

Ethnobotanical Studies from Central Nigeria¹

R. B. BHAT,² E. O. ETEJERE,³ AND V. T. OLADIPO³

The people of Kwara State, central Nigeria, depend on natural plant resources of their forests for food, medicine, pastoral, domestic, and other cultural and religious needs. This area, one of multi-ethnic status, has remained ethnobotanically unexplored until recently. Our survey among herbalists, herb sellers, tribal priests, and local people recorded medical and other uses of 52 species of plants. This first-hand information points out the importance of plants to tribal groups and modern people of central Nigeria.

The detailed taxonomic work on the flora in West Africa by Hutchinson and Dalziel (1954) is considered to be the monumental floristic work for this region. Recently, some publications have thrown more light on the flora of tropical West Africa (Cobley 1962; Gledhill 1972; Irvine 1969; Keay et al. 1964).

Most of these workers emphasized the need to collect and record the West African flora. Although the rural inhabitants depend on the plants of their surroundings for food, medical, pastoral, and miscellaneous domestic uses, botanists, naturalists, and plant collectors have also attempted to show the importance of the ethnobotany of this region (Bhat et al. 1985; Dalziel 1955; Irvine 1961; Oliver 1960; Oliver-Bever 1986; Singha 1965). Our project, therefore, was undertaken as a first step to investigate the role of some plant species used indigenously in Nigeria. The survey was centered in Kwara State (Fig. 1).

The plants were collected from different parts of the state; exhaustive field notes were taken with regards to the usefulness of the plants following some of the suggestions of Croom (1983). All information was obtained through series of interviews with elderly villagers and herbalists at the time of collection. Response to drug therapy was not recorded because the patients exhibiting disease symptoms were not readily available for interviews during documentation. This is because most of the herbalists have no organized hospitals and, therefore, most of the patients are out-patients who come from distant places. However, the elders and herbalists claim a high percentage of efficacy for these plant drugs. Identification of plants collected was carried out by using *Flora of West Tropical Africa* (Hutchinson and Dalziel 1954) and other works (Kennedy 1936; Oliver 1960).

The plants were processed in the customary way and deposited in the herbarium of the Department of Biological Sciences, University of Ilorin, Nigeria (abbreviation not in *Index Herbariorum*). In our enumeration, the species are alphabetically arranged and the data are presented in the following sequence: botanical name/collectors' initials (B = Bhat, E = Etejere, O = Oladipo) and collection numbers/family/vernacular names in (where possible) the three main Nigerian languages—H = Hausa, Y = Yoruba, and I = Ibo—and some other languages/plant part collected and preferred collection time for use/information on uses with methods of utilization and popularity of use. The basis for assigning herbs to the

¹ Received 10 September 1987; accepted 15 December 1989.

² Department of Botany and Range Science, Brigham Young University, Provo, UT 84602.

³ Department of Biological Sciences, University of Ilorin, Ilorin, Kwara State, Nigeria.

