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Full Length Research Paper

Medico-Ethnobotanical inventory of Ogii, Okigwe Imo State, South Eastern Nigeria

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Due to the renewed interest in medicinal plants research resulting from the resistance of malarial parasites as well as antibiotics to known drugs, this study was carried out to document the different medicinal plants used by the indigenes of Ogii in Okigwe, Imo State Nigeria to treat different ailments which complements orthodox medicine which is expensive and not readily available. Information on these plants were readily available with the older generation, hence the need to gather and document these data as soon as possible and also highlight the need for the conservation of plant resources. The different plants were collected during field trips in July and November 2008 as well as April and December 2009. A total of seventy three species mostly trees and shrubs belonging to thirty eight families and sixty eight genera were found useful to the people for curing different human diseases as well as other purposes. The most diverse families were *Euphorbiaceae*, *Annonaceae* and *Fabaceae* with seven genera for the former and six each for the other two. Members of the *Annonaceae* appeared the commonest species used in malarial treatment suggesting the presence of antiplasmodial substances in this family and the need to extract and characterize such for posterity. The survey was carried out using a structured questionnaire administered to local herbalists (ethnomedicinal practitioners) as well as some elderly men and women. The information provided in this paper included the botanical names, local names, family names, life forms, and parts of the plants used for medicinal purposes. Most of the plants were already known. The dried, pressed, and mounted specimens were deposited in the temporary herbarium of the Redeemer's University after proper authentication by Mr. B.O. Daramola and Mr. T. Odewo at the University of Lagos Herbarium.

Keywords: ethnobotany, antiplasmodial, medicinal plants, malaria, Ogii.

INTRODUCTION

In developing countries where modern western medicine is expensive, most of the indigenes rely on indigenous plants for the treatment of various ailments. Medicinal plants have been used since prehistoric times for the cure of different ailments (Qureshi *et al.* 2009). Again, with the ever changing resistance of malarial parasites to modern medicines coupled with the well documented cases of antibiotic resistance (Wongsrichanalai *et al*. 2002; Okeke, 2003; Shittu, *et al*. 2011), the locals resort to the combined use of different medicinal plants to curb this menace. Ogii Okigwe is inhabited by Igbo speaking people of Southeastern Nigeria. The area belongs to the humid tropic having the two peculiar dry and rainy seasons respectively. Though several workers have documented medicinal plants from south eastern Nigeria, the information is scanty compared to those from other parts of the country (Ibe and Nwufor,2005; Obute, 2005; Ndukwu and Ben-Nwadibia, 2005; Edeoga, 2007;

Okujagu *et al.* 2008; Ogbonna *et al*.2008; Njowundu *et al.* 2010;Nwosu,2002). Moreover, nothing has been documented from Okigwe generally. This present study is undertaken to first document the different plants and their parts used by the local Ogii community in treating different diseases as well as the preparation methods and dosages. This will pave way for further research on these plants to identify and isolate the different active ingredients contained in them especially as the search for more effective malarial drugs continues. The information contained herein will also highlight the contributions of some plants to the general healthcare of the people of Ogii-Okigwe.

MATERIALS AND METHODS

The study was conducted at the Ogii community located in the Okigwe local government area of Imo state Nigeria (latitude 5° 47' N and 7° 21'E). A structured questionnaire (Appendix 1) was prepared and administered to local herbalists (ethnomedicinal practitioners) as well as some elderly men and women who are more familiar with the medicinal uses of these plants than the younger generations. Two herbalists and fifty elderly people the majority of which were males the (36) were involved. The different plants were collected and shown to them for which they gave the medicinal and other uses. Most of their claims agreed together revealing the common use of some of the plants.

Collection of ethnomedicinal data

Ogii area was surveyed during field trips in July and November 2008 as well as April and December 2009 and the specimens were collected. The questionnaire (Appendix 1) was designed to extract information from the elderly and trado-medicinal practitioners. The elderly were chosen because they are more familiar with the uses of these plants than the younger generations who resort more to orthodox medicine. Bardshah and Hussain (2011) had highlighted the loss of information on medicinal uses of plants as the older generations die since they are more knowledgeable than the younger generations. Again the younger generations prefer western medicines to these local ones due to spiritual inclinations and the notion that herbal medicines are always associated with idol worship, together with the belief that the dosages for these herbal remedies are not reliable.

Identification of the collected specimens were done using Flora of West Tropical Africa (Hutchinson and Dalziel, 1954, 1968); Nigerian Trees (Keay *et al.* 1954); Outlines and Pictures of Medicinal plants in Nigeria (Odugbemi, 2006,2008); Handbook of African Medicinal Plants by Iwu, 1993; Medicinal plants of Nigeria (South-East) By Okujagu *et al.,* (2009).; and Guide to West African Weeds by Akobundu and Agyakwa,1987. The unknown ones were correctly identified and authenticated by Mr. Benjamin Daramola and Mr. Thomas Edewo at the Herbarium of the University of Lagos. All the collected plant specimens were pressed, dried, mounted on sheets and deposited in the temporary herbarium of the Redeemer's University after proper authentication by Mr. B.O. Daramola and Mr. T. Edewo at the University of Lagos Herbarium.

RESULTS

A total of seventy three (73) plant species were studied and the local names, family, uses and parts of the plant used are enumerated below. The commonest families were *Euphorbiaceae, Fabaceae, Annonaceae,* and *Rubiaceae* (Table 1) with a total of seven, seven, six and four genera respectively. While *Euphorbiaceae* and *Fabaceae* were represented by seven species, *Annonaceae,* and *Rubiaceae* were represented each by six and four species. Of these seventy three species, 36 were trees, 19 shrubs, 10 herbs and 8 climbers. Figure 1 shows the percentage occurrence of each life form studied. Table 2 summarizes the different diseases and their associated species. Of the fifty two respondents, 65% were above 60 years, while 35% were between 45 and 60 years. They more elderly ones were able to recognize above sixty of the seventy three plants studied. Majority of them attested to having not suffered from serious toothache as they use chewing sticks daily.

