Figure 3: Plans showing segmentation levels

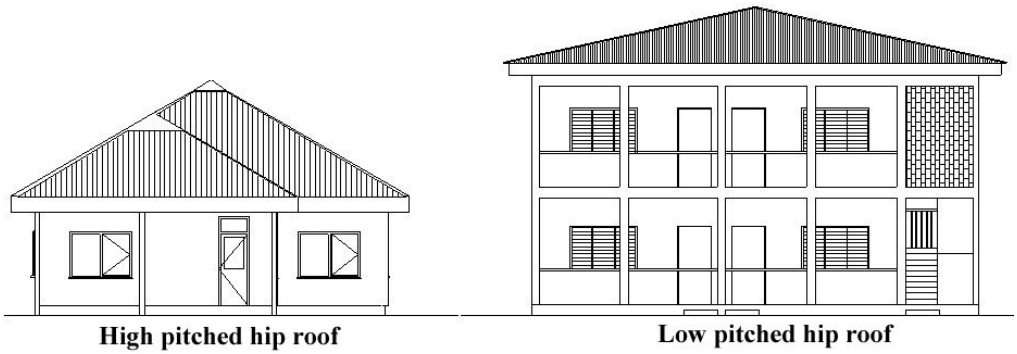
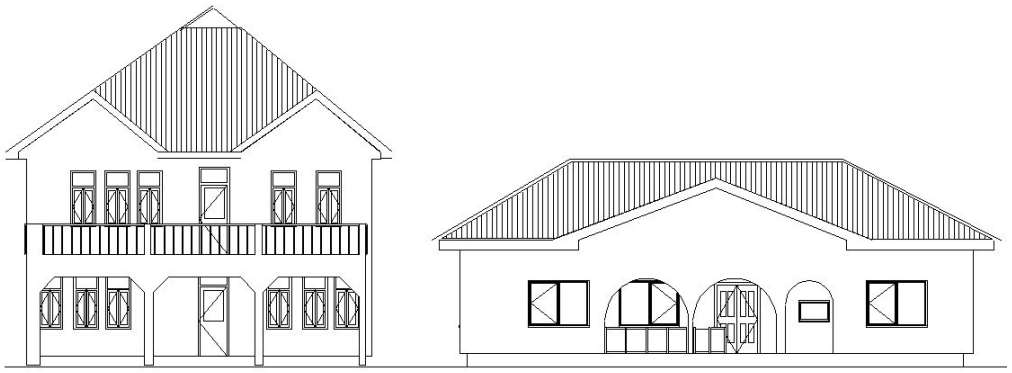


Figure 4: Hip Roof

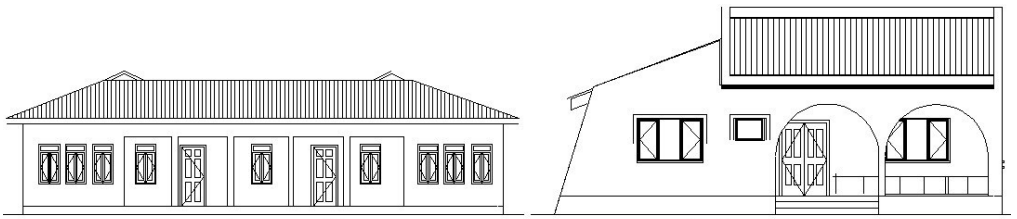
High gable roof Low gable roof

Figure 5: Gable roof



High pitched hip/gable roof Low pitched hip/gable roof

Figure 6: Hip/gable roof



Formal composition Informal composition

Figure 7: Formal and informal composition

Figure 8: Small and large windows

The Different Styles Identified

Nine styles emerged from the study. They were labelled ST1- ST9. Three of these were in the high density zone, one in the medium density zone and five in the low density zone. The characteristics of the different styles are shown in table 2.

Style ST1

Access into the rooms of this house style was by the corridor, which was frequently single and centrally located. This roof form of this style was predominantly the high pitched hip roof. A few examples of this style had low pitched hip roof. The composition of the façade was formal with small wooden casement windows, panel doors and verandahs which were frequently attached, as illustrated below.

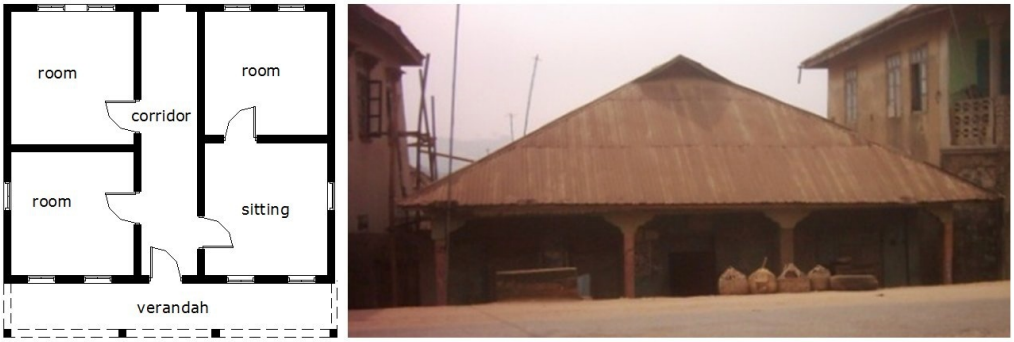


Figure 9: Style STI, Floor plan and elevation

				Style ST1	Style ST2	Style ST3	Style ST4	Style ST5	Style ST6	Style ST7	Style ST8	Style ST9
Plan form	1	courtyard				x						
	2	Corridor	Single corridor	x	x		x					
			Double corridor	x			x					
			Multiple corridor									
	3	Lobby						x	x	x	x	x
	4	Segmentation	Low	x	x	x						
			Medium				x					
			High					x	x	x	x	x
Roof type	5	Gable	High									
			Low									x
	6	Hipped	High	x		x		x				
			Low	x		x	x		x			
	7	Gable/hipped			x	x				x		
	9	Mono pitched/flat									x	
Façade	10	Composition	Formal	x	x	x	x					x
			Informal					x	x	x	x	
	11	Window	Small	x	x	x	x					
			Large					x	x	x	x	x
	12	Ornamentation	Present	x	x	x	x					
			absent				x	x	x	x	x	x
	13	Verandah	Absent								x	
			Attached	x	x	x	x					
			Formed					x	x	x	x	x
	14	Balustrades	Absent	x		x		x	x	x	x	
			Present		x		x	x		x	x	x

Table 2: Characteristics of the styles

Style ST2

Access into the various rooms was also by the corridor. The staircases were usually within the corridors. The segmentation level for this style was also low. This roof form of this style was predominantly the hip/gable roof; always with high pitch. The composition of the façade was also formal with small wooden casement windows, panel doors and verandahs which were also frequently attached.

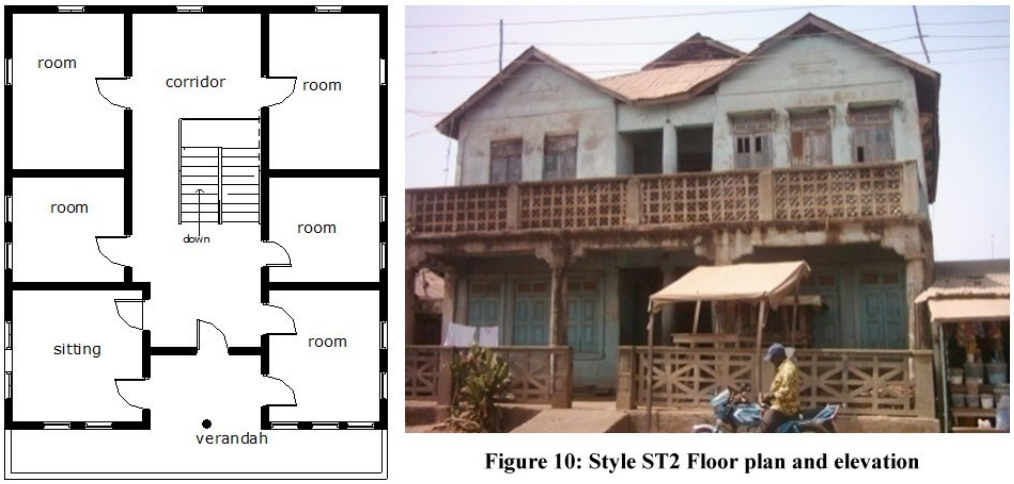


Figure 10: Style ST2 Floor plan and elevation

Style ST3

Access to the various rooms was through the courtyard. The segmentation level for this style was low. The roof form of this style was predominantly the hip roof. There were examples of both low and high pitched hip roof. The composition of the façade was formal with small wooden casement windows, panel doors.

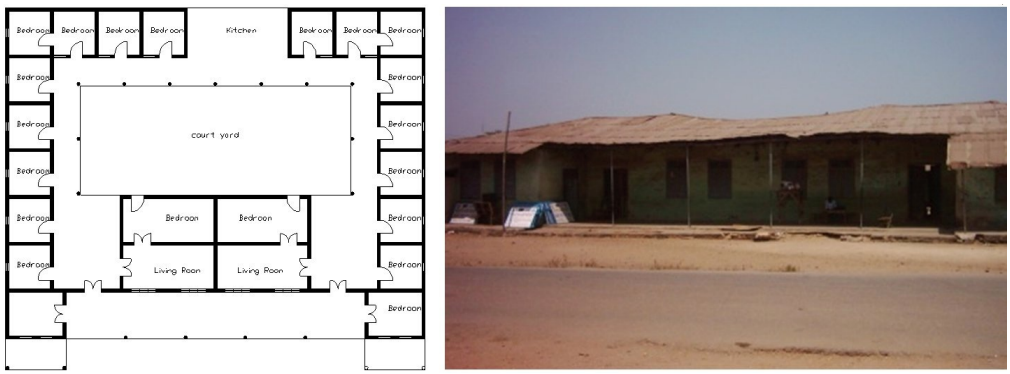


Figure 11: Style ST3, Floor plan and elevation

The three styles illustrated above appear to be the oldest styles of domestic buildings in Osogbo. They consisted of simple symmetrical plans with the lowest level of segmentation. They were built between 1930 and 1955. They were the predominant styles of the first stage of development of the town. The simple plan forms and low level of segmentation suggest that the socio-political setting of the society at the time was much simpler. The simple forms and common roof types also suggest that the design and construction of houses was common knowledge that did not require any professional input. These were also before the days of plumbing; as the buildings lacked water closet facilities. Most of these buildings as they exist today have additional or auxiliary buildings or spaces attached to them at the rear which are used for toilet and cooking facilities.

Style ST4

This was the only style that emerged from the medium density zone. These buildings were generally larger in size than those classified into ST1 to ST3 described above, although access was also by the corridor. They usually had two sets of stairs, one located at the exterior of the building usually by the side and the other within the building. The stairs

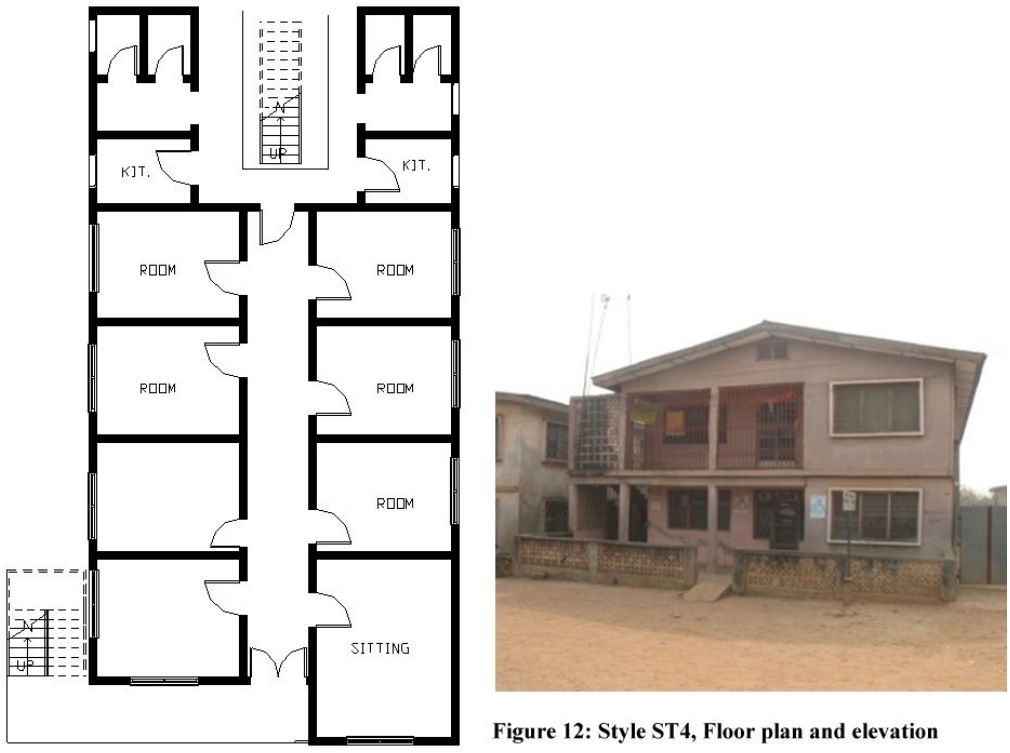


Figure 12: Style ST4, Floor plan and elevation

within the building served as the service stairs. These buildings were mainly two to three floors, although a few of them were just one floor. The segmentation level for this style was at the medium level. This roof form of this style was predominantly the low pitched gable roof. The composition of the façade was generally formal. Window sizes were larger and louvre windows had replaced wooden casement ones. Flush doors had also replaced the panel ones and the balustrades made of metal rather than wood as the case for styles ST1 and ST2.

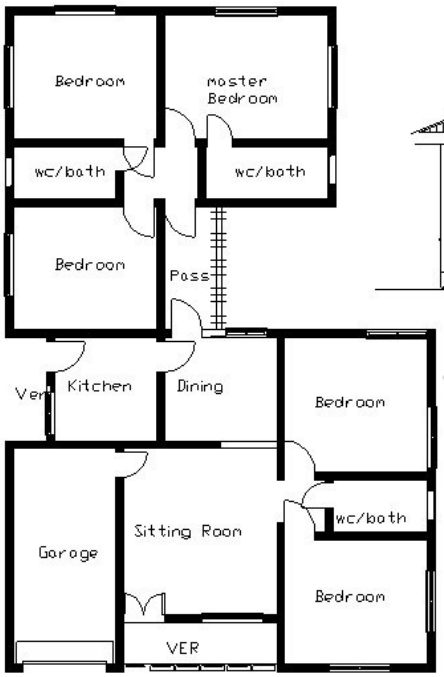
This style appears to have emerged after the first three styles discussed above. The plan forms have become a little bit more complex and segmentation level had risen to the second level. The presence of the water closet toilet suggests that plumbing had been introduced to the society by the time these houses were built. Many of them were built in the 1970s. The building materials used for the construction, (such as stucco) suggest a higher level of specialization employed in construction of the buildings. Metal and perforated bricks were mainly used for the balustrades, unlike the three styles discussed above where concrete was frequently used for the balustrades. An example of the style is shown above.

ST5-ST9

Five styles emerged from the low density residential zone. They are illustrated below as ST5-ST9. Generally, access into the various rooms was by the lobby and the segmentation level was high. All the roof forms could be found in this residential zone of the town. The facade compositions were informal with large sliding or louvre windows. Entrance doors were either custom-made security metal doors or flush doors. Verandahs were generally present. These styles are the latest styles of domestic buildings found in the town of Osogbo. They were built between 1990 and 2005. The plan forms had become much more complex. This suggests that these houses were built in a much more complex society with all the specialists in the building industry having input in the building process. The examples are illustrated in figures 13-17.

Styles of domestic architecture abound in Osogbo and they are spread across the town; from the ancient core to the newly developed areas at the outskirts. The styles were identified based on the architectural elements which the buildings exhibited. The final classification into styles was based on the analysis of these architectural elements. As one would expect the oldest styles are found in the core of the town and the latest styles are at the outskirts of the town. The buildings were classified into nine styles. Three of these were found in the

high density zone, corresponding to the oldest parts of the town, one in the medium density zone and the others in the low density zone, corresponding to the newest parts of the town.



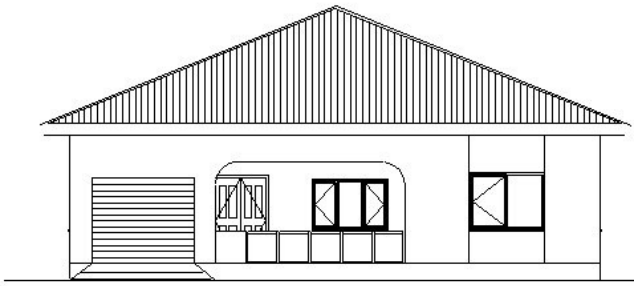
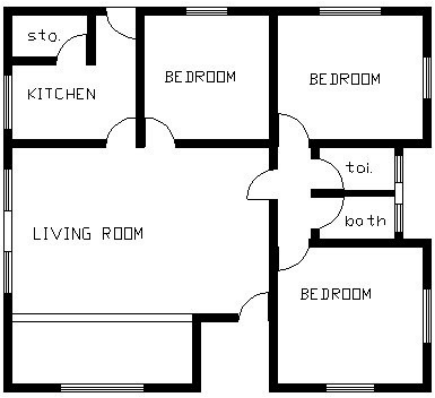


Figure 13: Style ST5, Floor Plan and elevation



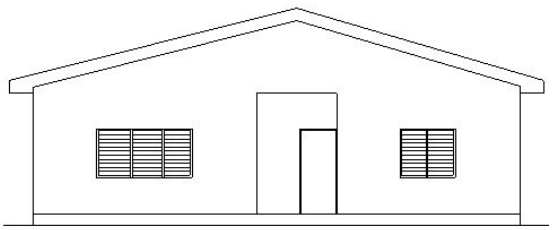


Figure 14: Style ST6, Floor Plan and elevation

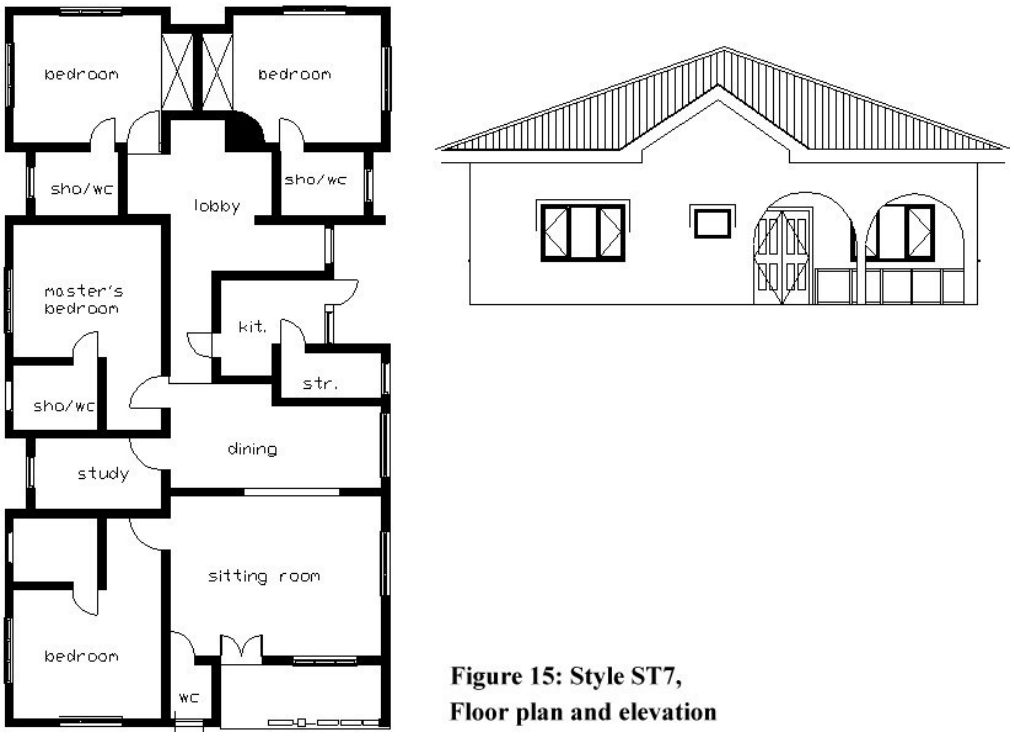


Figure 15: Style ST7,
Floor plan and elevation

It is observed that although the lowest number of domestic buildings was taken from the low density zone, more styles were identified in that area. This was a more modern era when individualism was emphasized, and with many specialists available, it was possible for builders and owners of buildings to express themselves. By this time also, many more outsiders and visitors to the town had more inputs into the designs and construction of these buildings such that their influence on the building industry at this era was greatly felt.