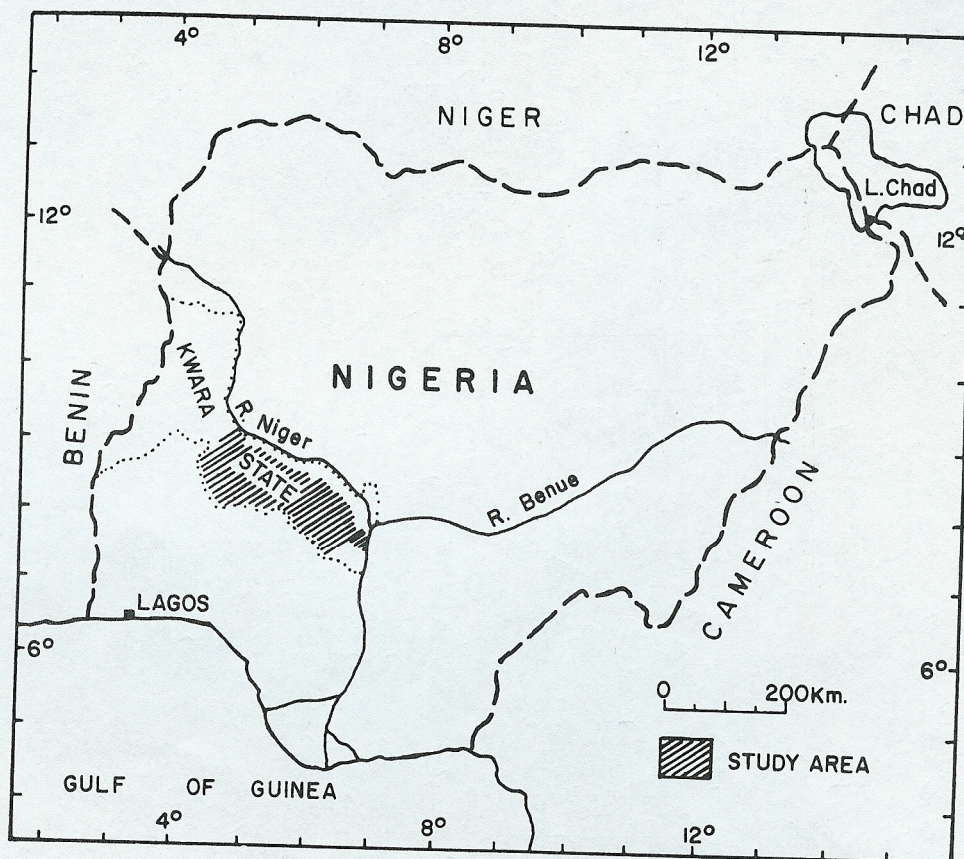


Fig. 1. Map of Nigeria showing location of the study area, Kwara State.

use categories “common” or “occasional” is based upon a number of factors such as easy availability and application of herbal medicine, effect of the treatment, traditional belief, etc.

ENUMERATION OF SPECIES

1. *Ageratum conyzoides* L./E. & B. 039/Asteraceae/imi-ewure (Y); akwokwo-nwaosi niaika (I)/Young and mature fresh leaves at any time of day/(i) For body infection: A handful of the leaves is squeezed in a glassful of water; the liquid is administered orally. Common. (ii) For neck pain: The leaves (a handful) are ground and mixed with two spoonfuls of shea butter (fat from the kernels of *Butyrospermum parkii*); this ointment is used to massage the affected part. Common.
2. *Allium sativum* L./O. & B. 029/Liliaceae/alubosa elewe (Y); garlic/Young plants at any time of day/(i) For convulsion: The plant is soaked in juice of *Citrus aurantifolia*, and a pinch of copper sulphate is added; the mixture is left for 4 d in a bottle; the bottle is shaken before use. Caution: Only a very small quantity is given orally to children; excess quantity results in vomiting or runny stool. Occasional. (ii) Other use: As a condiment in soup. Common.
3. *Annona senegalensis* Pers. var. *senegalensis*/B. & O. 001/Annonaceae/abo (Y); gwander daji (H); uburu-ocha (I)/Young and mature fresh leaves preferably before noon/(i) As a sexual stimulant for impotency: A decoction is prepared from 20–25 leaves each of *A. senegalensis* and *Glyphaea lateriflora* (G. Don) Hutch. and Dalz.; about half a glassful of water is added to dilute, and table salt (sodium chloride) is added to taste; the filtrate is collected and stored in a bottle; the filtrate is sipped every night before intercourse or when necessary. Occasional. (ii) For diarrhea: The