1. Botanical name: *Napoleona imperialis* P. Beauv.
   Local name:Nkpodu
   Family: Lecythidaceae
   Life form: Shrub
   Part used: Fresh leaves, stem, roots, fruit
   Specimen No: RH001

   Ethno-botanical uses: Matured fruit edible. Fresh leaves chewed for stomach ache. Roots boiled with "Usu" (*Pleurotus tuberregium*) and drunk for treatment of chest and heart pains.

2. Botanical name: *Burkea africana* Hook.
   Local name:Ofo
   Family: Fabaceae subfam. Caesalpinioideae
   Life form: Tree
   Part used: Bark, seeds
   Specimen No: RH002

   Ethno-botanical uses: Stem bark ground together with potash and boiled, taken while hot for seven days to cure tuberculosis. Also combined with ground leaves of "Anya nnunu" *Abrus precatorius* and potash and the mixture licked for treatment of tuberculosis. Seeds boiled and ground and used as soup condiment/thickener.

3. Botanical name: *Anthocleista djalonensis* A. Chev. Local name: Ogbeduga
Family: Loganiaceae
Life form: Tree
Part used: Root, leaves
Specimen No: RH003

Ethno-botanical uses: Root boiled together with "Osisikaguru" *Strophanthus hispidus* and taken for swollen stomach and oedema. Again, roots boiled and taken for venereal diseases. Leaves used as fodder for livestock.

4. Botanical name: *Strophanthus hispidus* (D. C.)
Local name: Osisikaguru
Family: Apocynaceae
Life form: Climber
Part used: Stem, leaves, seeds
Specimen No: RH004

Ethno-botanical uses: A multipurpose medicinal plant. Stem and leaves boiled with palm wine for the treatment of swollen stomach and burning sensation in heart. Half part of a tumbler taken thrice daily for one week. Seeds ground and put in bottle with gin and taken morning and night for eight days for treatment of heart disorders. Added to other preparations to treat different ailments.

5. Botanical name: *Brachystegia eurycoma* Harms
Local name:Achi
Family: Fabaceae subfam. Caesalpinioideae
Life form: Tree
Part used: Seeds, roots
Specimen No: RH005

Ethno-botanical uses: Roots infused in gin, I shot taken morning and night for seven days to treat infertility. Roots ground with *Abrus precatorius* to treat cough. Roots also used in the preparation of good luck charms. Matured seeds boiled or roasted, ground and used as soup condiment.

6. Botanical name: *Dennettia tripetala* (Bak,) F.
Local name:Nmimmi
Family: Annonaceae
Life form: Tree
Part used: Roots, leaves, seeds
Specimen No: RH006

Ethno-botanical uses: Cut roots combined with "odu- agu" *Uvaria chamae* roots put in bottle with gin, one half tumbler taken thrice daily for arthritis treatment. Leaves boiled and used to bathe for malaria. Seeds edible, served as kola to visitors.

7. Botanical name: *Newbouldia laevis* (P. Beauv.) Seemann ex Bureau
Local name:Ogirisi
Family: Bignoniaceae
Life form: Tree
Part used: Leaves
Specimen No: RH007

Ethno-botanical uses: Leaves boiled with bark of "ugba" *Pentacletra macrophylla* and bark of "osisikaguru" *Strophanthus hispidus* for the treatment of abscesses. Leaves warmed over fire and applied on dislocations. Root scraped, squeezed and put on wound to stop bleeding.

8. Botanical name: *Icacina trichanta* Oliv.
Local name:Ori-agbo
Family: Icacinaceae
Life form: Shrub
Part used: Leaves, tuber
Specimen No: RH008

Ethno-botanical uses: Fresh leaves boiled and drunk for malaria. Tuber used in combination with other herbs for pile.

9. Botanical name: *Olax subscoroidea* Oliv.
Local name: Atu nwa nkapi
Family: Olacaceae
Life form: Shrub
Part used: Roots, stems
Specimen No: RH009

Ethno-botanical uses: Stem used as chewing stick for toothache, stems and branches used as broom. Roots used treat impotence in men.

10. Botanical name: *Morinda lucida* Benth.
Local name: Nne mmanu
Family: Rubiaceae
Life form: Tree
Part used: Bark, Leaves
Specimen No: RH010

Ethno-botanical uses: Infusion of the leaves and bark used to treat malaria and typhoid fever. Bark boiled for treatment of itching of private part in women. Leaves also used as fodder for goats.

11. Botanical name: *Alstonia boonei* De Wild.
Local name:Egbu
Family: Apocynaceae
Life form: Tree
Part used: Bark.
Specimen No: RH011

Ethno-botanical uses: Bark ground with alligator pepper and placed for embrocating painful part of body or broken arm or leg.

12. Botanical name: *Khaya senegalensis* (Desr.) A. Juss.
Local name: Mahogany
Family: Meliaceae
Life form: Tree
Part used: Bark.
Specimen No: RH 012

Ethno-botanical uses: Bark boiled in pot with little quantity of local chalk "nzu". I shot (small tumbler) taken thrice

daily for treatment of chest /heart pains.

13. Botanical name: *Chromolaena odorata* (L.) R.M. King and Robinson
Local name: Obiarakara
Family: Asteraceae
Life form: Herb
Part used: Leaves
Specimen No: RH013
Ethno-botanical uses: Leaves squeezed and applied on fresh cuts to stop bleeding.

14. Botanical name: *Spondias mombin* Linn.
Local name: Ujukere
Family: Anacardiaceae
Life form: Tree
Part used: Leaves, fruits, bark
Specimen No: RH014
Ethno-botanical uses: Stems used in fence making. Ripe yellow fruits edible. Leaves used as fodder for goats but not newly pregnant females, causes abortion. Also used to remove placenta after delivery. Bark used for the treatment of venereal diseases, dysentery and diarrhea.

15. Botanical name: *Uvaria chamae* P. Beauv.
Local name:Odu- agu
Family: Annonaceae
Life form: Shrub
Part used: Stem bark, leaves, fruits.
Specimen No: RH015
Ethno-botanical uses: Ripe fruits edible. Leaves and bark boiled and taken for malaria.
Stem bark also used as alternative rope to tie firewood. Roots used to treat venereal diseases.

