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Known medicinal and aphrodisiac plants of Urhonigbe forest reserve, Edo State, Nigeria

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Abstract

This study was carried out at Urhonigbe Forest Reserve, Edo State, Nigeria to document and review the medicinal and aphrodisiac plant species encountered in the forest. Urhonigbe Forest Reserve is constituted and gazetted; it covers an area of 30,791 hectares and is located to the south east of the Sakponba Forest Reserve in Edo State. The study area was conveniently divided into three sample areas (X, Y and Z). Each sample area had four sampling plots, each measuring 50 m x 50 m. A total of thirty one (31) families of medicinal plants were encountered; some of which include Anacardiaceae, Annonaceae, Asteraceae, Commelinaceae, Fabaceae, Zingiberaceae while those of aphrodisiac properties include Annonaceae, Apocynaceae, Capparaceae, Costaceae, Euphorbiaceae and Tiliaceae; they comprising of trees, shrubs, herbs, sedges, grasses and climbers. Their medicinal and aphrodisiac usage were documented through the use of questionnaires which were administered to the locals of the host communities, use of available and existing literature on herbal medicine. Personal interviews, with fourteen old men and twenty three aged women known to be versed in herbal medicine; fifteen farmers in the host communities and four experienced foresters who served as our guides during the field trips. The medicinal importance of encountered species include treatment of hemorrhage, head-ache, helminthes infestations, some possess antibiotic and antifungal properties as well as improving sexual potency and solving infertility problems. Based on the diverse nature of the medicinal and aphrodisiac plant species in the forest reserve, conservation strategies will enhance availability of the plant species for unborn generations.

Keywords: Medicinal, aphrodisiac plants, Urhonigbe, Forest reserve

1. Introduction

Harshberger (1986) defined ethnobotany as the study of the utilitarian relationship between human beings and vegetation in their environment, including medicinal uses. Ethnobotany is a vital approach in the study of natural resources management of an indigenous people and can be summed up in four words: the people, plant, interaction and uses (Aliyu, 2006) [3]. Many countries rich in traditional medicinal knowledge have been conducting ethnobotanical survey of medicinal plants. Ethnobotanical research still plays its important scientific roles in stimulating further phytochemical and pharmacological studies (Leporatti and Corradi, 2001) [12].

Ethno-botanical studies also provide valuable insight into the potential uses of species (Aliyu 2006; Olufemi and Akinlosutu, 2006; Shomkegh *et al.*, 2008) [3, 15, 17]. Ethnobotanical knowledge that has been passed on from generation to generation either within families or ethnic groups also continues to find valuable uses in present day society. The socio-economic benefits arising from such resources are tremendous (Van der Maesen *et al.*, 1996) [20].

The forest has been variously described as sources of medicinal plants (Gyasi *et al.*, 2004) [8] richest drug store (Abu and Adebisi, 2002) [1] and forest medicine (Azeke, 2002) [5]. (Etukudo 2000) [6]. noted that forests constitute important and cheap sources of vitamins, minerals, protein, carbohydrates and fats and their contribution to human diets is immeasurable. Ethnobotanical studies also provide valuable insights into the potential uses of species (Aliyu 2006; Olufemi and Akinlosutu 2006; Shomkegh *et al.*, 2008) [3, 15, 17]. Adel (2006) stated that life would be virtually impossible for most people living in rural areas of developing countries without the availability of palm leaves for roof thatch.

Plants may be used internally or externally. The parts of plants used for medical purpose usually range from leaves, roots, bark, stems and shoot. The use of medicinal plants for treatments such as skin disease, fever, coughs, post-natal mother, tonic and so on has been reported (Shaharuddin, 2005) [16]. It was practiced by our ancestors for many centuries ago

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and has been passed on for generations. These herbal medicine and alternative remedies besides modern drugs. Nowadays, there are increasing interests on the value of medicinal plants. Possibly, the demand for these plants will increase as well for future health care needs (Shaharuddin, 2005) [16]. Based on the demand for less toxic and easily affordable drugs for the treatment of ailments and diseases, this study was undertaken to document the medicinal and aphrodisiac plant species in Urhonigbe Forest reserve, Edo State, Nigeria.