- leaves (10–15) are soaked in two to four glassfuls of water and squeezed to prepare a decoction; the solution is then given orally. Common. (iii) For venereal diseases: The dried leaves and roots in equal proportions are ground to powder and taken orally with pap (a semi-liquid food prepared from the grains of maize or guinea-corn). Occasional. (iv) As an insecticide: The leaves are burnt in clay pots in an enclosed room to kill mosquitoes and other insects by suffocation. Common.
4. *Anogeissus leiocarpus* Guil. and Pers./E. & O. 005/Combretaceae/ayin (Y); marike (H); atara (I)/Fresh twigs at any time of day/(i) For malaria: The leaves are packed tightly in earthen pots to which water is added; after cooking to give a concentrated decoction, the decoction is taken orally. Common. (ii) Other uses: (a) The roots are used as chewing sticks for cleaning teeth. Common. (b) The dry stems are used as firewood. Common.
 5. *Argemone mexicana* L./E. & B. 037/Papaveraceae/egun-arigbo (Y); kwarko (H); Mexican-poppy/Mature leaves and seeds at any time of day/(i) For jaundice: A handful of the leaves and a pinch of potash are cooked in water or sun-dried and ground to powder; the mixture or powder is taken orally. Common. (ii) For teething in infants: The seeds are cooked in water and the concentrate given to infants beginning from the age of 8 d; this helps children overcome problems associated with teething. Common.
 6. *Azadirachta indica* S. Juss./B. & O. 016/Meliaceae/igi-oba (Y); dogo yaro (H); neem tree, margosa/Young and mature twigs at any time of day/(i) For malaria: A potful of the leaves is boiled or squeezed in water for some time; the decoction is taken orally, hot or cold, or used as a steam bath. Common. (ii) For catarrh: A potful of the leaves is boiled in water and the concentrated hot solution used as a steam bath, inhaled, or taken orally. Common. (iii) Other uses: (a) It is used as a shade tree because of its dense evergreen crown. Common. (b) The stem is used as a chewing stick to clean the teeth and gums. The juice is believed to prevent tooth decay and gum infections. Common. (c) The fresh leaves are mixed with cereals during storage to prevent insect attack. Common. (d) The young seedlings are also commonly transplanted in the northern parts of Nigeria to check encroachment of the Sahara Desert and soil erosion.
 7. *Bauhinia thonningii* Schum./B. & E. 040/Caesalpiniaceae/abafe (Y); kaego (H); okapoatu (I)/Fresh mature fruits and roots at any time of day/(i) For fever and skin diseases: A decoction is prepared from the roots and fruits (quantity 2:1) in water and boiled to concentrate it; this is given orally. Common. (ii) Other uses: (a) The stem is used as rope for domestic purposes. (b) The bark is used as a cosmetic to redden the lips. Common.
 8. *Blumea gariepina* DC./B. & E. 030/Asteraceae/ewedorun (Y)/Fresh whole plants at any time of day/For old or new wounds: Two to four whole plants are boiled in water in earthen pots and the filtrate is collected in bottles; the filtrate is used to clean the wound with the aid of cotton every morning until healing. Common.
 9. *Bridelia ferruginea* Benth./E. & O. 010/Euphorbiaceae/ira (Y); kirni (H); egede (I); ogangan (Benin)/Roots, leaves, and bark from mature stems usually in the morning/(i) For coated tongue: The bark together with the stem is ground with aluminum sulphate in water; sugar or red pepper is added to filtrate to taste and taken orally as a drink or mouthwash. Occasional. (ii) As laxative and for headache: The leaves and roots are chewed regularly. Common. (iii) Other use: The stem is a firewood. Common.
 10. *Bryophyllum pinnatum* (Lam.) Oken/O. & E. 007/Crassulaceae/abamoda (Y); sproutleaf/Young fresh twigs and mature roots at any time of day/(i) For earache: The dried leaves (about five) are ground to powder and the liquid secretion (one to two teaspoonfuls) of a mollusk (*Mutella* sp.) is added to it; the mixture is then applied to the affected ears with the aid of feathers; the ear opening is then plugged with cotton for 3 d to prevent the entry of dust particles. Occasional. (ii) For eczema and pimples: The latex from the plant is applied directly to the pimples and eczema spots by means of cotton. Common. (iii) For whitlow: The dried whole plant is ground to powder and mixed with one or two raw eggs and one or two tablespoonfuls of shea butter; this is applied directly on the affected part to relieve the pain and dry up the inflammation. Occasional. (iv) As a cough mixture: A decoction prepared from the roots in water is taken orally as a cough mixture. Common.
 11. *Butyrospermum paradoxum* (Gaertn. f.) Hepper/B. & O. 020/Sapotaceae/pahan (Y); shea butter tree/Young and mature fresh leaves at any time of day/For malaria: Two to four handfuls of the leaves are cooked in six to eight glassfuls of water in earthen pots; the concentrate is taken orally. Common.
 12. *Butyrospermum parkii* (G. Don) Kotschy/E. & O. 023/Sapotaceae/emi (Y); ka'danya (H); osisi