16. Botanical name: *Gongronema latifolium* Benth.
Local name: Utazi
Family: Asclepiadaceae
Life form: Climber
Part used: Leaves
Specimen No: RH016
Ethno-botanical uses: Leaves used as vegetable, for preparation of pepper soup, yam stew, used together with other spices for postpartum women and treatment of stomach aches.

17. Botanical name: *Piper guineense* Schum. and Thonn.
Local name: Uzuza
Family: Piperaceae
Life form: Climber
Part used: Leaves, fruits
Specimen No: RH017
Ethno-botanical uses: Leaves and fruits used for pepper soup and ordinary soup making. Sold as source of revenue in big markets. Combined with other herbs for treatment of impotence.

18. Botanical name: *Piper umbellatum* Linn.
Local name: Njamunja
Family: Piperaceae
Life form: Shrub
Part used: Leaves
Specimen No: RH018
Ethno-botanical uses: Leaves boiled with “Uzuza” *Piper guineense* and yam. The preparation taken five days for the treatment of dry and chesty coughs. Leaves also combined with bark of “Ofo” *Burkea* occasionally to treat tuberculosis.

19. Botanical name: *Xylopia aethiopica* (Dunal.) A. Rich.
Local name: Uda
Family: Annonaceae
Life form: Tree
Part used: Fruits
Specimen No: RH019
Ethno-botanical uses: Fruits used in combination with *Piper nigrum*, *Tetrepleura tetraptera*, *Capsicum frutescens* to prepare concoction for woman who newly delivered, believed to help in uterus contraction.

20. Botanical name: *Tetrapleura tetraptrera* Taub.
Local name: Nkpokoro nwa ohio hio
Family: Leguminosae
Life form: Tree
Part used: Fruit
Specimen No: RH020
Ethno-botanical uses: Fruit burnt to drive away soldier ants and mosquitoes. Also used as spice to cook for newly delivered women.

21. Botanical name: *Microdesmis puberula* Hook. F. ex. Planch.
Local name:Kpirimbo
Family: Euphorbiaceae
Life form: Shrub
Part used: Leaves
Specimen No: RH021
Ethno-botanical uses: Leaves combined with *Ceiba* leaves and boiled for fever. Leaves also used as fodder for goats, highly preferred over others by livestock.

22. Botanical name: *Daniellia oliveri* Rolfe. Hutch. & Dalziel
Local name:Inyima
Family: Fabaceae
Life form: Tree
Parts used: Roots, bark and leaves.
Specimen No: RH022
Ethno-botanical uses: Roots and bark used as antidote for poison. Roots boiled with potash for urinary tract infections. Bark boiled for stomach disorders (stooling). Cut stems used to carve mortars for pounding yam, foo foo etc.

23. Botanical name: *Margaritaria discoidea* (Baill.) Muell. Arg.
Local name: Ibishi
Family: Euphorbiaceae
Life form: Tree
Part used: Leaves
Specimen No: RH023
Ethno-botanical uses: Bark boiled and used as purgative to clean the system. Leaves used as fodder for goat.

24. Botanical name: *Glyphaea brevis* (Spreng) Monachino
Local name: Ara anyasi
Family: Tiliaceae
Life form: Shrub
Parts used: Stem, bark and leaves.
Specimen No: RH024
Ethno-botanical uses: Stem used as cane during masquerade festival. Bark scraped and boiled with leaves for fever, venereal diseases and toothache treatments.

25. Botanical name: *Zingiber officinale*
Rose. Local name: ….Ginger
Family: Zingiberaceae
Life form: Herb
Part used: Whole
Specimen No: RH025
Ethno-botanical uses: To cure migraine. Scrape and crush, place on eyelids, and face, open eyes
several times, and close again to feel impact.

26. Botanical name: *Cola millenii* K. Schum.
Local name: Oji nwa nnabe
Family: Sterculiaceae
Life form: Tree
Part used: Fruits, leaves
Specimen No: RH026
Ethno-botanical uses: Ripe fruits edible. Leaves boiled and taken for treatment of venereal diseases.

27. Botanical name: *Berlinia grandiflora* (Vahl) Hutch and Dalz.
Local name: Ububa
Family: Fabaceae
Life form: Tree
Part used: Bark or leaves
Specimen No: RH027
Ethno-botanical uses: Bark or leaves boiled for malarial bathing. Bark boiled and used for treatment of stomach upset.

28. Botanical name: *Elaeis guineensis* Jacq.
Local name: Nkwu
Family: Arecaceae
Life form: Tree
Part used: Different parts
Specimen No: RH028
Ethno-botanical uses: Fronds used to make brooms for sweeping. Mature stem used for building and also tapped for palm wine which is used to infuse most herbal preparations. The ripe fruits used to prepare palm oil for home cooking, and industrial uses. Palm oil taken as antidote for poison.Extracts from palm oil preparation used as anti poison, and for warding off evil spirits. Palm kernels cracked and husks used for sand filling and as fuel for fires, the kernel boiled to prepare palm kernel oil which is used as body cream and as a potent multipurpose medicine especially dropped in the eyes and anus as well as rubbed on the bodies of convulsing children to effect healing. Bark of fronds cut and used to weave baskets for storage and movement of marketable farm products. Fresh ripe fruits roasted in fire and eaten to for relief from cough and as sleep inducing agent.

29. Botanical name: *Ocimum gratissimum* Linn.
Local name: Nchu anwu
Family: Lamiaceae
Life form: Herb
Part used: Leaves
Specimen No: RH029
Ethno-botanical uses: Popular leafy vegetable, used to spice different food preparations and in the preparation of pepper soups. Leaves squeezed into cup and taken for instant relief from stomach upset, also applied onto umbilical cord of babies to sterilize them and prevent infection. Leaves also squeezed and inhaled for relief from catarrh. Leaves also burnt to drive away mosquitoes hence the name. Mixed with mistletoes from Cola too treat diabetes.

30. Botanical name: *Ricinus communis* Linn.
Local name:Nkpikpi
Family: Euphorbiaceae
Life form: Shrub
Part used: Seeds, roots
Specimen No: RH030
Ethno-botanical uses: Seeds used to prepare soup condiment “ogiri”. Roots boiled with potash to treat venereal diseases. Oil from seeds used medicinally at home and industry.