There were a few variations observed in the buildings while classifying them into styles. Some exhibited one or more style characteristics; such as the colonial houses found at Oke-Ayepe. These had the high hip and gable roofs of the types found in the core of the town. The plan forms exhibited the lobby access unlike the corridor access that was common in the buildings found in the core. The façade composition was also not so formal or symmetrical quite unlike the buildings in the core. Windows were generally glass casement. Although this group of domestic buildings was found mostly at the outskirts of the town and one would expect that they be recent developments like the others found at the outskirts of the town, they were actually amongst the oldest domestic buildings found in the

town. This can be explained by the fact that these buildings were put up by the British colonial masters and they usually lived at the outskirts of the town.

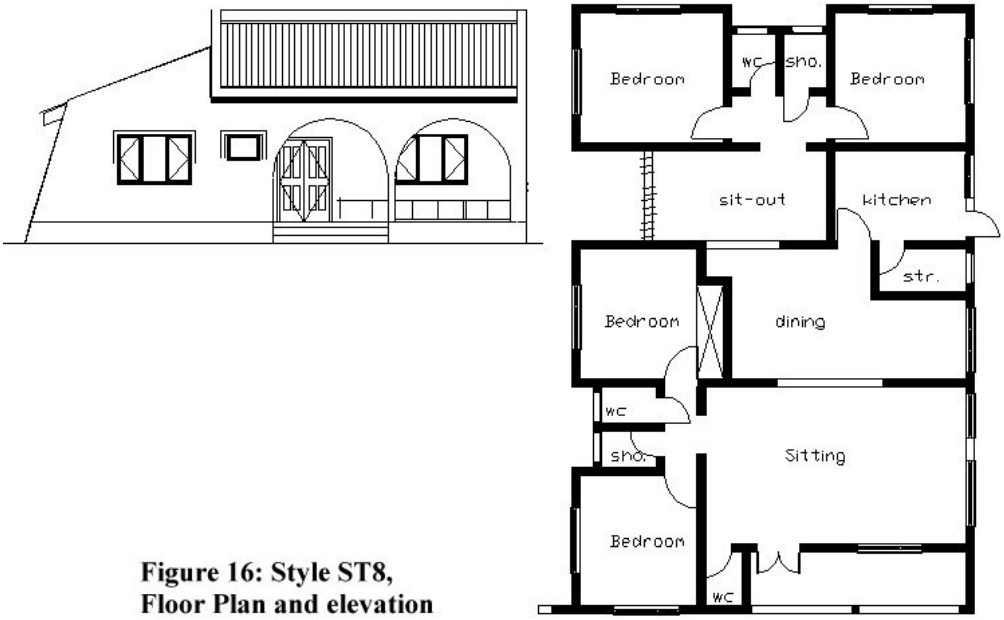


Figure 16: Style ST8, Floor Plan and elevation

Finally in the search for styles, it was also discovered that given the architectural elements and the way they were disposed in the buildings the same style of buildings were constructed at the same time, with the oldest styles in the high density zone and the recent styles are in the low density zone. Initially 300 buildings were slated for documentation, but as the study progressed it was clear that many repetitions would occur beyond the 166 buildings finally selected.

It is recommended that studies of historic buildings, especially in relation to style be encouraged. The process of classification of historical buildings will assist in the identification, evaluation and preservation of buildings and can be used to create a catalogue of all the domestic building types available in a particular locality such as Osogbo. Such a catalogue when developed to the required standard could be applied at different levels of organization to make better informed decisions regarding which types of domestic buildings and the landscape in general to preserve.

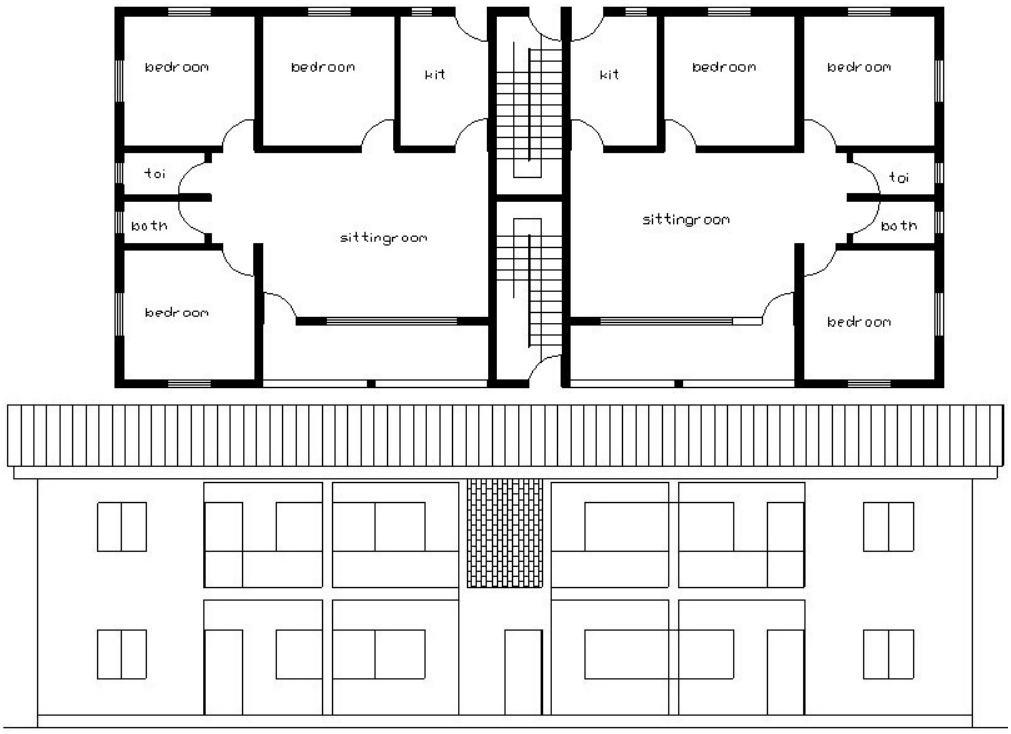


Figure 17: Style ST9, Floor plan and elevation

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BOOK REVIEW

Dani Lyndersay, *Nigerian Dress: the Body Honoured*,
pp. xv + 616 illus. b/w line drawings throughout, 12 pages in full colour,
Centre for Black African Arts and Civilization,
Lagos, 2011.

Dr. Dani Lyndersay's nineteen year sojourn in Nigeria took her all over the country: to Jos, Kano, Maiduguri and Zaria in the north; to Benin and Ibadan in the Southwest; to Calabar, Enugu and Uyo in the Southeast. Wherever she went, her eager eyes absorbed the diverse richness of Nigerian dress. As a costume designer in Theatre Arts, she was aware of the important role played by costume in the creation of character and mood in a performance. She intended this book as a resource tool for theatre and film practitioners. But it is far more than that! With 616 pages, including an index; a glossary of 534 terms related to dress, a bibliography of 582 entries; 500 + line drawings by the author herself and a list of figures classified by ethnic group or area, arranged in alphabetical order—this work is a veritable encyclopedia of Nigerian dress! No one in Nigeria, since Eve de Negri in the 1960's, has shone the spot-light so brightly on Nigerian dress and body adornment.

Dr. Lyndersay has organized her scholarly work in three parts. The first part deals with the significant role played by costume in a theatrical production and the importance attached to dress and adornment at all times and in all places throughout Nigeria. The second part presents archaeological and historical perspectives of traditional Nigerian dress. Dr. Lyndersay's thorough library research presents evidence collected from the writings of travellers, traders and missionaries century by century, from Ibn Batuta in the mid 1300's to Mary Kingsley at the turn of the 19th century. The third part is a 'kaleidoscopic view' of the dress of selected ethnic groups in Nigeria, classified geographically. She included not only the major ethnic groups but also minorities such as the Dakarawa, Gwari, Angas, Birom, Idoma and Ejagham, whose cultures are seldom publicized. There are line drawings by the author or every page so the reader can see exactly what Dr. Lyndersay is describing.

Dr. Lyndersay documents the various materials used for body covering before cotton—animal skins, bark-cloth, woven raffia and bast fibres (flexible fibrous bark) found in the 9th century A.D. chiefly burial tomb at Igbo-Ukwu. Some groups, living in remote hilly regions in central Nigeria to which they retreated to avoid cultural domination, wore a critical minimum of clothing, an apron or a belt to which leaves were strategically attached. However, in 1960, the Prohibition of Nudity Bye-laws came into force and people going to sell their produce in large towns donned wrappers.

The culture of Islam prescribed garments which covered the entire body, thereby stimulating the arts connected with clothing and textiles. Male converts wore a tunic

(kaftans) and if they were prosperous, the flowing, embroidered *riga* to which the Yoruba *agbada* is related.

Although locally woven prestige fabrics have been worn by the elite in West Africa for a very long time, Italian cloth dating from the 15th century A.D. has been found in Timbuktu. The Sahara Desert was not a barrier (as I was taught in school) but a great highway criss-crossed by caravans acting as a conduit for goods and ideas from North Africa and the Mediterranean, including fabrics and beads.

When sea trade to West Africa was offered up by the Portuguese in the 15th century, European traders quickly acquainted themselves with local preferences which they were eager to satisfy. The people of Benin were particularly fond of red cloth and red beads.

Just as Islam influenced dress and fashion in northern Nigeria, Christianity had a great impact on dress in the south. In the mid 19th century, groups of European ladies formed sewing-parties to make Mother Hubbards for female Christian converts, which, it was hoped, would lead to national improvement! Those were high-necked dresses with long skirts falling from a yoke and garnished with a deep frill. These ladies would have been shocked to hear that British trading companies sold Victorian ladies chemises, intended as underwear in their country of origin, which were worn as outerwear in Nigeria, with nothing over them!

In southeast Nigeria, men adopted European shirts with fancy pin-tucked yokes, but wore them with wrappers. European men's hats of various styles (bowlers, panamas, boaters, top-hats, trilbys) were much sought after and are still in use today in southeastern Nigeria as an important part of male attire which is a combination of local and foreign elements.

The black C.M.S. suit, as seen in iconic photographs of Bishop Samuel Ajayi Crowther, influenced the dress of men working for the colonial government who always wore suits in dark colours to go to the office. Western dress became a mark of prestige, though some reacted against it. The teachers of Lagos in 1889, at a general meeting resolved to wear only native dress!

From this cornucopia of information emerge facts which help us to construct a pattern of West African dress which has persisted for centuries and which is evident today. The wrapper remains the classic item of women's dress on both formal and informal occasions. The flowing gown worn by men (riga: Hausa; agbada: Yoruba) usually enriched with embroidery, was in the past and still is today a garment conveying the status and prestige associated with age and is still worn on formal occasions. The use of beads for adornment is of great antiquity. Evidence of this has survived from Nok culture and Sao culture (Borno State, 600BC 1300 A.D.), in the form of quartz, carnelian and glass beads. The 9th century

A.D. chiefly burial tomb in Igbo-Ukwu yielded beads from both local and foreign sources. Recently, beads have made a come-back on the modern fashion scene in Nigeria in materials ranging from semi-precious stones to glass and plastic.

The head was, and still is, the focus of adornment in the form of coiffure, jewellery and head-gear. In the past, women's hairstyles could be indicators of age, marital and social status and religious affiliation. In Yoruba thought, the head was regarded as the seat of one's personal destiny and had to be treated with care and respect at all times. Unkempt hair was the sign of a disordered mind.

It is not possible to do justice to this monumental work in a short review. Suffice it to say that for breadth of coverage of Nigerian dress, it has no equal! This book is a tribute to the scholarship and devotion of Dr. Dani Lyndersay and to the dynamism and creativity of the Nigerian peoples who inspired it. It deserves a place on the bookshelf of everyone who is interested in Nigerian culture.

— Pat Oyelola

THE BIRD LIST OF RICHARD FARMER'S *THE BIRDS OF THE IFE CAMPUS*

Joseph Kenny
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A mine of bird information for its place and time, *The birds of the Ife campus* is little known and hardly available. The author, Fr. Richard Farmer, as noted in his obituary in this issue, was both a lecturer in Philosophy and (like myself) a Catholic priest of the Dominican Order. From this double background, small wonder that he had an interest in nature, and was a foundation member of the Ife Branch of the Nigerian Field Society.

He had his book published by "Order of Preachers (Nigeria) Ltd."—the legal name for Dominicans—in two editions, both in a limited, mimeographed, spiral bound format. The first was in 1971, and a revised, expanded edition of 256 pages in 1973. He took care to deposit a copy of each in the Library of Congress. The 1973 edition bears the catalogue number QL692.N5 F36 1973.

Eleven of the birds listed in the first edition were omitted in the 1973 edition. In brackets, I included in their appropriate locations the information Fr. Farmer provided. Adding these to those in the 1973 edition gives us 222 species. Fr. Farmer groups the species according to families (except for "rare birds" #217-222), and for each species provides (1) Identification data, (2) Habitat, (3) Diet, (4) Picture references.

I added references to the collection of photos meant to accompany the first edition (1971). Prof. Augustine Isichei, of Abofemi Awolowo University (formerly called University of Ife), kindly retrieved these photos for me. Nevertheless, these photos, developed over 4 decades ago, have faded.

In the few cases of obvious misspelling, I simply corrected the word. To correlate Father Farmer's nomenclature to contemporary classification, after each entry, I add the data furnished by http://avibase.bsc-eoc.org/.

I have checked his list against the following sources, mainly the first for full names (which also offers audio-recordings), mainly the second—and occasionally the third and fourth—for photos.

- http://avibase.bsc-eoc.org/
- http://birdquest.net/afbid/
- http://www.birdlist.org/index.htm (World Institute for conservation & environment)
- http://twearth.com/species/

#1 AFRICAN LITTLE GREBE *Podiceps ruficollis*

Order: Podicipediformes. Family: Podicipedidae. English: Little Grebe. Scientific: Tachybaptus [ruficollis or tricolor]. Protonym: Colymbus ruficollis. Avibase ID: 215FEA89A0F19F5C. Taxomic Serial Number: TSN: 563259

#2 AFRICAN DARTER (SNAKE BIRD) *Anhinga rufa*

Order: Pelecaniformes. Family: Anhingidae. English: African Darter. Scientific: Anhinga rufa. Protonym: Plotus rufus. Avibase ID: 5C7936A7E5949CE8. Taxomic Serial Number: TSN: 174760

#3 [Long-tailed Shag/Cormorant, *Phalacrocorax africanus*, 56cm, Farmer #2]

Order: Pelecaniformes. Family: Phalacrocoracidae. English: Long-tailed Cormorant. Scientific: Phalacrocorax africanus. Protonym: Pelecanus africanus. Avibase ID: E255DCE15494936B. Taxomic Serial Number: TSN: 174729

#4 RED-NECKED LITTLE BITTERN *Ixobrychus minutus*

Order: Ciconiiformes. Family: Ardeidae. English: Little Bittern. Scientific: Ixobrychus minutus. Protonym: Ardea minuta. Avibase ID: 7AAD57ACA1C4ECA9. Taxomic Serial Number: TSN: 174850

#5 SQUACCO HERON *Ardeola ralloides*

Order: Ciconiiformes. Family: Ardeidae. English: Squacco Heron. Scientific: Ardeola ralloides. Protonym: Ardea ralloides. Avibase ID: CE73EBD7A90E9FCF. Taxomic Serial Number: TSN: 174864

#6 [Night Heron, *Nycticorax nycticorax*, 56cm. Farmer #5]

Order: Ciconiiformes. Family: Ardeidae. English: Black-crowned Night-Heron. Scientific: Nycticorax nycticorax. Protonym: Ardea Nycticorax. Avibase ID: 6BB94D7EA4D041A8. Taxomic Serial Number: TSN: 174832

#7 [Black-headed Heron, *Ardea melanocephala*, 90cm. Farmer #13]

Order: Ciconiiformes. Family: Ardeidae. English: Black-headed Heron. Scientific: Ardea melanocephala. Protonym: Ardea melanocephala. Avibase ID: 25A648FE397BB822. Taxomic Serial Number: TSN: 174787

#8 [Little Egret, *Egretta garzetta*, 60 cm. Farmer #11]

Order: Ciconiiformes. Family: Ardeidae. English: Little Egret. Scientific: Egretta garzetta.

Protonym: Ardea Garzetta. Avibase ID: A6E9EDE55D229ED9. Taxomic Serial Number: TSN: 174816

#9 BUFF-BACKED HERON or CATTLE EGRET *Ardeola ibis*

Order: Ciconiiformes. Family: Ardeidae. English: Cattle Egret. Scientific: Bubulcus [ibis or coromandus]. Protonym: Ardea Ibis. Avibase ID: 6CCDAC53F56435B4. Taxomic Serial Number: TSN: 174803

#10 AFRICAN GREEN-BACKED HERON *Butorides striatus*

Order: Ciconiiformes. Family: Ardeidae. English: Striated Heron. Scientific: Butorides striata. Protonym: Ardea striata. Avibase ID: 78B4A393265C5175 Taxomic Serial

#11 GREAT WHITE EGRET or AFRICAN GREAT WHITE HERON *Egretta alba*

Order: Ciconiiformes. Family: Ardeidae. English: Western Great Egret. Scientific: Ardea alba. Protonym: Ardea alba. Avibase ID: 267D8CCE889A4D6F. Taxomic Serial Number: TSN: 726061

#12 YELLOW-BILLED EGRET *Egretta intermedia*

Order: Ciconiiformes. Family: Ardeidae. English: Intermediate Egret. Scientific: Egretta intermedia. Protonym: Ardea intermedia. Avibase ID: 40B5D4A693F4C373. Taxomic Serial Number: TSN: 174823

#13 GREY HERON *Ardea cinerea*

Order: Ciconiiformes. Family: Ardeidae. English: Grey Heron. Scientific: Ardea cinerea. Protonym: Ardea cinerea. Avibase ID: 6AC87967DC86D7EE. Taxomic Serial Number: TSN: 174782

#14 PURPLE HERON *Ardea purpurea*

Order: Ciconiiformes. Family: Ardeidae. English: Purple Heron. Scientific: Ardea purpurea. Protonym: Ardea purpurea. Avibase ID: 8D6CB009B4D20368. Taxomic Serial Number: TSN: 174791

#15 OPEN BILL STORK *Anastomus lamelligerus*

Order: Ciconiiformes. Family: Ciconiidae. English: African Openbill. Scientific: Anastomus lamelligerus. Protonym: Anastomus lamelligerus. Avibase ID: 0F14ECE44F616F74. Taxomic Serial Number: TSN: 174903

#16 AFRICAN WOOLLY-NECKED STORK *Ciconia episcopus*

Order: Ciconiiformes. Family: Ciconiidae. English: Woolly-necked Stork. Scientific: Ciconia episcopus. Protonym: Ardea episcopus. Avibase ID: 1782CCF69296E23F. Taxomic Serial Number: TSN: 174908

#17 [Wood Ibis, *Ibis ibis*, 97cm. Farmer #7. This English and Scientific combination is not in any list. It seems to be Yellow-billed Stork, *Mycteria ibis*.]

Order: Ciconiiformes. Family: Ciconiidae. English: Yellow-billed Stork. Scientific: Mycteria ibis. Protonym: Tantalus Ibis. Avibase ID: 4F92C8924C9382AA. Taxomic Serial Number: TSN: 561280

#18 GARGANEY *Anas querquedula*

Order: Anseriformes. Family: Anatidae. English: Garganey. Scientific: Anas querquedula. Protonym: Anas Querquedula. Avibase ID: F577BA0F5BB7BD3F. Taxomic Serial Number: TSN: 175093

#19 PALM-NUT VULTURE *Gypohierax angolensis*

Order: Falconiformes. Family: Accipitridae. English: Palm-nut Vulture. Scientific: Gypohierax angolensis. Protonym: Falco angolensis. Avibase ID: 14885C181A91C21A. Taxomic Serial Number: TSN: 175478

#20 PALLID HARRIER *Circus macrourus*

Order: Falconiformes. Family: Accipitridae. English: Pallid Harrier. Scientific: Circus macrourus. Protonym: Falco macrourus. Avibase ID: 22647E26E5C80F2E. Taxomic Serial Number: TSN: 175436 Tarique Sani

#21 HARRIER HAWK *Polyboroides radiatus*

Order: Falconiformes. Family: Accipitridae. English: African Harrier-Hawk. Scientific: Polyboroides typus. Protonym: Vultur radiatus. Avibase ID: E6C0C78017C60B3B. Taxomic Serial Number: TSN: 175514

#22 WEST AFRICAN BLACK SPARROW HAWK *Accipiter melanoleucus*

Order: Falconiformes. Family: Accipitridae. English: Black Goshawk. Scientific: Accipiter melanoleucus. Protonym: Accipiter melanoleueus. Avibase ID: 819AB8230B1E2165. Taxomic Serial Number: TSN: 175330

#23 WEST AFRICAN GOSHAWK *Accipiter [tachiro] toussenelii*

Order: Falconiformes. Family: Accipitridae. English: Red-chested Goshawk. Scientific: Accipiter toussenelii. Protonym: Nisus Toussenelii. Avibase ID: 8AFD72B20BBEF60F.

Taxomic Serial Number: TSN: 175345

#24 ERITREAN SHIKRA *Accipiter badius*

Order: Falconiformes. Family: Accipitridae. English: Shikra. Scientific: Accipiter badius. Protonym: Falco badius. Avibase ID: 1A0ECB6EDF6DB4B2. Taxomic Serial Number: TSN: 558390

#25 WEST AFRICAN LITTLE SPARROW HAWK *Accipiter erythropus*

Order: Falconiformes. Family: Accipitridae. English: Red-thighed Sparrowhawk. Scientific: Accipiter erythropus. Protonym: Nisus erythropus. Avibase ID: AFD19C47E1EA9962. Taxomic Serial Number: TSN: 175318

#26 LONG TAILED HAWK *Urotriochis macrourus*

Order: Falconiformes. Family: Accipitridae. English: Long-tailed Hawk. Scientific: Urotriorchis macrourus. Protonym: Astur macrourus. Avibase ID: 1C209762B49964BF. Taxomic Serial Number: TSN: 175527

#27 LIZARD BUZZARD *Kaupifalco monogrammicus*

Order: Falconiformes. Family: Accipitridae. English: Lizard Buzzard. Scientific: Kaupifalco monogrammicus. Protonym: Falco monogrammicus. Avibase ID: 3EEB66EDF52A873B. Taxomic Serial Number: TSN: 175534

#28 RED-TAILED BUZZARD (RED-NECKED BUZZARD) *Buteo auguralis*

Order: Falconiformes. Family: Accipitridae. English: Red-necked Buzzard. Scientific: Buteo auguralis. Protonym: Buteo auguralis. Avibase ID: A16C3B99118616DB. Taxomic Serial Number: TSN: 175381

#29 AYER'S HAWK EAGLE *Hieraaetus [ayresii] dubius*

Order: Falconiformes. Family: Accipitridae. English: Ayres's Hawk-Eagle. Scientific: Hieraaetus ayresii. Protonym: Spizaëtus ayresii. Avibase ID: 7DF004036707FA39. Taxomic Serial Number: TSN: 560441

#30 [Long crested Hawk eagle, Lophaetus occipitalis, 56cm. Farmer #24]

Order: Falconiformes. Family: Accipitridae. English: Long-crested Eagle. Scientific: Lophaetus occipitalis. Protonym: Falco occipitalis. Avibase ID: 14B9664A8926D2DB. Taxomic Serial Number: TSN: 175572

#31 WEST AFRICAN BLACK KITE *Milvus migrans*

Order: Falconiformes. Family: Accipitridae. English: Black Kite. Scientific: Milvus migrans. Protonym: Falco migrans. Avibase ID: C1C255AA01C58664. Taxomic Serial Number: TSN: 175469

#32 CUCKOO FALCON *Avideda cuculoides*

Order: Falconiformes. Family: Accipitridae. English: African Baza. Scientific: Aviceda cuculoides. Protonym: Aviceda cuculoides. Avibase ID: 648936C0CA95E160. Taxomic Serial Number: TSN: 175441

#33 BLACK-SHOULDERED KITE *Elanus caeruleus*

Order: Falconiformes. Family: Accipitridae. English: Black-shouldered Kite. Scientific: Elanus caeruleus. Protonym: Falco caeruleus. Avibase ID: 97C47F3E1BA4129A. Taxomic Serial Number: TSN: 175284

#34 [Lanner, Falco biarmicus, - cm. Farmer #22]

Order: Falconiformes. Family: Falconidae. English: Lanner Falcon. Scientific: Falco biarmicus. Protonym: Falco biarmicus. Avibase ID: 3D3808E38BB61165. Taxomic Serial Number: TSN: 175631

#34 *Falco biarmicus*
(Farmer)

#34 Falco biarmicus
(Thierry Helsens)

#35 AFRICAN PEREGRINE *Falco peregrinus*

Order: Falconiformes. Family: Falconidae. English: Peregrine Falcon. Scientific: Falco peregrinus. Protonym: Falco Peregrinus. Avibase ID: C7F1C08CB3F7F2DA. Taxomic Serial Number: TSN: 175609

#36 GREY KESTREL *Falco ardosiaceus*

Order: Falconiformes. Family: Falconidae. English: Grey Kestrel. Scientific: Falco ardosiaceus. Protonym: Falco Ardosiaceus. Avibase ID: 3F2BA4F7CD1E5F37. Taxomic Serial Number: TSN: 175629

#37 LESSER KESTREL *Falco naumanni*

Order: Falconiformes. Family: Falconidae. English: Lesser Kestrel. Scientific: Falco naumanni. Protonym: Falco Naumanni. Avibase ID: BECA271F14F77BEE. Taxomic Serial Number: TSN: 175646

#38 KESTREL *Falco tinnunculus*

Order: Falconiformes. Family: Falconidae. English: Common Kestrel. Scientific: Falco tinnunculus. Protonym: Falco Tinnunculus. Avibase ID: DCDDC20BDA55E5D3. Taxomic Serial Number: TSN: 175621

#39 DOUBLE-SPURRED FRANKOLIN (BUSH FOWL) *Frankolinus bicalcaratus*

Order: Galliformes. Family: Phasianidae. English: Double-spurred Francolin. Scientific: Francolinus bicalcaratus. Protonym: Tetrao bicalcaratus. Avibase ID: D8267ADE70E0D733. Taxomic Serial Number: TSN: 175966

#40 AFRICAN CRAKE *Crex egregia*

Order: Gruiformes. Family: Rallidae. English: African Crake. Scientific: Crex egregia. Protonym: Ortygometra (Crex) egregia. Avibase ID: 09A0F2EBC063CF30. Taxomic Serial Number: TSN: 176278

#41 BLACK CRAKE *Limnocorax flavirostra*

Order: Gruiformes. Family: Rallidae. English: Black Crake. Scientific: Amaurornis flavirostra. Protonym: Gallinula flavirostra. Avibase ID: 148F0B012CB5233A. Taxomic Serial Number: TSN: 558539

#42 AFRICAN MOORHEN *Gallinula chloropus*

Order: Gruiformes. Family: Rallidae. English: Common Moorhen. Scientific: Gallinula

chloropus. Protonym: Fulica Chloropus. Avibase ID: 8F82FF8C30667D90

#43 FINFOOT *Podica senegalensis*

Order: Gruiformes. Family: Heliornithidae. English: African Finfoot. Scientific: Podica senegalensis. Protonym: Heliornis senegalensis. Avibase ID: 46DECAEEE5908123. Taxomic Serial Number: TSN: 176398

#44 LILY TROTTER (AFRICAN JACANA) *Actophilornis africana*

Order: Charadriiformes. Family: Jacanidae. English: African Jacana. Scientific: Actophilornis africanus. Protonym: Parra africana. Avibase ID: D16D486D33F5C4C3. Taxomic Serial Number: TSN: 176454

#45 SPUR-WING PLOVER *Vanellus spinosus*

Order: Charadriiformes. Family: Charadriidae. English: Spur-winged Lapwing. Scientific: Vanellus spinosus. Protonym: Charadrius spinosus. Avibase ID: F5E92B225F648330. Taxomic Serial Number: TSN: 176499

#46 FORBES' BANDED PLOVER *Charadrius forbesi*

Order: Charadriiformes. Family: Charadriidae. English: Forbes's Plover. Scientific: Charadrius forbesi. Protonym: Aegialitis forbesi. Avibase ID: 4EBB9A284B6C1015. Taxomic Serial Number: TSN: 176531

#47 WHIMBREL *Numenius phaeopus*

Order: Charadriiformes. Family: Scolopacidae. English: Whimbrel. Scientific: Numenius phaeopus. Protonym: Scolopax phaeopus. Avibase ID: 082F3A63A99AEDD4. Taxomic Serial Number: TSN: 176600

#48 CURLEW *Numenius arquata*

Order: Charadriiformes. Family: Scolopacidae. English: Eurasian Curlew. Scientific: Numenius arquata. Protonym: Scolopax Arquata. Avibase ID: 3BB5CBA66CF48884. Taxomic Serial Number: TSN: 176596

GREENSHANK

Tringa nebularia

#49 Order: Charadriiformes. Family: Scolopacidae. English: Common Greenshank. Scientific: Tringa nebularia. Protonym: Scolopax nebularia. Avibase ID: 18B415D28BBF934C. Taxomic Serial Number: TSN: 176624

WOOD SANDPIPER

Tringa glareola

#50 Order: Charadriiformes. Family: Scolopacidae. English: Wood Sandpiper. Scientific: Tringa glareola. Protonym: Tringa Glareola. Avibase ID: 8E67DC5F68BDF62C. Taxomic Serial Number: TSN: 176618

GREEN SANDPIPER

Tringa ochropus

#51 Order: Charadriiformes. Family: Scolopacidae. English: Green Sandpiper. Scientific: Tringa ochropus. Protonym: Tringa Ocrophus [sic]. Avibase ID: A7B17EFC92B53D29. Taxomic Serial Number: TSN: 176632

COMMON SANDPIPER

Tringa hypoleucos

#52 Order: Charadriiformes. Family: Scolopacidae. English: Common Sandpiper. Scientific: Actitis hypoleucos. Protonym: Tringa Hypoleucos. Avibase ID: 8548B07ECA48773F. Taxomic Serial Number: TSN: 176613

JACK SNIPE

Gallinago minima

#53 Order: Charadriiformes. Family: Scolopacidae. English: Jack Snipe. Scientific: Lymnocryptes minimus. Protonym: Scolopax minima. Avibase ID: 1A15F0C6B4948C52. Taxomic Serial Number: TSN: 176591

LITTLE STINT

Calidris minuta

#54 Order: Charadriiformes. Family: Scolopacidae. English: Little Stint. Scientific: Calidris minuta. Protonym: Tringa minuta. Avibase ID: 9936FF4AFB430504. Taxomic Serial Number: TSN: 176670

BRONZE NAPED PIGEON

Columba malherbii

#55 Order: Columbiformes. Family: Columbidae. English: Western Bronze-naped Pigeon. Scientific: Columba iriditorques. Protonym: Columra [sic] iriditorques. Avibase ID:

3FC9BA60C6657F27. Taxomic Serial Number: TSN: 555619

RED-EYED TURTLE DOVE

Streptopelia semitorquata

#56 Order: Columbiformes. Family: Columbidae. English: Red-eyed Dove. Scientific: Streptopelia semitorquata. Protonym: Columba semitorquata. Avibase ID: 9888B3AE7B0B41EE. Taxomic Serial Number: TSN: 177146

TAMBOURINE DOVE

Turtur tympanistria

#57 Order: Columbiformes. Family: Columbidae. English: Tambourine Dove. Scientific: Turtur tympanistria. Protonym: Columba Tympanistria. Avibase ID: 7308278F0D6F820F. Taxomic Serial Number: TSN: 177220

RED-BILLED WOOD DOVE

Turtur afer

#58 Order: Columbiformes. Family: Columbidae. English: Blue-spotted Wood-Dove. Scientific: Turtur afer. Protonym: Columba afra. Avibase ID: 23D5FC36BA0C0636. Taxomic Serial Number: TSN: 563621

#59 BLUE-HEADED DOVE *Turtur brehmeri*

Order: Columbiformes. Family: Columbidae. English: Blue-headed Wood-Dove. Scientific: Turtur brehmeri. Protonym: Chalcopelia Brehmeri. Avibase ID: 0CA6EE59C1A158BE. Taxomic Serial Number: TSN: 563622

GREEN FRUIT PIGEON

Treron australis

#60 Order: Columbiformes. Family: Columbidae. English: Madagascar Green-Pigeon. Scientific: Treron australis. Protonym: Columba australis. Avibase ID: BA5B593502113515. Taxomic Serial Number: TSN: 677426

GOLD COAST TOURACO

Tauraco persa

#61 Order: Musophagiformes. Family: Musophagidae. English: Guinea Turaco. Scientific: Tauraco persa. Protonym: Cuculus Persa. Avibase ID: 0B36500B526315F5. Taxomic Serial

Number: TSN: 555325

GREY PLANTAIN EATER

Crinifer piscator

#62 Order: Musophagiformes. Family: Musophagidae. English: Western Grey Plantain-eater. Scientific: Crinifer piscator. Protonym: Falco piscator. Avibase ID: 3C3092F9E9DA070A. Taxomic Serial Number: TSN: 555345

GREAT SPOTTED CUCKOO

Clamator glandarius

#63 Order: Cuculiformes. Family: Cuculidae. English: Great Spotted Cuckoo. Scientific: Clamator glandarius. Protonym: Cuculus glandarius. Avibase ID: 3D67C56A490A60AE. Taxomic Serial Number: TSN: 554674

LEVAILLANT'S CUCKOO

Clamator levaillantii

#64 Order: Cuculiformes. Family: Cuculidae. English: Levaillant's Cuckoo. Scientific: Clamator levaillantii. Protonym: Coccyzus levaillantii. Avibase ID: 3C8C3A3108123D9C. Taxomic Serial Number: TSN: 705298

#65 SOLITARY or RED CHESTED CUCKOO *Cuculus solitarius*

Order: Cuculiformes. Family: Cuculidae. English: Red-chested Cuckoo. Scientific: Cuculus solitarius. Protonym: Cuculus solitarius. Avibase ID: 26A34DA5474E1A01. Taxomic Serial Number: TSN: 554680

#66 GABON CUCKOO *Cuculus clamosus gabonensis*

Order: Cuculiformes. Family: Cuculidae. English: Gabon Cuckoo. Scientific: Cuculus clamosus gabonensis. Protonym: Cuculus Gabonensis. Avibase ID: 02E915C306BB88E6. Taxomic Serial Number: TSN: 705330

#67 KLAAS' CUCKOO *Chrysococcyx klaas*

Order: Cuculiformes. Family: Cuculidae. English: Klaas's Cuckoo. Scientific: Chrysococcyx klaas. Protonym: Cuculus Klaas. Avibase ID: 1FACD21062D63FCB. Taxomic Serial Number: TSN: 554711

#68 DIDRIC CUCKOO *Chrysococcyx caprius*

Order: Cuculiformes. Family: Cuculidae. English: Dideric Cuckoo. Scientific: Chrysococcyx caprius. Protonym: Cuculus caprius. Avibase ID: 0482FA7E6D2B02F4. Taxomic Serial Number: TSN: 554713

#69 EMERALD CUCKOO *Chrysococcyx cupreus*

Order: Cuculiformes. Family: Cuculidae. English: African Emerald Cuckoo. Scientific: Chrysococcyx cupreus. Protonym: Cuculus cupreus. Avibase ID: 1B309CB5E7D3F87F. Taxomic Serial Number: TSN: 554712

#70 YELLOWBILL *Ceuthmochares aereus*

Order: Cuculiformes. Family: Cuculidae. English: Yellowbill. Scientific: Ceuthmochares aereus. Protonym: Cuculus aereus. Avibase ID: E0D521B7C12613CE. Taxomic Serial Number: TSN: 705411

#71 BLUE:HEADED COUCAL *Centropus monachus*

Order: Cuculiformes. Family: Cuculidae. English: Blue-headed Coucal. Scientific: Centropus monachus. Protonym: Centropus monachus. Avibase ID: 7C879D6DBEB96890. Taxomic Serial Number: TSN: 554769

#72 SENEGAL COUCAL *Centropus senegalensis*

Order: Cuculiformes. Family: Cuculidae. English: Senegal Coucal. Scientific: Centropus senegalensis. Protonym: Cuculus senegalensis. Avibase ID: 4A83155BA1B18139. Taxomic Serial Number: TSN: 554771

#73 [Black-throated Coucal, *Centropus leucogaster*, 50cm. Farmer #41]

Order: Cuculiformes. Family: Cuculidae. English: Black-throated Coucal. Scientific: Centropus leucogaster. Protonym: Polophilus leucogaster. Avibase ID: DE2CC6CF49C41E9F. Taxomic Serial Number: TSN: 554766

#74 AFRICAN BARN OWL *Tyto alba*

Order: Strigiformes. Family: Tytonidae. English: Barn Owl. Scientific: Tyto alba. Protonym: Strix alba. Avibase ID: B69BC028F710D49A. Taxomic Serial Number: TSN: 177853

#75 AFRICAN SCOPS OWL *Otus scopus senegalensis*

Order: Strigiformes. Family: Strigidae. English: African Scops-Owl. Scientific: Otus senegalensis. Protonym: Scops Senegalensis. Avibase ID: 9E9404C16EF2796C. Taxomic Serial Number: TSN: 686649

#76 WHITE-FACED OWL *Otus leucotis*

Order: Strigiformes. Family: Strigidae. English: Northern White-faced Owl. Scientific: Ptilopsis leucotis. Protonym: Strix leucotis. Avibase ID: E561A180ED8942F7. Taxomic Serial Number: TSN: 686681

#77 WOODFORD'S OWL (WEST AFRICAN WOOD OWL) *Ciccaba woodfordi*

Order: Strigiformes. Family: Strigidae. English: African Wood-Owl. Scientific: Strix woodfordii. Protonym: Noctua Woodfordii. Avibase ID: 2E6575A8C8ECAD9B. Taxomic Serial Number: TSN: 686688

#78 PLAIN NIGHTJAR *Caprimulgus inornatus*

Order: Caprimulgiformes. Family: Caprimulgidae. English: Plain Nightjar. Scientific: Caprimulgus inornatus. Protonym: Caprimulgus inornatus. Avibase ID: 7C3959D678F5AA3C. Taxomic Serial Number: TSN: 555590

#79 LONG-TAILED NIGHTJAR *Caprimulgus climacurus*

Order: Caprimulgiformes. Family: Caprimulgidae. English: Long-tailed Nightjar. Scientific: Caprimulgus climacurus. Protonym: Caprimulgus climacurus. Avibase ID: A20EA34DD9C65727. Taxomic Serial Number: TSN: 555598

#80 STANDARD-WING NIGHTJAR *Macrodipteryx longipennis*

Order: Caprimulgiformes. Family: Caprimulgidae. English: Standard-winged Nightjar. Scientific: Macrodipteryx longipennis. Protonym: Caprimulgus longipennis. Avibase ID: D36F4D980D23FDD7. Taxomic Serial Number: TSN: 555601

#81 COMMON SWIFT *Apus apus*

Order: Apodiformes. Family: Apodidae. English: Common Swift. Scientific: Apus apus. Protonym: Hirundo Apus. Avibase ID: 4E6EF3F983079D73. Taxomic Serial Number: TSN: 178010

#82 LITTLE AFRICAN SWIFT *Apus affinis*

Order: Apodiformes. Family: Apodidae. English: Little Swift. Scientific: Apus affinis. Protonym: Cypselus affinis. Avibase ID: D209A90C8A90DA51. Taxomic Serial Number: TSN: 555014

#83 PALM SWIFT *Cypsiurus parvus*

Order: Apodiformes. Family: Apodidae. English: African Palm-Swift. Scientific: Cypsiurus

parvus. Protonym: Cypselus parvus. Avibase ID: 483A2A51F4A5E37E. Taxomic Serial Number: TSN: 555001

#84 PIED KINGFISHER *Ceryle rudis*

Order: Coraciiformes. Family: Alcedinidae. English: Pied Kingfisher. Scientific: Ceryle rudis. Protonym: Alcedo rudis. Avibase ID: 8205077FA2E98715. Taxomic Serial Number: TSN: 554636

#85 MALACHITE KINGFISHER *Alcedo cristata*

Order: Coraciiformes. Family: Alcedinidae. English: Malachite Kingfisher. Scientific: Alcedo cristata. Protonym: Alcedo cristata. Avibase ID: 12EA0D5AC3AE4B91. Taxomic Serial Number: TSN: 554558

#86 WHITE-BELLIED KINGFISHER *Alcedo leucogaster*

Order: Coraciiformes. Family: Alcedinidae. English: White-bellied Kingfisher. Scientific: Alcedo leucogaster. Protonym: Halcyon leucogaster. Avibase ID: 4F94B89C71A13F13. Taxomic Serial Number: TSN: 554562

#87 PYGMY KINGFISHER *Ceyx picta*

Order: Coraciiformes. Family: Alcedinidae. English: African Pygmy-Kingfisher. Scientific: Ceyx pictus. Protonym: Todus pictus. Avibase ID: C0998BB90475C36D. Taxomic Serial Number: TSN: 692713

#88 RED-HEADED DWARF KINGFISHER *Ceyx lecontei*

Order: Coraciiformes. Family: Alcedinidae. English: Dwarf Kingfisher. Scientific: Ceyx lecontei. Protonym: Ispidina Lecontei. Avibase ID: 9BE54916EA869262. Taxomic Serial Number: TSN: 692712

#89 SENEGAL KINGFISHER *Halcyon Senegalensis*

Order: Coraciiformes. Family: Alcedinidae. English: Woodland Kingfisher. Scientific: Halcyon senegalensis. Protonym: Alcedo senegalensis. Avibase ID: CFD27A1FB27A6E10. Taxomic Serial Number: TSN: 554589

#90 BLUE BREASTED KINGFISHER *Halcyon malimbica*

Order: Coraciiformes. Family: Alcedinidae. English: Blue-breasted Kingfisher. Scientific: Halcyon malimbica. Protonym: Alcedo Malimbica. Avibase ID: 0D8BDD356AF10B22. Taxomic Serial Number: TSN: 554591

#91 GREY-HEADED KINGFISHER *Halcyon leucocephala*

Order: Coraciiformes. Family: Alcedinidae. English: Grey-headed Kingfisher. Scientific: Halcyon leucocephala. Protonym: Alcedo leucocephala. Avibase ID: 178B6892F59B71D3. Taxomic Serial Number: TSN: 554588

#92 WHITE-THROATED BEE-EATER *Merops albicollis*

Order: Coraciiformes. Family: Meropidae. English: White-throated Bee-eater. Scientific: Merops albicollis. Protonym: Merops albicollis. Avibase ID: 03C4A0C92560EB26. Taxomic Serial Number: TSN: 554653

#93 BLACK BEE-EATER *Merops gularis*

Order: Coraciiformes. Family: Meropidae. English: Black Bee-eater. Scientific: Merops gularis. Protonym: Merops gularis. Avibase ID: 3B472CF590E4F346. Taxomic Serial Number: TSN: 554643

#94 BROAD-BILLED ROLLER *Eurystomus glaucurus*

Order: Coraciiformes. Family: Coraciidae. English: Broad-billed Roller. Scientific: Eurystomus glaucurus. Protonym: Coracias glaucurus. Avibase ID: 4F01F4165EC3954E. Taxomic Serial Number: TSN: 554526

#95 BLUE-THROATED ROLLER *Eurystomus gularis*

Order: Coraciiformes. Family: Coraciidae. English: Blue-throated Roller. Scientific: Eurystomus gularis. Protonym: Eurystomus gularis. Avibase ID: 8FFDE282DE05C176. Taxomic Serial Number: TSN: 554527

#96 [Rufous-crowned Roller, Coracias naevia, 38cm. Farmer #50]

Order: Coraciiformes. Family: Coraciidae. English: Rufous-crowned Roller. Scientific: Coracias naevius. Protonym: Coracias naevia. Avibase ID: 2624054ED644AABB. Taxomic Serial Number: TSN: 692685

#97 GUINEA WOOD HOOPOE (KAKELAAR) *Phoeniculus purpureus*

Order: Upupiformes. Family: Phoeniculidae. English: Green Woodhoopoe. Scientific: Phoeniculus purpureus. Protonym: Promerops purpureus. Avibase ID: 28CACA8FA9A07018. Taxomic Serial Number: TSN: 678145

#98 BUFF-HEADED WOOD HOOPOE *Phoeniculus bollei*

Order: Upupiformes. Family: Phoeniculidae. English: White-headed Woodhoopoe.

Scientific: Phoeniculus bollei. Protonym: Irrisor Bollei. Avibase ID: D1FFB47492CD4B35. Taxomic Serial Number: TSN: 554473

#99 GREY HORNBILL *Tokus nasutus*

Order: Bucerotiformes. Family: Bucerotidae. English: African Grey Hornbill. Scientific: Tockus nasutus. Protonym: Buceros nasutus. Avibase ID: 0CCD664DDD5E664B. Taxomic Serial Number: TSN: 554415

#100 BLACK DWARF HORNBILL *Tockus hartlaubi*

Order: Bucerotiformes. Family: Bucerotidae. English: Black Dwarf Hornbill. Scientific: Tockus hartlaubi. Protonym: Toccus [sic] hartlaubi. Avibase ID: 39F21FF96BFD1577. Taxomic Serial Number: TSN: 554403

#101 ALLIED HORNBILL *Tockus fasciatus semifasciatus*

Order: Bucerotiformes. Family: Bucerotidae. English: Allied Hornbill. Scientific: Tockus fasciatus semifasciatus. Protonym: Buceros semifasciatus. Avibase ID: 89218876B46F34B1. Taxomic Serial Number: TSN: 707825

#102 WHITE-CRESTED HORNBILL *Tropicranus albocristatus*

Order: Bucerotiformes. Family: Bucerotidae. English: White-crested Hornbill. Scientific: Tropicranus albocristatus. Protonym: Buceros albo-cristatus. Avibase ID: 9B729FF3D03FCB92. Taxomic Serial Number: TSN: 707784

#103 PIPING HORNBILL *Bycanistes fistulata*

Order: Bucerotiformes. Family: Bucerotidae. English: Piping Hornbill. Scientific: Bycanistes fistulator. Protonym: Buceros Fistulator. Avibase ID: 2AAFDD0026D5797D. Taxomic Serial Number: TSN: 707792

#104 HAIRY-BREASTED TOOTHBILL [BARBET] *Lybius hirsutus*

Order: Piciformes. Family: Ramphastidae. English: Hairy-breasted Barbet. Scientific: Tricholaema hirsuta. Protonym: Pogonias hirsutus. Avibase ID: ECD7738CA89E34F4. Taxomic Serial Number: TSN: 685923

#105 NAKED-FACED BARBET *Gymnobucco calvus*

Order: Piciformes. Family: Ramphastidae. English: Naked-faced Barbet. Scientific: Gymnobucco calvus. Protonym: Bucco calvus. Avibase ID: F06B282BAE91920F. Taxomic Serial Number: TSN: 554194

#106 BRISTLE-NOSED BARBET *Gymnobucco peli*

Order: Piciformes. Family: Ramphastidae. English: Bristle-nosed Barbet. Scientific: Gymnobucco peli. Protonym: Gymnobucco Peli. Avibase ID: 92757910F43BF91C. Taxomic Serial Number: TSN: 554195

#107 SPECKLED TINKER BIRD *Pogoniulus scolopaceus*

Order: Piciformes. Family: Ramphastidae. English: Speckled Tinkerbird. Scientific: Pogoniulus scolopaceus. Protonym: Xylobucco scolopaceus. Avibase ID: EEA161A8A5344B2B. Taxomic Serial Number: TSN: 554202

#108 YELLOW-THROATED TINKER BIRD *Pogoniulus subsulphureus*

Order: Piciformes. Family: Ramphastidae. English: Yellow-throated Tinkerbird. Scientific: Pogoniulus subsulphureus. Protonym: Bucco subsulphureus. Avibase ID: 523991EFD3803032. Taxomic Serial Number: TSN: 554207

#109 YELLOW-BILLED BARBET *Trachyphonus purpuratus*

Order: Piciformes. Family: Ramphastidae. English: Yellow-billed Barbet. Scientific: Trachylaemus purpuratus. Protonym: Trachyphonus lurpuratus. Avibase ID: 75DF194C91B89D54. Taxomic Serial Number: TSN: 685721

#110 LESSER HONEY-GUIDE *Indicator minor*

Order: Charadriiformes. Family: Charadriidae. English: Spur-winged Lapwing. Scientific: Vanellus spinosus. Protonym: Charadrius spinosus. Avibase ID: F5E92B225F648330. Taxomic Serial Number: TSN: 176499

#111 WRYNECK *Jynx torquilla*

Order: Piciformes. Family: Picidae. English: Eurasian Wryneck. Scientific: Jynx torquilla. Protonym: Jynx Torquilla. Avibase ID: B2E6AB9FC2608DFA. Taxomic Serial Number: TSN: 178150

#112 BUFF-SPOTTED WOODPECKER *Campethera nivosa*

Order: Piciformes. Family: Picidae. English: Buff-spotted Woodpecker. Scientific: Campethera nivosa. Protonym: Dendromus nivosus. Avibase ID: 02E56D9865ACB418. Taxomic Serial Number: TSN: 554006

#113 GABON WOODPECKER *Dendropicos gabonensis*

Order: Piciformes. Family: Picidae. English: Gabon Woodpecker. Scientific: Dendropicos

gabonensis. Protonym: Dendrobates Gabonensis. Avibase ID: 8B3DF11879F5506E. Taxomic Serial Number: TSN: 686145

#114 FIRE-BELLIED WOODPECKER *Mesopicos pyrrhogaster*

Order: Piciformes. Family: Picidae. English: Fire-bellied Woodpecker. Scientific: Dendropicos pyrrhogaster. Protonym: Picus (Chloropicus) Pyrrhogaster. Avibase ID: 8E98933455DECA5D. Taxomic Serial Number: TSN: 554017

#115 EUROPEAN SWALLOW *Hirundo rustica*

Order: Passeriformes. Family: Hirundinidae. English: Barn Swallow. Scientific: Hirundo rustica. Protonym: Hirundo rustica. Avibase ID: 58C502EA7AF3E023. Taxomic Serial Number: TSN: 178448

#116 ETHIOPEAN SWALLOW *Hirundo aethiopica*

Order: Passeriformes. Family: Hirundinidae. English: Ethiopian Swallow. Scientific: Hirundo aethiopica. Protonym: Hirundo aethiopica. Avibase ID: 42E93B64D9C74D3F. Taxomic Serial Number: TSN: 560456

#117 RUFOUS-CHESTED SWALLOW *Hirundo semirufa*

Order: Passeriformes. Family: Hirundinidae. English: Rufous-chested Swallow. Scientific: Cecropis semirufa. Protonym: Hirundo semirufa. Avibase ID: 958F4A5E90FEB8C7. Taxomic Serial Number: TSN: 560485

#118 EUROPEAN HOUSE MARTIN *Delichon Urbica*

Order: Passeriformes. Family: Hirundinidae. English: Northern House-Martin. Scientific: Delichon urbicum. Protonym: Hirundo urbica. Avibase ID: E4BB82F50C488B8B. Taxomic Serial Number: TSN: 726115

#119 FANTI ROUGH-WINGED SWALLOW *Psalidoprocne obscura*

Order: Passeriformes. Family: Hirundinidae. English: Fanti Sawwing. Scientific: Psalidoprocne obscura. Protonym: Hirundo obscura. Avibase ID: 8CA8B6594CEF258F. Taxomic Serial Number: TSN: 562501

#120 BLUE-HEADED WAGTAIL *Motacilla flava*

Order: Passeriformes. Family: Motacillidae. English: Blue-headed Wagtail. Scientific: Motacilla flava. Protonym: Motacilla flava. Avibase ID: C0876FE9D56CCDEB. Taxomic Serial Number: TSN: 178483

#121 YELLOW WAGTAIL *Motacilla flava flavissima*

Order: Passeriformes. Family: Motacillidae. English: Yellowish-crowned Wagtail. Scientific: Motacilla flavissima. Protonym: Budytes flavissima. Avibase ID: 34DA7F52E134110E. Taxomic Serial Number: TSN: 178483

#122 AFRICAN PIED WAGTAIL *Motacilla alba*

Order: Passeriformes. Family: Motacillidae. English: White Wagtail. Scientific: Motacilla alba. Protonym: Motacilla alba. Avibase ID: 80A3185DD94F9D98. Taxomic Serial Number: TSN: 178476

#123 PLAIN-BACKED PIPIT *Anthus leucophrys*

Order: Passeriformes. Family: Motacillidae. English: Plain-backed Pipit. Scientific: Anthus leucophrys. Protonym: Anthus leucophrys. Avibase ID: ECC3F122FD09C14F. Taxomic Serial Number: TSN: 558652

#124 TREE PIPIT *Anthus trivialis*

Order: Passeriformes. Family: Motacillidae. English: Tree Pipit. Scientific: Anthus trivialis. Protonym: Alauda trivialis. Avibase ID: 365F5E975B414FE6. Taxomic Serial Number: TSN: 178500

#125 YELLOW-THROATED LONGCLAW *Macronyx croceus*

Order: Passeriformes. Family: Motacillidae. English: Yellow-throated Longclaw. Scientific: Macronyx croceus. Protonym: Alauda crocea. Avibase ID: 0D9BFED179B45DB3. Taxomic Serial Number: TSN: 560925

#126 RED-BILLED SHRIKE *Prionops caniceps*

Order: Passeriformes. Family: Malaconotidae. English: Chestnut-bellied Helmetshrike. Scientific: Prionops caniceps. Protonym: Sigmodus caniceps. Avibase ID: B1EF3E4F459806EF. Taxomic Serial Number: TSN: 562463

#127 GAMBIAN PUFF BACK SHRIKE *Dryoscopus gambensis*

Order: Passeriformes. Family: Malaconotidae. English: Northern Puffback. Scientific: Dryoscopus gambensis. Protonym: Lanius gambensis. Avibase ID: 7DE7F0ED411E691E. Taxomic Serial Number: TSN: 559825

#128 SABINE'S PUFF BACK SHRIKE *Dryoscopus sabini*

Order: Passeriformes. Family: Malaconotidae. English: Large-billed Puffback. Scientific:

Dryoscopus sabini. Protonym: Thamnophilus Sabini. Avibase ID: DEE6CC4D331DB8FB. Taxomic Serial Number: TSN: 559827

#129 MANY COLOURED BUSH SHRIKE *Malaconotus multicolor*

Order: Passeriformes. Family: Malaconotidae. English: Many-colored Bushshrike. Scientific: Telophorus multicolor. Protonym: Laniarius multicolor. Avibase ID: 3703187C2C2205D5. Taxomic Serial Number: TSN: 563342

#130 FIERY-BREASTED BUSH-SHRIKE *Malaconotus cruentus*

Order: Passeriformes. Family: Malaconotidae. English: Fiery-breasted Bushshrike. Scientific: Malaconotus cruentus. Protonym: Vanga cruenta. Avibase ID: 2714B2A756B95E62. Taxomic Serial Number: TSN: 560945

#131 WOODCHAT *Lanius senator*

Order: Passeriformes. Family: Laniidae. English: Woodchat Shrike. Scientific: Lanius senator. Protonym: Lanius Senator. Avibase ID: 7E70D490A6476D16. Taxomic Serial Number: TSN: 560732

#132 EUROPEAN GOLDEN ORIOLE *Oriolus oriolus*

Order: Passeriformes. Family: Oriolidae. English: Eurasian Golden-Oriole. Scientific: Oriolus oriolus. Protonym: Coracias Oriolus. Avibase ID: 92A772BBB88868CD. Taxomic Serial Number: TSN: 561707

#133 BLACK-WINGED ORIOLE *Oriolus nigripennis*

Order: Passeriformes. Family: Oriolidae. English: Black-winged Oriole. Scientific: Oriolus nigripennis. Protonym: Oriolus nigripennis. Avibase ID: DBBB162B137A4348. Taxomic Serial Number: TSN: 561706

#134 SQUARE-TAILED DRONGO *Dicrurus ludwigii*

Order: Passeriformes. Family: Dicruridae. English: Square-tailed Drongo. Scientific: Dicrurus ludwigii. Protonym: Edolius ludwigii. Avibase ID: E83D45A633F66806. Taxomic Serial Number: TSN: 559769

#135 SHINING DRONGO *Dicrurus atripennis*

Order: Passeriformes. Family: Dicruridae. English: Shining Drongo. Scientific: Dicrurus atripennis. Protonym: Dicrurus atripennis. Avibase ID: 28AC53BEB114CBB4. Taxomic Serial Number: TSN: 559760

#136 VELVET-MANTLED DRONGO *Dicrurus adsimilis modestus*

Order: Passeriformes. Family: Dicruridae. English: Velvet-mantled Drongo. Scientific: Dicrurus modestus. Protonym: Dicrurus modestus. Avibase ID: 5DEB4565B66BA50E. Taxomic Serial Number: TSN: 559771

#137 NARROW-TAILED STARLING *Poeoptera lugubris*

Order: Passeriformes. Family: Sturnidae. English: Narrow-tailed Starling. Scientific: Poeoptera lugubris. Protonym: Poeoptera lugubris. Avibase ID: E2FB8C490A5AD824. Taxomic Serial Number: TSN: 562365

#138 CHESTNUT-WINGED STARLING *Onychognathus fulgidus*

Order: Passeriformes. Family: Sturnidae. English: Chestnut-winged Starling. Scientific: Onychognathus fulgidus. Protonym: Onychognathus fulgidus. Avibase ID: 01D755E8A671D71E. Taxomic Serial Number: TSN: 561670

#139 SPLENDID GLOSSY STARLING *Lamprocolius splendidus*

Order: Passeriformes. Family: Sturnidae. English: Splendid Glossy-Starling. Scientific: Lamprotornis splendidus. Protonym: T [urdus] splendidus. Avibase ID: 18B10CF9F269693B. Taxomic Serial Number: TSN: 560689

#140 AMETHYST STARLING *Cinnyricinclus leucogaster*

Order: Passeriformes. Family: Sturnidae. English: Violet-backed Starling. Scientific: Cinnyricinclus leucogaster. Protonym: Turdus leucogaster. Avibase ID: B1A3AF6C3BF7EDFF. Taxomic Serial Number: TSN: 559294

#141 RED-SHOULDERED CUCKOO SHRIKE *Campephaga phoenicea*

Order: Passeriformes. Family: Campephagidae. English: Red-shouldered Cuckoo-shrike. Scientific: Campephaga phoenicea. Protonym: Ampelis phoenicea. Avibase ID: 439F76D18410EBF7. Taxomic Serial Number: TSN: 559016

#142 COMMON or GARDEN BULBUL *Pycnonotus barbatus*

Order: Passeriformes. Family: Pycnonotidae. English: Garden Bulbul. Scientific: Pycnonotus barbatus. Protonym: Turdus barbatus. Avibase ID: 6ABDB63537227774. Taxomic Serial Number: TSN: 562602

#143 LITTLE GREY BULBUL *Andropadus gracilis*

Order: Passeriformes. Family: Pycnonotidae. English: Grey Greenbul. Scientific:

Andropadus gracilis. Protonym: Andropadus gracilis. Avibase ID: 486103D72507F76C. Taxomic Serial Number: TSN: 558583

#144 SLENDER-BILLED BULBUL *Androdadus gracilirostris*

Order: Passeriformes. Family: Pycnonotidae. English: Slender-billed Greenbul. Scientific: Andropadus gracilirostris. Protonym: Andropadus gracilirostris. Avibase ID: 5D82C13BD6554647. Taxomic Serial Number: TSN: 558582

#145 LITTLE GREEN BULBUL *Andropadus virens*

Order: Passeriformes. Family: Pycnonotidae. English: Little Greenbul. Scientific: Andropadus virens. Protonym: Andropadus virens. Avibase ID: 3413C42CFE613F82. Taxomic Serial Number: TSN: 558594

#146 YELLOW-WHISKERED BULBUL *Andropadus latirostris*

Order: Passeriformes. Family: Pycnonotidae. English: Yellow-whiskered Greenbul. Scientific: Andropadus latirostris. Protonym: Andropadus latirostris. Avibase ID: 728B225E752DB2FD. Taxomic Serial Number: TSN: 558587

#147 WHITE-TAILED GREENBUL *Baeopogon indicator*

Order: Passeriformes. Family: Pycnonotidae. English: Honeyguide Greenbul. Scientific: Baeopogon indicator. Protonym: Criniger indicator. Avibase ID: E6A0D2081861623B. Taxomic Serial Number: TSN: 558844

#148 SIMPLE LEAF LOVE *Chlorocichla simplex*

Order: Passeriformes. Family: Pycnonotidae. English: Simple Greenbul. Scientific: Chlorocichla simplex. Protonym: Trichophorus simplex. Avibase ID: D3D4D1B7CDB80226. Taxomic Serial Number: TSN: 559210

#149 BAUMAN'S GREENBUL *Phyllastrephus baumanni*

Order: Passeriformes. Family: Pycnonotidae. English: Baumann's Olive-Greenbul. Scientific: Phyllastrephus baumanni. Protonym: Phyllostrephus [sic] baumanni. Avibase ID: D5A35997E3471A7F. Taxomic Serial Number: TSN: 562063

#150 WHITE-THROATED GREENBUL *Phyllastrephus albigularis*

Order: Passeriformes. Family: Pycnonotidae. English: White-throated Greenbul. Scientific: Phyllastrephus albigularis. Protonym: Xenocichla albigularis. Avibase ID: D4CB1B8932E129AF. Taxomic Serial Number: TSN: 562060

#151 SWAMP BULBUL *Theselocichla leucopleura*

Order: Passeriformes. Family: Pycnonotidae. English: Swamp Greenbul. Scientific: Thescelocichla leucopleura. Protonym: Phyllostrophus [sic] leucopleurus. Avibase ID: EBE5673604DFF259. Taxomic Serial Number: TSN: 563413

#152 LEAF LOVE *[Pyrrhurus] Phyllastrephus scandens*

Order: Passeriformes. Family: Pycnonotidae. English: Leaf-love. Scientific: Pyrrhurus scandens. Protonym: Phyllastrephus scandens. Avibase ID: E781F61C3BE55121. Taxomic Serial Number: TSN: 562079

#153 GREY-HEADED BRISTLEBILL *Bleda canicapilla*

Order: Passeriformes. Family: Pycnonotidae. English: Grey-headed Bristlebill. Scientific: Bleda canicapillus. Protonym: Trichophorus canicapillus. Avibase ID: D4B9EE90D79F3FCD. Taxomic Serial Number: TSN: 558905

#154 WHITE-BEARDED BULBUL *Criniger calurus*

Order: Passeriformes. Family: Pycnonotidae. English: Red-tailed Bulbul. Scientific: Criniger calurus. Protonym: Trichophorus calurus. Avibase ID: F8104BC1FEFA8B70. Taxomic Serial Number: TSN: 559586

[Simple-bearded Bulbul, *Criniger barbatus*, 18cm. Farmer: picture lost]

#155 Order: Passeriformes. Family: Pycnonotidae. English: Bearded Bulbul. Scientific: Criniger barbatus. Protonym: Trichophorus barbatus. Avibase ID: 0F97A3561BBEDA56. Taxomic Serial Number: TSN: 559585

WEST AFRICAN NICATOR

Nicator chloris

#156 Order: Passeriformes. Family: Genera Incertae Sedis. English: Yellow-spotted Nicator. Scientific: Nicator chloris. Protonym: Lanius chloris. Avibase ID: 6413CE1A45E48AB5. Taxomic Serial Number: TSN: 561611

#157 WHINCHAT *Saxicola rubetra*

Order: Passeriformes. Family: Muscicapidae. English: Whinchat. Scientific: Saxicola rubetra. Protonym: Motacilla Rubetra. Avibase ID: A0EDAEA2E89A9A96. Taxomic Serial Number: TSN: 562837

#158 FIRE-CRESTED ALETHE *Alethe diademata*

Order: Passeriformes. Family: Turdidae. English: White-tailed Alethe. Scientific: Alethe diademata. Protonym: Bessonornis (Turdus) diadematus. Avibase ID: ECD2AB676D4C61D1. Taxomic Serial Number: TSN: 558520

#159 SNOW-CROWNED ROBIN CHAT *Cossypha niveicapilla*

Order: Passeriformes. Family: Muscicapidae. English: Snowy-crowned Robin-Chat. Scientific: Cossypha niveicapilla. Protonym: Turdus niveicapilla. Avibase ID: BB05D1FC2BADE469. Taxomic Serial Number: TSN: 559540

#160 NIGHTINGALE *Luscinia megarhynchos*

Order: Passeriformes. Family: Muscicapidae. English: Common Nightingale. Scientific: Luscinia megarhynchos. Protonym: Luscinia megarhynchos. Avibase ID: 7C7F0DEE5B364038. Taxomic Serial Number: TSN: 560897

#161 FINSCH'S RUSTY (FLYCATCHER) THRUSH *Stizorhina fraseri*

Order: Passeriformes. Family: Turdidae. English: Rufous Flycatcher-Thrush. Scientific: Stizorhina fraseri. Protonym: Muscicapa Fraseri. Avibase ID: 031AC7C9301A1383. Taxomic Serial Number: TSN: 561566

#162 KURRICHANE THRUSH *Turdus pelios*

Order: Passeriformes. Family: Turdidae. English: African Thrush. Scientific: Turdus pelios. Protonym: Turdus pelios. Avibase ID: 40A2405D8F570AE9. Taxomic Serial Number: TSN: 563603

#163 MELODIOUS WARBLER *Hippolais polyglotta*

Order: Passeriformes. Family: Sylviidae. English: Melodious Warbler. Scientific: Hippolais polyglotta. Protonym: Sylvia polyglotta. Avibase ID: DCDD1BCA24E978F5. Taxomic Serial Number: TSN: 560451

#164 GARDEN WARBLER *Sylvia borin*

Order: Passeriformes. Family: Sylviidae. English: Garden Warbler. Scientific: Sylvia borin. Protonym: Motacilla Borin. Avibase ID: A6A4FC63261EA8CD. Taxomic Serial Number: TSN: 563185

EUROPEAN BLACKCAP WARBLER

Sylvia atricapilla

#165 Order: Passeriformes. Family: Sylviidae. English: Blackcap. Scientific: Sylvia

atricapilla. Protonym: Motacilla Atricapilla. Avibase ID: 61F9065BE0965E1A. Taxomic Serial Number: TSN: 563183

WHITE-THROATED WARBLER

Sylvia communis

#166 Order: Passeriformes. Family: Sylviidae. English: Common Whitethroat. Scientific: Sylvia communis. Protonym: Sylvia communis. Avibase ID: 14AFBA82D556918C. Taxomic Serial Number: TSN: 563188

WILLOW WARBLER

Phylloscopus trochilus

#167 Order: Passeriformes. Family: Sylviidae. English: Willow Warbler. Scientific: Phylloscopus trochilus. Protonym: Motacilla Trochilus. Avibase ID: 88F4B969622B8268. Taxomic Serial Number: TSN: 179841

WOOD WARBLER

Phylloscopus sibilatrix

#168 Order: Passeriformes. Family: Sylviidae. English: Wood Warbler. Scientific: Phylloscopus sibilatrix. Protonym: Motacilla Sibilatrix. Avibase ID: 572C4C7FD4322D14. Taxomic Serial Number: TSN: 179847

#169 WHISTLING GRASS WARBLER *Cisticola lateralis*

Order: Passeriformes. Family: Cisticolidae. English: Whistling Cisticola. Scientific: Cisticola lateralis. Protonym: Drymoica lateralis. Avibase ID: 5A1840290C2EB2AE. Taxomic Serial Number: TSN: 559337

#170 CHATTERING GRASS WARBLER *Cisticola anonymus*

Order: Passeriformes. Family: Cisticolidae. English: Chattering Cisticola. Scientific: Cisticola anonymus. Protonym: Drymoeca anonyma. Avibase ID: 01CFA60AC9AF58D3. Taxomic Serial Number: TSN: 559309

#171 SHORTWING GRASS WARBLER *Cisticola brachypterus*

Order: Passeriformes. Family: Cisticolidae. English: Siffling Cisticola. Scientific: Cisticola brachypterus. Protonym: Drymoeca brachyptera. Avibase ID: FBDCA962A03CC7E7. Taxomic Serial Number: TSN: 559313

#172 RED-WINGED WARBLER *Prinia erythroptera*

Order: Passeriformes. Family: Cisticolidae. English: Red-winged Warbler. Scientific: Heliolais erythropterus. Protonym: Drymoica erythroptera. Avibase ID: C67FD539EECC3942. Taxomic Serial Number: TSN: 560363

#173 [Red-faced Cisticola, *Cisticola erythorps*, 10cm. Farmer: picture lost]

Order: Passeriformes. Family: Cisticolidae. English: Red-faced Cisticola. Scientific: Cisticola erythrops. Protonym: Drymoeca erythrops. Avibase ID: 8AB622BB594F3449. Taxomic Serial Number: TSN: 559327

#174 WEST AFRICAN PRINIA *Prinia subflava*

Order: Passeriformes. Family: Cisticolidae. English: Tawny-flanked Prinia. Scientific: Prinia subflava. Protonym: Motacilla subflava. Avibase ID: 63F72CA7A9412F97. Taxomic Serial Number: TSN: 562453

#175 SLATE-BREASTED FOREST WARBLER *Apalis rufogularis*

Order: Passeriformes. Family: Cisticolidae. English: Buff-throated Apalis. Scientific: Apalis rufogularis. Protonym: Drymoica rufogularis. Avibase ID: 75E0430BC4AB0FB4. Taxomic Serial Number: TSN: 558695

#176 YELLOW-BROWED [Olive-green] CAMAROPTERA *Camaroptera superciliaris*

Order: Passeriformes. Family: Cisticolidae. English: Yellow-browed Camaroptera. Scientific: Camaroptera superciliaris. Protonym: Sylvicola superciliaris. Avibase ID: 63220C7976D9E1E9. Taxomic Serial Number: TSN: 559011

#177 GREEN-BACKED CAMAROPTERA *Camaroptera chloronota*

Order: Passeriformes. Family: Cisticolidae. English: Olive-green Camaroptera. Scientific: Camaroptera chloronota. Protonym: Camaroptera chloronota. Avibase ID: 65393B92D360769B. Taxomic Serial Number: TSN: 559009

#178 GREY-BACKED CAMAROPTERA *Camaroptera brachyura*

Order: Passeriformes. Family: Cisticolidae. English: Green-backed Camaroptera. Scientific: Camaroptera brachyura. Protonym: Sylvia brachyura. Avibase ID: 9DACBD080E671EA5. Taxomic Serial Number: TSN: 559007

#179 WHITE-BELLIED CROMBEC *Sylvietta virens flaviventris*

Order: Passeriformes. Family: Sylviidae. English: Green Crombec. Scientific: Sylvietta virens. Protonym: Sylvietta virens. Avibase ID: 4814D018AFA2AF00. Taxomic Serial Number: TSN: 563214

#180 KEMP'S BUSH WARBLER *Macrosphenus [kempi] flavicans*

Order: Passeriformes. Family: Sylviidae. English: Yellow Longbill. Scientific: Macrosphenus flavicans. Protonym: Macrosphenus flavicans. Avibase ID: 931B81D91D76C9D6. Taxomic Serial Number: TSN: 560932

#181 GREEN HYLIA *Hylia prasina*

Order: Passeriformes. Family: Sylviidae. English: Green Hylia. Scientific: Hylia prasina. Protonym: Sylvia prasina. Avibase ID: 98BA31AA9A5B45F7. Taxomic Serial Number: TSN: 560501

#182 SPOTTED FLYCATCHER *Muscicapa striata*

Order: Passeriformes. Family: Muscicapidae. English: Spotted Flycatcher. Scientific: Muscicapa striata. Protonym: Motacilla striata. Avibase ID: EE8206E703914D22. Taxomic Serial Number: TSN: 561250

#183 PIED FLYCATCHER *Ficedula hypoleuca*

Order: Passeriformes. Family: Muscicapidae. English: European Pied Flycatcher. Scientific: Ficedula hypoleuca. Protonym: Motacilla hypoleuca. Avibase ID: 6E352E1870A195B7. Taxomic Serial Number: TSN: 560081

#184 PALE FLYCATCHER *Bradornis pallidus*

Order: Passeriformes. Family: Muscicapidae. English: Pale Flycatcher. Scientific: Melaenornis pallidus. Protonym: Musicapa [sic] pallida. Avibase ID: FA03A965234ED42B. Taxomic Serial Number: TSN: 558918

#185 CHESTNUT WATTLE-EYE *Platysteira castanea*

Order: Passeriformes. Family: Platysteiridae. English: Chestnut Wattle-eye. Scientific: Dyaphorophyia castanea. Protonym: Platysteira castanea. Avibase ID: 8D5622591D568D72. Taxomic Serial Number: TSN: 562266

#186 BLISSETT'S WATTLE EYE *Platisteira blissetti*

Order: Passeriformes. Family: Platysteiridae. English: Red-cheeked Wattle-eye. Scientific: Dyaphorophyia blissetti. Protonym: Diaphorophyia Blissetti. Avibase ID: 5369EE11056143BE. Taxomic Serial Number: TSN: 562265

#187 CHESTNUT-CAPPED FLYCATCHER *Erythrocercus mccalli*

Order: Passeriformes. Family: Genera Incertae Sedis. English: Chestnut-capped Flycatcher.

Scientific: Erythrocercus mccallii. Protonym: Pycnosphrys McCallii. Avibase ID: 9EB7EBA911EA2DDE. Taxomic Serial Number: TSN: 559967

#188 CRESTED FLYCATCHER *Trococercus nitens*

Order: Passeriformes. Family: Monarchidae. English: Blue-headed Crested-Flycatcher. Scientific: Trochocercus nitens. Protonym: Trochocercus nitens. Avibase ID: 3800DCCF8E4326FA. Taxomic Serial Number: TSN: 563527

#189 FAGAN'S PARADISE FLYCATCHER *Terpsiphone rufiventer*

Order: Passeriformes. Family: Monarchidae. English: Black-headed Paradise-Flycatcher. Scientific: Terpsiphone rufiventer. Protonym: Muscipeta rufiventer. Avibase ID: 5A70C87A34E695F3. Taxomic Serial Number: TSN: 563370

#190 YELLOW-CHINNED/ GREY-CHINNED SUNBIRD *Anthreptes rectirostris*

Order: Passeriformes. Family: Nectariniidae. English: Green Sunbird. Scientific: Anthreptes rectirostris. Protonym: Certhia rectirostris. Avibase ID: 3429B28327337144. Taxomic Serial Number: TSN: 558627

#191 COLLARED SUNBIRD *Anthreptes collaris*

Order: Passeriformes. Family: Nectariniidae. English: Collared Sunbird. Scientific: Anthodiaeta collaris. Protonym: Cinnyris collaris. Avibase ID: 1611F295EC75FB50. Taxomic Serial Number: TSN: 558617

#192 SPLENDID SUNBIRD *Nectarinia coccinigaster*

Order: Passeriformes. Family: Nectariniidae. English: Splendid Sunbird. Scientific: Cinnyris coccinigastrus. Protonym: Certhia coccinigastra. Avibase ID: 48EC6C781978DA0C. Taxomic Serial Number: TSN: 561493

#193 OLIVE-BACKED SUNBIRD *Nictarinia verticalis*

Order: Passeriformes. Family: Nectariniidae. English: Green-headed Sunbird. Scientific: Cyanomitra verticalis. Protonym: Certhia verticalis. Avibase ID: 6DE16262C2F04AAA. Taxomic Serial Number: TSN: 561554

#194 OLIVE SUNBIRD *Nectarinia olivacea*

Order: Passeriformes. Family: Nectariniidae. English: Olive Sunbird. Scientific: Cyanomitra olivacea. Protonym: Cinnyris olivaceus. Avibase ID: 7E5B3C614F036798. Taxomic Serial Number: TSN: 561525

#195 BLUE-THROATED BROWN SUNBIRD *Nectarinia cyanolaema*

Order: Passeriformes. Family: Nectariniidae. English: Blue-throated Brown Sunbird. Scientific: Cyanomitra cyanolaema. Protonym: N.[ectarinia] cyanolaemus. Avibase ID: 36A24C796330E984. Taxomic Serial Number: TSN: 561498

#196 BUFF-THROATED SUNBIRD *Nectarinia adeberti*

Order: Passeriformes. Family: Nectariniidae. English: Blue-throated Brown Sunbird. Scientific: Cyanomitra cyanolaema. Protonym: N.[ectarinia] cyanolaemus. Avibase ID: 36A24C796330E984. Taxomic Serial Number: TSN: 561498

#197 OLIVE-BELLIED SUNBIRD *Nictarinia chloropygia*

Order: Passeriformes. Family: Nectariniidae. English: Buff-throated Sunbird. Scientific: Chalcomitra adelberti. Protonym: Cinnyris adelberti. Avibase ID: 59EE3B94C9828729. Taxomic Serial Number: TSN: 561477

#198 SUPERB SUNBIRD *Nectarinia superba*

Order: Passeriformes. Family: Nectariniidae. English: Superb Sunbird. Scientific: Cinnyris superbus. Protonym: Certhia superba. Avibase ID: 7C8BC7CF0F50D34E. Taxomic Serial Number: TSN: 561547

#199 WHITE-FRONTED GROSBEAK *Amblyospiza albifrons*

Order: Passeriformes. Family: Ploceidae. English: Grosbeak Weaver. Scientific: Amblyospiza albifrons. Protonym: Pyrrhula albifrons. Avibase ID: C7708C7028C1BE64. Taxomic Serial Number: TSN: 558548

#200 VILLAGE WEAVER *Ploceus cucullatus*

Order: Passeriformes. Family: Ploceidae. English: Village Weaver. Scientific: Ploceus cucullatus. Protonym: Oriolus cucullatus. Avibase ID: 1226BBB2A1B2E284. Taxomic Serial Number: TSN: 562296

#201 CHESTNUT AND BLACK WEAVER *Ploceus nigerrimus*

Order: Passeriformes. Family: Ploceidae. English: Vieillot's Black Weaver. Scientific: Ploceus nigerrimus. Protonym: Ploceus nigerrimus. Avibase ID: 2B5D181CD8E3859B. Taxomic Serial Number: TSN: 562315

#202 YELLOW-MANTLED WEAVER *Ploceus tricolor*

Order: Passeriformes. Family: Ploceidae. English: Yellow-mantled Weaver. Scientific:

Ploceus tricolor. Protonym: Hyphantornis tricolor. Avibase ID: BE85C81E93158343. Taxomic Serial Number: TSN: 562335

#203 IBADAN WEAVER *Malimbus ibadensis*

Order: Passeriformes. Family: Ploceidae. English: Ibadan Malimbe. Scientific: Malimbus ibadanensis. Protonym: Malimbus ibadanensis. Avibase ID: 228DDFAD43574FB1. Taxomic Serial Number: TSN: 560962

#204 RED-VENTED WEAVER *Malimbus scutatus*

Order: Passeriformes. Family: Ploceidae. English: Red-vented Malimbe. Scientific: Malimbus scutatus. Protonym: S [y]cobius scutatus. Avibase ID: 13AA5A5C3AFCEA0A. Taxomic Serial Number: TSN: 560967

#205 GRAY'S BLUE-BILLED WEAVER *Malimbus nitens*

Order: Passeriformes. Family: Ploceidae. English: Gray's Malimbe. Scientific: Malimbus nitens. Protonym: Ploceus nitens. Avibase ID: E27AFD147A3BB63F. Taxomic Serial Number: TSN: 560964

#206 RED-HEADED WEAVER *Malimbus rubricollis*

Order: Passeriformes. Family: Ploceidae. English: Red-headed Malimbe. Scientific: Malimbus rubricollis. Protonym: Ploceus rubricollis. Avibase ID: 960B56F246C8B562. Taxomic Serial Number: TSN: 560966

#207 CRESTED WEAVER *Malimbus malimbicus*

Order: Passeriformes. Family: Ploceidae. English: Crested Malimbe. Scientific: Malimbus malimbicus. Protonym: Tanagra malimbica. Avibase ID: D0203B65DC6FEF66. Taxomic Serial Number: TSN: 560963

#208 RED-HEADED DIOCH *Quelea erythrops*

Order: Passeriformes. Family: Ploceidae. English: Red-headed Quelea. Scientific: Quelea erythrops. Protonym: Ploceus erythrops. Avibase ID: F8041931EBD03502. Taxomic Serial Number: TSN: 562668

#209 PIN-TAILED WHYDAH *Vidua macroura*

Order: Passeriformes. Family: Viduidae. English: Pin-tailed Whydah. Scientific: Vidua macroura. Protonym: Fringilla (macroura). Avibase ID: 673E66F0FA0E3817. Taxomic Serial Number: TSN: 179625

#210 GREY-CROWNED NEGRO FINCH *Nigrita canicapilla*

Order: Passeriformes. Family: Estrildidae. English: Grey-headed Negrofinch. Scientific: Nigrita canicapillus. Protonym: Aethiops canicapillus. Avibase ID: B15F4C49065C86DF. Taxomic Serial Number: TSN: 561615

#211 PALE-FRONTED NEGRO FINCH *Nigrita luteifrons*

Order: Passeriformes. Family: Estrildidae. English: Pale-fronted Negrofinch. Scientific: Nigrita luteifrons. Protonym: Nigrita luteifrons. Avibase ID: AE4727FB798B36B6. Taxomic Serial Number: TSN: 561617

#212 WHITE-BREASTED NEGRO FINCH *Nigrita fusconota*

Order: Passeriformes. Family: Estrildidae. English: White-breasted Negrofinch. Scientific: Nigrita fusconotus. Protonym: Nigrita fusconotus. Avibase ID: F3B46894FE9005B3. Taxomic Serial Number: TSN: 561616

#213 BLUE-BILLED WEAVER *Spermophaga haematina*

Order: Passeriformes. Family: Estrildidae. English: Western Bluebill. Scientific: Spermophaga haematina. Protonym: Loxia haematina. Avibase ID: 3817DA4ABE5D080E. Taxomic Serial Number: TSN: 563053

#214 ORANGE-CHEEKED WAXBILL *Estrilda melpoda*

Order: Passeriformes. Family: Estrildidae. English: Orange-cheeked Waxbill. Scientific: Estrilda melpoda. Protonym: Fringilla melpoda. Avibase ID: 1E79A7D7AEE67569. Taxomic Serial Number: TSN: 179612

#215 BLUE-BILLED MANIKIN *Lonchura bicolor*

Order: Passeriformes. Family: Estrildidae. English: Black-and-white Munia. Scientific: Lonchura bicolor. Protonym: Amadina bicolor. Avibase ID: 21C4CE6A0D252540. Taxomic Serial Number: TSN: 560841

#216 BRONZE MANIKIN *Lonchura cucullata*

Order: Passeriformes. Family: Estrildidae. English: Bronze Munia. Scientific: Lonchura cucullata. Protonym: Spermestes cucullata. Avibase ID: 142E4CB7E5788254. Taxomic Serial Number: TSN: 179615

#217 BLACK-HEADED ORIOLE *Oriolus brachyrynchus*

Order: Passeriformes. Family: Oriolidae. English: Western Black-headed Oriole. Scientific:

Oriolus brachyrynchus. Protonym: Oriolus brachyrhynchus. Avibase ID: 418C7CCB79265662. Taxomic Serial Number: TSN: 561693

#218 CARMELITE SUNBIRD *Nectarinia fulginosa*

Order: Passeriformes. Family: Nectariniidae. English: Carmelite Sunbird. Scientific: Chalcomitra fuliginosa. Protonym: C [erthia] fuliginosa. Avibase ID: 23BEFB1980A7D06F. Taxomic Serial Number: TSN: 561502

#219 EUROPEAN CUCKOO *Cuculus canorus*

Order: Cuculiformes. Family: Cuculidae. English: Common Cuckoo. Scientific: Cuculus canorus. Protonym: Cuculus canorus. Avibase ID: B3D2C3C5B73EC8E8. Taxomic Serial Number: TSN: 177822

#220 STREAKY-BREASTED PYGMY RAIL (BOHM'S CRAKE) *Sarothrura böhmi*

Order: Gruiformes. Family: Rallidae. English: Streaky-breasted Flufftail. Scientific: Sarothrura boehmi. Protonym: Sarothrura böhmi. Avibase ID: EBA9F2C4AC6931EC. Taxomic Serial Number: TSN: 176366

#221 BLACK-BELLIED COUCAL *Centropus toulou*

Order: Cuculiformes. Family: Cuculidae. English: Madagascar Coucal. Scientific: Centropus toulou. Protonym: Cuculus Toulou. Avibase ID: 6F7BCBE589CCCD2E. Taxomic Serial Number: TSN: 554762

#222 PIED CUCKOO *Clamator jacobinus*

Order: Cuculiformes. Family: Cuculidae. English: Pied Cuckoo. Scientific: Clamator jacobinus. Protonym: Cuculus Jacobinus. Avibase ID: BF0A09546401D245. Taxomic Serial Number: TSN: 705297

OBITUARIES

Professor Emmanuel Asuquo OBOT (April 11, 1952 – June 3, 2012)

Professor Emmanuel Asuquo Obot was born 60 years ago at Uyo in the then Uyo Province of Eastern Nigeria (now Akwa Ibom State). He attended the Lutheran High School, Obot Idim, Akwa Ibom State and the University of Ife, Ile-Ife where he obtained all his three degrees in Botany viz: B.Sc. 1977, M.Sc. Plant Ecology 1980; and Ph.D. Plant Ecology, 1984). Rather fondly, he cherished his tutelage under Prof. W.W. Sanford, the Father of Plant Ecology at the University of Ife and a renowned Orchidologist who supervised his Postgraduate studies. As a student he was very active, easily noticed in the class and quite popular with his mates..

Prof. Obot at the April 2012 Annual Business Meeting of the Nigerian Field Society, OAU, Ile-Ife

He joined the services of the then University of Ife (now Obafemi Awolowo University) in 1978 as a Graduate Assistant in the newly created Institute of Ecology. He joined the services of the then Kainji Lake Research Institute (later renamed National Institute for Freshwater Fisheries Research), New Bussa, in 1979. As a Research Officer, he carried out studies on options for the management of wildlife habitats in the Kainji lake national park. It was during this period that he carried out studies that led one of his landmark publications: A model for estimating the optimum tree density for maximum herbaceous production in the

Guinea savanna of Nigeria (*Journal of Arid Environments* 14, 267-273: 1984). When the mandate of the Kainji lake Research institute was changed to research on freshwater fisheries, he applied himself to investigations on the utilization of *Echinochloa stagnina*, a grass that was then invading the Kainji Lake and making fishing difficult. He developed a computer based model for the management and utilization of the aquatic macrophyte, *Echinochloa stagnina* (that invaded Lake Kainji) as dry season livestock fodder for nomadic livestock that otherwise lose weight and form due to inadequate feed during the usually long dry season associated with the dry areas of Nigeria. Today, the results of this work is of direct benefit to people because the harvesting, drying and sale of *Echinochloa* "hay" based on the models is a full time occupation of a section of the population of villages around Lake Kainji especially in Birnin Yauri. He rose quickly through the ranks to become a Principal Research Officer (1985 - 1987) at National Institute for Freshwater Fisheries Research (NIFFR) New Bussa.

Emman as he was fondly called by friends and associates left NIFFR in 1987 for the Rivers State University of Science and Technology (RSUST), Port Harcourt (Rivers State) as Senior Lecturer and familiarized himself there with wetland, especially mangrove, structure and function. His stay at RSUST was brief as he soon left in 1989 to the Nigerian Defence Academy (NDA), Kaduna as Senior Lecture and Acting Dean, Faculty of Science. It was at NDA that he was promoted a Professor of Botany in October 1991. He was the Dean, Faculty of Science at NDA up till 1994. His quest for field 'action' and rather fortuitously, for familiarity with all the ecologies of Nigeria, made him join the WWF–UK Cross River National Park Project (Okwango Programme) as Biological Research Specialist. As the Coordinator of the Okwango Programme he worked closely with the local people to develop options for the rational use of the biological resources of the Park. His four-year stint at the Okwango National Park (1994-1998) adequately prepared him for the position of Director, Technical Programmes, Nigerian Conservation Foundation (NCF) from 1998 to 2003. He supervised NCF's field projects as well as coordinating conservation awareness and advocacy. He was Executive Director, NCF from 2003 until his death in the DANA air crash at Iju, near Lagos in the afternoon of Sunday, 3 June 2012.

Endowed with a sound academic training from Great Ife and his very rich and varied working experience, Emmanuel Obot established himself as a world class ecologist and a conservationist par excellence. He was a member of the Forestry Association of Nigeria, Nigerian Environmental Society, IUCN Orchid Survival Group (OSG) and IUCN Working Group on Extractive Industry and Biodiversity (WGEIS). He was also Co-Chairperson (South) IUCN Commission on Environmental Economics and Social Policy (CEESP). He was the President, Ecological Society of Nigeria and Fellow, the

Botanical Society of Nigeria (BOSON). We were reliably informed that his bag had been packed ready for him to travel to Ile-Ife on arrival from Abuja, to participate at the 21st annual conference of the Botanical Society of Nigeria that was scheduled to commence on the day of the DANA crash.

Prof. Emmanuel Obot published very widely and altogether had over 100 publications. He contributed to two film documentaries, conferences and national discourses. His other accomplishments include the following:

(i) Development of a strategy for the control of the invasive nuisance aquatic weeds on Lake Kainji through their utilization as fodder for cattle and livelihood resource for the rural riparian dwellers of the Kainji Lake basin;

(ii) Development and testing the governance structure that now allows communities living in close proximity of National Parks to have a voice and contribute to the management of the parks;

(iii) Promotion of a paradigm shift among Niger Delta wetland communities and Governments from the oil and gas dependence to sustainable management of renewable natural resources towards the realization of the trade value of biodiversity and poverty reduction;

(iv) Promotion of watershed conservation and the wise use of renewable natural resources through the Participatory Sustainable Management of Renewable Natural Resources in Buru, Taraba State, Nigeria; and

(v) Development of small-scale processes to add value to local forest products and improve family income earned from the collection and processing of non-timber forest products (NTFP).

One of the befitting honours to Prof. Obot was the naming of a new (species *nova*), butterfly subspecies *Acraca oreas oboti* after him. This honour was in appreciation of his in-depth knowledge of the Nigerian flora and his conservation efforts. Prof. Obot was a true field man and this must have attracted him to the fold of the Nigerian Field Society (NFS). In his element, he was admiring orchids, butterfly, mimicking birds or exchanging pleasantries with the drills. He was elected Editor of the Society's journal, Nigerian Field at the 2011 Annual Business Meeting (ABM) of the society held in Benin-City, Edo State at a critical time in the life of the journal. He was very committed to the Society and the Journal, his short time as Editor notwithstanding. He worked with a characteristic enthusiasm and speed to get the journal out in due time.

Prof. Obot was the first Council member to arrive for the 2012 ABM of the society

held at Ile-Ife in April 2012 and with him in office the society became very confident of a rosy future for the journal. The news of his tragic death in the ill-fated DANA air crash of 3rd June 2012 came to all members as a rude shock. For a long time, we hoped and prayed it was all a dream, at worst a nightmare. However we have course to thank God for his good life of remarkable service to humanity, science and the Nigerian Field. We pray that all the good tributes of his exemplary life shall live very long after him. Our deep sympathy goes out to his wife Ema and their four children. May light perpetual shine upon his soul!

Prof. I.F. Adeniyi
President, Nigerian Field Society

C/o Zoology Department, OAU, Ile-Ife.

Prof. Augustine O. Isichei
President, Botanical Society of Nigeria
C/o Dept. of Botany, OAU, Ile-Ife

Hon. Christopher Agboola Ajao 1932-2011

Hon. Christopher Agboola Ajao was the son of David Oladele Ajao, Senior Tutor at Iwo Baptist College and Comfort Adeduntan Togun, a nurse at the Baptist Hospital, Ogbomoso. He was educated at the Baptist Day School, Iwo and Baptist Boys' High School, Abeokuta (1945-50). After obtaining a Grade One in his Cambridge School Certificate, he continued his education overseas, qualifying as a physiotherapist with specialisation in hydrotheraphy. He joined the services of the Oyo State Government where he rose to the post of Chief Physiotherapist, also serving as Hon. Physiotherapist at the 2nd All Africa Games in 1973 and at the Commonwealth Games in 1974. He also held the post of Chief Physiotherapist at King Khalid Hospital, Saudi Arabia, for some years.

Pa Ajao was one of the pioneers of the physiotherapy profession in Nigeria, being a co-founder of the Nigerian Society of Physiotherapy in 1959 and the pioneer secretary of the organisation. He served in various capacities and led as president on various occasions. He pioneered the community physiotherapy service in 1974, taking physiotherapy to the rural areas. In recognition of his services to the profession, he was awarded the singular Silver Jubilee Meritorious Honour in 1985 and received the Honorary Fellowship Award in 2001.

Pa Ajao was a keen scouter, becoming Secretary of the Association in the former Western Region of Nigeria and later State Commissioner and President of the

Association in the former Oyo State. He was deeply concerned for the welfare of children with special needs and was a Life Member of the Board of Management School for Handicapped Children, Ibadan, from 1967 until his death.

Pa Ajao's deep knowledge of Nigerian history and culture with his concern for the environment attracted him to organisations such as the Nigerian Field Society, Legacy and the Nigerian Society for Information, Arts and Culture. His interests made him the best informed Commissioner for Information that Oyo State has ever had!

Though by no means parochial in his outlook, Pa Ajao made invaluable contributions to his home town, Ogbomoso. He was the pioneer Secretary of the Ogbomoso Investment Club, dedicated to the economic development of the town. He also belonged to the Ogbomoso Environmental Heritage and Cultural Association, Ogbomoso Community Foundation and was patron to many other societies.

He is survived by his widow, Ajike, children Olaitan and Dele, and grand children.

—Pat Oyelola
(based on funeral brochure)

In memoriam: Christopher Agboola Ajao (1932-211), a personal tribute

Death has deprived the Ibadan Branch o the Nigerian Field Society of one of its staunchest members and our family of a dear friend. Since he attended Baptist Boys' High School in Abeokuta, Mr. Ajao considered himself an honorary Egba and we would have many a long, good-humoured discussion about Egba history and tradition. He was keenly interested in arts and culture and we frequently exchanged related newspaper cuttings and snippets from the Internet. This led to our organizing a symposium on 18 November 2004 on "The preservation and restitution of Nigeria's cultural heritage," in conjunction with the National Museum of Unity, Ibadan, and Legacy. His enthusiasm for the social, intellectual and physical benefits of "Ayo" (Nig. Fld., vol. 70, part 2, pp. 172-173) resulted in an Ayo tournament organized under the auspices of the Society for Information Arts and Culture.

Pa Ajao was a great motivator, operating quietly, modestly, but very effectively—a veritable "Baba s'ale". He attended all Nigerian Field Society Ibadan Branch events and all national business meetings of the Society until incapacitated by health problems. He maintained his wit and good humour right until the end. Pa Ajao was a great humanist, appreciative of everyone who made genuine and honest efforts for the improvement of humankind. He was a man of integrity, without being smug, a man

of wit, without being vicious. Above all, he was a profoundly modest and unassuming person. This was reflected in the instructions he gave for his own burial, which was conducted without advertisement or fanfare in Ogbomoso. He will be missed in the many organizations which he animated with his ideas and supported with his benign presence.

We in "The Nigerian Field Society" will miss his enthusiastic support and encouragement for everything connected with the Nigerian Field Society and its Journal. We extend our sincere sympathy to his wife, Ajike, and his children, Dele and Olaitan, on the loss of a caring husband and father, whose unblemished name will endure as an inspiration to those he has left behind.

Alagba, sun re o!

Nat & Pat Oyelola
Nigerian Field Society, Ibadan

Chris Ajao fondly remembered

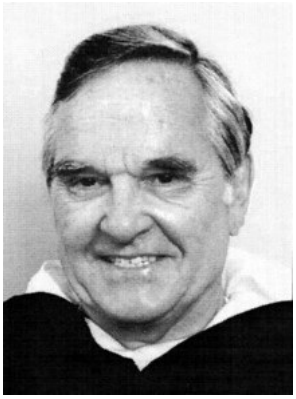
Chris Ajao was one of those rock solid persons you could always count on, and he also had a great sense of humor.

One incident comes to mind which I will always remember. A few years ago, Ibadan Branch hosted a lecture by an American historian on the women's protest in Abeokuta during WWII about unfair taxation. The reaction from the pro-and anti Alake groups in the audience was fantastic and spontaneous. Indeed, at one point Professor Olurin (nee Odutola) got up and sang a song which she remembered singing as a school girl in support of the Alake.

After which Chris Ajao, bristling with humor, stood up and said that he was just a "strapping young lad at the time, but he recalls riding across Abeokuta on his bicycle delivering messages on behalf of the protesters, and that of course 'women of the elite' (meaning Professor Olurin) were always in support of the Alake!" Perhaps it misses something in translation, but it was indeed a excellent rejoinder to pro-Alake forces in the audience. Chris Ajao will be dearly missed.

Chris Bankole, Vice Chairperson, Ibadan branch

Fr. Richard Robert Farmer, O.P. (9 January 1924-18 August 2006)



Born on January 9, 1924, the son of the late Arthur William and Edith Genevieve Farmer of Omaha, Nebraska, he was the brother of the late William, Margaret Mary Jackson, and Patricia Atwood.

Father Farmer graduated from Creighton Preparatory School, Omaha, and went to Iowa State University where he studied electrical engineering. After his second year, he was drafted into the army to serve in World War II. Because of his training in electrical engineering, he was assigned to the Army Signal Corps.

The army sent him for some training at the University of Arizona. In that capacity, he served in New Guinea and the Philippines. He returned to Iowa State after the war and earned a bachelor's degree in electrical engineering. He worked in New Jersey after graduation.

There, one Sunday, a visiting Dominican priest preached at his parish. Richard was impressed. That, and his reflection in the army on life's meaning, led him to give up a promising career to join the Dominican Order. After a year's novitiate at Winona, Minnesota, he made his first profession on 30 September 1950.

At the Dominican House of Studies, River Forest, Illinois, he obtained a Licentiate degree in Philosophy, and went to the Dominican House of Studies, Oakland, California, for theological studies. After being ordained a priest on 10 June 1955 in St. Mary Cathedral in San Francisco, he was sent to the new Dominican Priory at Dubuque, Iowa, to complete a master's degree in theology. Thereupon, he received an assignment to Nigeria, where he served for 33 years.

Coming by ship, he arrived at Lagos on 16 October 1957. From there he went immediately to Gusau, where he handled the parish and outstations. When I joined him there in 1964, I enjoyed his disquisitions on birds and their migrations, even from Europe. Following the coup d'état and riots in the North in January 1966, he left for Lagos.

In October 1967, he took up the post of lecturer in the Department of Philosophy and Religion at the University of Ife (now OAU), where he taught Philosophy. He also was Catholic Chaplain of the University.

Fr. Farmer was a foundation member of the Ife Branch of the Nigerian Field Society.

He had a particular interest in birds, and set nets in the forest to capture and photograph specimens. I had the privilege of accompanying him once on an outing to photograph birds. In the living room of his house hung a beautiful nest of a weaver bird, which was still there long after he left Ife. He gathered his research in a privately published monograph, *The birds of the University of Ife Campus*, the first edition in 1971, and a second expanded edition in 1973.

After a ending 1 October 1978, he was appointed Pastor & Superior at St. Dominic's, Yaba, Lagos. In December 1989, after fell very sick, he returned to the U.S., and took up residence in at the Dominican Priory in River Forest, Illinois, where he served as bursar for eight years and Catholic chaplain at O'Hare International Airport.

Father Farmer came to the Washington D.C. area in 2002, where he resided at St. Dominic's Priory in the District, and served as chaplain at both Reagan National Airport and Dulles Airport. I last visited him in Washington D.C. in 2008. Shortly after that, he retired to Chicago because of cancer, and died there on 18 August 2006.

Even more than his natural family, his Dominican brothers, and the many whom he taught, served and worked with, both in Nigeria and in the United States, appreciate this outstanding man —who sought no reward here (Mt 6), but whose deeds follow him beyond (Rev 14:13).

—Joseph Kenny, O.P.

Peter Denzil Alexander-Marrack (1946-2011)

Peter Alexander-Marrack was born in 1946 in Hammersmith, London, and educated at Hendon County Grammar School, and Corpus Christi College, Cambridge (1965-1971). He obtained a double first in Natural Sciences, specialising in Geology, and gained a Ph.D. for his geological work in east Greenland. He was a member of the Cambridge Bird Club, and also took part in a university botanical expedition to Turkey.

He joined the Shell Group in 1971, specialising in the geological interpretation of seismic data for oil and gas exploration. After basic training, he worked in the Netherlands, Brunei and Sarawak, Nigeria, Thailand, Gabon and Norway. He was in Lagos, Nigeria, from 1977-1981, where he extended his studies of birds, joined the Nigerian Field Society and was an active member of the Lagos Branch. His friend David Watters remembers many weekends visiting forest reserves and other places of interest. Peter was Secretary of the Society's Resident Committee from 1980-81, and was a member of the NFS for the rest of his life.

In 1994, he married Johanna Draisma, whom he had first met in Borneo. He continued bird watching, and was also interested in butterflies, dragonflies, spiders, robber flies and orchids. In 2000, he took early retirement and he and Jo moved to Heerenveen, Netherlands. They enjoyed many trips looking at plant and animal life, and he also researched his family history. In January 2010, he was diagnosed with incurable bowel cancer. At first he could go out in a wheel chair, but later was only able to watch the garden birds from his bed. He died on 25 December 2011.

We extend our sympathy to his family and friends.

—Joyce Lowe and David Watters
(based on an obituary written by Peter himself for his Cambridge College)

Peter Rutherford McKenzie

Peter McKenzie, who has died aged 87 after a long illness, was a lecturer in the Department of Religious Studies at the University of Ibadan between 1965 and 1970. His experiences and field work while in Nigeria resulted in an increasing and enduring fascination with traditional belief systems and their devotees, as well as their encounters with Christian Missionaries in the 19th century. He founded and edited 'Orita', a journal devoted to academic study of the three 'religions' in Nigeria, namely Christianity, Islam, and traditional religions. In 1970 he moved to England and went on to head the Department of Religions at Leicester University, though he retained a strong interest in African affairs through many links with former Nigerian colleagues and close friends.

Peter continued to pursue his academic research interests even into retirement, and published widely (e.g., *Inter-religious Encounters in West Africa, Leicester Studies in Religion*, Blackfriars 1976; 'Dreams and Visions from Nineteenth Century Yoruba Religion' in M C Jedrej & R Shaw (eds.) *Dreaming, religion and society in Africa*; Leiden 1992; *Hail Orisha! A Phenomenology of a West African Religion in the Mid-Nineteenth Century*, Brill, 1997. He attended and presented papers at many international conferences and was past chair of the British Association of the Study of Religion.

He spent his last years surrounded by the extensive library of books he had collected throughout his life, learning and applying book-binding skills, and enjoying his growing extended family.

Peter is survived by his wife Renate, Ann Barbara, Eva and Immanuel, and seven grandchildren.

—Immanuel McKenzie

SOCIETY REPORTS

IBADAN BRANCH, March 2011–April 2012

The Ibadan Branch of the Society held series of activities in the year 2011 up to the month of April 2012, among which are summarised below:

The Branch had its 2011 Annual General Meeting on the 19th of March, 2011 at the Dominican's Institute, Samonda, Ibadan, Nigeria.

The Branch also planted commemorative trees for the Society's 80th Anniversary in the Botanical Garden of the University of Ibadan, Ibadan, Nigeria on the 28th May, 2011.

The Branch was represented at the 2011 Annual Business Meeting of the Society that was hosted by Benin Branch and held at the Faculty of Engineering Board Room, University of Benin, Benin-City, Nigeria from the 3rd to 4th June, 2011.

A lecture titled "Beauty in Unexpected Places: The Transformation of an Invasive Weed" was also delivered to the Society" by Miss Achenyo Idachaba on the 1st of December, 2011 at the Drapers' Hall, Institute of African Studies, University of Ibadan, Ibadan, Nigeria.

The Branch also organised a get together party for members on the 18th of February, 2012 at the Dominican's Institute, Samonda, Ibadan, Nigeria.

The Branch had its 2012 Annual General Meeting on the 14th of April, 2012 at the Botanical Garden of the University of Ibadan, Ibadan, Nigeria.

—Andrew A. Erakhrumen
Branch Secretary

ILE-IFE BRANCH, April, 2012

Membership of the Society has continued to increase especially because of the regular meetings and Lecture Series that has attracted scholars and other interested individuals to the activities of the Society. Unfortunately, the Society was unable to organize any excursion or trips. In 2011, several lectures were given by invited speakers as well as members of the Society. The General Meeting and the Executive meeting still continue to hold as scheduled. A summary of the events in 2011 are listed below.

2011 ABM Benin (4 June)

Four members of the Branch attended the 2011 ABM hosted by the Benin Branch (Prof. A.O. Isichei–Chairman, Stephen Foláránmí–Secretary, Prof. I.F. Adeniyi–National

President and P. Emmanuel). The Guest Lecturer was the legendary Dr. Victor Nwaifor who gave a talk, "The Essence of Our Cultural Heritage: Benin as A Case Study."

The High points of the meeting were the nomination and election into the vacant post of the Vice President and the Editor in Chief. While the Dr. (Mrs.) Ekpo Chairperson Ibadan Branch became the Vice President, the position of the Editor in Chief went to Prof. E.A. Obot, Executive Director of NCF, Lagos. The New rates are:

Members	₦2000
Postgraduate Members	₦1500,
Student Members,	₦500.

To commemorate the World Environment Day in 2011, a Lecture titled "Forest and the Environment" was delivered on Thursday 9th June, 2011 by Professor J.O. Fáluyì of the Department of Botany with about 30 people in attendance. Also in June, the Branch was instrumental to the inauguration of the JABU Branch of the Society on Tuesday June 14th, 2011.

The April Lecture, "Impact Assessment of Patronage of Tourism Sites on the Built Environment of Obáfémi Awólówò University, Ilé-Ifè, Nigeria," was delivered by Dr. Olufemi OMISORE of the Department of Urban and Regional Planning, Obáfémi Awólówò University.

The monthly event / programme of the Society held on Wednesday 13th July, 2011 at the usual venue was a Lecture given by Prof. I.F. Adéníyì of the Department of Zoology titled "The Hydrology and Water Quality of Owena River; A Typical Nigerian Forest Water Body."

The August lecture, "Archaeology and Tourism: Òsun Northeast, Òsun State" was by far the most attended with 58 people in attendance. The presenter was Mr. Adisa Ogunfolakan of the Natural History Museum while the session was chaired by Dr. G.R. Adeoti, the Ag. Director of the Institute of Cultural Studies.

The September lecture titled "Is the Fear of Probable Political Misuse by State Governments Enough to Prevent the Establishment of State Police Forces?" was delivered by Dr. Kemi Rotimi, on Wednesday 14th September, 2011. The lecture, (attended by 41 people) generated thought provoking issues bothering the minds of the Nigerian public about the police.

Inauguration of the NFSYE Club

A few members of the Society attended the launching the Nigerian Field Society Young Explorers Club on Saturday 19 November, 2011 at IITA Ibadan. The theme of the launch was '*Role of young people in protecting Nigeria's biodiversity'*. The event which was generously supported by the IITA was attended by members from different branches

including the National President Prof. I.F. Adéníyì, The Branch Chairman, Prof. A. Isichie, Branch Secretary, Stephen Fólárànmí and Dr. (Mrs.) O.O. Otusanya. After the official Launch, interested members joined the new members of NFSYE club on a tour of the IITA forest and natural sites.

The last event on Wednesday 21 December, 2011 was a general meeting and lecture, "Òwò Palace Art in the Context of Yorubaland," delivered by Akin Adejuwon, the Curator of the Institute of Cultural Studies, O.A.U., Ife. There were 42 people in attendance; the event was also used as a end of year get together for members.

The year 2012 has been a busy one for the branch; meetings continue to take place, no lecture, excursion or trips has however taken pace. Members have been preoccupied with the planning of a successful hosting of the 2012 ABM as well as the 40th Anniversary Celebration of the branch.

—Stephen Fólárànmí
Branch Secretary

Lagos Branch

Another active year for the branch, carrying out a wide range of activities with an ever changing group of members (and committee members).

Programme

Over 20 events were held covering culture , history, flora and fauna, music, art, films, walking, exploring, bicycling, canoeing, cooking. Although somewhat constrained by the elections and their aftermath, we held trips to nearby national parks (forest elephant footsteps and more in Omo-Shasa-Oluwa forests, game spotting (and cultural sights) across the border in Benin and ancient kingdoms (Epe – Sungbo's Eredo). We also visited the Durbars in Kano, Badagry, Sacred groves of Oshogbo. Around Lagos we walked to Lighthouse Beach, explored the vast Nigerian Railways train years at Ebute Mette, the architecture of the old quarter of the island, saw birds in Lekki Conservation Area, musicians, artists and their works, villages and their Masquerades (Ebi festival) and their development (with Sailharbour Foundation), and cycled across Third Mainland bridge. We had evening talks on butterflies, bird conservation, herbs, forest elephants, sustainable development, traditional culture, and watched documentaries on Lagos and local communities.

As well as the usual annual support for NFS National activities (e.g. paying for the Website which covers all the activities of the NFS country-wide), the Lagos Branch made a donation of 300,000 naira towards the launch of the NFS Young Explorers Club.

Volunteers

A huge thanks is due to the committee members and trip leaders who plan and carry out the program of activities (all voluntarily). We are fortunate to have dedicated committee members who continue to work hard for the NFS – Paulette and Will vanTrier (past co-chairs) , Betti-O, Phil Hall, Mike Newton, Romeo and Irene Barberopoulus, Aino Oni-Okpaku, Prof Obot, Sharon Cornish and Jonathon Barrow (Treasurer) and Sue Bunch (Membership secretary), Melissa Morse, Chris Drexler.

We said Good-bye and thank you to some very active committee members – Jonathon, Sue and Melissa. We welcomed (back) Robin and Hugh Campbell (after their sabbatical) and a new Membership Secretary Chevvone Hendrische and new Treasurer – Susan and and Carl Eriksson. We are very grateful to them for volunteering to take on these roles.

Thanks to Partners

The Branch would like to give a big thanks to Legacy. This NGO is dedicated to the reservation of historic monuments and sites in Nigeria and during the year ran many joint trips with the NFS. Special thanks are due to John and Jill Godwin and John Ebiekpi for organising these trips.

Lagos Branch Membership

2011 saw the membership steady at 150 family members which represent about 300 people. This is a large group of people who are keen to see more of Nigeria. Given there are many aspects of Nigeria that deserve to be seen, we would welcome more people willing to help lead trips or run talks and to help bridge the gap between the two!

—Charles Wheeler
Chairman Lagos Branch
April 2012

UK Branch, for 2011

Chairman Professor Rob Oldham; Treasurer Mr Geoff Partridge; Secretary Miss Sheila Everard

The last increase in the annual subscriptions to the branch to £5.00 does not appear to have deterred members as the total remains quite high at 116; 39 of these are joint subscriptions making the actual membership 155. Considering the distance members have to travel to meetings held all over the country, the average attendance of 31+, is very satisfactory.

AGM and Spring meeting –Keswick Cumbria , 7th/8th May 2011

Thirty six members and three guests attended the AGM at the Skiddaw Hotel Keswick followed by lunch and a tour of the local mining museum. In the Lake District, volcanic activity has resulted in a wealth of mineral deposits; twenty of these are of significant commercial value. They include graphite, lead, barium, tungsten, coal and iron. The museum recorded the exploitation of minerals from prehistoric times to the present day.

A short walk took us to the Pencil Museum, celebrating its 30th anniversary this year. We entered through a replicated graphite mine after a talk about the 350 year history of the manufacture of pencils. Legend has it that a violent storm which uprooted trees, exposed a strange black material; shepherds found it useful for marking sheep. A cottage industry making pencils grew by stages to the founding of the first UK pencil factory in Keswick in 1832. Pencils are now manufactured near Workington, but the museum preserves the fascinating history and attracts 80,000 visitors a year. One exhibit of especial interest was a wartime pencil given to all servicemen flying on active service over Germany. The pencil concealed a rolled up map and compass where the eraser tip should have been; those shot down and attempting to escape back to UK would have an invaluable tool. This wartime secret was never discovered by the Germans.

The following day the group visited 'The manor of the Valley' Dalemain. This beautiful house, originally C16th but later improved and extended, is the private home of the Hasell-McCosh family, descended from the original purchasers in 1675. A Fulani hat hung from the stand in the hall but we never discovered why. An annual, international marmalade competition is held here and we were able to sample and buy the exhibits in the tea room afterwards. The gardens, landscaped along a stream, were a delight. Elsewhere an Elizabethan knot garden and a children's garden provided more variety. Spring bulbs and flowers gave colour as we were too early for the summer displays of roses.

We are grateful to Rachel Nicholson for planning the weekend.

Summer Meeting at Dungeness Kent 11th/12th June 2011

35 members gathered at Winchelsea Lodge, East Sussex, for a most interesting and detailed study of Dungeness. The event was organised by Steve Graham and included guided visits to the Nature Reserve and the RSPB site. The large area of shingle built up over centuries of long shore drift is still growing and 5 lighthouses have been built to keep up with the changes. One section is an SSSI with many rare and interesting plants growing in abundance in the protected areas. On Sunday we had two lectures about the Romney Marsh area. Terry Burke secretary of the Romney Marsh Research Trust talked about the mediaeval landscape of Romney marsh and two of the churches we visited the previous evening, Fairfield and Brooklands. Climate change in the C13th altered much of the landscape and subsequently former ports such as the Cinque Ports, (providing the King with

ship services) have silted up. In mediaeval times, Rye was the largest town in the south of England having a population of 4000 people, the same as it has today. The second lecture on the post glacial evolution of the Romney marsh was given by Professor Martyn Walker from Kingston University. He explained how the marsh and particularly the peat had been formed from a pre-glacial forest, subsequently submerged by the sea as the ice melted. Later, we visited Pett Level Beach where peat, laid down between 6000-4000 years BC including alder stumps and branches of the same age could be seen on the surface.

Autumn Meeting in the Montrose area, 10th/11th September 2011

This meeting in Angus Scotland was attended by 22 members; many stayed together in the Northern Hotel Brechin, where we were royally fed and watered. Our first meeting was at the House of Dun, built by William Adam in the early C18th for David Erskine, Lord Dun. Significant alterations were made to the house by John Erskine Kennedy and his wife Lady Augusta FitzClarence, whom we learned was the illegitimate daughter of the Duke of Clarence, later William IV who preceded Queen Victoria on the throne of England. William had many children with his much loved mistress the actress Mrs Jourdan but no legitimate heir, hence the succession of Victoria to the throne when William died in 1837. It was Lady Augusta's walk set in a deep ravine that we followed in torrential rain when visiting the garden. She had also planted the magnificent row of Wellingtonias at the front of the house, soon after they were introduced to Britain in 1853. In the walled garden, a strange hanging structure turned out to be a hanging game larder shaded by lime trees.

Later that evening we had a lecture from Sheila Mann, on Violet Jacob Erskine, an accomplished poet. Violet, born in 1863 spent much time with the estate workers, learning their dialect. This inspired some of her poetry which captures their language and way of life. Always unconventional, she travelled the countryside alone on horseback, gathering material for her work.

The following day we visited the Montrose Wildlife Reserve, situated along the edge of the Montrose Basin. This large sea inlet is rich in nutrients and was used in the past to raise mussels, for salmon and eel netting, salt panning and hunting waterfowl. Now protected from commercial exploitation, it provides a perfect environment for migrating and resident birds, as many as 50,000 migrants pass through the basin each year. One of the best equipped visitor centres in the UK, it provides telescopes, binoculars and a great deal of information at all levels of interest.

Finally, in what can euphemistically be described as bracing weather, the group visited St Cyrus Nature Reserve. In contrast to the Montrose basin, the visitor centre is small, a former C19th lifeboat station. We crossed the bridge, built in 1985 by the Gurkhas and were blown like autumn leaves along the beach in what may have been the last puffs of Hurricane Katrina. Returning along the quieter path on the other side of the dunes, we passed the C13th Nether Kirkyard where a jilted poet had shot himself, and a watch hut,

built in former times to prevent the theft of bodies for medical research.

News of members

Sadly the following have died: A.A. Wilson Reading (13th November 2010 and R.W. Fishwick, Devon (12th February 2011).

Programme for 2012

AGM & Spring Meeting, Birmingham University —Friday 13th /Saturday 14th April 2012. Organisers are Brian Hopkins & Evelyn Murphy. A talk and visit to the Danford Collection has been arranged.

Summer Meeting, Chichester, West Sussex —14th/15th July 2012. Organiser is Brian Hopkins.

Autumn Meeting, Conway North Wales —8th/9th September 2012. Organisers are John & Maggie Hall.

Programme for 2013

AGM & Spring Meeting, Bristol Area —20th/21st April 2012. Organisers, Barbara Ryder and Janet Kirk.

Summer meeting: 'West Africana Road Show' with a display of items owned by members, date and venue to be arranged.

Autumn meeting: Faversham Kent —14th/15th September 2012. Organisers Geoff& Dinah Partridge.

Members from Nigeria who will be in the UK and who would like to attend are very welcome. Please contact the secretary via address in the Journal.

—Sheila Everard

WARRI BRANCH

Membership

1. Pa. Mac Eyeyibo - Branch Chairman
2. Mr. Henry A. Erikowa - Branch Secretary
3. Mr. Sonde Eghuba
4. Pastor Elijah Obas
5. Mr. Abiloye Erikowa
6. Mr. Aboyewa Oghomieno
7. Miss Yemi Omasan
8. Mr. Peter O.A. Okwuegbe
9. Mr. Ayo Ayesa
10. Bishop (Mrs) Wood
11. Mr. Michael O. Ewetan

Activities

Our major concern in Warri is on membership drive. As nothing is known about the Nigerian Field Society in this area, members have been involved in individual/collective enlightenment outreaches through the free distribution of The Society's Journals. Warri, being a predominately oil city with its institutions and companies petroleum based, generating people's interest on The Society has not been easy. We are not relenting!

The branch is presently engaged in the collation of data on spices/medicinal plants in the three Warri Local Government Areas (South, North and West) to proffer solution in checking rate of extinction.

—Henry A. Erikowa
Branch Secretary

NIGERIAN FIELD SOCIETY

NIGERIA ACCOUNT FOR 2011

Opening Balance as at January 2011		**₦863,318.00**
INCOME		
Branch subscriptions:		
Ife	100 members	65,000.00
Lagos	200 members	120,000.00
Ibadan	26 members	15,600.00
Abuja	no record	00.00
Benin	20 members	12,000.00
Abeokuta	no record	00.00
Corporate subs 2011		nil
Transfer from UK account (£1,750)		437,500.00
Individual subs 2011		nil
Journal sales		4,000.00
Back Nos.		nil
Yoruba culture		nil
Corporate subscription 2009		478,000.00
Contributions		654,100.00
(NEST T-shirts, conference bags, stickers. Mr Silva's sculpting of Ibadan Melimbe Bird. IITA ₦500 lunch subsidy x 60. FRIN bus hire. Music Circle PA system)		
Total Income		**₦1,517,418.00**
EXPENDITURE		
President 2011 Imprest		10,000.00
Editing and formatting		35,000.00
Secretary 2011 Imprest		10,000.00
Business manager 2011 Imprest		10,000.00
Journal (Combined issue, Vol. 76)		186,150.00
Postage		98,000.00
Benin Branch for ABM 2011		20,000.00
Bank charges		400.00
Total Expenditure		**₦369,550.00**
Balance: December 2011		**₦1,147,868.00**

Dr. Modupe Ladipo
Treasurer

NIGERIAN FIELD SOCIETY - UK ACCOUNTS FOR 2011
Receipts and Payments Account for the year ending 31st December 2011

RECEIPTS

2010 £			2011 £
1,368	Ordinary subscriptions, and donations		1,276
305	2010 Corporate subscriptions	2011	349
255	2011 " "	2012	409
70	Sale of back numbers		109
–	Advertisements		15
69	Interest		76
2,067			2,234

PAYMENTS

296	Postage	312
6	Stationery, photocopies & computer media	2
2,000	Printing	1,750
16	U.K. Branch subscriptions	14
2,318		2,078
(251)	Difference between Receipts and Payments	156

BALANCES as at 31st DECEMBER 2011

STATEMENT OF FUNDS

27,253	Opening balances at beginning of year	27,002
(251)	Difference between Receipts and Payments	156
27,002		27,158

CASH AT BANKS

	National Westminster Bank:	
6,328	Current Account	6,408
	Halifax plc:	
17,725	Main Fund	17,800
2,949	Prize Fund	2,950
27,002		27,158

Notes: Income was more than last year, due to more libraries paying in advance, and somewhat higher sales of back numbers. Payments were less, as a smaller amount was transferred for printing the journal and its transport to the UK.

Dr Joyce Lowe, Council Member Resident in U.K.

COMMENT ON THE RESEARCH NOTE *IGI-NLA* (big tree)

Joyce Lowe

I refer to the Research Note by O.A.Akinpelu on Igi-Nla, [botanical name *Okoubaka aubrevillei*] in Vol.75, pp. 92-96. In the *Flora of West Tropical Africa*, ed. 2 (Keay, 1958) and *Trees of Nigeria* (Keay, 1989) it was placed in the family Octoknemataceae, but was later moved to the family Santalaceae (see Burkill, *The Useful Plants of West Tropical Africa*, ed.2, vol.5, 2000). The generic name, Okoubaka, comes from *oku baka*, the name in Anyi (an Ivory Coast language) meaning "death tree". The species was first described, in French, in 1937, but only given a valid Latin description in 1946. Burkill lists other names for Sierra Leone, Liberia and Ghana, and for Nigeria he gives *igi-nla* (Yoruba) and *akoelisi*, *akuobisi* and *okoubisi* (all Edo). However, I think that *okoubisi* is probably a misprint for *okuobisi* since the source for this name is given as Hardie (see below). The tree is also found in Cameroon, with another variety in Congo.

The tree is said to prevent any undergrowth forming beneath it – although some species are immune to the effect. Burkill writes, "A tree with such remarkable properties is free from danger of felling; no one would dare to cut it, nor even touch it... It is considered so malign that the Liberian Government at one time forbad possession or sale of the bark... Medicine-men devised means to propitiate the spirit of the tree with suitable gifts to enable them to remove bark without risk of fateful penalty... A piece of bark placed in a house is held to drive out spirits and robbers... and in this modern age... a piece of bark carried on one's person is protection against car accidents."

The Nigerian Field published an article on the tree in 1963 ("Okoubaka – a rare juju tree," vol.28, pp. 70-72) by A.D.K.Hardie, a Forest Officer at Sapoba Forest Reserve. He gives the Bini [Edo] name as *okuobisi*, meaning "a big tree", and writes, "it is reputed to kill all neighbouring trees except *Myrianthus arboreus* and *Musanga cecropioides*… which are called respectively the wife and servant of *okuobisi*." He observed one *Okoubaka* (60 feet high) which had no trees within 80 feet of it, except for *Myrianthus*, *Musanga* and one woody *Vernonia*. He goes on: "According to Bini informants, the bark is commonly used in making charms to drive evil from a house and to inflict a curse upon an enemy. The bark may be removed by day or at night – never at sunrise or sunset when the tree 'spits poison' – but first it is necessary to propitiate the spirit of the tree by offering gifts: usually portions of kola nut, white yam, coco-yam and plantain, two cowrie shells, a piece of white drill cloth and a quantity of chalk."

Hardie was informed by the nursery headman (Joseph Iruwa) at Sapoba that J.D.Kennedy knew *okuobisi* and was well aware of its reputation. In 1930, Kennedy obtained seed of the

tree which he sowed in the nursery. When the plants were 12-18 inches tall, adjacent seedlings began to die, and the *okuobisi* were discarded. Kennedy also sowed some in the nearby forest, which Hardie suggests are the trees he observed in the 1960s.

NOTES FOR AUTHORS

The Nigerian Field welcomes articles on the flora and fauna, culture and history of West Africa. The Society is particularly anxious to encourage field observations in all of these areas. Since the Journal serves a wide audience, highly technical papers more suitable for specialist journals will not be accepted. However, popular accounts of such research aimed at the general reader would be welcomed. *The Nigerian Field* has established a reputation for the quality of its illustrations and, in consequence, preference will be given to contributions offered with a strong illustrative content.

Text: The text must be submitted on CD, flashdrive, or by e-mail. A print-out will also be welcomed. After the title there should appear the author's name and address. Contributions of 2000 to 6000 words will be printed as main articles. Shorter items of 500 to 1000 words are welcome as Notes or Correspondence.

Halftone illustrations: Clear digital black and white prints, with good contrast, should be submitted. Colour images can sometimes be reproduced in black and white.

Line illustrations: These should be drawn in Indian ink on Bristol Board or drafting film (or similar material). Lettering should be with stencil or "Letra-set'. The submitted original should be 1½ linear, the final printed size thus allowing a reduction of a third. Scales should be indicated by bars.

References should be given in the following manner:

Papers: Hopkins H.C. 1983. The taxonomy, reproductive biology and economic potential of *Parkia* (Leguminosae: Mimosoideae) in Africa and Madagascar. *Bot. J. Linn. Soc.* 87:135-167.

Ikediobi C.O., Obi V.C. & Achoba I.A. 1985. Beekeeping and honey production in Nigeria. *Niger. Fld.* 50:59-70.

Books: Rosevear D.R. 1974. *The carnivores of West Africa*, xii + 1548. London: British Museum (Natural History) .

Fagg W. (ed.) 1971 *The living arts of Nigeria*. 154 pp. London: Studio Vista.

If in doubt about the correct abbreviations for names of journals, the name should be given in full.

Articles will be subjected to the normal refereeing procedures by specialists in the area. It is assumed that submitted papers are not on offer elsewhere. The copyright of all published contributions is vested in The Nigerian Field Society, and papers are accepted on this strict understanding. Proofs of articles are not sent to authors, but if the original text has been substantially edited, the author's approval will be sought before publication.

All contributions should be sent to the Editor, at the address shown on the title page of the Journal.

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