- (I); shea butter tree/Mature fruits at any time of day/(i) For neck pain: A handful of the leaves of *Ageratum conyzoides* is ground together and mixed with one or two tablespoonfuls of shea butter; the ointment is used to massage the affected part. Common. (ii) For swollen limbs: A handful of leaves of *Bryophyllum pinnatum* is ground and mixed with one or two teaspoonfuls of shea butter and used to massage the affected part. Common. (iii) For whitlow: A handful of leaves of *Bryophyllum pinnatum* is ground and mixed with one or two raw eggs and about one tablespoonful of shea butter and used to massage the affected part. (iv) Other uses: (a) The fruits are eaten raw as a dessert. Common. (b) Shea butter is used as a domestic cooking oil. Common.
13. *Calotropis procera* (Ait.) Ait. f./O. & E. 002/Asclepiadaceae/bomu-bomu (Y); tufatia (H); sodom-apple/Fresh twigs, preferably from young plants, at time of need/(i) For snake bite or scorpion sting: Latex is obtained from any part of the plant and applied by making seven (traditional belief) incisions on the affected part after dipping the razor in the latex. Occasional. (ii) As an expectorant: Four to six dried leaves are ground and then mixed with about one teaspoonful of shea butter and water; this is taken orally. Common. (iii) Other use: Used as a coagulant of fresh milk by boiling the milk and the crushed leaves together, enabling the milk to separate into fat and whey; this is left overnight to ferment and later sold as local cheese. Common.
14. *Carica papaya* L./O. & E. 044/Caricaceae/ibepe (Y); gwanda (H); ojo-mgbimgbi (I); pawpaw, papaya/Young and mature leaves at any time of day/(i) For body infections: The leaves are cooked along with those of *Musa sapientum* in equal proportions; the extract is taken orally or as a bath. Precaution: Should not be administered to infants. Common. (ii) For yellow fever: The leaf extract is taken orally with table salt. Common. (iii) As a treatment for beri-beri: The fruits are eaten regularly. Common. (iv) As an anthelmintic: The leaf extract and latex of raw fruits are taken orally. Occasional. (v) For stomachache: Infusion of the leaves is used. Occasional. (vi) Other uses: (a) As a meat tenderizer: Tough meat is cooked along with leaves and green fruits. Common. (b) The ripe fruits are also eaten as food. Common.
15. *Cassia alata* L./E. & O. 048/Caesalpiniaceae/asunwon (Y); okpo ndichi (I); akoria (Bennin); ringwombush/Fresh twig with inflorescence either before noon or at sunset/(i) For ringworm and other skin diseases: The juice from the leaves and stems is squeezed out and rubbed on the affected part of the skin. Common. (ii) For indigestion: The dried leaves are powdered along with those of *Piper guineense* in equal proportions; the powdered component is divided into small portions and taken orally with hot pap. Common. (iii) As a laxative: The ground inflorescence is mixed with pap and taken orally. Common. (iv) A strong decoction of the leaves is also used to cause abortion or to hasten delivery at labor. Occasional.
16. *Cassia occidentalis* L./O. & B. 047/Caesalpiniaceae/rere (Y); raildore (H); akedeagbora, ikpa mmuo (I); negro-coffee/Young and mature fresh leaves in the morning or the evening/(i) As a laxative: A handful of the dried leaves is ground into powder, mixed with pap, and taken orally. Common. (ii) To stop bleeding during pregnancy: The leaves together with those of *Sida cordifolia* and *Crassocephalum rubens* are ground, in equal proportions, in water; table salt is added; the filtrate of the mixture is collected in bottles. Dosage: A tablespoonful three times daily. Occasional. (iii) The ground fresh leaves are also applied as poultice to induce extrusion of Guinea worm. Common. (iv) Any part of the plant can also be used as a lotion for ophthalmia and as a diuretic. Occasional. (v) To blacken blackboards: The leaves are squeezed and mixed with ground charcoal; the mixture is applied all over the board. Common.
17. *Cissus quadrangularis* L./B. & E. 032/Vitaceae/olowomefa (Y)/Young fresh leaves at any time of day/(i) For backache and body pain: One or two handfuls of the young fresh leaves are ground with nine (traditional belief) seeds of alligator pepper for females (seven for males) and mixed with shea butter to prepare an ointment; the ointment is then used to massage the affected part of the body in the evening or just before going to bed. Common. (ii) Other use: The stem fibers are used for ropes. Common.
18. *Citrus aurantifolia* (Christm.) Swing./E. & O. 022/Rutaceae/osanwewe (Y); lemu (H); ofofa-nta (I)/Ripe fruits, young and mature fresh leaves at any time of day/(i) For irregular menstrual flow: The fruit juice is mixed with the infusion of the leaves of *Jatropha gossypifolia* in equal proportions and taken orally until the flow becomes regular. Occasional. (ii) For dizziness: A handful of leaves and one or two small bulbs of *Allium sativum* are ground together in one-half or one glassful of water; the mixture is taken orally and also used to massage the face. Occasional. (iii) For prevention of scurvy: The fruit juice is taken regularly. Common. (iv) Other use: The dry rind of the fruit is used to kindle firewood during cooking. Common.