31. Botanical name: *Monodora tenuifolia* (Benth.) W.
Local name:Osisi ogiri/Ehuru
Family: Annonaceae
Life form: Tree
Part used: Seeds
Specimen No: RH031
Ethno-botanical uses: Seeds fried and ground to prepare condiment for eating kolanuts. Used in pepper soups. Seeds also chewed and put on forehead to stop headache. Stem chewed for toothache.

32. Botanical name: *Abrus precatorius* Linn.
Local name: Anya nnunu
Family: Leguminosae
Life form: Climber
Part used: Leaves
Specimen No: RH032
Ethno-botanical uses: Infusion of the leaves used to treat whopping cough.

33. Botanical name: *Costus afer* Ker-Gawl.
Local name:Okpoto
Family: Zingiberaceae
Life form: Shrub
Part used: Fresh stems, leaves
Specimen No: RH033
Ethno-botanical uses: Fresh stem chewed for cough, leaves used to wrap sliced oil bean seeds to ferment and improve taste.

34. Botanical name: *Physalis angulata* Linn.
Local name:Ogwu ari
Family: Solanaceae
Life form: Herb
Part used: Leaves
Specimen No: RH034
Ethno-botanical uses: Leaves squeezed and put inside folded *Newbouldia laevis* leaves and dropped in eyes for the treatment of eye infections, redness of eye, scratching of eyes(”ari anya”).

35. Botanical name: *Carica papaya* Linn.
Local name:Okwuru bekee
Family: Caricaceae
Life form: Tree
Part used: Every part
Specimen No: RH035
Ethno-botanical uses: Ripe fruit edible. Fresh leaves and ground potash used for the treatment of witlow, leaves boiled with *Mangifera indica, Cympopogon citratus* and *Citrus aurantifolia* for typhoid and malaria. Stem and roots boiled for venereal diseases. Unripe fruits eaten for malaria. Seeds crushed and used to make face look smooth.

36. Botanical name: *Raphia vinifera* P. Beauv.
Local name: Ngwo
Family: Arecaceae
Life form: Tree
Part used: Exudate from wounded stem, stem, sap.
Specimen No: RH036
Ethno-botanical uses: Sap used as palm wine and also boiled for gin production. Exudate from wounded stem used to treat whitlow. Stem and fronds used for building. Cut and rotted stem source of raphia maggots which are edible and put in water fed to babies, believed to have medicinal effects and to make babies grow fat.

37. Botanical name: *Raphia hookeri* Mann & Wendl.
Local name: Ide
Family: Arecaceae
Life form: Tree
Part used: Exudate from wounded stem, Stem, fronds
Specimen No: RH037
Ethno-botanical uses: Sap used as palm wine and also boiled for gin production. Exudate from wounded stem used to treat whitlow. Stem and fronds used for building and weaving of local canopy, masquerade wears, hand fans. Fronds used to make canoe paddling poles. Seeds and fruit used by Boys Scouts for decoration.

38. Botanical name: *Jatropha curcas* Linn.
Local name:Okwe aru
Family: *Euphorbiaceae*
Life form: Shrub
Part used: Root, bark
Specimen No: RH038
Ethno-botanical uses: Root or bark boiled with potash for the treatment of impotence, gonorrhea and other venereal diseases. Planted as a hedge plant. Juice very dangerous to the eyes.

39. Botanical name: *Euphorbia heterophylla* Linn.
Local name:Ogwu afo
Family: *Euphorbiaceae*
Life form: Herb
Part used: Leaves
Specimen No: RH039
Ethno-botanical uses: Leaves boiled with yam and used as purgative.

40. Botanical name: *Peperomia pellucida* (L.) H. B. & K.
Local name: …….
Family: Piperaceae
Life form: Herb
Part used: Leaves
Specimen No: RH040
Ethno-botanical uses: Leaves crushed and applied in between toes to treat athletes’ foot. Leaves also applied to wounds to effect healing.

41. Botanical name: *Lawsonia inermis* Linn.
Local name:Lali
Family: Lythraceae
Life form: Shrub
Part used: Roots, Leaves
Specimen No: RH041
Ethno-botanical uses: Roots boiled with potash and used as abortifacient. Leaves ground and applied as cosmetics on nails.

42. Botanical name: *Annona senegalensis* Pers.
Local name:Nri nnunu
Family: Combretaceae

Life form: Shrub
Part used: Fruits, Bark, fruit
Specimen No: RH042

Ethno-botanical uses: Fruits edible. Roots boiled with potash for venereal diseases. Bark boiled for the treatment of dysentery.

43. Botanical name: *Senna alata* L. (Roxb)
Local name: Ogwu ululoo
Family: Fabaceae
Life form: Herb
Part used: Leaves
Specimen No: RH043

Ethno-botanical uses: Leaves crushed for the treatment of ring worm. The ring worm site is initially scratched before the application of the crushed *Senna* leaves. Leaves burnt to drive away mosquitoes.

44. Botanical name: *Vernonia amygdalina* Del. Cent.
Local name: Olugbu
Family: Compositae
Life form: Shrub
Part used: Leaves, Bark
Specimen No: RH044

Ethno-botanical uses: Leaves applied to fresh cuts to stop bleeding. Leaf decoction used to treat cough, and also taken for malaria. Leaves squeezed and taken to reduce blood sugar, recommended for diabetics.

45. Botanical name: *Bryophyllum pinnatum* (Lan.) Oken
Local name:Akwukwo ndu
Family: Crassulaceae
Life form: Herb
Part used: Leaves
Specimen No: RH045

Ethno-botanical uses: Squeezed juice from heated leaves mixed with talc powder for the healing of navels in infants. Leaves crushed and applied on wounds for healing.

46. Botanical name: *Alchornea cordifolia* (Benth.) Pax and K. Hoffin.
Local name: Ububе
Family: Euphorbiaceae
Life form: Shrub
Part used: Leaves, twigs
Specimen No: RH046

Ethno-botanical uses: Leaves boiled and used to bathe children with small pox. Leaves also used as fodder for goats. Twigs used as chewing stick to treat toothache.