2. Materials and Methods

Study Area

Urhonigbe is a constituted and gazetted forest reserve. It lies between latitudes 5°57'59" and 5°59'31"N and longitudes 6°05'38" and 6°06'45"E. The reserve, which covers an area of 30,791 hectares, is located to the South-east of the Sakponba Forest Reserve in Edo State. It is shaped like a reversed letter 'C' and lies between Urhonigbe and Evboesi communities to

the East and West respectively. A 64-hectare Strict Natural Reserve (SNR) is located within the forest reserve; Urhonigbe is located in the southern end and Obazagbon in the North east. Other Bini towns and villages occupy the fringes of the forest reserve. The slope of Urhonigbe Forest Reserve is quite gentle with an average elevation of 60 m, and the highest is 75 m above sea level (Shell, 2006) [18]. The climate of the area is typical humid tropical rainforest type with an average annual temperature of 27°C. Rainfall is heavy for about 9 months of the year from March to November with average annual rainfall of 1778mm to 2286mm, well distributed within the rainy season. The dry season lasts from December to February. The major soil type is sandy loam; the texture of the soil is responsible for its high permeability and high base-leaching. These conditions, together with the high annual rainfall, induce high soil acidity with soil pH values ranging from 4.30-5.00.

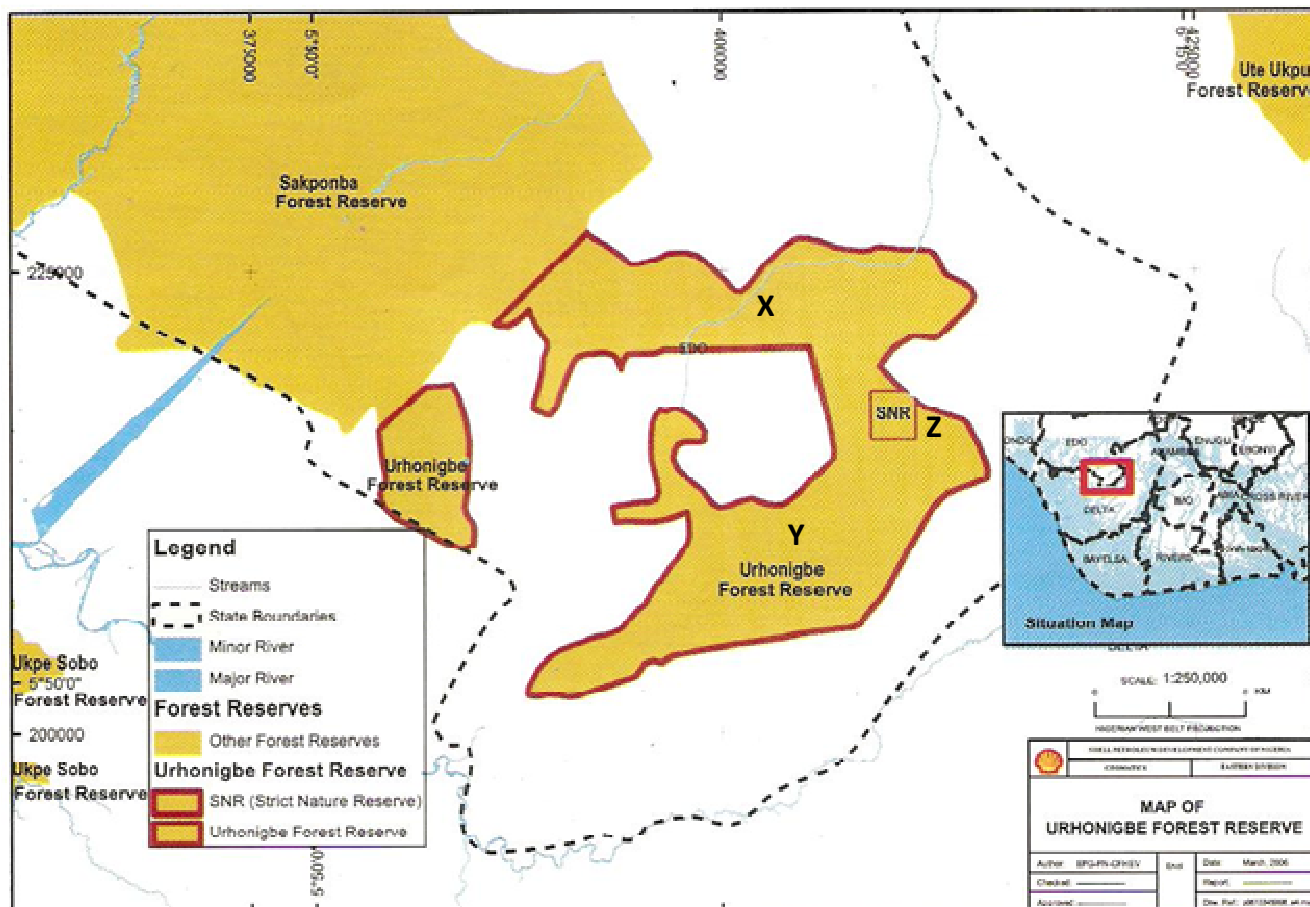


Fig 1: Map of Urhonigbe Forest Reserve showing the Strict Natural Reserve (SNR) and surrounding forest blocks.

Source: Adopted from Shell (2006)

Information for this study was collected using:

- a.) Administration of questionnaires to the locals that live close to the forest reserve
- b.) From available literature (Ethnomedical uses of plants in Nigeria by Gill (1992) [7], Ogie-Odia (2010) [13], Idu *et al.* (2008) [10], and Ajibensin (2011)) on herbal medicine and other uses
- c.) Personal interviews, with fourteen old men and twenty three women, who could no longer go to the farms but were known to be versed in herbal medicine;
- d.) Fifteen farmers in the host communities and four experienced foresters who served as our guides during the field trips

3. Results

Table 1: Plants with known medicinal uses in Urhonigbe forest

| Family | Scientific | Medicine uses |
|---------------|---|--|
| Anacardiaceae | <i>Anacardium occidentale</i> L. | Leaves are boiled with that of <i>Carica papaya</i> and <i>Mangifera indica</i> and drunk for treatment of fever. |
| Annonaceae | <i>Anonidium mannii</i> (Oliv.) Engl. & Diels | Antidotes (venomous stings, bites), arthritis, rheumatism, diarrhoea, dysentery, generally healing, menstrual cycle, pain-killer, paralysis, epilepsy, convulsion, spasm, stomach trouble |
| Annonaceae | <i>Polyalthia suaveolens</i> Engl. & Diels | Bark decoction are taken to treat stomach-ache and other pains, gonorrhoea and infertility, as diuretic, purgative and aphrodisiac, and to facilitate childbirth. Bark ash is rubbed into scarifications on the forehead to treat psychosis, and bark pulp is applied externally against rheumatism, headache, epilepsy and toothache. In Cameroon bark is applied to scarifications to treat malaria, and also in Gabon the bark is used for the treatment of malaria. Root decoctions are taken to treat liver complaints and headache, and root sap is administered as anthelmintic and aphrodisiac, and to treat oedema and swollen glands. Leaf decoctions or macerations serve to treat hepatitis and pains and are applied externally to treat rheumatism. |
| Annonaceae | <i>Monodora tenuifolia</i> Benth. | The seeds are used to prevent haemorrhage, Leaf decoction is added to bath water against itching in children. It is widely used to relieve toothache, dysentery, dermatitis, headache and as worm expeller. When ground to powder, the kernel is used to prepare pepper soup as a stimulant to relieve constipation and control passive uterine hemorrhage in women immediately after childbirth. Other uses include the treatment of body aches, chest pains and rashes due to river blindness and leprosy. |
| Apocynaceae | <i>Mezoneuron benthamiana</i> Baill. | Used in management of erectile dysfunction, dysentery, urethral discharges, skin diseases and wounds. |
| Apocynaceae | <i>Voacanga africana</i> Stapf. | The bark and seeds of the tree are used as stimulant |
| Apocynaceae | <i>Rauwolfia vomitoria</i> Afzel | Root brewed as a tea and used in humans to treat hypertension, insanity, snake bites and cholera. It is also used for relief of central nervous system disorder including anxiety and excitement. |
| Apocynaceae | <i>Tabernaemontana pachysiphon</i> Stapf | The plant latex is generally used as a styptic and is applied to fresh wounds to prevent infection. It forms a film over the wound. The dried and powdered leaves are applied to sores and wears to heal them. Painful breasts of lactating women are treated with the latex from the petioles or bark. The latex of the fruit is rubbed into scarifications to treat lymphatic glandular swellings. The latex is applied to sore eyes. A decoction of the root bark is taken in Nigeria for the treatment of insanity. In East Africa, a decoction is used against stomach-ache, constipation, flatulence, headache and as a hypnotic. Headache is also treated with a leaf infusion. The bark is used as medicine for hypertension. In DR. Congo a maceration prepared from the stem bark is used to wash the body against scabies. |
| Apocynaceae | <i>Hunteria umbellata</i> (K.Schum) Hallier.f. | Decoction of the plants seeds is highly valued in African herbal medicine in the management of inflammation, diabetes and obesity. The plant is used by West African traditional midwives as phytotherapies in herbal remedies to treat pregnancy related ailment and most especially to augment labour in gravid uterus. In Ghana and Nigeria the root and stem barks are used as an anthelmintic especially against guinea worm, filarial worms and schistosomiasis (causing bilharziasis). Aqueous and alcoholic extracts of the seeds are used as a cure for piles, yaws, diabetes and stomach ulcers in Nigeria. The bark and the root are used as a bitter tonic in Nigeria and powdered root and root decoctions are used to prevent miscarriage and to treat menorrhagia or hematomunia (regular menstruation but with excessive blood flow and duration). In Cameroon, a bark or fruit decoction is taken to treat stomach ache, liver problems and hernia. The plant extracts are used in Germany for phytotherapeutic purposes, to reduce the heart rate of decrease blood pressure and reduce blood lipid content. |
| Apocynaceae | <i>Funtumia elastica</i> (Preuss) Stapf. | The plant has important antioxidant, antifungal, anti-inflammatory, and antibiotic properties. It is traditionally used in its native environment, tropical Africa to treat asthma, allergies and other respiratory issues, as well as malaria. |
| Apocynaceae | <i>Picralima nitida</i> (Staph f.) | The seeds are crushed or powdered and taken orally, and are mainly used for the treatment of malaria and diarrhoea, and as a painkiller. |
| Apocynaceae | <i>Alstonia boonei</i> De Wild. | An infusion in cold water of the stem bark is drunk as a cure for venereal diseases, worms, snakebites and rheumatism and to relax muscles. It is also taken internally or used as a bath as a remedy for dizziness. An infusion of root and stem bark is drunk as a remedy for asthma, a liquid made from the stem bark and fruit is drunk once daily to treat impotence. In Ghana, a decoction of the bark is given after childbirth to help in the delivery of the placenta. It is used from Cote d'Ivoire through to Burkina Faso as a decoction to cleanse suppurating sores and exposed fractures; in Nigeria for sores and ulcers and in Cameroon and Liberia for snakebites and arrow poison. The bark has widespread use in Ghana to assuage toothache, in Sierra Leone it is used as an anthelmintic. The latex is said to be antidote for <i>Strophanthus</i> poison. In Cote d'Ivoire the leaves, pulped to a mesh, are applied topically to reduce oedema, and leaf sap is used to cleanse sores. |
| Asteraceae | <i>Aspilia africana</i> (Pers.) C.D. Adams. | Used to stop bleeding, block infection, remove foreign bodies from the eyes, treat scorpion stings and speed up wound healing. |
| Asteraceae | <i>Chromolaena odorata</i> (L.) King & Robinson | The young leaves are crushed, and the resulting liquid can be used to treat fresh cuts. |
| Bignoniaceae | <i>Newbouldia laevis</i> | Tree is regarded as a sacred tree by the Yorubas and Binis, and a symbolic marker for sacred |

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| | (P.Beauv.) | spots. This plant has many medicinal properties and is valued in Africa. |
| Bombacaceae | <i>Bombax buonopozense</i> P.Beauv. | The abundant thorns present on the bark are burnt and the resulting charcoal is mixed with butter to treat swelling. |
| Burseraceae | <i>Dacryodes edulis</i> (G.Don) H.J.Lam | Used to treat various ailments such as wound, skin diseases, dysentery and fever. The extracts and secondary metabolites have been found to show biological activities such as antimicrobial, antioxidant and anti-sickle cell disease (Ajibesin, 2011). |
| Capparaceae | <i>Buchholzia coriacea</i> Engl. | The crushed seeds are pasted over the stomach for difficult childbirth. It is also considered anthelmintic (worm expeller) it is used as cough medicine, and in the treatment of ulcer. It is also used in the treatment of hypertension by drinking the fluid squeezed out of the leaves with pea leaves and small quantity of salt. The bark can be made into a pulp for inhalation or into a snuff to relieve headache, sinusitis, and nasal congestion in Ivory Coast, small pox for skin itching in Gabon. The pulped bark is applied to the chest to treat chest pains and also boils. |
| Chrysobalanaceae | <i>Parinari excelsa</i> Sabinea | Used for treating blood disorders, insanity, diarrhoea, dysentery, as well as vermifuges |
| Combretaceae | <i>Terminalia superba</i> Engl. & Diels. | The aqueous extract of the plant prevents glucose-induced hypertension in rats (Tom <i>et al.</i> , 2011) [19]. |
| Commelinaceae | <i>Palisota hirsuta</i> (Thunb.) K.Schum | Lactation stimulants, hemorrhoids, diarrhoea, dysentery, dropsy, swellings, oedema, gout, ear treatments, generally healing, kidneys, diuretics, naso-pharyngeal infections, pain-killers, skin, mucosae, venereal diseases. The plant can be used as abortifacients. |
| Comelinaceae | <i>Commelina benghalensis</i> L. | Used for treating sterility and as mucilage for treating burns, sore eyes, and sore throats. It used for treating strangury (slow and painful discharge of the urine, due to spasm of the urethra and bladder) |
| Connaraceae | <i>Cnestis ferruginea</i> Vahl ex DC | Decoction of leaves used for dysentery. The tart, astringent fruit is chewed for oral hygiene. Extracts from the fruit have been found to have antimicrobial effects, especially against gram-positive bacteria |
| Costaceae | <i>Costus afer</i> Ker Gawl. | A stem decoction, the mashed or chewed stem or the pounded fruit, sometimes mixed with sugar cane juice, are taken to treat cough, respiratory problems and a sore throat. Leaf sap is used as eye drops to treat the eye problems and as nose drops to treat headache with vertigo, and in frictions to treat oedema and fever. Leaf sap or a rhizome decoction is taken to treat malaria. Stem sap is applied to treat urethral discharges, venereal diseases, jaundice and to prevent miscarriage. A stem decoction is widely taken to treat rheumatoid arthritis. An infusion of the dried aerial parts is taken to treat hypertension. The powdered stems are used as an enema (the procedure of introducing liquids into the rectum and colon via the anus) to treat worms and hemorrhoids. The pulped stems taken in water are strongly diuretic. In Nigeria the debarked stem is chewed to treat nausea and to quench thirst. A cold water extract of the stem is taken to treat small epileptic attacks. Rhizome pulp is applied to abscesses and ulcers to mature them, applied to teeth to cure toothache, and mixed with water it is taken to treat diarrhoea and amoebic dysentery. A rhizome decoction or the raw rhizome is taken to treat leprosy and venereal diseases. In Gabon, the stem sap is rubbed on the body to treat colic. |
| Cucurbitaceae | <i>Momordica charantia</i> L. | The useful parts include its roots, stem, fruit and flower. It is useful in skin diseases, vermifuge, diabetes and fever. |
| Dischapeltilaceae | <i>Dichapetalum guineense</i> (DC) Keay | Roots are used in treatment of diarrhoea and liver diseases. |
| Euphorbiaceae | <i>Ricinodendron heudelotii</i> (Baill.) Pierre ex Pax | Used for eye treatment and snake bite |
| Euphorbiaceae | <i>Alchornea cordifolia</i> (Schum and Thonn) Muell.Arg. | Used in treating sore throat, genital urinary problems, bronchitis, female sterility and cough. |
| Euphorbiaceae | <i>Alchornea laxiflora</i> (Benth.) Pax & Hoffman | Use in treating liver disease |
| Euphorbiaceae | <i>Drypetes chevalieri</i> Beille Beille | Cures impotence |
| Fabaceae | <i>Acacia ataxacantha</i> DC | Cure eye-sight |
| Fabaceae | <i>Baphia nitida</i> Lodd | Leaves, bark, roots and twigs treat constipation, skin diseases, venereal diseases, ringworm, eczema, flatulence and small pox. |
| Fabaceae | <i>Pterocarpus santalinoides</i> DC | Bark is used in uterine bleeding. It is in treatment of pimples, acne, wrinkles, chronic bronchitis, gonorrhoea and gleet, chronic cystitis with benzoic and boric acids. |
| Icaanaceae | <i>Icacina manii</i> Oliv. | Used in treating dropsy, swelling, oedema, gout, genital depressants. |
| Lomariopsidaceae | <i>Lomariopsis guineensis</i> (Underw.) Alston | Leaf used medicinally for naso-pharyngeal infections. |
| Meliaceae | <i>Guarea cedrata</i> (A.Chev.) Pellegr. | For treating stomach ache, food poisoning, gonorrhoea, as a wash against kidney pain, bleeding after birth, rheumatism and leprosy. |
| Meliaceae | <i>Trichilia monadelpha</i> (Thonn.) JJ de Wilde | A bark decoction or the pulp is applied externally to wounds, sores, skin, infections, including yaws, lumbago and oedema. Bark extracts are used to soothe cough, anagelsic and anthelmintic, gonorrhoea and syphilis. |
| Meliaceae | <i>Khaya ivorensis</i> A.Chev. | Used in treatment of general body ailment. |
| Meliaceae | <i>Entandrophragma cylindricum</i> (Sprague) | The seed oil is used medicinally, including for skin problems and rheumatism. |
| Myristicaceae | <i>Pycnanthus angolensis</i> | Used to cure toothache |

| | (Welw.) Warb. | |
|----------------|---|---|
| Passifloraceae | <i>Barteria fistulosa</i> Mast. | Used in treating arthritis, rheumatism, paralysis, epilepsy, convulsion, spasm, stomach trouble, oral treatments, skin, small pox, chicken pox, measles. It is also used as antidote (venomous stings, bites, etc). |
| Piperaceae | <i>Piper guineense</i> Thonn & Schum. | Used as sedatives, laxatives and antibiotics. Used in treating stomach troubles, tumors, cancers, vermifuges and pulmonary trouble. |
| Piperaceae | <i>Maesopsis eminii</i> Engl. | The root bark is beaten with clay and used to treat gonorrhoea. |
| Rubiaceae | <i>Corynanthe pachyceras</i> K.Schum. | Purgative medicine for children |
| Rubiaceae | <i>Rothmannia hispida</i> (K.Schum.) Fageri | Used as worm expeller |
| Samydaceae | <i>Homalium africanum</i> (Hook.F.) Benth. | The bark cures piles |
| Sterculiaceae | <i>Sterculia tragacantha</i> Lindl. | Stomach heat control and cooling of birth womb |
| Tiliaceae | <i>Grewia mollis</i> Juss. | It is used as antidote for (venoms) stings and bites. |
| Tiliaceae | <i>Grewia pubescens</i> P.Beauv. P.Beauv. | Medicinal uses as genital stimulants, antidotes for (venoms) sting and bites. |
| Tiliaceae | <i>Glyphaea brevis</i> (Spreng.) Monach | Use for cutaneous, subcutaneous parasitic infection, kidney diuretics. It is also used as antidotes for (venom) stings and bites. |
| Verbenaceae | <i>Vitex rivularis</i> Gurke | The herb has been used to cure conditions such as madness, insanity and epilepsy. |
| Violaceae | <i>Rinorea dentata</i> (P. Beauv.) O Ktze. | Used in the past for the treatment of body inflammation and hence milk flow after birth. |
| Zingiberaceae | <i>Afromanum melegueta</i> K.Schum | The plant grains are to some extent used in veterinary practice. |

Fifty three (53) of the plants enumerated have various medicinal values. The uses of plant species for medicinal purposes vary from community to community, village to village and country to country. The plants used for the treatment of a particular ailment may differ from place to place, hence the multiple uses of plant species with diverse medicinal potentials. (Table 1)

Table2: Plants with known aphrodisiac properties in Urhonigbe forest

| Family | Scientific name | Habit |
|---------------|--|-------|
| Annonaceae | <i>Polyalthia suaveolens</i> Engl. & Diels | Tree |
| Apocynaceae | <i>Hunteria umbellata</i> (K.Schum) Hallier.F. | Tree |
| Capparaceae | <i>Buchholzia coriacea</i> Engl. | Tree |
| Costaceae | <i>Costus afer</i> Ker Gawl. | Herb |
| Euphorbiaceae | <i>Drypetes chevalieri</i> Beille | Tree |
| Tiliaceae | <i>Grewia pubescens</i> P. Beauv. | Shrub |

Six plant species enumerated have the ability to enhance, stimulate or excite sexual desire. These plants are said to have aphrodisiac properties; aphrodisiac plants have been used for ages to improve sexual potency, solving infertility or sterility problems, or just to spice up or boost sex life (Table 2)

4. Discussion and Conclusion

Urhonigbe Forest Reserve was found to be rich in medicinal plants. This agreed with the reports of earlier workers that forests had been variously described as sources of medicinal plants (Gyasi *et al.*, 2004) [8] richest drug store (Abu and Adebisi, 2002) [1] and forest medicine (Azeke, 2002) [5]. *Anacardium occidentale* leaves combined with *Carica papaya* and *Mangifera indica* leaves were found to be used by the people of the communities for the treatment of malaria. This agrees with the report by Ogie-Odia (2010) [13], that the leaves of *Anacardium occidentale* together with *Carica papaya* and *Mangifera indica* leaves are boiled and drunk for treatment of malaria.

Different plants may be used to cure the same ailment but their methods of preparation may vary or differ. When one plant is not available, a substitute that serves the same purpose is used. *Hunteria umbellata* (K.Schum) Hallier.f. leaves were found to be used by traditional midwives as phytomedicines in herbal remedies to treat pregnancy related ailment whereas Idu *et al.*

(2008) [10] reported the use of *Bryophyllum pinnatum* for healing of navel for newly born babies. *Cnestis ferruginea* was used for the treatment of dysentery as well as having antimicrobial effects. This is in conformity with the work carried by Lewis and Elvin-Lewis (2003) that extracts from the fruit have been found to have antimicrobial effects, especially against gram-positive bacteria. *Funtumia elastica* leaves were used for the treatment of malaria whereas Okoegwale and Omofezi (2001) [14], Idu *et al.*, (2007 & 2008) [10, 11] reported the use of *Azadirachta indica* leaves and bark for the treatment of malaria. *Dacryodes edulis* (G.Don) H.J.Lam, leaves, barks are used to treat various ailments. This agrees with the report of Ajibesin (2011) that the extract and secondary metabolites of *Dacryodes edulis* (G.Don) H.J.Lam show antimicrobial, antioxidant and anti-sickle-cell disease. *Terminalia superba* cures hypertension; a similar report was given by Tom *et al.*, (2011) [19] that the aqueous extract of *Terminalia superba* leaves prevents glucose-induced hypertension in rats. *Chromolaena odorata* (L.) King & Robinson leaves used to treat skin wounds this concurs with the report by Ogie-Odia (2010) [13] that *Chromolaena odorata* (L.) King & Robinson was used for healing skin wounds.

From the work carried out, anthropogenic activities pose serious threats to the biodiversity, plant community as well as endanger some medicinal plant species which may hold the key to future medicinal problems.

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