- (I); shea butter tree/Mature fruits at any time of day/(i) For neck pain: A handful of the leaves of *Ageratum conyzoides* is ground together and mixed with one or two tablespoonfuls of shea butter; the ointment is used to massage the affected part. Common. (ii) For swollen limbs: A handful of leaves of *Bryophyllum pinnatum* is ground and mixed with one or two teaspoonfuls of shea butter and used to massage the affected part. Common. (iii) For whitlow: A handful of leaves of *Bryophyllum pinnatum* is ground and mixed with one or two raw eggs and about one tablespoonful of shea butter and used to massage the affected part. (iv) Other uses: (a) The fruits are eaten raw as a dessert. Common. (b) Shea butter is used as a domestic cooking oil. Common.
13. *Calotropis procera* (Ait.) Ait. f./O. & E. 002/Asclepiadaceae/bomu-bomu (Y); tufatia (H); sodom-apple/Fresh twigs, preferably from young plants, at time of need/(i) For snake bite or scorpion sting: Latex is obtained from any part of the plant and applied by making seven (traditional belief) incisions on the affected part after dipping the razor in the latex. Occasional. (ii) As an expectorant: Four to six dried leaves are ground and then mixed with about one teaspoonful of shea butter and water; this is taken orally. Common. (iii) Other use: Used as a coagulant of fresh milk by boiling the milk and the crushed leaves together, enabling the milk to separate into fat and whey; this is left overnight to ferment and later sold as local cheese. Common.
14. *Carica papaya* L./O. & E. 044/Caricaceae/ibepe (Y); gwanda (H); ojo-mgbimgbi (I); pawpaw, papaya/Young and mature leaves at any time of day/(i) For body infections: The leaves are cooked along with those of *Musa sapientum* in equal proportions; the extract is taken orally or as a bath. Precaution: Should not be administered to infants. Common. (ii) For yellow fever: The leaf extract is taken orally with table salt. Common. (iii) As a treatment for beri-beri: The fruits are eaten regularly. Common. (iv) As an anthelmintic: The leaf extract and latex of raw fruits are taken orally. Occasional. (v) For stomachache: Infusion of the leaves is used. Occasional. (vi) Other uses: (a) As a meat tenderizer: Tough meat is cooked along with leaves and green fruits. Common. (b) The ripe fruits are also eaten as food. Common.
15. *Cassia alata* L./E. & O. 048/Caesalpiniaceae/asunwon (Y); okpo ndichi (I); akoria (Bennin); ringwormbush/Fresh twig with inflorescence either before noon or at sunset/(i) For ringworm and other skin diseases: The juice from the leaves and stems is squeezed out and rubbed on the affected part of the skin. Common. (ii) For indigestion: The dried leaves are powdered along with those of *Piper guineense* in equal proportions; the powdered component is divided into small portions and taken orally with hot pap. Common. (iii) As a laxative: The ground inflorescence is mixed with pap and taken orally. Common. (iv) A strong decoction of the leaves is also used to cause abortion or to hasten delivery at labor. Occasional.
16. *Cassia occidentalis* L./O. & B. 047/Caesalpiniaceae/rere (Y); raildore (H); akedeagbora, ikpa mmuo (I); negro-coffee/Young and mature fresh leaves in the morning or the evening/(i) As a laxative: A handful of the dried leaves is ground into powder, mixed with pap, and taken orally. Common. (ii) To stop bleeding during pregnancy: The leaves together with those of *Sida cordifolia* and *Crassocephalum rubens* are ground, in equal proportions, in water; table salt is added; the filtrate of the mixture is collected in bottles. Dosage: A tablespoonful three times daily. Occasional. (iii) The ground fresh leaves are also applied as poultice to induce extrusion of Guinea worm. Common. (iv) Any part of the plant can also be used as a lotion for ophthalmia and as a diuretic. Occasional. (v) To blacken blackboards: The leaves are squeezed and mixed with ground charcoal; the mixture is applied all over the board. Common.
17. *Cissus quadrangularis* L./B. & E. 032/Vitaceae/olowomefa (Y)/Young fresh leaves at any time of day/(i) For backache and body pain: One or two handfuls of the young fresh leaves are ground with nine (traditional belief) seeds of alligator pepper for females (seven for males) and mixed with shea butter to prepare an ointment; the ointment is then used to massage the affected part of the body in the evening or just before going to bed. Common. (ii) Other use: The stem fibers are used for ropes. Common.
18. *Citrus aurantifolia* (Christm.) Swing./E. & O. 022/Rutaceae/osanwewe (Y); lemu (H); ofofa-nta (I)/Ripe fruits, young and mature fresh leaves at any time of day/(i) For irregular menstrual flow: The fruit juice is mixed with the infusion of the leaves of *Jatropha gossypifolia* in equal proportions and taken orally until the flow becomes regular. Occasional. (ii) For dizziness: A handful of leaves and one or two small bulbs of *Allium sativum* are ground together in one-half or one glassful of water; the mixture is taken orally and also used to massage the face. Occasional. (iii) For prevention of scurvy: The fruit juice is taken regularly. Common. (iv) Other use: The dry rind of the fruit is used to kindle firewood during cooking. Common.

in equal proportions and is taken orally and consistently until the menstrual flow becomes regular. Occasional.

28. *Lagenaria siceraria* (Molina) Standl./O. & E. 008/Cucurbitaceae/agbe (Y); duma (H); oba (I); bottle gourd/Fresh young plants usually before noon/(i) For stomachache: The young plant is ground and mixed with pap; this is taken orally. Common. (ii) Other use: The mature fruits are dried in the sun and the seeds removed; the empty fruit is used as a vessel for carrying solids and liquids, especially palm wine. Common.
29. *Lawsonia inermis* L./B. & O. 015/Lythraceae/lali (Y); lalle (H); henna/Young and mature fresh leaves at any time of day/(i) For yellow fever: Two to four handfuls of the leaves boiled in six to eight glassfuls of water to prepare a decoction, which is mixed with meat stew and taken orally. Common. (ii) For body infections: Henna (a red dye prepared by crushing the leaves) is used to paint the legs and arms. Common. (iii) Other use: The red dye is also used as a cosmetic for beautifying the female body. Common.
30. *Lonchocarpus sericeus* (Poir.) H.B.K./B. & E. 038/Fabaceae/ipappo (Y)/Young and mature fresh leaves at any time of day/For body infections: A potherb of the leaves together with those of *Vernonia macrocyanus* O. Hoffm. is made; seven (traditional belief) stones are added during preparation; the decoction is taken orally. Occasional.
31. *Loranthus* sp./E. & O. 012/Loranthaceae/afomo (Y); kauci (H); obu egbee (I)/Young and mature fresh leaves at anytime of day/For skin diseases: Five or six dried leaves are ground with one or two leaves of *Parkia clappertoniana* and one-fourth or one-half teaspoonful of potash; the powder is taken orally with pap. Occasional.
32. *Momordica balsamina* L./E. & O. 009/Cucurbitaceae/okookoo (Y); kakayi (I)/Fresh young mature leaves and fruits at any time of day/(i) For diarrhea: The leaves (about 15–20) are crushed and squeezed in two or three glassfuls of water to obtain the juice; the filtrate is taken orally with table salt to taste. Common. (ii) As laxative and anthelmintic: A decoction from the leaves and fruits is taken orally. Common.
33. *Musa sapientum* L./B. & O. 025/Musaceae/ogede (Y); ayabo (H); ogbede-jioko (I); ukom (Efik); ode (Urhobo); plantain/Fresh leaves and mature fruits at any time of day/(i) For general body infections: A potherb is prepared from a mixture of the leaves and those of *Carica papaya*; the concentrated decoction is taken orally. Caution: Small quantities should be given to children. Common. (ii) The sap is used with food to treat diarrhea. Common. (iii) The root is pounded and used as an enema. Common. (iv) The ash of burnt stem, leaf, or fruit skin is used as dusting powder for ulcers. Occasional. (v) The sap of inflorescence is used for earache. (vi) Other uses: (a) The raw peeled fruits are eaten when ripe, either cooked or fried to prepare *dodo* (plantain slices fried in oil). (b) The unripe fruits are peeled, sun-dried, and ground to give plantain flour; the flour is sifted and mixed with hot water to prepare a semi-solid food, *amala* (plantain meal). (c) Fried plantain chips [ipekere (Y)], like potato chips, can also be prepared from raw plantains. (d) The unripe or ripe fruit can also be roasted and eaten with red palm oil. Common.
34. *Ocimum basilicum* L./E. & B. 042/Lamiaceae/efinrin (Y)/Young and mature fresh leaves in the morning or the evening/For fever and piles: A handful of leaves is extracted in one or two glassfuls of cold water; the filtrate is taken orally. Common. The same liquid with table salt added to taste is taken orally for piles. Common.
35. *Ocimum canum* Sams./B. & E. 011/Lamiaceae/efinrin wewe (Y)/The whole plant preferably in the morning/(i) For sound health in children: A concentrated decoction is prepared in small earthen pots by boiling the whole plant in water; this is administered orally to children. Occasional. (ii) Other use: As a vegetable soup, the leaves are cooked in water along with red pepper, red palm oil, salt, and other ingredients. Common.
36. *Parinari polyandra* Benth. var. *polyandra*/O. 021/Rosaceae/idofin (Y); kaikaji (H)/Mature fruits and leaves usually in the morning/(i) For piles: The sun-dried fruits are ground and the powder is placed on the ground for the patient to sit upon. Rare. (ii) For dysentery: Five or six handfuls of the leaves are boiled in 10–15 glassfuls of water in earthen pots; the concentrate is taken orally. Common.
37. *Parkia clappertoniana* Keay/B. & O. 045/Mimosaceae/igba (Y); dorowa (H); orgiri (I); locust-beantree/Young fresh leaves and seeds at any time of day/(i) For skin diseases: A handful of the tender leaves with those of *Loranthus* sp. and a pinch of potash are ground together; this is taken orally with pap. Common. (ii) Other uses: (a) The soaked seeds are cooked, allowed to ferment

- for 3 d, and used to prepare the spice called *iru* by the Yoruba; the spice is added to soup during cooking to flavor. Common. (b) The fruit pulp is eaten fresh for its sweet taste. Common.
38. *Pennisetum purpureum* Schum./O. & B. 026/Poaceae/esun pupa (Y)/Young and mature fresh leaves at any time of day/For snake bite: The leaves are squeezed and the infusion is applied directly to the affected part; the infusion can also be used for the treatment of fresh wounds. Occasional.
39. *Phyllanthus pentandrus* Schum. and Thonn./B. & O. 013/Euphorbiaceae/ehin-elebe (Y); maji-yarkur mi (H); egu-eza (I)/Fresh mature leaves at any time of day/(i) For boils: The dried leaves along with those of *Vigna* sp. are ground in equal proportions to powder and mixed with shea butter; this ointment is applied on the affected part. Common. (ii) The above ointment, massaged into the skin, is also used to treat dislocated limbs. Common.
40. *Piper guineense* Schum. and Thonn./E. & B. 035/Piperaceae/iyere (Y); masoro (H); ozeza (I); black pepper of West Africa/Mature seeds at any time of day/(i) For indigestion: One or two teaspoonfuls of the seeds together with one or two handfuls of *Cassia alata* leaves are ground together; the paste is divided into small portions and taken orally with pap. Common. (ii) Other use: The seeds are a condiment.
41. *Prosopis africana* (Guill. and Perr.) Taub./E. & O. 018/Mimosaceae/ayan (Y); mbuci oro (I)/Young and mature fresh leaves at any time of day/For malaria: One to two handfuls of the leaves along with an equal proportion of those of *Tamarindus indica* are boiled in four to six glassfuls of water; the decoction is taken orally. Common.
42. *Pterocarpus* sp./O. 019/Fabaceae/isedum (Y); maidobia (H)/Young and mature fresh leaves at any time of day/(i) For skin diseases: A handful of leaves, one or two teaspoonfuls of the seeds of *Erythrophleum ivorense* A. Chev., together with one-half teaspoonful of potash, are ground together; the mixture is taken orally with water. Common. (ii) Other use: To make people have good fortune and lead a life of happiness: The leaves along with those of *Ficus thonningii* are ground and mixed with local black soap; the mixture is used as a toilet soap. Occasional.
43. *Pyrenacantha* sp./E. & O. 014/Icacinaceae/opo (Y)/Plant bark usually in the morning/To treat weight loss in children: A decoction prepared from two to four handfuls of pieces of the bark in earthen pots almost filled with water is administered to children orally or as a bath. Common.
44. *Sida cordifolia* L./E. & O. 044/Malvaceae/oloosokutu (Y)/Young fresh twigs usually in the morning/(i) To stop bleeding during pregnancy: The leaves along with those of *Cassia occidentalis* and *Crassocephalum rubens* are ground in equal proportions and table salt is added to taste; water is added to the mixture and the filtrate stored in bottles; the filtrate is taken orally. Occasional. (ii) For asthma: An infusion of the plant is mixed with table salt and the filtrate is collected; this is taken orally. Common. (iii) Other uses: (a) The mature plant is used as a broom for sweeping. Common. (b) The fresh leaves are cooked as a vegetable soup. Common.
45. *Solanum americanum* Mill./O. & B. 024/Solanaceae/odu (Y); gantankaji (H); ugumakpe (I)/Young and mature fresh leaves at any time of day/(i) For convulsion: An infusion from the leaves is used to massage the whole body. Occasional. (ii) Other use: The leaves are used to prepare vegetable soup. Common.
46. *Tamarindus indica* L./O. & B. 003/Caesalpiniaceae/ajagbon (Y); tsaniya (H); icheku oyibo (I); tamarind/Young and mature fresh leaves at any time of day/(i) For malaria fever: The leaves are ground along with those of *Prosopis africana* in equal proportions; the mixture is taken orally with water. Common. (ii) As a laxative: Cold water and one-half teaspoonful of crushed potash are added to one or two handfuls of leaflets and left until an extract is obtained; the mixture is then taken orally. Common. (iii) Other use: The unripe and ripe fruit pulp is eaten as food.
47. *Terminalia glaucescens* Planch. ex Benth./B. & O. 049/Combretaceae/idi (Y); baushe (H); edo (I)/Fresh mature roots at any time of day/(i) For diarrhea: The roots (a handful) are cooked along with one-half teaspoonful of potash in water and the concentrated decoction is taken orally. Common. (ii) Other use: The roots are used as chewing sticks for cleaning teeth. Common.
48. *Trema orientalis* (L.) Blume/E. & O. 033/Ulmaceae/afefe (Y); telemukwu (I)/Young and mature fresh leaves at any time of day/For fever: The leaves are cooked in earthen pots, and the decoction is collected in vessels or used as a steam or cold bath. Common.
49. *Tridax procumbens* L./E. & B. 031/Asteraceae/igbalode (Y)/Young and mature fresh leaves in the morning and the evening/(i) For dysentery and diarrhea: A handful of the green clean leaves is crushed in warm or cold water with a small quantity of potash; the filtrate is collected and stored in bottles; the mixture is taken orally three times daily. Common. (ii) Other uses: (a) The

- fresh leaves are used as animal feed, especially for domestic rabbits. (b) The crushed leaves mixed with ground charcoal are used to blacken blackboards. Occasional.
50. *Vernonia amygdalina* O. Hoffm./B. & O. 052/Asteraceae/ewuroaja (Y); shiwak (H); olugbu (I); oligbo (Urhobo); bitterleaf/Young mature fresh leaves and roots at any time of day/(i) As anti-scorbutic and digestive tonic: A decoction of the leaves is taken orally. Common. (ii) For ringworm and body infections: An infusion of the leaves is rubbed on the body. Occasional. (iii) As a stomachic tonic and appetizer: The roots are ground in water and taken orally. Common. (iv) The leaves are used as a vegetable. Common.
51. *Vigna unguiculata* (L.) Walp./E. & O. 036/Fabaceae/owi-ahun (Y); wakin-tunka (H); cowpea/Young and mature fresh leaves at any time of day/For tooth ailments: The leaves are chewed and kept in contact with the affected part for some time. Occasional.
52. *Vitex doniana* Sweet/B. & E. 027/Verbenaceae/ori (Y); dinyar (H); uchakora (I)/Young and mature fresh leaves at any time of day/(i) For dizziness: A handful of the leaves and dried intestines of a bat are ground together; the mixture is taken with pap. Occasional. (ii) Other uses: (a) The leaves are used for the preparation of vegetable soup. (b) The plant is used by Islamic teachers as ink, to write on slate. The ink is prepared by boiling the roots and leaves together in water and the mixture is filtered. Rare. (c) The wood of the plant can be carved and used to make music drums. Common.

DISCUSSION

The present investigation has shown that rural and urban people make use of a great range of plants from their environment. Of the 52 species recorded, all the plants have one or more medicinal uses, 17 are used as food, 3 are used as cosmetics, 1 as insecticide, and the others for commercial purposes.

The knowledge regarding the utility of plants and plant products may either have been passed on to the present generation by their ancestors or be based on experience; this conforms with the report of Oliver-Bever (1986). The curative art is kept confined to a limited number of families with some sanctity and secrecy. It is believed that wide knowledge of a recipe may reduce the effectiveness of the medicine. However, it seems that most herbalists do not want to divulge these secrets due to monopolistic tendencies. Similar reports have also been made by Singh et al. (1979).

It is very clear that illiterates may not know the basic reasons for the curative values of specific wild plants, but, on the basis of their experience, they can ascertain their healing potentials. The knowledge and application of herbal medicine are also sometimes associated with supernatural powers and hence the preparations and treatments are followed by rituals and chanting of incantations. Similar observations have also been made by Jain and Borthakur (1980). It is also believed that prolonged and complicated diseases are attributed to the spell of evil spirits or to the violation of laws of traditional gods. The main purpose of the rituals accompanying medicinal preparations or uses, therefore, is to appease these gods. However, minor ailments are regarded as natural.

Based on the preparation of the medicine and nature of practice, the native doctors are generally known as "juju," "ifas" men, and herbalists. Those who practice traditional medicine followed by magic and tribal rituals are known as "juju" men; those who claim that they have discovered the plants having stronger spirits than the disease spirits, as "ifa"; those who practice the medicine that is not followed by any rituals, as herbalists. This conforms with observations of Oliver-Bever (1986). The term herbalist is sometimes used for all categories of native doctors. Nevertheless, the present knowledge of medicinal use of plants

needs scientific investigation to confirm medicinal values, since some of the medicines inflict side effects (Shiv and Lata 1980) and are also prepared under superstitious circumstances usually accompanied by magic and tribal rituals.

ACKNOWLEDGMENTS

The authors acknowledge the University of Ilorin for providing the facilities for this study; Dr. Darrell Weber, Brigham Young University, Provo, Utah, for aid; and Miss Janet McKee and Miss Pamela Burnside, Brigham Young University, for typing the manuscript.

LITERATURE CITED

- Bhat, R. B., A. A. Adelaye, and E. O. Etejere. 1985. Some medicinal plants of Nigeria. *J. Econ. Tax. Bot.* 6:161-165.
- Cobley, L. S. 1962. An introduction to the botany of tropical crops. Longman, London.
- Croom, E. M. 1983. Documenting and evaluating herbal remedies. *Econ. Bot.* 37:13-27.
- Dalziel, T. M. 1955. The useful plants of West Tropical Africa. 2nd reprint. Crown Agents, London.
- Gledhill, D. 1972. West African trees. Longman, Nigeria.
- Hutchinson, J., and J. M. Dalziel. 1954. Flora of West Tropical Africa. Vol. 1, Part 2. Crown Agents, London.
- Irvine, F. R. 1961. Woody plants of Ghana. 2nd ed. Oxford University Press, London.
- . 1969. West African agriculture. 2. West African crops. 3rd ed. Oxford University Press, London.
- Jain, S. K., and S. K. Borthakur. 1980. Ethnobotany of Mikirs of India. *Econ. Bot.* 34:264-272.
- Keay, R. W. J., C. F. A. Onochie, and D. P. Stanfield. 1964. Nigerian trees. Oxford University Press, London.
- Kennedy, J. D. 1936. Forest flora of southern Nigeria. Government Printers, Lagos, Nigeria.
- Oliver, B. 1960. Medicinal plants in Nigeria. Nigerian College of Arts, Science and Technology, Zaria City, Nigeria.
- Oliver-Bever, B. 1986. Medicinal plants in tropical West Africa. Cambridge University Press, New York.
- Shiv, D. L., and K. Lata. 1980. Plants used by the Bhat community for regulating fertility. *Econ. Bot.* 34:273-275.
- Singh, M. P., S. B. Malla, S. B. Rajbhandari, and A. Manadhar. 1979. Medicinal plants of Nepal. *Econ. Bot.* 33:185-193.
- Singha, S. C. 1965. Medicinal plants of Nigeria. Nigerian National Press, Lagos City, Nigeria.