47. Botanical name: *Borassus aethiopium* Mart.
Local name: Ebi
Family: Arecaceae
Life form: Tree
Part used: Fruits. root, leaves
Specimen No: RH047

Ethno-botanical uses: Fruits edible. Root boiled with potash and used to treat swollen testis. Leaves woven to make local hand fan. Matured stem used as timber for building construction.

48. Botanical name: *Rothmannia whitfieldii* Lindl.
Local name: Uri
Family: Rubiaceae
Life form: Shrub
Part used: Fruits, roots, bark
Specimen No: RH048

Ethno-botanical uses: Fruits crushed and used to decorate body to heal smallpox. Bark and leaves boiled and used to bathe also for relief from small pox.

49. Botanical name: *Hedranthera barteri* (Hook. F.) Pichon.
Local name: Amu nkita
Family: Apocynaceae
Life form: Shrub
Part used: Fruit, roots
Specimen No: RH049

Ethno-botanical uses: Root boiled for treatment of venereal diseases. Fruits ground and used as worm expeller.

50. Botanical name: *Maesobotrya barteri* (Baill.) Hutch. Local name: Uvune
Family: Euphorbiaceae
Life form: Shrub
Part used: Fruit, stems
Specimen No: RH050

Ethno-botanical uses: Ripe fruits edible. Stem used as chewing stick to treat toothache. Roots cut and infused in gin for arthritis. Stems also used for fencing and supporting yam tendrils on the farm.

51. Botanical name: *Pterocarpus santalinoides* L' Herit. Ex DC.
Local name:Uturukpa
Family: Fabaceae
Life form: Tree Part used: Leaves
Specimen No: RH051

Ethno-botanical uses: Leaves used as vegetables and as livestock feed for goats.

52. Botanical name: *Pterocarpus soyauxii* Taub.
Local name: Oha/Ora
Family: Fabaceae
Life form: Tree
Part used: Leaves
Specimen No: RH052

Ethno-botanical uses: Fresh leaves used as vegetables and as livestock feed for goats. Fresh leaves also recommended for consistent use by diabetics. Bark

crushed used for treating eczema and ringworm. Matured trees used as timber and for making talking drums used to announce meetings and during masquerade festivals.

53. Botanical name: *Cleistopholis patens* (Benth) Engl. And Diels
Local name:Oghuru/Oghulu
Family: Annonaceae
Life form: Tree
Part used: Bark
Specimen No: RH053
Ethno-botanical uses: Leaves combined with *Uvaria chamae* for malarial treatment or stem bark boiled in water with yam and taken for quick relief from malaria.

54. Botanical name: *Ceiba pentandra* (L.) Gaertn.
Local name: Akpu
Family: Bombacaceae
Life form: Tree
Part used: Fresh leaves, stem
Specimen No: RH054
Ethno-botanical uses: Fresh leaves used as vegetable. Bark boiled in water and used for diabetes and erectile dysfunction treatments. The silk used in some medicinal preparations. Matured stem used as timber for construction.

55. Botanical name: *Bombax buonopozense* P. Beauv.
Local name: Akpu ogiri
Family: Bombacaceae
Life form: Tree
Part used: Bark, leaves, stem
Specimen No: RH055
Ethno-botanical uses: Bark and leaves boiled for the treatment of stomach disorder. Roots boiled with potash and roots of *Rauwolfia vomitora* for serious venereal diseases. Matured stem used as timber for construction.

56. Botanical name: *Pisidium guajava* Linn.
Local name: Gova
Family: Myrtaceae
Life form: Tree
Part used: Stem, leaves, fruits
Specimen No: RH056
Ethno-botanical uses: Matured fruits edible. Stem used as chewing stick. Leaves boiled with *Cymbopogon citratus*, *Citrus aurantifolia* (sliced fruits/leaves), *Carica papaya*, and *Aziradchita indica* leaves. Hot preparation put in a cup and drank, also poured into basin and patient covered with thick cloth over the steam to sweat for malarial treatment. The preparation boiled and used to bath the following morning and evening for four days. Fresh leaves also chewed to stop stooling.

57. Botanical name: *Ficus polita* Vahl /*F. capensis* Thunb
Local name: Ukoro
Family: Moraceae
Life form: Tree
Part used: Leaves, Twigs,fruits
Specimen No: RH057
Ethno-botanical uses: Leaves and twigs boiled and left overnight to cool, taken afterwards with malt drink or milk as blood tonic. Leaves also used as fodder for livestock. Fruits edible.

58. Botanical name: *Mucuna pruriens* (L.) DC
Local name: Agbara ohia
Family: Leguminosae
Life form: Climber
Part used: Leaves, seeds
Specimen No: RH058
Ethno-botanical uses: Fresh leaves squeezed and taken with malt or milk as blood tonic. Seeds swallowed while hunting to prevent snake bite. Leaves used in mulching of farms.

59. Botanical name: *Mondia whitei* (Hook. F.) Skeels
Local name: Ukukoro
Family: Periplocaceae
Life form: Climber
Part used: Fruit
Specimen No: RH059
Ethno-botanical uses: Fruits eaten as fruit vegetable with palm oil. Whole plant boiled for the treatment of pile.

60. Botanical name: *Telfaria occidentalis* Hook. F.
Local name: Ugu
Family: Curcubitaceae
Life form: Climber
Part used: Leaves
Specimen No: RH060
Ethno-botanical uses: Leaves used as vegetable. Old leaves used as fodder for goats. Healthy Fresh leaves squeezed and taken with malt or milk to treat anaemia. Seeds scooped out from matured fruit boiled and eaten as vegetable. Roots very potent poison.

61. Botanical name: *Aspilia africana* (Pers.) C. D. Adams
Local name: Oranjele
Family: Compositae
Life form: Herb
Part used: Leaves
Specimen No: RH061
Ethno-botanical uses: Leaves squeezed and applied to fresh cuts and wounds to stop bleeding. Leaves also used for the treatment of stomach troubles and as fodder for livestock.

62. Botanical name: *Myrianthus arboreus* P. Beauv.
Local name: ujuju
Family: Moraceae
Life form: Tree
Part used: Stem bark, fruits
Specimen No: RH062

Ethno-botanical uses: Ripe fruits edible. Stem bark boiled to treat dysentery and stomach upset.

63. Botanical name: *Discorea bulbifera* Linn-Holl.
Local name: Adu
Family: Discoreaceae
Life form: Climber
Part used: Aerial tubers
Specimen No: RH063

Ethno-botanical uses: Aerial tubers harvested and stored. Eaten during slight famine after planting of yams, cocoyams etc. Tubers also used for spiritual remedy of mental disorders.

64. Botanical name: *Canarium schweinfurthii* Engl.
Local name: Ube mgba
Family: Burseraceae
Life form: Tree
Part used: Fruits, bark
Specimen No: RH064

Ethno-botanical uses: Fruits softened in boiled water and eaten like black pear. Bark boiled with potash for venereal disease treatment and used to rub limbs of pregnant women with oedema. Matured tree used as timber.

65. Botanical name: *Nauclea latifolia* Smith.
Local name: Uvuru
Family: Rubiaceae
Life form: Shrub
Part used: Roots, Fruits, bark
Specimen No: RH065

Ethno-botanical uses: Roots and stem bark boiled with potash for venereal disease treatment. Leaves boiled with other leaves for malarial treatment. Leaves also used as fodder for goat.

66. Botanical name: *Mitracarpus villosus* (Sw.) DC. Local name: Ogwu ngwo
Family: Rubiaceae
Life form: Herb
Part used: Leaves
Specimen No: RH066

Ethno-botanical uses: Leaves crushed, squeezed and applied on already scratched eczema surface.

67. Botanical name: *Cola lepidota* (K. Schum)
Local name: Ochichaa
Family: Sterculiaceae
Life form: Tree
Part used: Fruits, Leaves
Specimen No: RH067

Ethno-botanical uses: Testa of ripe fruits eaten raw or with palm oil for nutrients. Stem bark used for the treatment of pile and stomach disorders in combination with *Citrus aurantifolia, Gongronema latifolia* and *Scoparia dulcis*. Roots cut in pieces, put in gin and used for arthritis.

68. Botanical name: *Enantia chlorantha* Oliv.
Local name: Erumeru
Family: Annonaceae
Life form: Tree
Part used: Stem bark.
Specimen No: RH068

Ethno-botanical uses: Stem bark boiled in water and taken for malaria. Stems used for supporting yam tendrils on the farm.

69. Botanical name: *Garcinia cola* Heckel. Local name: Agbilu
Family: Clusiaceae
Life form: Tree
Part used: Fruits
Specimen No: RH069

Ethno-botanical uses: Fruits eaten raw for cough and sore throat. Could also be eaten together with “tom- tom” for faster relief of chesty coughs. Fruit also served as cola to visitors as sign of good will.

70. Botanical name: *Syncepalum dulcificum* (Schum. and Thonn.)Daniell.
Local name: Ununaa/Ununoo
Life form: Shrub
Family: Sapotaceae
Part used: Fruits, leaves
Specimen No: RH070

Ethno-botanical uses: Leaves and fruits edible. Used to sweeten tongue especially during masquerade festival so as to drink even very sour palm wine which tastes sweet.

71. Botanical name: *Irvinga gabonensis* (Aubry -Lecomte ex O'Rorke) Baillon.
Local name: Ujiri
Life form: Tree
Family: Irvingaceae
Part used: Fruits, stem
Specimen No: RH071

Ethno-botanical uses: Testa of matured ripe fruits edible. Stems cut and used as chewing stick.

72. Botanical name: *Irvinga woumbolu* Vermoesen.
Local name: Ogbono
Life form: Tree
Family: Irvingaceae
Part used: Fruits, stem
Specimen No: RH072

Ethno-botanical uses: Testa of matured ripe fruits bitter not edible. Ground seeds used as soup condiment/thickener. Very economic, money yielding crop. Stems cut and used as chewing stick.

Table 1. Summary of the different Plant Families; their representative Genera and Species.

S/No	Families	Total Genera	Number of Species
1	Anacardiaceae	1	1
2	Annonaceae	6	6
3	Apocynaceae	3	3
4	Arecaceae	3	4
5	Asclepidaceae	1	1
6	Asteraceae	1	1
7	Bignoniaceae	1	1
8	Bombacaceae	2	2
9	Burseraceae	1	1
10	Caricaceae	1	1
11	Combretaceae	1	1
12	Compositae	2	2
13	Clusiaceae	1	1
14	Crassulaceae	1	1
15	Cucurbitaceae	1	1
16	Dioscoreaceae	1	1
17	Euphorbiaceae	7	7
18	Fabaceae	6	7
19	Icacinaceae	1	1
20	Irvingaceae	1	2
21	Lamiaceae	1	1
22	Lecythidaceae	1	1
23	Leguminosae	3	3
24	Loganiaceae	1	1
25	Lythraceae	1	1
26	Meliaceae	1	1
27	Moraceae	2	2
28	Myrtaceae	1	1
29	Olacaceae	1	1
30	Periplocaceae	1	1
31	Piperaceae	2	3
32	Rubiaceae	4	4
33	Rutaceae	1	1
34	Sapotaceae	1	1
35	Solanaceae	1	1
36	Sterculiaceae	1	2
37	Tiliaceae	1	1
38	Zingberaceae	2	2
	Total	68	73

Table 2. Summary of different diseases and their associated plant species

Malaria	Venereal diseases	Cough
Uvaria chamae	*Ricinus communis*	*Abrus precatorius*
Denettia tripetala	*Uvaria chamae*	*Ocimum gratissimum*
Cleistopholis patens	*Nauclea latifolia*	*Piper umbellatum*
Enantia chloranta	*Anthocleista djalonensis*	*Piper guineense*
Carica papaya	*Spondias mombin*	*Brachystegia eurycoma*
Citrus aurantifolia	*Cola millenii*	*Costus afer*
Microdesmis puberula	*Citrus aurantifolia*	*Garcinia cola*
Glyphae brevis	*Carica papaya*	*Vernonia amygdalina*
Morinda lucida	*Jatropha curcas*	Palm fruits
Icacina trichanta	*Hederanthera barteri*	**Tuberculosis**
Psidium guajava	*Annona senegalensis*	*Burkea africana*
Nauclea latifolia	*Bombax buonopozense*	*Piper umbellatum*
Vernonia amygdalina	**Oedema in women**	**Pile**
Berlinia grandiflora	*Canarium schweinfurthii*	*Mondia whitei*
Infertility	*Anthocleista djalonensis*	*Icacina trichanta*
Olax subscoroidea	*Strophanthus hispidus*	*Cola lepidota*
Brachystegia eurycoma	**Purgative**	**Heart related diseases**
Ceiba pentandra	*Euphorbia heterophylla*	*Strophanthus hispidus*
Piper guineense	*Margaritaria discoideus*	*Napoleona puberula*
Post natal preparations	**Aborfacient**	*Khaya senegalensis*
Xylopia aethiopica	*Lawsonia inermis*	
Gongronema latifolium	*?Spondias mombin*	**Swollen testis**
Ocimum gratissimum	**Ringworm/eczema**	*Borassus aethiopium*
Napoleona puberula	*Pterocarpus soyauxii*	**Diabetes**
Piper guineense	*Senna alata*	*Vernonia amygdalina*
Tetrapleura tetraptera	*Mitracarpus villosus*	*Pterocarpus soyauxii*
Monodora tenuifolia	**Stomach disorders**	*Ocimum gratissimum*
Blood tonic/anaemia	*Napoleona puberula*	*Ceiba pentandra*
Telfairia occidentalis	*Uvaria chamae*	**Toothache**
Mucuna pruriens	*Gongronema latifolium*	*Olax subscoroidea*
Ficus polita/capensis	*Berlinia grandiflora*	*Glyphae brevis*
Wound healing	*Citrus aurantifolia*	*Monodora tenuifolia*
Peperomia pellucida	*Myrianthus arboreus*	*Alcornea cordifolia*
Vernonia amygdalina	*Bombax buonopozense*	*Maesobotrya barteri*
Chromolaena odorata	*Annona senegalensis*	**Poison antidote**
Newbouldia laevis	*Aspilia africana*	*Palm oil*
Bryophyllum pinnatum	**Embrocation**	*Daniellia oliveri*
Aspilia africana	*Alstonia boonei*	**Arthritis**
Witlow	*Newbouldia laevis*	*Maesobotrya barteri*
Carica papaya	**Dysentary/diarrhoea**	
Raphia hookeri	*Spondias mombin*	**Mental disorder**
Eye infections	**Small pox**	*Discorea bulbifera*
Physalis angulata	*Rothmannia whitfieldii*	**Worm expeller**
Newbouldia laevis	*Alcornea cordifolia*	*Hederanthera barteri*

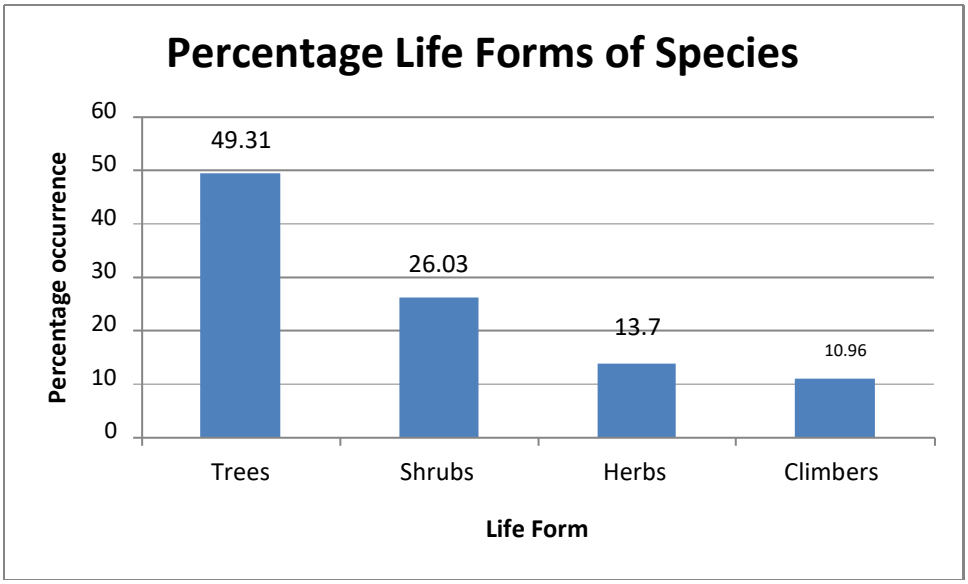

Figure 1. Percentage occurrence of the different life forms

73. Botanical name: *Citrus aurantifolia* (Christm.) Swingle
Local name: Ujiri nta/ oroma nkirisi
Life form: Tree
Family: Rutaceae
Part used: Fruits, leaves, stem
Specimen No: RH073

Ethno-botanical uses: Fruit highly medicinal, added to various medicinal preparations. Used for stomach upset, clean bitter tongue/mouth especially during high fevers. Fruits cut in pieces and added mixed in boiled water with "lipton" teabags for fever treatment. Fruits cut and used to wash male organ after sex to prevent venereal diseases. Leaves and twigs boiled with other leaves for malarial treatment. Twigs also cut and used as chewing stick.

DISCUSSION

Majority of the different plants used by the people of Ogii have been documented as medicinal plants in other parts of Nigeria (Odugbemi 2006, 2008; Bhat *et al*. 1990; Kadiri *et al*. 2010; Sofowora, 1984, 1993; Ogbole *et al.* 2010; Ubom, 2010 amongst others), with few exceptions like the use of *Cleistopholis patens* in malarial treatment (B. O. Daramola. University of Lagos Herbarium, Oral communication).

Most of the respondents attested to the common use of *Strophanthus hispidus* as a "great medicine" used to strengthen others in medicinal preparations. Its action against heart problem could be due to the presence of a substances similar to the cardiac glycoside strophantin which has been isolated from the ripe seeds of *S. kombe*, a variety of the Genus common in East Africa. This study has highlighted the common use of plants of the *Annonaceae* in malarial treatment which calls for further investigation. Possibly this plant family contains an active ingredient which could compete with other malarial drugs in effective treatment of the menace. Liu *et al.* (1990) had isolated a new alkaloid, 3-methoxysampangine in association with three already known alkaloids, eupolauridine, liriodenine, and eupolauridine N-oxide from the root bark of *Cleistopholis patens.* The new alkaloid had proved effective against the fungi *Candida albicans, Aspergillus fumigatus,* and *Cryptococcus neoformans.* Furthermore, Seidel *et al.* (1999) had also isolated partially acetylated tri- and tetrarhamnoside dodecanyl ether derivatives from its matured leaves. Possibly the antiplasmodial action attested to by the respondents could be caused by the presence of these elements, though further investigations using the stem bark which was what most respondents claim to use need to be carried out.

Some of the information gathered from the Ogii respondents agrees with those from other southeastern Nigerian villages revealing common use of these plants especially *Telfairia occidentalis, Gongronema latifolium, Elaeis guineensis* kernel extract in treating convulsion in children, *Ocimum gratissimum*, *Uvaria chamae*, *Denettia tripetala* and *Ricinus communis* (Obute, 2005; Okujagu, *et al.* 2008; Ibe, and Nwufo, 2005, amongst others).

An assessment of earlier workers when compared to the present revealed some areas in which the results are close indicating the common use of some of these plants in southeastern Nigeria, while for some like *Costus afer*, *Cleistopholis patens*, *Cola lepidota*, *Canarium schweinfurthii, Piper umbellatum, Burkea africana* and *Spondias mombin,* the information contained here from available literature are new to the knowledge of south

eastern Nigerian medicinal plants. Furthermore, the linking of *Burkea africana* and *Piper umbellatum* with the treatment of leprosy and tuberculosis is worth investigating going by the deleterious effects of the diseases on humanity. Since the Genera of organisms responsible for leprosy and tuberculosis are similar, the combined therapy of both plants should be tested on *Mycobacterium leprae* and *M. tuberculosis.* Annually, Nigeria spends a lot of foreign exchange on the importation of ergometrine derived from the ergot of rye (*Claviceps purpurea*) which is used medically for placental ejection after delivery and stoppage of bleeding, the respondents have pointed out the potentials of *Spondias mombin* in delivery of placenta after birth in goats. The need to verify this claim and possibly isolate a substance similar to ergometrine which would reduce the amount of money spent on importation will be a worthwhile research.

In response to Ayodele (2005) and Odugbemi (2008) assertions, the need for scientists to indulge in extensive research to ascertain whether what these locals have said concerning the medicinal properties of these plants were true need not be over emphasized. Okujagu *et al.* (2008) had made remarkable progress in testing and documenting the active ingredients such as alkaloids, tannins, saponins, phenols, etc present in some of these medicinal plants. Edeoga *et al.* (2005) had also investigated the active ingredients in *Sida acuta, Emilia coccinea, Cleome rutidosperma, Scoparis dulcis, Euphorbia heterophylla, Tridax procumbens, Richardia bransilensis, Spigelia anthelmia, Physalis angulata,* and *Stachytarpheta cayenensis.* Steroids and phlobatannins were the most common ingredient they found of which steroids are useful in relation to sex hormones.

Though Ogbonna *et al.* (2008) had investigated the antimalarial properties of selected herbs from southeastern Nigeria using only three out of the numerous plants associated with malarial treatment, majority of the plants they used were encountered in this study and the performance of *Nauclea latifolia* and *Enantia chloranta* in vivo proves their efficacy as good malarial remedies thereby confirming the claims of the respondents. Aderounmu (2002) had also reported the efficacy of *Enantia chloranta* together with *Cymbopogon giganteus, Azadirachta indica* and *Morinda lucida* in treating malaria caused by the most deadly malaria parasite *Plasmodium falciparum* (Krettli, 2001).

Obute and Adubor, 2007 had investigated the chemical constituents of about seventeen medicinal plants from southeastern Nigeria. They isolated phenols and flavonols which are the substances that confer these medicinal properties on these plants. Among the plants they studied that were encountered in this survey were *Vernonia amygdalina, Psidium guajava, Chromoleana odorata, Carica papaya, Telfairia occidentalis, Mangifera indica, Aspilia africana,* and *Newbouldia laevis.* Their findings justified the use of these plants in traditional medicine.

Though Ndukwu and Ben-Nwadibia (2005) had recorded *Xylopia aethiopica, Piper guineense, Piper nigrum, Piper umbellatum, Zingiber officinale, Tetrapleura tetraptera Ocimum gratissimum, Dennettia tripetala* among spices used by Niger Delta people of Nigeria their other uses were slightly different from those of Ogii people. This study has shown more uses of these plants by the people of Ogii-Okigwe.

As the search for new drugs continues, other plant groups apart from the Angiosperms and gymnosperms need to be investigated also. Nwosu (2002) had listed some pteridophytes of medicinal value in Southeastern Nigeria, hence the need to investigate, isolate and characterize the active ingredients these lower plants contain. Furthermore, the medicinal properties of fungi species especially mushrooms like *Ganoderma lucidum*, *Pleurotus tuberregium*, *Lentinus* spp., have also been reported (Ofodile *et al.* 2011; Zoberi, 1973). These are the popular ones, there are still over eight species of edible mushrooms from Southeastern Nigeria (U. Igbokwe, 2009, personal communication). This study has highlighted the economic importance of the listed plants and their contributions the general healthcare of the people of Ogii-Okigwe. Further studies on mostly herbs and more shrubs, is underway to add to the medicinal plants database of southeastern Nigeria and the whole country as a whole.

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APPENDIX 1

OUESTIONNAIRE

NAME OF RESPONDENT:

NAME OF PLANT: a) Local:
b) Scientific/Common:

SERIAL NUMBER: ☐

LIFE FORM: TREE ☐ SHRUB ☐ CLIMBER (LIANA) ☐ HERB ☐

RECOGNIZED BY RESPONDENT: YES ☐ NO ☐

KNOWN TO INVESTIGATOR: YES ☐ NO ☐

MEDICINAL: YES ☐ NO ☐

PART OF PLANT USEFUL:

AILMENT USED FOR:

OTHER USES: