

**MUHIMBILI MEDICAL CENTRE
INCOPORATING THE
MUHIMBILI UNIVERSITY COLLEGE OF HEALTH SCIENCES**

DAFMEP

Welcome to **DAFMEP**, an acronym for **Database for Africa Medicinal Plants**. It contains published information on medicinal plants of Africa. **DAFMEP** was initially funded by the International Development and Research Center (IDRC), Canada. It is a property of Muhimbili University College of Health Sciences, in the Faculty of Pharmacy, Department of Pharmacognosy. Dr. Charles M. Nshimo manages it.

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Information in **DAFMEP** has been synthesized from journals, books, abstracts and other literature dating back from 1970. It is updated periodically. The information entered in the database for each plant is given in five profiles as follows:

- (i) **Botanical information:** This section includes the botanical name of the plant, authority, family and country (C) where the plant was collected. Synonyms and vernacular (V) name(s), if known, are also included.
- (ii) **Ethnomedical uses:** Included in this section is published information on traditional and folkloric uses of the plant in the country where it was collected and from other countries as reported.
- (iii) **Biological activity:** Entered here are the biological activities of extracts and pure compounds isolated from the plant and the biological assays used.
- (iv) **Chemical constituents:** Entered here are those compounds that were isolated from the plant and structures found as a result of screening tests.
- (v) **Reference:** Information provided in **DAFMEP** is an abstract of the published material in the reviewed article. Readers interested in the paper, can find the reference in this section.

BOTANICAL NAME: *Abrus precatorius* L. *ssp africanus* Verdc. (Papilionaceae)
Syn: *Glycine abrus* L.

C: Tanzania
V: Mwangaruchi

ETHNOMEDICAL USES: Decoction of root mixed with sap from leaves for asthma. Afrodisiac or impotence when eaten together with 3 boiled eggs and honey.

Others: Decoction of antiemetic, against bilharzias, tape worm. Roots remedy for gonorrhoea, snakebite, aphrodisiac, pain in the chest. Leaves: bilharzias, antiemetic, dysentery, to treat swellings by cutting and inserting the powder for 4 days. Vapour from boiled leaves for inflamed eyes, decoctions of leaves used against conjunctivitis, cough and stomach troubles. Entire plant: Add 3-4 pods against gonorrhoea. Seeds: Maceration for treating purulent eye ulcers and intestinal worms powdered seeds as contraception. In Senegal the seeds are considered toxic for man and animals.

BIOLOGICAL ACTIVITY: The lethal dose for abrin intraperitoneally in mice is 2µg/kg body weight. The toxin works by interference with pectin synthesis. Ethanol extract of roots has antiestrogenic effect and oral administration to rats prevents the conception completely.

CHEMICAL CONSTITUENTS: Seeds: Toxic protein, abrin. Roots, stems and leaves contain the triterpene saponin glycyrrhizin.

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 237 - 238, 1983

BOTANICAL NAME: *Abutilon grandiflorum* G. Don (Malvaceae)

C: Tanzania

ETHNOMEDICAL USES: Used in the treatment of malaria.

BIOLOGICAL ACTIVITY: Antimalarial activity (root bark) *in vitro* against *Plasmodium falciparum* strain. Activity IC₅₀ values below 10µg/ml. *In vivo* test against *Plasmodium vinckei vinckei* in mice. Survival of mice lasted for two weeks compared to five days survival for untreated mice.

CHEMICAL CONSTITUENTS:

REFERENCES: E.M. Beha, J. Wiesner, A. Jung, M. Lanzer, M.C. Gessler and M. Heinrich: Antimalarial effects and phytochemical study of *Abutilon grandiflorum*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 35-36, Dar-es-Salaam.* University of Dar-es-Salaam

BOTANICAL NAME: *Acacia cfr bussei* Sjostedt. (Mimosaceae)

Syn: *Acacia benadirensis sensu* Choiv. Fl. Somala p.p

C: Tanzania

V: Mkahabu

ETHNOMEDICA USES: Powdered pods mixed with porridge are eaten against feminine sterility. A decoction of the roots is drunk against early hydrocoele or painful testicles.

Others: A decoct of the bark as cure for cough.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Acacia brevispica* Harms (Mimosaceae)

C: Rwanda

V: Umugeyo

BIOLOGICAL ACTIVITY: Stem extract tested for antiulcer activity and found to be inactive

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39.

Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Acacia gerardii* Benth (**Mimosaceae**)

C: Rwanda

V: Umugunga

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Stem extract showed no antiulcer activity.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Acacia mearnsii* De Wild (**Mimosaceae**)

C: Rwanda

V: Barakatsi

ETHNOMEDICAL USES: Used to treat leprosy.

BIOLOGICAL ACTIVITY: Extract from stem was tested for antiulcer activity and found to be slightly active. The extract was also tested for inhibition of growth of wheat rootlets but no results were reported.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and*

Central Africa (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Acacia mellifera* Benth. *ssp mellifera* Vahl.

Syn: *Acacia Senegal* Willd *ssp mellifera* Roberty, *Mimosa mellifera* Vahl

C: Tanzania

ETHNOMEDICAL USES: Decoction of roots drunk against infertility.

Others: The bark is boiled in water liquid taken for stomach rouble, sterility, pneumonia, malaria, and primary sypylis. The bark is used as a stimulant.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Rutin and apigenin-6,8-bis-D-glucoside.

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Acacia polyacatha* Willd *spp Campylacantha* Benan
(Mimosaceae)

Syn: *Acacia caffra* Willd *var Campylacantha* Aubev, *A. campylacantha* Hochst ex Rich. *A. catechu* Willd *spp suma* Roberty 191 *var campylacantha*, *A. catechu sensu* P.D.H.C non (L.f) Willd, *A. suma sensu* Harms in N.B.G.B.4 non sensu stricto.

ETHNOMEDICAL USES: Roots boiled with sodium bicarbonate, decoction drunk against asthma.

Others: Water extract to child for sores, snakebite. A child with restless sleep is given an infusion of the root. A decoction is given against malaria and abscess, bark of the root as stimulant. Leaves: Powdered, dried rubbed into sores on the head of a child. Plant used as an ingredient in the treatment of gonorrhoea. Tree is used for leprosy, aphrodisiac, and used in pneumonia, throat maladies and tooth troubles.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Apigenin-6-bis-D-glucoside, rutin (leaves). Dimethyl tryptamine present in the amount of 0.004%

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Acacia Senegal* Wild (Mimosaceae)

C: Rwanda

V: Umkoui

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: The leaf extract was tested for antiulcer activity and found to be active.

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Acacia stuhlmanni* Taub (Mimosaceae)

C: Tanzania

V: Mumbwe

ETHNOMEDICAL USES: A cold-water extract drunk against cholera

BIOLOGICAL ACTIVITY

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Acalypha fruticosa* Forsk (Euphorbiaceae)

Syn: *Acalypha betulina* Reitz, *Acalypha chrysadenia* suesseng. & Friedr., *A. paxiana* Dinter ex Pax, *Ricinocarpus fruticosus* O.Kuntze.

ETHNOMEDICAL USES: Leaves: skin diseases, leaves pounded together with *Zanthoxylum chalybeum* Engl. and *Suregada zanzibarensis* and the juice applied to affected parts. Roots: paste of fresh root applied to the affected parts. Roots boiled together with roots of *Zanthoxylum chalybeum* Engl. and *Suregada zanzibariensis* Baill the decoction drunk for skin diseases.

Others: Roots for stomach problems, whooping cough, gonorrhoea, fever, colds, and tooth ache. Leaves: cold water extract used in constipation, coughs chest pains, stomach ache and cholera, aerial parts: eye drops for conjunctivitis, febrifuge and snake bite remedy.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Acanthospermum hispidum* DC (Asteraceae)

C: Malawi

ETHNOMEDICAL USES: In Malawi it is used to treat stomach complaints, wounds and migraine. I Ivory Coast a decoction is drunk as a purgative and counter poison. An aqueous macerate is drunk and put onto baths for arthritis and rheumatism.

BIOLOGICAL USES: Anticancer activity both *in vitro* and *in vivo* due to canthospermilides.

CHEMICAL CONSTITUENTS: Canthospermolides, sesquiterpene lactones: 4E-acanthospermolide and the 4Z- derivatives (in aerial part).

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp.184, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Achillea fragrantissima* Sch. Bip. (Compositae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Swertisin 2''-arabinoside (C-glycosylflavone)

REFERENCES: A.A. Ahmed, A. Mashalaby, F.R Melek and J. Mabry: Swertin 2''-arabinoside, a new C-glycosylflavone from *Achillea fragrantissima*: *Journal of Natural Products* **51**:971-972, 1988.

BOTANICAL NAME: *Adansonia digitata* (Bombacaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and /or repelling properties against insects.

BIOLOGICAL ACTIVITY: Weak antifeedant activity against *Nudaulelia belina* from seed extracts.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudaulelia belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Adenia globosa* Engl. (Passifloraceae)

C: Kenya

ETHNOMEDICAL USES: The juice from freshly prepared plant is given to cows and goats for quick delivery.

BIOLOGICAL ACTIVITY: Oxytotic activity from tuber water extract on rat uterus. Causes contraction of the uterus (dose range 0-400 µg/ml)

CHEMICAL CONSTITUENTS: Deidaclin and tetraphyllin A (Epimeric form of cyanohydrin glycosides)

REFERENCES: K.A. Sinei and J.W. Mwangi: Effect of tuber extract of *Adenia globosa* Engl. on rat uterus: *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 89. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Adenia globosa ssp. globosa* Engl. (Passifloraceae)

C: Tanzania

V: Wandiri

ETHNOMEDICAL USES: Cold water extract of the stem is used against abdominal pain. It is also used as a bath against itching.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 240, 1983

BOTANICAL NAME: *Adenia gummifera* Harms (Passifloraceae)

Syn: *Adenia rhodesica* Suesseng, *Modecca gummifera* Harv.
Ophiocaulon cissampeloides sensu Bak. non (Hook) Mast. *Ophocaulon gummier* Mast.

C: ¹Tanzania, ²Zimbabwe

V: ¹Ghoye

ETHNOMEDICAL USES: ¹A decoction is drunk to treat sterility in women, to treat smallish bent (curved) penis.

Others: Roots: Decoction is diuretic, rootbark: inner bark for treatment of hydrocele, ash of root + cast oil is used against scabies. Decoct is used for gonorrhoea and diarrhoea, drunk with milk for cure against roots, chewed for snakebite. Decoct used against malaria and leprosy, produces vomiting and perspiration, infusion is used in convalescence. Leaves: Juice is used against colics, crushed leaves applied on broken bones, powdered leaves and stem as emetic for biliousness. Other parts of the plant: Outer wood, bark, branches and leaves are powdered as fish poisons, gummy substances as cosmetics.

²The juice from the leaves is used in Tanzania to treat colic, crushed leaves are applied externally in the treatment of broken bones. The leaves are employed as diuretic, to treat filariasis, and against infertility.

BIOLOGICAL ACTIVITY: ¹Intraperitoneal injection of a suitable extract to rats causes death within 24 hours causing liver damage.

²Hepatic toxicity has been associated with the chronic traditional use of the plant among the Zulu of South Africa. Gummiferol exhibited significant activity against the KB human cell line and a broad spectrum against other human cancer cell lines.

CHEMICAL CONSTITUENTS: ¹Leaf and root have been found to contain toxalbumin modeccin.

²Polyacetylenic diepoxide compounds, gummiferol.

REFERENCES: ¹Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 240, 1983

²F. Fullas, D. M. Brown, M.C. Wani, M.E. Wall, T.E Chagwedera, N.R. Farnsworth, J.M. Pezzuto and A.Douglas Kinghorn: Gummiferol, A cytotoxic polyacetylene from the leaves of *Adenia gummifera*. *Journal of Natural Products* **58**:1625 – 1628, 1995.

BOTANICAL NAME: *Aeluropus lagopoides* Trin ex Thwaites (**Gramineae**)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Flavonoids: C-glycosides; vitexin, isovitexin, oreintin, isoorientin, 6,8-di-C-glycosyl-apigenin, 6,8-di-C-glucosyl-luteolin and 6,8-di-C-glucosyl-luteolin and 6,8-di-C-glucosyl chrysoeriol.

REFERENCES: M.F. Abdalla and R.M.A Mansour: Flavone C-glycosides of *Aeluropus lagopoides*; *Journal of Natural Products* **47**:184, 1984.

BOTANICAL NAME: *Aframomum aulacocarpos* Pellegr. Ex J. Koechlin
(**Zingiberaceae**)

C: Cameroon

ETHNOMEDICAL USES: Seeds used as food spices

BIOLOGICAL ACTIVITY: Aulacocarpinolide, aulocarpin B and aulacocarpin B have weak antimicrobial and cytotoxic activities. Aframodial is a non toxic broad spectrum antifungal agent, cytotoxic and antihypercholesterolemic principle.

CHEMICAL CONSTITUENTS: Labdane diterpenoids, aulacocarpinolide, aulacocarpin A, aulacocarpin B, aframodial (a diterpene dialdehyde).

REFERENCE: J. Ayafor, M.H.K.Tchuendem, B.Nyasse, F.Tillequin and H. Anke: Novel bioactive diterpenoids from *Aframomum aulacocarpos*. *Journal of Natural Products* **57**:917 – 923, 1994.

BOTANICAL NAME: *Alberta magna* E. Mey (**Rubiaceae**)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Iridoids form leaves: amagnalactone.

REFERENCES: S.E. Drewes, M. M. Horn and M. Ochse: Iridoids from South African Rubiaceae. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 24, Dar-es-Salaam.* University of Dar-es-Salaam.

BOTANICAL NAME: *Albizia anthelmintica* A. Brogn (**Mimosaceae**)

Syn: *Albizia anthelmintica* Brogn **var** *pubscens* Burt-Davy. *A. conjugato-pinnata* Vatke, *Besenna anthelmintica* A. Rich. Nom. Prov

C: ^{1,2}Tanzania

ETHNOMEDICAL USES: ¹One of remedies to treat sterility in women.

Others: A decoction of root or bark as anthelmintic against tapeworm and purgative. An overdose can cause death. Roots used against fever and gonorrhoea and sexual stimulant for women. Bark has been given to children 6-8 years for treatment of taenia. Root for stomach troubles; root bark as febrifuge and purgative, bark as sexual stimulant, gonorrhoea remedy against nervous complaints to treat swellings of the body, syphilis and rheumatism, in childbirth. Taken immediately before menses the bark prevents pregnancy.

²Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: ¹Musennin is anthelmintic.

²Antifeedant activity against the larvae of *Nudauleiria belina* which feeds on *Mangifera indica* (Mango) and *Anacardium occidentale* (Cashewnut) at a concentration of 1% extract. (Stembark, petroleum ether extract)

CHEMICAL CONSTITUENTS: ¹Saponins: musennin deglucomusennin from the bark.

REFERENCES: ¹Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

²S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudauleiria belina*

(Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: cfr. *Albizia glaberrima* Benth (Mimosaceae)

Syn: *Albizia eggelingii* Bak f., *A. glabrescens* Oliv., *A. warnechei* Harms, *Mimosa glaberima* Schumach & Thorm., *Pthecollobium glaberrimum* Aubrev

C: Tanzania

V: Mshai

ETHNOMEDICAL USES: Root extract is used against bilharzia.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Triterpene glucoside.

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Albizia gummifera* C.A. Smith (Mimosaceae)

C: Ethiopia

V: Ambosea

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Monodesmosidic triterpenes: 3-O- $\{\beta$ -D-glucopyranosyl(1 \rightarrow 2)- $[\alpha$ -L-arabinopyranosyl(1 \rightarrow 6)]- β -D-glucopyranosyl}-decanoic acid; bisdesmosidic triterpenoid: β -D-glucopyranosyl(1 \rightarrow 2)- β -D-glucopyranosyl 3-O- $\{\beta$ -D-glucopyranosyl(1 \rightarrow 2)- $[\alpha$ -L-arabinopyranosyl(1 \rightarrow 6)]- β -D-glucopyranosyl}-oleanolate. Δ^5 -stigmasterol-3-O- β -D-glucopyranoside. Oleanone type of triterpene lacoteglycosides: 3 β -O- β -D-glucopyranosiduronic acid (1 \rightarrow 2)- β -glucopyranosyloxy]-machaerinic acid γ -lactone, A-homo-3 α -oxa-5 β -olean-12-en-3-one-28-oic acid.

REFERENCES: A.Debella, E.Haslinger, M.G. Schmid, F.Bucar, G.Michl. D.Abebe and O.Kunert: Triterpenoid saponins and sapogenin lactones from *Albizia gummifera*: *Phytochemistry* **53**:885 – 892, 2000

BOTANICAL NAME: *Albizia harveyi* Fourn (**Mimosaceae**)

Syn: *Albizia hypoleuca* Oliv. *A. pahida* Harv non Fourn nom illegit, *A. paspichilli* Harms.

C: Tanzania

ETHNOMEDICAL USES: Roots boiled with chicken used to prevent abortion or for a woman who does not conceive.

Others: The root is used for intestinal troubles.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Albizia* *cf.* *Versicolor* Welw ex Oliv (**Mimosaceae**)

C: Tanzania

V: Mchane

ETHNOMEDICAL USES: Wood from root powdered and snuffed is used to treat sinusitis, chest pains, loud coughs.

Others: Roots anthelmintic purgative, head ache;; stem bark: the decoction is drunk against scrofula, the juice from the bark used for skin diseases, irritating particles in the eye. Used for treatment of sore eyes.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids and saponins.

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Alkanna orientalis* Boiss (Boraginaceae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Flavonoids: kaempferol-3-glucoside, kaempferol-3-rutinoside, quercetin-3-glucoside, quercetin-3-rutinoside, kaempferol-3,6-dimethyl ether.

REFERENCES: R.M.A. Mansour and N.A.M. Saleh: The flavonoids of *Alkanna orientalis*: *Journal of Natural Products*: **49**: 356, 1986.

BOTANICAL NAME: *Allophyllus rubifolus* Engl. (Sapindaceae)

Syn: *Allophyllus tritis* Radlk *Schiedelia rubifolia* Hochst ex A. Rich

C: Tanzania

V: Msempele

ETHNOMEDICAL USES: Used to treat swellings on the rib-side or chest side (decoction of the root). Also ground roots and juice and paste is smeared on incisions made on the swellings.

Others: Roots as medicine to make birth easy and normal. Decoction from roots is used to cure diarrhoea in small children or as mouthwash to relieve tooth ache.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 247, 1983

BOTANICAL NAME: *Aloe chabaudii* (Liliaceae)

C: Zimbabwe

ETHNOMEDICAL USES: Ingestion by women in Zimbabwe to procure abortion has resulted to several deaths.

BIOLOGICAL ACTIVITY: Leaf extract at concentration of 1mg/ml causes complete inhibition of uterine contractions (N=9) of Sprague Dawley rats. No effect on quiescent uterus.

CHEMICAL CONSTITUENTS: Anthraquinone glycosides.

REFERENCES: O. Parry: The Relaxant effects of *Aloe chabaudii* on rat uterus. . *Fifth Natural Product Symposium on Natural Products, September 19-23, 1993. Antananarivo, Madagascar.* p109-111. Printed by EMPDA – Ethiopia.

BOTANICAL NAME: *Aloe ferox* Miller (Liliaceae)

C: ^{1,2}South Africa

ETHNOMEDICAL USES: ¹Used as a cathartic.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹Feroxidin, O-glucosylated derivatives of feoroxidin: feroxin A and feroxin B.

²Nonglycosylated 5-methylchromones: 7-hydroxy-2,5,-dimethyl chromone, FU roaloesone: 8-c-glucosylated 5-methylchromones: Aloesin, aloeresin, aloesone.

REFERENCES: ¹G. Speranza, P. Monitto, D. Monti, D. Pezzuto: Studies on aloe, part 10. Feroxins A and B, two O-glucosylated 1-methyltetralins from cape aloe: *Journal of Natural Products* **55**:723-729, 1992.

²G. Speranza, P. Manitto, P. Cassara, D. Monti, D. De Castri and F. Chialva: Studies on aloe, 12, Furoaloesone, a new 5-methylchromone, from cape aloe; *Journal of Natural Products* **56**:1089-1094, 1993.

BOTANICAL NAME: *Ambrosia maritima* L. (Asteraceae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Has shown toxicity to snails. It is a potential molluscicidal agent.

CHEMICAL CONSTITUENTS: Sesquiterpene lactone: damsine and ambrosin, hymenin.

REFERENCES: A.K. Picman, J.T. Arnason, J.D.H. Lambert: Hymenin, another sesquiterpene lactone in *Ambrosia maritima*: *Journal of Natural Products*: **49**:556, 1986

BOTANICAL NAME: *Ammi majus* (Umbelliferae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity against *Saccharomyces cerevisiae* (leaves)

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicinal plants in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993

BOTANICAL NAME: *Anacardium occidentale*. (Anacardiaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Molluscicidal activity and larvicidal activity from extracts of cashew Nutshell against *Biomphalaria glabrata* and larvae of mosquito *Aedes aegypti*

CHEMICAL CONSTITUENTS: Anacardic acid.

REFERENCES: C. Bories, J-C. Gantier, A. Laurens, S.Sahpaz and A. Cave: Molluscicidal and larvicidal activities of Casheu nutshell extracts from *Anacardium occidentale*. *Fifth Natural Product Symposium on Natural Product, September 19-23, 1993. Antananarivo, Madagascar*. P 21-22. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Anisocycla cymosa* Troupin (Menispermaceae)

C: ^{1,2,3}Zaire

ETHNOMEDICAL USES: Used as a tonic, antipyretic, analgesic and antirheumatic.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹Leaves contain alkaloids of the type N-methyl tetrahyprotoberberines: (-)-N-O-dimethylthaicanine and (-)-N-methylthaicanine, (-)-N-methyltetrahydropalmatine, anisocycline, palmatine and stephenanthrine (phenanthrine).

²Bisbenzyl isoquinoline-N-oxide alkaloids: (+)-2'-norobabeline-2'-β-N-oxide; 2-norbabeline; daphnandrine, coclobine; anisocycline; palmatine; and remrefidine.

³Bisbenzylisoquinoline alkaloids: (+)-2'-norcocsoline, (+)-12-O-methylcocsoline-2'-β-N-oxide and (+)-cocsoline-2'-β-N-oxide, aporphine, protobeberine, phenanthrene alkaloids.

REFERENCES: ¹B. Kanyinda, R.V. Fastre, M.Vanhaelen and R. Ottinger: Identification by two-dimensional NMR spectroscopy of two new benzylisoquinoline alkaloids from leaves of *Anisocycla cymosa*: *Journal of Natural Products* **55**:607-912, 1992.

²B. Kanyinda, R. Vanhaelen-Foestre and M. Vanhaelen: A new bisbenzyl isoquinoline-N-oxide alkaloid from seeds of *Anisocycla cymosa*: *Journal of Natural Products* **56**: 618-620, 1993.

³B. Kanyinda, R. Vanhaelen-Fastre, M. Vanhaelen and R. Ottinger: Bisbenzylisoquinoline alkaloids from *Anisocycla cymosa* roots; *Journal of Natural Products* **56**:957-960, 1993.

BOTANICAL NAME: *Anisocycla jollyana* Diels (Menispermaceae)

C: Zaire

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Bisbenzyl isoquinoline, alkaloids: (+)limacusine-2'β-N-oxide, (-)-2'-norlimacine, (-)-2-norlimacine, (-)-limacine, (-)-limacine-2'-β-N-oxide, (+)-homoaromaline, (+)-trilobine, (+)-isotulobine, (+)-ehydro-1,2-telobine and (+)-remrefidine.

REFERENCES: B. Kanyinda, R.V. Faster and M. Vanhaelene: Benzyl isoquinoline alkaloids from *Anisocycle iollyana* leaves. *Journal of Natural Products* **58**:1587 – 1589, 1995.

BOTANICAL NAME: *Annona muricata* (Annoaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Antifeedant activity against the larvae of *Nudauleiria belina*, feeds on *Mangifera indica* (Mango) and *Anacardia occidentale* (Cashewnuts) at a concentration of 1% extract (Methanol extract of the stem bark).

CHEMICAL CONSTITUENTS: Methanol extracts of stem bark, emodins and emodols, flavone aglycones, coumarins, sterols and triterpenes, tannins, alkaloids, salts, steroid glycosides (Cardiotonics)

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudauleiria belina* (Westwood) (Sturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Annona reticulata* (Annonaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Weak antifeedant activity against *Nudauleria belina* from stem bark extracts.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Annona senegalensis* Pers. (Annonaceae)

C: Zimbabwe

ETHNOMEDICAL USES: The plant is used for treatment of cancer, convulsions, diarrhoea, dysentery, fever, filariasis, male impotency, pain of the chest and intestines, swelling, trypanosomiasis, venereal diseases and snake bite.

BIOLOGICAL ACTIVITY: Root extract has been found to exhibit antineoplastic activity in mice bearing sarcoma 180 ascites tumor cells. Antiprotozoal activity in mice infected with *Trypanosoma brucei brucei*. (-)-Roemerine was found to enhance the cytotoxic response mediated by vinblastine with multi-drug resistant KB-V1 cells.

CHEMICAL CONSTITUENTS: Aliphatic ketone, alkanes, alkanols, fatty acids, flavonoids, and sterol from leaves. Monoterpenoids and sesquiterpenoids are found in essential oils of the leaves and fruit. Amino acids from stem bark and *ent*-kaurenoids from the root bark. Also found are Aporphine alkaloids, (-)-roemerine, (-)-isocorydine. Lignans: (±)-8,8'-bisdihydrodiringenin and (+)-5yringoresinol.

REFERENCES: M. You, D.B. Mahinda, Wickramaratine, G.L. Silva, H. Chai, T.E. Chagwedera, N. R. Farnsworth, G.A. Cordell, A. Douglas Kinghorn and J.M. Pezzuto: (-)-roemerine and aporphine alkaloid from *Annona senegalensis* that reverses the multidrug-resistance phenotype with cultured cells. *Journal of Natural Products* **58**:598 – 604, 1995.

BOTANICAL NAME: *Antizoma angustifolia* Miers ex Harv. (Menispermaceae)

C: South Africa

ETHNOMEDICAL USES: Used against abdominal disorders.

BIOLOGICAL ACTIVITY: Slight anti-inflammatory activity by sinocutine (26% inhibition of phlogistic response at 300 mg/kg dose).

CHEMICAL CONSTITUENTS: Morphinan alkaloid: Sinoacutine; β -sitosterol.

REFERENCES: T.G. Dekker, T.G. Fourie, E. Mathel and F.O. Snyekers: A morphinan alkaloid from *Antizoma angustifolia*; *Journal of Natural Products* **51**:584, 1988.

BOTANICAL NAME: *Apodytes dimidiata* (Icacinaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: The iridoids were shown to have molluscicidal properties as shown by tests on *Bulinus africanus*. Activity of genipin was LD₅₀ = 25.27 ppm, LD₉₀ = 32.57 ppm, genipin acetate LD₅₀ = 21.72 ppm LD₉₀ = 39.40 ppm

CHEMICAL CONSTITUENTS: Iridoids: genipin, genipin acetate.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. p 261-265, 1996, University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Arisarum vulgare* Targ-Tozz (Araceae)

C: Morocco

V: Irni

ETHNOMEDICAL USES: When was eaten by people durin periods of scarcity resulted into several toxicological manifestations including irritation of mucous membrane, gastroenteritis, and allergic symptoms mainly dermatitis, pyruritis and sometimes death.

BIOLOGICAL ACTIVITY: The alkaloid fraction of the MeOH extract of tubers demonstrated toxicity on Brine Shrimp Bioassy.

CHEMICAL CONSTITUENTS: Pyrrolidine alkaloids: Irniine.

REFERENCES: A. Melhaoi, A. Jassang and B. Bodo: Structure of irniine, a pyrrolidine alkaloid from *Arisarum vulgare*: *Journal of Natural Products* **55**: 950-952, 1992.

BOTANICAL NAME: *Aristolochia rigida* Duch. (Aristolochiaceae)

C: Somalia

ETHNOMEDICAL USES: It is carefully avoided by herbaceous animals and apparently not attacked by insects.

BIOLOGICAL ACTIVITY: Aristolochic acid has been found to have antitumor activity, immunomodualting and antifertility properties. Aristolochic acid is endowed with weak direct mutagenic properties.

CHEMICAL CONSTITUENTS: Flavonol glycosides: Kaempferol-3-O- β -D-ribinobioside. Acids: Aristolochic acid IV and aristolochic acid IVa.

REFERENCES: L.Pistelli, E. Nieri, A.R. Billa, A. Marsili and R. Scarpato: Chemical constituents of *Aristolochia rigida* and mutagenic activity of Aristolochic acid IV: *Journal of Natural Products* **56**:1605-1608, 1993.

BOTANICAL NAME: *Artabotrys lastourvillensis* Pellegrin (Annonaceae)

C: Gabon

ETHNOMEDICAL USES: Bark used in folkmedicine in Gabon

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Catecholic acid aporphine alkaloids: Lastourvilline, suaveoline, and glaucine.

REFERENCES: J.E. Ropiva, J. Beliveau and D.Z. Simon: Isolation of a new alkaloid from *Artabotrys lastourvillensis*: *Journal of Natural Products* 460-462, 1985.

BOTANICAL NAME: *Artemisia afra* Jacq. (Asteraceae)

C: ¹South Africa, ²Tanzania

ETHNOMEDICAL USES: ¹Used for the treatment of fevers and symptoms of malaria.

²Used in the treatment of malaria.

BIOLOGICAL ACTIVITY: ¹Antimalarial activity. Preliminary cytotoxicity screening against normal fibroblast cell line, conc. 1 µg/ml of pure compounds not toxic. The petroleum ether extract of the plant exhibits *in vitro* activity against both chloroquine sensitive and chloroquine resistance strains of *Plasmodium falciparum*.

²Antimalarial activity against *Plasmodium falciparum* malaria parasites *in vitro*. Scopoletin showed mild activity (IC₅₀ = 37- 45 µg/ml)

CHEMICAL CONSTITUENTS: ¹Artemisinin.
²Scopoletin

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. -L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 314-320, 1996. University of Zimbabwe Publications. Harare.

¹L.S. Kinabo and H.H. Nkunya: Chemical studies of some Tanzanian anti-malarial plants: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Artemisia herba-Alba* (Asteraceae)

C: Morocco and Tunisia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Sesquiterpene lactone: herbolide A and its deacetyl derivative, herbolide B herbolide D, eudesmanolide, balchanolide, 8 α -acetoxytaurin, 11 β , 13-dihydroanhydroverlotrin, shonachalin A, spathulenol, a coumarin: herniarin and p-hydroxyacetophenone, deacetylherbolide D, spathulenol, herniarin, p-hydroxyacetophenone, 11 β , 13-dihydroanhydroverlotrin, 1 β -hydroperoxy-9 β -acetoxygermacra-4,10(14)-dien-6 β , 11 β H-12,6-olide; 9 β -hydroxygermacra-4,10(14)-dien-6 β , 11 β H-12,6-olide, 1 β , 9 β -Dihydroxyeudesm-3(3R,4S,7R)-3,7-Dimethyl-4,7-epoxynon-8-enoic acid. 1 β , 9 β -Diacetoxygermacra-4,10(14)-dien-(β , 11 β H-12,6-olide(Herbolide-deacetate) 9 β -Hydroxy-1 β , 10 α ; 4 α , 5 β -diphenoxy germacran-6 β , 11 β H-12,6olide 9 β -acetoxyelema-1,3-diene-5 α , 6 β , 11 β H-12,6olide.

REFERENCES: J.A. Marco, J.F. Sanz-cervera, G.Ocete, M. Carda, S. Rodriguez and J. Valles-xirau: New germacranolides and eudesmanolides from North African *Artemisia Herba- Alba*. *Journal of Natural Products* **57**:939 946, 1994.

BOTANICAL NAME: *Asparagus burchananii* Bak (Liliaceae)

C: Tanzania

V: Mwinikanguru

ETHNOMEDICAL USES: Decoction of roots against irregular menstruation .
Others: Infusion or decoction of roots against bilharzias and gonorrhoea.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Asteranthe asterias* (Annonaceaea)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimycotic activity comparable to naftifine. Inactive against *Trpanosoma brucei rhodensiense in vitro*.

CHEMICAL CONSTITUENTS: From root bark; Prenyl indole pyranes: 2',3'-epoxyasteranthine and 2',3,'dihydroxyasteranthine.

REFERENCES: M.H.H. Nkunya, S.A. Jonker: Antiprotozoan and other natural products form Tanzanian lians, shrubs and small trees. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 4-5, Dar-es-Salaam.* University of Dar-es-Salaam.

BOTANICAL NAME: *Asteriscus pygmaeus* Coss and Desv (Compositae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Thymol derivatives: 7-isovaleryloxy-10-isobutyryloxy-8,9-dihydro 8,9-epoxythymol-isobutyrate; Farnesol glucoside: 1,5,12-trihydroxy-5-O-{4-O-angeloyl- β -D-glucopyranosyl} farnesol; 1,5,12-trihydroxy-5-O-{3'-

O-acetyl-4'-O-angeloxyl- β -D-glucopyranosyl} farnesol; 1,5,12, trihydroxy-5-O-{2'-3'-O-diacetyl-4'-O-angeloyl- β -D-glucopyranosyl} farnesol; 1,5,12, trihydroxy-5-O-{2',3',6'-triacyl-\$-O-angeloyl- β -D-glucopyranosyl} farnesol.

REFERENCES: A.A. Ahmed: Farnesol and thymol derivatives from *Asteriscus pygmaeus*: *Journal of Natural Products* **55**:824-827, 1992.

BOTANICAL NAME: *Atriplex nummularia* Lindley (**Chenopodiaceae**)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Potent molluscicide activity.

CHEMICAL CONSTITUENTS: Monodesmosidic saponins: hederagenin-3-O- β -D-glucuronopyranoside and oleanilic acid-3- β -D-glucuronopyranoside (calenduloside E).

REFERENCES: S.Brogger Chridtensen and A.A. Omar: *Atriplex nummularia*, a source for the two molluscicide saponins: Hederagenin-3-O- β -D-glucuronopyranoside and calenduloside E: *Journal of Natural Products* **48**:161,1985.

BOTANICAL NAME: *Aucoumea klaineana* Pierre (**Burseraceae**)

C: Gabon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Triterpenes with 7/8 centre of unsaturation with different stereochemistry at C-9, C-13, C-14 and C-17 of the tirucallene skeleton e.g. 3,23-dioxo-22 α -hydroxy-9 α ,20 α -tirucall-7,24-diene.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. -L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 196, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Azadirachta indica* A.Juss (Meliaceae)

C: ¹Togo, ^{2,3,4}Tanzania, ⁵Africa, Pakistan, ⁶Sudan
²V: Mwarobaini

ETHNOMEDICAL USES: ¹Used in the therapy of malaria, fevers, diabetes and hypertension.

²Used as a cathartic, emetic, asthma cure, anthelmintic and cure for skin diseases.

⁴Medicinal and/or repelling properties against insects.

⁵Used against diseases of bacterial and fungal origin

BIOLOGICAL ACTIVITY: ¹Antimalarial activity below 20µg/ml on *Plasmodium falciparum*.

²Extracts from the plant did not possess either hypertensive or hypotensive action on cats anaesthetized with pentobarbitone sodium 30mg/kg i.v.

³Effect of neem plant formulation Margosan-o-concentrate on *Anopheles gambiae* str.(N = 125) and *Culex p. quinquefasciatus* (N=125). Toxicity against mosquito species, antifeedant, growth inhibition, orientation inhibition, fecundity, metamorphosis and oviposition reduction. Azadirachtin most active against various insect pests.

⁴Antifeedant activities against larvae of *Nudauleia belina* (petroleum ether), dichloromethane and methanol extracts of the stem bark.

⁵Nimbidin is anti-arthritic and anti-inflammatory, antiulcer potential. Antitumor, antipyretic, insect antifeedant (leaves and fruits). Factors from the plant have repellence, phagodeterrence, reduced growth, abnormal development and reduced oviposition.

⁶Antimalarial activity

CHEMICAL CONSTITUENTS: ¹Limonoid: Gedunin.

²Azadirachtin.

⁵Nimbin, nimbinin, nimbidin, triterpenoids, tetranortriterpenoids: desacetylnimbinolide, acetylnimbinolide, desacetylnimbin.

⁶Tetranortriterpenoid: Gedunin

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 217, 1996. University of Zimbabwe Publications. Harare.

²M.M.J Minja: Acute toxicity and cardiovascular activity of three Tanzania medicinal plants: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 93 - 100. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

³D.H.K Matemu: Natural products as pesticides for the control of medical vectors: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 109 - 115. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

⁴S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

⁵S. Siddiqui, T. Mahmood, B.S. Siddiqui and S. Faizi: Two new tetranortriterpenoids from *Azadiarachta indica*: *Journal of Natural Products* **49**:1068 – 1073, 1986

⁶S.A. Khalid, H. Duddeck, E.G.-Sierra: Isolation and characterization of an antimalarial agent of the Neem tree *Azadirachta indica*: *Journal of Natural Products*: **52**:922-927, 1989.

BOTANICAL NAME: *Bacium glandiflorum var obovatum* (Lamiaceae)

C: South Africa

ETHNOMEDICAL USES: Used for the treatment of cancer.

BIOLOGICAL ACTIVITY: Root bark hot water extract of the plant produced a significant *in vitro* response in H522 human lung carcinoma cells (1g/10ml)

CHEMICAL CONSTITUENTS: Triterpenoid saponins 3-O- β -D-glucopyranosyl terminolic acid, 28-O- α -L-rhamnopyranosyl-(1-3)- β -D-xylopyranosyl-(1-4)-[apianofuranosyl-(1-3)] α -L-arabonopyranosyl ester (Beciumecine I).

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 293-307, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Balanites aegyptica* (Balanitaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Antifeedant activity against larvae of *Nudauleria belina* from the petroleum extract of stem bark.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Bauhinia thonningii* Milne. Redh. (Caesalpinaceae)

C: Nigeria

ETHNOMEDICAL USES: Treatment of inflammatory conditions.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: γ -lactone: Griffonilide

REFERENCES: S.K. Okwute, G.I. Ndukwe, K.Watanabe and N.Ohno: Isolation of frifonilide from the stem bark of *Bauhinia thonningii*: *J. Natural Products* **49**: 716-717, 1986.

BOTANICAL NAME: *Bersama abyssinica* (Meliaceae)

C: Kenya, Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity against *Bacillus subtilis* at 100 µg/ml (root bark, leaves have no activity).

CHEMICAL CONSTITUENTS: Bufenolides: Abyssinin and abyssinols.

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Boerhavia diffusa* (Nyctaginaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: No antifeedant activity on larvae of *Nudauleiria belina* from root extract.

CHEMICAL CONSTITUENTS:

REFERENCES: ²S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudauleiria belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Borreria verticillata* (Rubiaceae)

ETHNOMEDICAL USES: Used in Casamance for the treatment of witlew and boils by applying a paste from leaves together with extract of *Carapa procera*

BIOLOGICAL ACTIVITIES: Wound healing due to azulene, antimicrobial activity against bacteria due to high boiling components of the volatile oil.

CHEMICAL CONSTITUENTS: Volatile oils rich in terpenes, phenols and aromatic polycarboxylic acids, azulene.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 101, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Bridelia cathartica* Bertol (Euphorbiaceae)

Syn: *Bridelia fischeri* Pax, *B. melanthesoides* Klotsch,
Pentameria melanthesoides Klotsch ex Baill

C: Tanzania

V: Mnembenembe

ETHNOMEDICAL USES: Decoct drunk to treat protruding rectum.

Others: Juice of root bark is drunk against amoebic dysentery. Powder or root bark blown into anus to treat haemorrhoids. Decoction is drunk twice a day for stomach pains.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Bridelia micrantha* Bouillon (Euphorbiaceae)

C: Rwanda
V: Umugimbo

ETHNOMEDICAL USES: Used in the treatment of gastroenteritis, antidote to poisoning.

BIOLOGICAL ACTIVITY: Extract tested for antiulcer activity and found to be inactive.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Brucea antidysenterica* Mill (Simaroubaceae)

C: ^{1,2}Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ¹Cytotoxic, antileukemic (bruceantin, bruceantosides A and B and bruceanol A and B also the alkaloids). Bruceanol C demonstrated potent cytotoxicity against human KB, A-549 lung carcinoma and HCT-8 colon tumor as well as murine P-388 lymphocytic leukemia with ED₅₀ values of <0.04<0.48<0.40 and <0.56 µg/ml respectively.

²Antileukemic activity in P-388 due to bruceantinoside-A and B.

CHEMICAL CONSTITUENTS: ¹Quassinoids: Bruceantinoside A and B, Bruceanol A and B bruceanol C and alkaloids.

²Quassinoids: Bruceantinoside-A, Bruceantinoside-B, Bruceantin.

REFERENCES: ¹N. Fukamiya, M. Okano, K. Tagahara, T. Aratani and K.H. Lee: Antitumor agents, 93. Bruceanol C, A new cytotoxic quassionoid from *Bucea antidysenterica*: *Journal of Natural Products* **51**:349 – 352, 1988.

²M. Okano, K.H. Lee and I.H. Hall: Antitumor agents 39. Bruceantinoside-A and B, Novel antileukemic quassionoid glucosides from *Bucea antidysenterica*: *Journal of Natural Products* **44**:470-474, 1981.

BOTANICAL NAME: *Bulbine capitata* (Asphodelaceae)

C: Botswana

ETHNOMEDICAL USES: Used for treatment of ailments arising from bacterial and fungal infections.

BIOLOGICAL ACTIVITIES:

CHEMICAL CONSTITUENTS: From roots: Isofurano naphthoquinones, Quinones: chrysophanol, 10,10' chrysophanol, bianthrone, knipholone and isoknipholone. Phenol-2-hydroxy-3-methoxy-5-(2-proenyl)phenol.

REFERENCES: M.T. Bezabih, G. Alemayehu and B.M. Abegaz: Novel secondary metabolites from marketed plants belonging to the three genera: Senna (Leguminosae), Rhamnus (Rhamnaceae) and Bulbine (Asphodelaceae). *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 20, Dar-es-Salaam.* University of Dar-es-Salaam.

BOTANICAL NAME: *Burchellia bubalina* (Rubiaceae)

C: South Africa.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Iridoids: β -gardiol

REFERENCES: S.E Drewes, M.M. Horn and M.Ochse: Iridoids from leaves from South African Rubiaceae. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 24, Dar-es-Salaam.* University of Dar-es-Salaam.

BOTANICAL NAME: *Calendula arvensis* L. (Compositae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Sesquiterpenes glycosides: triterpene glycosides. β -D-fructopyranisides of α -bisabolane and α -bisabolone, dihydroactinidiolide. Endemane glycosides: $3\alpha,7\beta$ -Dihydroxy-5 $\beta,6\beta$ -epoxyendeman-4(15)-ene-11-(O- β -D-fuopyranoside-2',4'-diangelate-3'-acetate), $3\alpha,7\beta$ -Dihydroxy-5- $\beta,6\beta$ -epoxyendeman-4(15)-ene-11-(O- β -D-fucopyranoside-2',4'-diangelate-3'-isobutyrate); $3\alpha,7$ -Dihydroxy-5- $\beta,6\beta$ -epoxyendeman-4(15)-ene-11-(O- β -D-fucopyranoside-2',4'-diangelate-3'-methylbutyrate); and $3\alpha,7\beta$ -Dihydroxy-15-acetoxyendeman-4(5)-ene-11-(O- β -D-fucopyranoside-2',4'-diangelate-3'-acetate).

REFERENCES: A. Ahmed, J. Jakupovic and Tom. Mabry: Sesquiterpene glycosides from *Calendula arvensis*. *Journal of Natural Products* **56**:1821-1824, 1993.

BOTANICAL NAME: *Cajanus cajan* Mill sp (Papilionaceae)

Syn: *Cajanus indicus* Spreng., *Cytisus cajan* L.

C: ¹Tanzania, ²Rwanda

V: ¹Mbaazi, mbainisiri, ²Umukunde

ETHNOMEDICAL USES: ¹Decoction of roots drunk for stomach ache for women suspecting pregnancy.

Others: Ash of stem applied to wound and scales, stalks chewed for tooth ache, decoction of root drunk against gonorrhoea, juice of leaf for bad vision. Decoction of leaves used against heart disease.

²Used in the treatment of pneumonia and gonorrhoea.

BIOLOGICAL ACTIVITY: ²Tested for antiulcer activity and found to be active.

CHEMICAL CONSTITUENTS:

REFERENCES: ¹Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 238, 1983.

²E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Caparis tomentosa* Lam. (Caparidaceae)

C: Rwanda

V: Umkorokombe

ETHNOMEDICAL USES: Hepatitis, in fever and abortive.

BIOLOGICAL ACTIVITY: Leaf extract tested for antiulcer activity. No activity.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Carica papaya*

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antibacterial activity against *Staphylococcus aureus*, *Bacillus cereus*, *Escherichia coli*, *Pseudomonas aeruginosa* and *Shigella flexneri* (MIC = 0.2-0.3 mg/ml for gram positive bacterial and large (1.5 – 4 mg) for gram negative bacteria. Leaf extract had no activity.

CHEMICAL CONSTITUENTS: Ptein like substance (Extracts from epicarp, endocarp seeds and leaves)

REFERENCES: A.C. Emeruwa: Antibacterial substance from *Carica papaya* fruit extract: *Journal of Natural Products* **45**:123-127,1982.

BOTANICAL NAME: *Carissa edulis* Vahl (Apocynaceae)

C: Kenya

ETHNOMEDICAL USES: Steam from an aqueous root or rootbark infusion is inhaled as a treatment for chest congestion.

BIOLOGICAL USES:

CHEMICAL CONSTITUENTS: 2-Hydroxyacetophenone

REFERENCES: M.D Bentley, S.R. Brackett and A. Chapy: 2-hydroxyacetophenone:Principal root volatile of the East African medicinal plant, *Carissa edulis*: *Journal of Natural Products* **47**:1056-1057

BOTANICAL NAME: *Cassia abbreviata* Oliv.

C: Zimbabwe¹, Zambia²

ETHNOMEDICAL USES: In Zimbabwe a decoction of stembark is used as abortifacient, to treat gonorrhoea, lower blood pressure, alleviate abdominal pain and diarrhoea. In Zambia it is used for treatment of diarrhoea.

BIOLOGICAL ACTIVITY: ¹Lowers blood pressure in anaesthetized rats. Bark extract in the concentration of 0.1-0.3 mg/ml did not contract or relax the rat fundus (N=8), the guinea pig taenia coli (N=6) nor the guinea pig ileum (N=10): Effects on KCl induced contractions 3.0 mg/ml reduced the amplitude of the contraction induced by potassium chloride (60mM). Prolonged exposure of the guinea pig ileum to the extract antagonized the response to KCl, acetylcholine, serotonin and histamine.

²Antidiarrhoea *in vitro*. Inhibits the motility of the smooth muscle of rabbit ileum at a concentration of 600µg/ml. *In vitro* antibacterial activity against *Staphylococcus aureus*, *Shigella dysenteriae*, *Proteus ssp* and *Bacillus ssp* with MIC ranging from 500-700µg/ml

CHEMICAL CONSTITUENTS: ² 4-hydroxy cinnamic acid.

REFERENCES: ¹O.Parry and Z.J. Duri: The effects of *Cassia abbreviata* on gastrointestinal smooth muscle. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 113-115. Printed by EMPDA - Ethiopia

²S.Prakash: Antibacterial and anti diarrhoeal studies of Zambian medicinal plants. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 32, Dar-es-Salaam*. University of Dar-es-Salaam

BOTANICAL NAME: *Cassia didymobotrya* Fres.

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Chrysophanol, aloe emodin, rhein, kaempferol-3-rhamnoside.

REFERENCES: S.M. El-Sayyad and S.A. Ross: A phytochemical study of some *Cassia* species cultivated in Egypt: *Journal of Natural Products* **46**:431-432, 1983

BOTANICAL NAME: *Cassia italica* Mill. (Caesalpinaceae)

ETHNOMEDICAL USES: Constipation (cleaning of the stomach). There are reports of self-intoxication due to overdose of the plant preparation.

BIOLOGICAL ACTIVITY: Used against constipation, cholagogue, laxative, purgative. Used as powdered leaves at a dose of 5g per day.

CHEMICAL CONSTITUENTS: Leaves contain mucilages, anthracene derivatives (Sennosides being active) sterol, carotenoids and coumarins.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 237, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Cassia javanica* L.

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: α -amyrin, β -amyrin, β -sitosterol, kaempferol, kaempferol-3-methylether, kaempferol-7-methylether, quercetin, emodin, rhein, sinapic acid, leucocyanidin, pelargonidin chloride.

REFERENCES: S.M. El-Sayyad and S.A. Ross: A phytochemical study of some *Cassia* species cultivated in Egypt: *Journal of Natural Products* **46**:431-432, 1983

BOTANICAL NAME: *Cassia nodosa* Buch- Ham

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Kaempferol, kaempferol-3- rhamnoside.

REFERENCES: S.M. El-Sayyad and S.A. Ross: A phytochemical study of some *Cassia* species cultivated in Egypt: *Journal of Natural Products* **46**:431-432, 1983

BOTANICAL NAME: *Cassia occidentalis* (Caesalpinaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Antifeedant activity gaist the larvae of *Nudauletia belina* that feeds on *Mangifera indica* (Mango) and *Anacardium occidentale* (Cashewnut) at a concentration of 1% exctrypt (Leaf petroleum extract).

CHEMICAL CONSTITUENTS: Petroleum ether extract of leaves contains emodins and emodols, flavone aglycones, sterols and triterpenes.

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Cassia siamea*

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids (leaves): Siamine, siaminine A, B and C.

REFERENCES: S.M. El-Sayyad, Samir-A. Ross, and H.M. Sayed: New isoquinoline alkaloids from leaves of *Cassia siamea*: *Journal of Natural Products* **47**:708-710, 1984.

BOTANICAL NAME: *Cassia singueana* Del. (Leguminosae)

C: Tanzania

ETHNOMEDICAL USES: Root bark of the plant is used against convulsions, gonorrhoea, bilharzias, heartburn, stomachache, constipation, wounds and snake bite.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Rootbark contain torosachrysone, germichrysone, singueol-I, singueanol II, chrysophanol and physcion, 7-methylphyscion and cassiamin A, triterpenoids.

REFERENCES: S.L. Mutasa, M.R. Khan: Hydroanthraquinones from the rootbark of *Cassia singueana* Del. *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 54 - 57, 1989, P 17 – 23. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Cassine papillosa* (Hoechst) Kuntze (Celastraceae)

C: South Africa.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: From the stem bark: (-) 4'-O-methoxy epigallocatechin, (+)6R,13R-11,11-dimethyl-1,3,8,10 tetrahydroxy-9-methocyanidin, glactitol, tringenone, tingenin B and pentacyclic triterpenes; canphyllol, 30-hydroxylupeol and 30-hydroxylup-20(29)-ene-3-one.

REFERENCES: B. Abgaz, A.De Bruyn, N. Kebede, F. Lamein and P. Nunn: Chemistry of Gresspea toxin and related N-oxalyl aminoacids, *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 73-75. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Catunaregan nilotica* Tierengadon (**Rubiaceae**)
Syn: *Lanchnosiphonium niloticum* Dandy *Randia nilotica* Stapf.
Xeromphis nilotica Keay

C: Tanzania
V: Mzongozongo

ETHNOMEDICAL USES: A decoction of root bark used against asthma, epilepsy and mental illness. Powder of dry root sniffed against epilepsy and madness. Infusion of fresh fruit is emetic and against fever.

Others: Roots against snakebite. Decoction is diuretic and purgative, root as antidote in arrow poisoning. Stem bark: Foam of the bark in water for application to varicous parts of the body for dropsy and stomach pain. Fruit: Maceration from roots is emetic and fish poison.

BIOLOGICAL ACTIVITY: Extract of the root has insecticidal properties of the derris class.

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 243-244, 1983

BOTANICAL NAME: *Cedrela odorata* L. (**Meliaceae**)

C: Tanzania
V: Mvuje

ETHNOMEDICAL USES: Treatment of numb sores of the feet, numb foot put on hot brk.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Terpenoid compounds from essential oils and timber.

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Celtis durandii* (Ulmaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Antifeedant activity against the larvae *Nudaulelia belina* that feeds on *Mangifera indica* (Mango) and *Anacardium occidentale* (Cashewnut) at a concentration of 1% (Stem bark, petroleum ether, dichlormethane and methanol extracts.)

CHEMICAL CONSTITUENTS: Petroleum ether extract of the stem bark contains flavene aglycone, coumarins, sterols, triterpenes and basic alkaloids. Methanol extract of the stembark contains flavone aglycones, coumarins, sterols and triterpenes.

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudaulelia belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Centella asiatica*

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Hypoglycaemic effect of water extract and triterpenes.

CHEMICAL CONSTITUENTS: Triterpenes.

REFERENCES: C.K. Mtayabarwa, JM. Sayi, W. Msangi and G.M. Mwaluko: Hypoglycaemic activity of *Centella asiatica*. *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 208. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Chasmanthera dependens* Hochst (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES: The bark is used for venereal discharges, as a general tonic for physical and nervous debilities, in inflammatory and exhausting diseases.

BIOLOGICAL ACTIVITY: Anonine has been reported to have hypotensive, columbamine antibacterial, antileishmaniasis and antifertility activity.

Glaucine has adrenolytic, antitussive. Jatrorrhizine has sedative, antimicrobial, antifungal and antifertility.

Liriodendrine has cytotoxic activity. Magnoflorine has hypotensive and muscle-relaxant.

Nornuciferine has convulsive.

Palmitine has antimicrobial, anticholinesterase, epinephrine inhibitor, antifungal and antifertility.

CHEMICAL CONSTITUENTS: Quaternary alkaloids: Jatrorrhizine, columbamine, magnoflorine, pseudocolumbamine, magnoflorine, pseudocolumbamine and palmitine. Tertiary non-phenolic alkaloids: Tetrahydropalmitine, Liriodenine, lysicanine, oxoglucine, glaucine, O,O-dimethylcorytuberine. Tertiary phenolic alkaloids: (-)-govanine, (-)-coreximine, Bisnorargenine, pallidine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Ibadan*. P.95-116,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage.

BOTANICAL NAME: *Chenopodium ambrosioides* (Chenopodiaceae)

C: Rwanda

V: Umwishake

ETHNOMEDICAL USES: Used for the treatment of diarrhoea.

BIOLOGICAL ACTIVITY: Leaf extract tested for antiulcer activity. The extract was found to be active.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Chironia baccifera* L. (Gentianaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Secoiridoids: Swertiamarine, gentiopicroside, sweroside.

REFERENCES: J. Luc Wolfender, M. Hamberger, K. Hostettmann, J.D. Msonthi, S. Mavi: Search for better principles in *Chironia* species by LC-MS and isolation of a new secoiridoid diglycoside from *Chironia krebsii*: *Journal of Natural Products* **56**:682-689, 1993.

BOTANICAL NAME: *Chironia krebsii* Griseb (Gentianaceae)

C: ²Malawi

ETHNOMEDICAL USES: ¹Malawi

BIOLOGICAL ACTIVITIES: ¹Methanol extracts of the root shows an important inhibition of MAO-A in vitro at 15 µg/ml. The IMAO activity is due to xanthones. Several of them showed selective and reversible inhibitory of MAO-A. The most active xanthone was 1,5 dihydroxy-3-methoxyanthone with inhibitory activity of 0.04 µm (IC₅₀ MAO-A).

CHEMICAL CONSTITUENTS: ¹Secoiridoids, xanthone-o-glycosides, xanthone aglycones.

²Secoiridoids: Swertiamarine, chironioside, sweroside; also in small amounts: gentiopicroside; and eustomoside; xanthones.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 21-30, 1996. University of Zimbabwe Publications. Harare.

²J. Luc Wolfender, M. Hamberger, K. Hostettmann, J.D. Msonthi, S. Mavi: Search for better principles in *Chironia* species by LC-MS and isolation of a new secoiridoid diglycoside from *Chironia krebsii*: *Journal of Natural Products* **56**:682-689, 1993.

BOTANICAL NAME: *Chironia palustris* Burch (Gentianaceae)

C: Zimbabwe

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Secoiridoids: Gentiopicroside, sweroside, also in small amounts: Swertiamarine, eustomoside. Eustomoside.

REFERENCES: J. Luc Wolfender, M. Hamberger, K. Hostettmann, J.D. Msonthi, S. Mavi: Search for better principles in *Chironia* species by LC-MS and isolation of a new secoiridoid diglycoside from *Chironia krebsii*: *Journal of Natural Products* **56**:682-689, 1993.

BOTANICAL NAME: *Chironia purpurascens* Verdoorn (Gentianaceae)

C: Zimbabwe

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Secoiridoids: Eustomoside, eustomorusside, gentiopicroside also in small amounts, swertiamarine, chironioside, sweroside.

REFERENCES: J. Luc Wolfender, M. Hamberger, K. Hostettmann, J.D. Msonthi, S. Mavi: Search for better principles in *Chironia* species by LC-MS and isolation of a new secoiridoid diglycoside from *Chironia krebsii*: *Journal of Natural Products* **56**:682-689, 1993.

BOTANICAL NAME: *Cissampelos mucronata* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Isochondodendrine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.62,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Cissampelos pareira* L. (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: l-curine, hyatine, hayatinine (leaves and roots), d-isochondodendrine (Vines and roots), cyclanoline (roots), Cissamperine (whole plant), (++)-4-O-methyl-curine (Vines and roots), hayatidine, cycleanine (leaves and roots), dehydrodicentrine (roots), dicentrine (roots), insularine (roots), N,N'-dimethyl curarine (roots).

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.68-69,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Cissampelos pareira* L. *var orbiculata* Miq.
(Menispermaceae)
Syn. *Cissampelos orbiculata*

C: Tanzania
V: Chegonde

ETHNOMEDICAL USES: Decoction of leaves used against diarrhoea in children + roots of *Sida rhombifolia* L drunk against frequent abortions.

Others: Decoction used against hookworm, rootbark used against snakebites. Roots for sore throat, cold, cough. Roots and leaves chewed for stomach pains and pregnancy pains. Burnt root and leaves used for wounds in Africa, root as sexual stimulant, rheumatic pain, headache, tonic, diuretic, blennorrhagia, haematuria and colic. Decoction is used against pimples and the body. Carbonized root rubbed into scarification for relief of neuralgia. Out side Africa, roots for purgative, antiperiodic in dyspepsia, emenagogue and as a solvent for urinary calculi.

BIOLOGICAL ACTIVITY: Chloroform extract (Alkaloids) had a transient relaxant effect on smooth muscle. Hyatine chloride has no effect on contraction of skeletal muscle but hayatine methiodide and hyatine methochloride have muscle relaxant activity similar to d-tubocurarine. Hyatine methiodide more potent and less toxic. Hyatine methiodide injected intra ventricular, intrathecally or intracisternally, causes increases in blood pressure, the rate and depth of respiration and the somatic reflexes. Salivation, lacrimation and papillary dilatation produced. IV in dogs and humans conc. reaches after 2 min. after 15 min no trace, 4-8% of inj. Drugs excreted in the urine.

CHEMICAL CONSTITUENTS: Bis benzylisoquinoline alkaloids: l-berberrine, cissamparine, l-curine, hayatidine, hayatine, hayatinine, isochondodendrine, (++)-4''O-methylcorine (roots).

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Cissus quandranguralis* (Vitaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Antifeedant activity against *Nudauleria belina* that feeds on *Mangifera indica* (Mangoes) and *Anacardium occidentale* (Cashewnuts) at a concentration of 1% of extract (Whole plant extract of petroleum ether, dichloromethane extracts).

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Cissus rotundifolia* Vahl (Vitaceae)

Syn: *Cissus crassifolia* Planch, *Soelanthus rotundifolius* Forsk, *Vitis crassifolia* Bak.

C: Tanzania

V: Chazi

ETHNOMEDICAL USES: Powdered leaves mixed with leaves of *Hoslundia opposita* Vahl and smoked for the treatment of bad smell in the mouth and nose accompanied with pain in head and chest.

Others: Roots used for yaws as a purgative, externally for ulcers, muscular rheumatism, toothache remedy. Leaves: Juice of leaves as a sedative in mental illness, heart troubles with dizziness and unconsciousness. A paste of leaves mixed with oil is used to treat inflammation and swelling on the skin. Juice of the leaves for infected ear. Entire plant: Applied locally as remedy for wounds. Hot plant juice applied locally for earache.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 256, 1983

BOTANICAL NAME: *Citrus cfr. aurantium* L. (Rutaceae)

C: Tanzania

V: Mdanzi

ETHNOMEDICAL USES: Powdered root and cut up fruit + leaves is eaten against polio. Cold water extract of root used against upset stomach. Roots used for patients possessed by the devil.

Others: Juice of leaves dropped into ear for earache.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 245, 1983.

BOTANICAL NAME: *Clausena anisata* Hook.f.ex Benth (Rutaceae)

C: Cameroon

ETHNOMEDICAL USES: Leaves are used as insect repellent.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Coumarins, anisocoumarins E, anisocoumarin F anisocoumarin G and anisocoumarin H, imperatorin, capnolactone and triphasiol.

REFERENCES: B.T. Ngadjui, J.F. Ayafor, B.L. Sondengam and J.O. Connolly: Prenylated coumarins from the leaves of *Clausena anisata*: *Journal of Natural products* **52**:243-247, 1989.

BOTANICAL NAME: *Cleistopholis patens* Engl & Diels (Annonaceae)
Syn: *Oxyumitra patens* Benth.

C: Ghana

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Noraporphine alkaloids: Isomoschatoline; oxoaporphine alkaloids: liriodenine.

REFERENCES: S.A-El Atti, H.A. Ammar, C.H. Phoebe Jr. P.L. Schiff Jr and D.J. Slatkin: Alkaloids of *Guatteria melosa* and *Cleistopholis patens*. *Journal of Natural Products* **45**:476-480, 1982.

BOTANICAL NAME: *Clerodendrum buchneri* Guerke (Verbenaceae)

C: Zaire

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Macrocyclic spermine alkaloids: Buchnerine; N¹-(Z)-p-methoxycinnamoylbuchnerine.

REFERENCES: S. Lumbu and C. Hootele: Buchnerine and N¹-(Z)-p-methoxycinnamoyl buchnerine, two new macrocyclic alkaloids from *Clerodendrum buchneri*; *Journal of Natural Products* **56**:1418-1420, 1993.

BOTANICAL NAME: *Clerodendrum inerme* Gaertn. (Verbenaceae)

C: Egypt

ETHNOMEDICAL USES: In East Africa the plant is used as army-worm antifeedant. In West Africa, the leaf extract is used for arresting bleeding from cuts and other wounds as well as stopping post partum hemorrhage.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Iridoid biglycosides: Inerminside A, inerminoside B. Phenyl propanoids and flavanoids.

REFERENCES: I. Calis, M. Hosny, A. Yuruker, A.D. Wright and O. Sticher.: Inerminosides A and B, two novel complex iridoid glycosides from *Clerodendrum inerme*. *Journal of Natural Products* **57**:494 – 500, 1994.

BOTANICAL NAME: *Clerodendrum makanjanum* Winkler (Verbenaceae)

C: Egypt
V: Mlibiti

ETHNOMEDICAL USES: A decoction of the roots is used for treatment of abdominal pain.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 253, 1983.

BOTANICAL NAME: *Clerodendrum myricoides* R.Br. ex Vatke

C: Rwanda

V: Umukuzanyana

ETHNOMEDICAL USES: Used in the treatment of leprosy, syphilis, yaws, gonorrhoea, and diarrhoea.

BIOLOGICAL ACTIVITY: Leaf extract was tested for antiulcer activity and found to be inactive.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Clerodendrum uncinatum* Schinz. (Verbenaceae)

C: Malawi

ETHNOMEDICAL USES: Powdered root bark has contraceptive activity. A decoction of the roots as a gargle is used for sorethroat. Cures schistosomiasis.

BIOLOGICAL ACTIVITY: Fungicida activity against *Cladosporium cucumerinum* spores on TLC bioassay. Activity is due to hydroquinone dieterpene, uncinatone inhibits growth of the fungus down to 0.5 mg in TLC assay.

CHEMICAL CONSTITUENTS: Hydroquinone diterpene, uncinatone.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Clerodendrum wildii* Moldenke (Verbenaceae)

C: Malawi

ETHNOMEDICAL USES: It is said to be active against intestinal parasites. It is used in the treatment of malaria.

BIOLOGICAL ACTIVITY: Molluscicidal activity. Mi-saponin showed activity against *Biomphalaria glabrata* (25ppm)

CHEMICAL CONSTITUENTS: Mi-saponin A (Triterpenoids saponin) from roots.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Clutia abyssinica* Jaub & Spach. (Euphorbiaceae)

Syn: *Clutia abyssinica* vars. *Calvescens firma*, *glabra* Pax & Hoffm. *C. lanceolata* Hochst var *glabra* A. Rich, *C. myricoides* Pax, *C. richardiana*?

C: ¹Tanzania, ²Rwanda

V: ¹Mhende, ²Rwanda

ETHNOMEDICAL USES: ¹Decoction of root prepared together with roots of *Cassia didymobotrya* Fres, *Momordica calantha* Gilg., *Myrica salicifolia* Hochst. *Macaranga capensis* Sim. *Uvaria cfr leptocladon* against dizziness and *Crossocephelum vitellinum*, *Conyza pyrrhopappa ssp oblongifolia* Willd. Roots and leaves decoction for ugly sores on infant believed to have been caused by the mother.

Others: A decoction is drunk for toothache, stomachache, influenza, malaria and for indigestion. Decoction mixed with milk is used to treat liver pains, roots as a scanifuge, habitual abortions, fits in children, for enlarged spleen and influenza. Leaves: vapours for fumigation against malaria. Leaf sap for application to wet dermatoses. Wood smoked by women during menstruation.

²Used in the treatment of hepatitis and indigestion.

BIOLOGICAL ACTIVITY: ²The stem extract was tested for anticholinergic activity but no results were given. There was no activity when tested for antiulcer activity.

CHEMICAL CONSTITUENTS:

REFERENCES: ¹Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

²E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Cocculus hirsutus* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUTENTS: Alkaloids: d-trilobine, magnoflorine, isotulobine. (roots and stem bark).

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.69,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange.

BOTANICAL NAME: *Cocculus pendulus* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Oxyacanthine, plamatine, sinactine, coclaurine, menisarine, cocsuline (roots), penularine, cocsoline, cocsaline (leaves and stem bark.)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.69,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Coleus barbatus* (Andr) Benth. (**Labiatae**)

Syn: *Ocimum cinereum* R. Br, *Plectranthus barbatus* Andr.

C: Tanzania

V: Mzugliva

ETHNOMEDICAL USES: Decoction of roots used against stomach pains including delayed delivery of labour, against infertility in women, leaves pound and drunk in water against cough and tonsillitis, rheumatism.

Others: leaves as purgative and stomachache. Leaves as purgative and stomach ache. Leaves in water against misles in children.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Triterpene: Barbatusin.

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Combretum apiculatum* (**Combretaceae**)

ETHNOMEDICAL USES: In East Africa it is used for treating snake bites, scorpion bite, bloody diarrhoea and leprosy. In South Africa, it is used to treat abdominal disorders, conjunctivitis. In Zimbabwe it is used to treat weak body.

BIOLOGICAL ACTIVITY: Borer and termite resistance. Inhibition of growth of *Penicillium expansum* in antifungal tests. Cytotoxic activity, antileukemic activity in the P-388 murine system. It has allelopathic activity.

CHEMICAL CONSTITUENTS: Contains substituted phenanthrenes and dihydrophenanthrenes, gums (arabinogalactan proteins), combretastatins B.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum caffrum* (Combretaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Borer and termite resistance, totally inhibits the growth of *Penicillium expansum* in antifungal tests. Antileukemic activity in P-388 murine system. Combrestatin A-4 is most potent inhibitor of colchicine binding to tubulin. It inhibits tubulin polymerization, retards strongly the growth of the murine leukemic L1210 and P-388 cell lines as well as Human colon cancer cell lines and is potent antimitotic agent.

CHEMICAL CONSTITUENTS: Substituted phenanthrenes and dihydrophenanthrenes, combretastatin A-1-6, B-1-4,C and D.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum edwardsii* (Combretaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Molluscicidal activity.

CHEMICAL CONSTITUENTS: Mollic acid arabinoside.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum elaeagnoides* (Combretaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Jessie acid arabinoside, Jessie acid and its methyl ether.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum erythrophyllum* (Combretaceae)

ETHNOMEDICAL USES: In South Africa it is used as a fattening tonic for dogs. In Zimbabwe it is used to reduce size of vaginal orifice

BIOLOGICAL ACTIVITY: Deaths have been reported in Zimbabwe after women had inserted material from this plant into their vaginas to reduce the size. It has allelopathic activity.

CHEMICAL CONSTITUENTS: It contains cycloartane dienone lactones from leaves, combretastatin glucosides from roots and gums. Bibenzyls and combretastatin in trace amounts in barks.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum fragrans* (Combretaceae)

ETHNOMEDICAL USES: In East Africa it is used for chest coughs and syphilis. In Zimbabwe it is used as an aphrodisiac.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum glutinosum* Perr. (Combretaceae)

C: ^{1,2}Senegal

ETHNOMEDICAL USES: ¹In Senegal it is used for treatment of hepatic disease, antihypertensive, diuretic, bronchial disease.

²It is used as a diuretic and for the treatment of jaundice.

BIOLOGICAL ACTIVITY: ¹Leaf extract from this plant from Senegal strongly inhibit hepatitis B virus antigen (HB_sAg) *in vitro* and angiotensin-converting enzyme.

²It inhibited hepatitis B virus surface antigen.

CHEMICAL CONSTITUENTS: ²Cotanins tannins: 2,3(S)-hexahydroxydiphenoyl-D-glucose, punicalin, punicalagin, combreglutinin.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

²A.Jossang, J.L Purset and B. Bodo: Combreglutinin, a hydrolysable tannin from *Combretum glutinosum*: *Journal of Natural Products*, **57**: 732 – 737, 1994.

BOTANICAL NAME: *Combretum heteroense* (Combretaceae)

ETHNOMEDICAL USES: In East Africa, it is used for the treatment of bilharzias.
-In Zimbabwe for the treatment of headache and infertility in women.

BIOLOGICAL ACTIVITY: It has a borer and termite resistance.

CHEMICAL CONSTITUENTS: Contains substituted phenanthrenes and dihydrophenanthrenes e.g. 9,10 dihydrophenanthrenes.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum imberbe* (Combretaceae)

ETHNOMEDICAL USES: In South Africa it is used for coughs and colds. In
-Zimbabwe, it is used for diarrhoea, to drive away bad spirits and bilharzias.

BIOLOGICAL ACTIVITY: Imberbic acid has a molluscicidal activity toxic to *Biomphalaria glabrata* snails at concentration of 20 ppm where its bidesmoside is inactive.

-It has an allelopathic activity from epidermal leaf secretions.

CHEMICAL CONSTITUENTS: Triterpenoids, imberbic acid.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum kraussii* (Combretaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Cytotoxic activity, they are potent inhibitors of microtubule assembly *in vitro* and potent inhibitors of the binding of colchicines to tubulin. Tests on mammalian sensory neurons, combretastatin B-1 had rapid and completely reversible effects on a variety of potassium ion channels without any marked effect on calcium or sodium channels.

CHEMICAL CONSTITUENTS: Combretastatin B-1 and B-5 and its glucoside, Combretastatin A-1 and its glucoside.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum leprosum* (Combretaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Molluscicidal activity toxic to *Biomphalaria glabrata* snails

CHEMICAL CONSTITUENTS: Mollic acid (30 carboxy-1 α -hydroxycycloartane)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum micranthum* G.Don. (Combretaceae

C: Mali

ETHNOMEDICAL USES: Fever, constipation, indigestion, stomachache, weakness, hypertension, anorexia, headache and stomatitis.

BIOLOGICAL ACTIVITY: Used against digestive disturbances associated with liver diseases and jaundice (constipation, fat intolerance, loss of appetite). Tissular and hepatorenal diuretics

CHEMICAL CONSTITUENTS: Leaves contain coumarins, carotenoids, catechic and gallic tannins, steroids, terpenes and alkaloids (e.g. hydroxy-stachydrine), betanin and choline, vitexin and orientin, sorbitol, manitol, gallic acid, tartric acid, malic, citric and oxalic acid.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 235-236, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum microphyllum* (Combretaceae

ETHNOMEDICAL USES: In Zambia it is used for the treatment of lunacy.
In Zimbabwe it is used as a lick charm.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum molle* (Combretaceae)

ETHNOMEDICAL USES: In East Africa it is used for treatment of hookworm, stomachache, snakebite, leprosy, fever, dysentery, chest complaints and anthelmintic.

In Zambia it is used for headache.

In Malawi, it is as an anthelmintic and for snakebite.

In Zimbabwe, it is used for abdominal pains, diarrhoea, ead ache, convulsions, infertility in women, to stop bleeding after birth, to fatten babies and as a dressing for wounds.

BIOLOGICAL ACTIVITY: It has a borer and termite resistance, inhibition of growth of *Penicillium expansum* in antifungal tests, molluscicidal activity from sodium salt of mollic acid, glucoside is toxic to *Biomphalaria glabrata* snails at a concentration of 12 ppm. It has allelopathic activity.

CHEMICAL CONSTITUENTS: Gum exudates (arabinogalactan proteins), 9,10-dihydrophenanthrenes, combretastatin B (a stilben), mollic acid (an acidic triterpenoid) and its glycosides. Olean and cycloartane triterpenoids and their mono-and bidesmosides. Mollic acid glucoside, mollic acid xyloside, mollic acid arabinoside, jessic acid xyloside, arjunglucoside I and arjunctin.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum padoides* Diels & Engl. (Combretaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Triterpenoid: Desmosides and 25(27)-dehydroporiferasterol 23-hydroxy imberic acid 23-O- α -L-4-acetylramnopyranoside; 23-hydroxyimberbic acid 3-O- α -L-rhamnopyranosyl-23-O- α -L-4-acetylramnopyranoside; 23-hydroxyimberbic acid 3-O- α -L-rhamnopyranosyl-23-O- α -L-rhamnoside.

REFERENCES: C.B. Rogers: New mono- and Bi-Desmosidic triterpenoid isolated from *Combretum padoides* leaves: *Journal of Natural Products*: **52**:528-533, 1989.

BOTANICAL NAME: *Combretum platypetalum* (Combretaceae)

ETHNOMEDICAL USES: In Zambia: For treatment of swelling caused by mumps.

In Zimbabwe: Treatment of pneumonia, abdominal pains, diarrhoea, antiemetic, dysmenorrhoea, infertility in women, earache, epistaxis and haemoptysis.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum psidioides* (Combretaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antileukemic activity in the P-388 murine system.

CHEMICAL CONSTITUENTS: Gum exudates, combretastatin B, Substituted phenanthrenes and 9,10-dihydrophenanthrenes from heartwood.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Combretum zeyheri* (Combretaceae)

ETHNOMEDICAL USES: In East Africa: It is used for to treat tooth ache, cough.

In Tanzania: It is used to treat scorpion bite, diarrhoea with blood.

In Zambia: Used to arrest menstrual flow, eye lotion, embrocation, diarrhoea.

In Zimbabwe: It is used to treat diarrhoea with blood and abdominal disorders.

BIOLOGICAL ACTIVITY: The nut inside the four winged fruit is toxic to humans and animals. It has allelopathic activity.

CHEMICAL CONSTITUENTS: Contains acidic triterpenoids and their glycosides, non-proteinogen aminoacids and combretastatins and their glycosides, N-methyl-L-tyrosine and its 4'-O- β -D-glucoside, 3-aminomethyl-L-phenylalanine and 3-(3'-hydroxymethyl-L-phenylalanine and its 3'-O- β -D-glucoside,

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Commiphora incisa* Chiov. (Burseraceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Triterpenes of the type 1 α -acetoxy-3 β -hydroxycycloart-24-ene and 1 α -,2 α ,3 β -trihydroxy-30-nor-8,24-diene.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 190-192, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Commiphora merkeri* Engl.

ETHNOMEDICAL USES: Used against infection.

BIOLOGICAL ACTIVITY: Anti-inflammatory activity (pentacyclic triterpene), analgesic activity. It was found to have 28% inhibition (100 mg/kg dose) [Phenylbutazone (reference) had 64% inhibition at 100 mg/kg dose] of the phlogistic response (carrageenan induced oedema) in the rat. At the same dose, 37% inhibition of writhing response in the rat [Aspirin (reference had 85% inhibition at 100mg/kg dose)

CHEMICAL CONSTITUENTS: Volatile oils, monoterpenes and sesquiterpenes. Pentacyclic triterpene: $2\alpha,3\beta,23$ -trihydroxyolean 12-ene.

REFERENCES: T.G. Fourie and F.O.Snychers: A pentacyclic triterpene with anti-inflammatory and analgesic activity from the roots of *Commiphora merkeri*: *Journal of Natural Products*: **52**:1129-1131, 1989.

BOTANICAL NAME: *Commiphora kua* Vullesen. (Burseraceae)

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Aqueous ethanolic extract from the resin has an anti-inflammatory activity. Activity is due to mansumbione and mansumbionic acid (greater activity).

CHEMICAL CONSTITUENTS: Resin contains lignans, polygamain and polypocrogamin, triterpene derivatives i.e. mansumbinone, mansumbiol, and mansumbnoic acid, 16β , 20α -dihydroxydammar-24-en-3-one, 16-oxygenated octanordemmaranes with double bond between C-13 and C-17 e.g. mansumb-13(-en-3,16-dione.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 190, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Commiphora rostrata* Engl. (Burseraceae)

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antifungal activity due to the resin. The resin repels ants and termites, feeding deterrents to insects.

CHEMICAL CONSTITUENTS: Highly volatile resin oils containing methyl ketones as 2-dodecanone, 2-undecanone and 2-dodecanone (resin)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 187, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Clausena anisata* Hook.f. ex Benth.

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids, limonoids, coumarins: 3-(1,1-dimethyl)xanthyletin, xanthoxyletin, helettin, gravelliferone methyl ether, swietenocoumarin I, imperatorin, triphasiol, and capnolactone, anisocoumarins A-H.

REFEENCES: B.T.Ngadjui, J.F. Ayafor, B.L. Sondengam and J.D. Connolly: New coumarins from *Clausena anisata*: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130.

Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Cleistopholis patens* Engl and Diels (**Annonaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Anticandidal activity from the root bark alcoholic extract due to eupolauridine (MIC=1.56 µg/ml) in yeast nitrogen broth.

CHEMICAL CONSTITUENTS: Alkaloids: Eupolauridine and onychine.

REFERENCES: C.D. Hufford, S. Liu, A.M. Clark and B.O. Oguntimein: *Journal of Natural Products* **50**:961-964,1987.

BOTANICAL NAME: *Clausena anisata* Hook. f. (**Rutaceae**)

C: Nigeria

ETHNOMEDICAL USES: Burnig of dried plants repel mosquitoes.

BIOLOGICAL ACTIVITY: Volatile oil from leaves is toxic to variegated grasshopper *Zonocerus varegatus* L. Volatiles from leaves have repellent activity against a tick *Ixodes ricimus*

CHEMICAL CONSTITUENTS: Estragole

REFERENCES: A.L. Okunade and J.I. Oleifa: Estragole: an acute toxic principle from the volatile oil of the leaves *Clausena anisata*: *Journal of Natural Products*: **50**: 990 1987.

BOTANICAL NAME: *Clivia miniata* Regel (Amaryllidaceae)

C: Egypt

ETHNOMEDICAL USES: Used to counteract snake bite, to treat febrile conditions and facilitated delivery at child birth.

BIOLOGICAL ACTIVITY: Antiviral activity lycorine (alkaloid) decreases the growth of polio in VERO cells through its inhibitory action on viral protein synthesis.

CHEMICAL CONSTITUENTS: Alkaloids: Lycorine clivonine, clivatine and clivonidine.

REFERENCES: A.A. Ali, S.A. Ross, A.M. El-Moghazy and S.A. El-Moghazy: Clivonidine, A new alkaloid from *Clivia miniata*. *Journal of Natural Products* **46**:350-352,1983.

BOTANICAL NAME: *Clivia nobilis* Regel (Amaryllidaceae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Nobilisine, Clivatine, lycorine.

REFERENCES: P.W. Jeffs, L. Mueller, A.H. Abou-Donia, A.A. Seif el- Din, and D. Campau: Nobilisine, a new alkaloid from *Clivia nobilis*.

BOTANICAL NAME: *Combretum caffrum* Kuntze (Combretaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Inhibit murine P-388 Lymphocytic leukemia (PS system) cell line. Combrestatins B-3 and B-4 gave PS ED₅₀ Values of 0.4 and 1.7 µg/ml respectively. All bn benzyls caused leukemia cells to accumulate in mitosis at cytotoxic drug concentrations.

CHEMICAL CONSTITUENTS: Bibenzyls; combretastatin B-3 and combretastatin B-4

REFERENCES: G. Pettit, S.B. Singh, J.M. Schmid, M.L. Niven, E. Hamel and C.M. Lin. Isolation, structure, synthesis and antimitotic properties of combretastatin B-3 and B-4 from *Combretum caffrum*: *Journal of Natural Products* **51**:517-527,1988.

BOTANICAL NAME: *Cotula cinerea* L. (Compositae)

C: Egypt

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Flavonoids: Kaempferitin, querstrin, quercetin, kaempferol, luteolin-7-O-β-D-glucoside, luteolin, luteolin 7-O-β-diglucoside, luteolin 6-hydroxy-O-β-D-glucoside, apigenin 7-O-α-rhamnoside, 6-C-ora-binosyl-8-C-glucosylapigenin, isoschaftoside, quercetin 3-O-β-D-glucoside, quercetin 3-O-β-galactoside and 7-O-β-D-glucoside, 5,3',4'-trihydroxy,3,6,7-trimethoxy flavone.

REFERENCES: A.A. Ahmed: Flavonoids of *Cotula cinerea*: *Journal of Natural Products* **50**:519, 1987

BOTANICAL NAME: *Crinum stuhlmannii* Baker (Amaryllidaceae)

C: Kenya

ETHNOMEDICAL USES: It is used for the treatment of cough, colds, renal and hepatic diseases, sores, sexually transmitted diseases, backache and entamoeba hystolytica.

BIOLOGICAL ACTIVITY: From bulbs, lycorine and crinamine showed biological activity against *Entamoeba hystolytica*. Lycorine had an IC₅₀ of 0.23µg/ml, crinamine had an IC₅₀ of 0.53µg/ml, ambelin showed no activity. The three compounds had no activity against *Trypanosoma cruzi*, *Leishmania donovani* and *Plasmodium falciparum*.

CHEMICAL CONSTITUENTS: Alkaloids: lycorine, 9-O-demethylpluviine, kirkine ambelline, crinamine, crinine, hamayne and amabline.

REFERENCES: A. Machocho, S.C. Chhabra, F.Vila domat, C. Codina and J. Bastida.: Alkaloids from *Crinum stuhlmannii*. *Planta Medica*, **64**:679-680, 1998.

BOTANICAL NAME: *Crossopteryx febrifuga* Benth (Rubiaceae)

Syn: *Crossopteryx kotschyana* Fenzl. *Rondeletia febrifuga* Afzel ex G.Don

C: ¹Mali

C: ²Tanzania

ETHNOMEDICAL USES: ¹Used in Mali for the treatment of cough, pneumonia, chest pain, fever, oedema, diarrhoea, and sickness.

²Ground bark used against constipation. Powdered root bark and stem against asthma.

Others: Decoction of roots is used for tuberculosis, cough, spasms of the stomach, hookworm, venereal diseases, syphilis, antiulcer. Decoction of roots is used for various disorders of the mouth including canker sores. Juice of root dropped in nose is used for the treatment of headache. As an ingredient of ointment, is used against filarial in the eye connective tissue. Stem bark: is used against abortion and facilitate birth. The bark is used as a febrifuge, decoction as antipruritic lotion. Bark is also used for malaria, diarrhoea, colic, intestinal worm, ophthalmia and as an application to wounds. Decoction of bark is used against chest pains. Coldwater extract is used against pains of the gut, as galactagogue and against gonorrhoea. Preparation of bark and root bark are diuretic, in high doses cause vomiting, purging, bark as cough, gonorrhoea and against worms. Astringent in the treatment of diarrhoea, dysentery, fever. Leaves: A cold extract is used for conjunctivitis. The leaves are used as a tonic and for mental illness, chest pain. Extract from plant for treatment of rheumatism.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ²Positive tests for alkaloids, saponins.

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 244, 1983

BIOLOGICAL ACTIVITY: Antiinflammatory, analgesic and mucolytic properties (crossoptines A and B), expectorant effects. Intraperitoneal injection in mice causes bradcardia, loss of motor coordination and balance. The animal then dies due to cardiac arrest. Stem bark extract contain triterpenes e.g. betulic acid which has activity on colon cancer cell lines.

CHEMICAL CONSTITUENTS: Fruits contains tannins, carotenoids, coumarins, mucilage, sterols, triterpenes (crossptines A and B), leucoanthocyanins and saponins. Betulic acid.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 237, 1996. University of Zimbabwe Publications. Harare.

²Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**:244, 1983

BOTANICAL NAME :*Crotalaria emarginata* Benth (**Papilionaceae**)

C: Tanzania

V: Kiroctuman

ETHNOMEDICAL USES: Leaf juice used against eye diseases.

Others: An infusion of the curshed leaves in hot water is used against sore eyes.

BIOLOGICA ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 238, 1983

BOTANICAL NAME: *Crotalaria cfr. zanzibarica* Benth (Papilionaceae)

Syn: *Crotalaria usamoensis* Bak. f.

C: Tanzania

ETHNOMEDICAL USES: Juice from ground leaves is dropped into ear for otitis.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Pyrrolizidine alkaloids: retrorsine, usaramine and senecionine

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 239, 1983

BOTANICAL NAME: *Croton dichogamus* Pax. (Euphorbiaceae)

C: Tanzania

V: Mhand

ETHNOMEDICAL USES: Powdered leaf in porridge or tea for tuberculosis. Leaves biled for treatment of kwashiorkor/malnutrition.

Others: Roots added to soup made of goats' meat as a tonic. Smoke from burnt leaves is inhaled in treatment of fever. Chest ailment. Leaves chewed or smoked as a cigarette, stomach diseases.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Dilleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Croton macrostachyus* (Euphorbiaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity.

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Croton megalocarpus* (Euphorbiaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: No antimicrobial activity found.

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Croton gratissimum* (Euphorbiaceae)

C: Botswana

ETHNOMEDICAL USES: The leaves can either be smoked or made into tea for treatment of cough and as stock feed. The leaves' aroma is used for preparing traditional perfumes and for driving away evil spirits. Stem resistant to insect attack.

BIOLOGICAL ACTIVITY: Insect antifeedant.

CHEMICAL CONSTITUENTS: Clerodane diterpenes, flavonoids.

REFERENCES: N.M. Mukombwe, G.Kalelwa and N. Tshabang: Novel clerodanes from *Croton gratissimus*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 22, Dar-es-Salaam.* University of Dar-es-Salaam.

BOTANICAL NAME: *Croton polytrichus* Pax. (Euphorbiaceae)

C: Tanzania

V: Mchamwa

ETHNOMEDICAL USES: Decoction of roots drunk to drive out the devil, powdered root bark mixed with porridge or tea to treat impotence: powdered root bark is mixed with powdered roots of *Croton dichogamus* Pax. In tea without milk for treating male impotence, heavy head ache. Leaves boiled with leaves of *Combretum exaltatum* Engl. *Ficus cfr vogelii*. Miq., *Croton pseudopulchellus* Pax. and *Uvaria cfr lepdocladon*. The vapours from boiling leaves are inhaled to drive out the devil. Roots for headache and labour pain.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Croton pseudopulchellus* Pax. (Euphorbiaceae)

C: Tanzania

V: Mkombechi

ETHNOMEDICAL USES: Decoction of roots drunk to drive out the devil. Leaves vapour for the same use.

Others: Decoction of root for asthma, leaves are boiled and applied to chest for colds, an infusion of leaves given to cattle for anthrax. Leaves as insecticide in crops; leaves and twigs decoction for gonorrhoea. Leaves and twigs of *Teclea nobilis* are used in making vapour both for syphilitic sores + local application of the pounded root of *Crossopteryx febrifuga*.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Croton sylvatus* (Euphorbiaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: No antimicrobial activity found.

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Cryptolepis sanguinolenta* Schelechter (Asclepiadaceae)

C: ¹Guinea Bissau

²Ghana

ETHNOMEDICAL USES: ¹A root decoction of the plant has been used for treatment of various fevers, including hepatitis and the leaves have been used for the treatment of malaria or powdered as cicatrizant of wounds. In Ghana the plant is used for treatment of malaria and of urinary and upper respiratory tract infection.

²In Ghana it is used for treatment of various fevers including malaria.

BIOLOGICAL ACTIVITY: ¹Cryptolepine has hypotensive, antipyretic, antiinflammatory *in vitro* antibacterial and antimalaria effect cryptotheptine has antibacterial activity against gram-postive bacteria.

²Used in clinical treatment of urinary and upper respiratory tract infections.

Pharmacological activity of cryptolepine: Administration of cryptolepine HCL to dogs at a dose of 15-30 mg/kg produced hypothermia and decreased the hypertensive and renal vasoconstrictive actions of epinephrine. Ip injection of (120mg/kg) of the compound was lethal to guinea pigs in about 12 h.

-I.V. administration (5 mg/kg) of the alkaloid produced a marked and protracted hypotensive response in the vagotomized dog with a corresponding decrease in renal volume due to vasodilatation produced by the alkaloid.

-Extracts of the root inhibit the growth of *Neisseria gonorrhoea*, *Escherichia coli* and *Candida albicans* but not of *Pseudomonas aeruginosa*.

-Cryptolepine possesses hypotensive, anti-inflammatory, antibacterial, and vasoconstrictive activity. Some authors demonstrated that cryptolepine HCL is a noradrenoceptor antagonist in the isolated rat vas deferens and also inhibits (ip injection; 1-20mg/kg) carrageenan-induced hind paw edema in the rat.

CHEMICAL CONSTITUENTS: ¹Alkaloids: Indoloquinoline alkaloids cryptolepine, quindoline, cryptospirolepine, (spiro-noncyclic alkaloids), indole alkaloids: hydroxycryptolepine, cryptotheptine and cryptoqueindoline.

²Alkaloids: a doloquinoline alkaloid: Cryptolepine, a spiro-nonacyclic alkaloid: cryptolepine, a spiro-nonacyclic alkaloid: cryptospirolepine.

REFERENCES: ¹A. Paulo, E.T. Gomes and P.J. Houghton: New alkaloids from *Cryptolepis sanguinolenta*. *Journal of Natural Products*. **58**: 1485 – 1491, 1995.

²A.N.Tachie, G.L. Boye, M.H.M. Sharaf, P. L. Schiff Jr. R.C. Crouch, T.D. Spitzer, R.L. Johnson, J. Dunn, D. Minick and G.E. Martin: Cryptospirolepine: A unique spiro-nonaclenic alkaloid isolated from *cryptolepis sanguinolenta*: *Journal of Natural Products* **56**:653-670,1993.

BOTANICAL NAME: *Cryptocarya liebertiana*

C: South Africa, Zimbabwe.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: α -Pyrones e.g. cryptoflinone, ocobullenone (a neo lignan)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 261-265, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Cucumis sativus* (Cucurbitaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Antifeedant activity against larvae of *Nudauleiria belina* that feeds on *Mangifera indica* (Mango) and *Anacardium occidentale* (Cashewnut) at a concentration of 1% (Seeds, petroleum ether, dichlormethane and methanol extracts)

CHEMICAL CONSTITUENTS: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudauleiria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Cussonia arborea* (Araliaceae)

C: Tanzania

ETHNOMEDICAL USES: Medical and/ or repelling properties against insects.

BIOLOGICAL ACTIVITY: No activity against larvae of *Nudaulea belina* stem bark petroleum ether, methanol and dichloro methane extracts.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudaulea belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Cussonia spicata* Thumb. (Araliaceae)

C: Malawi

ETHNOMEDICAL USES: Barks from the plant and other species are used in the treatment of malaria. An infusion of the root is used for prevention of skin irritation and is antifebrile.

BIOLOGICAL ACTIVITY: Molluscicidal activity. Water extract of the stem bark showed an activity of 400ppm within 24 hours against *Biomphalaria glabrata* snails. When isolated, two saponins were found to contain activity of 12.5ppm and 100ppm.

Spermicidal activity against human spermatozoa at 1ppm and 3 ppm within 3 minutes for the saponins respectively.

CHEMICAL CONSTITUENTS: Saponins

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Custus vashaffelti* (Zingiberaceae)

C: Uganda

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: The ether extract of the rhizomes is toxic to nematodes ($ED_{50} = 10.38 \pm 1.05$) of the type *Pratylenchus brachyurus* a banana nematode.

CHEMICAL CONSTITUENTS: Ether extract from the rhizome contains steroids, terpenoids, emodin and reducing sugars.

REFERENCES: A.M. Kezimbira and O.Odyek: Toxicity tests of some plants on a banana nematode *Pratylenchus brachyurus*: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 93 - 100. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Cymbopogon citratus* Stapf. (Gramineae)

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Essential oil containing geraniol as main component. α -oxobisabolene etc.

REFERENCES: B. Abegaz, P.G. Yohannes and R.K. Dieter: Constituents of the essential oil of Ethiopian *Cymbopogon citratus* Stapf. *Journal of Natural Products* **46**:424-426, 1983

BOTANICAL NAME: *Cyphostemma cfr gigantophyllum* Descoings (Vitaceae)

Syn: *Cissus gingantophylla* Gilg & Brandt. *C. leucadenia* Suesseng

C: Tanzania

V: Nanyale

ETHNOMEDICAL USES: A decoction of the roots is used for uvulitis. Crushed leaves are applied to swellings.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 256 1983.

BOTANICAL NAME: *Cymbopogon nervatus* Chiov. (Gramineae)

C: Sudan

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: β -bergamotene has been reported to have antibiotic, antitumor and immunosuppressive activity.

CHEMICAL CONSTITUENTS: Oils: β -selinene, β -bergamotene, germacrene-D. P-menthadienols constitute about 90% of the essential oil, another sesquiterpenoid: β -bergamotene.

REFERENCES: B.M. Modawi, H.R.V. Magar, A.M. Satti, R.J.H. Duprey. *Journal of Natural Products* **47**:167-169, 1984.

BOTANICAL NAME: *Cyphostemma adenocaulis* Descoings (Vitaceae)

Syn: *Cissus adenocaulis* Steud. Ex A. Rich, *Cissus tenuicaulis* Chev. *Vitis tenuicaulis*

ETHNOMEDICAL USES: A decoction of the roots with *Hoslundia opposita* Vahl and lime is used for treatment of stomach pain and reduced excessive menstrual bleeding.

Boiled leaves applied externally on the head to treat migraine and mental illness and wound treatment.

Others: Roots: A decoction of tubers is used for treatment of syphilis, abdominal pain during pregnancy, joint disease. A paste from tubers is used as a poultice to draw out abscesses and reduce swellings. Roots: used as remedy for the prevention of abortion. Leaves used to treat swellings when it is applied locally. Poultice is used in the treatment of pneumonia. Infusion of roots used as purgative and swollen abdomen. Entire plant: For treating wounds.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 256 1983

BOTANICAL NAME: *Dacryodes mormandii* Aubrev et Pellegr.

C: Gabon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Yields only ursane and oleanane triterpenes. Contains 21-oxo-3,4-*seco*-olean-12-en-4(23),12dien-3-oic acid and the corresponding ursane.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 196, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Dalbegia lacteal* Vatke (Fabaceae)

C: Rwanda
V: Umhashya

ETHNOMEDICAL USES: Used in the treatment of abscess, rectal prolaps and as antiseptic.

BIOLOGICAL ACTIVITY: The extract has been tested for antiulcer activity but found to be inactive. Also tested for antimicrobial activity but no results given.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Dalbergia melanoxylon* Guill. & Perr. (**Papilionaceae**)

C: Tanzania
V: Mpingo

ETHNOMEDICAL USES: Decoction of the root is used against abdominal pain or hernia.

Others: Roots: A decoction is used against imminent abortion and gonorrhoea. Decoction used for abdominal pain, as an anthelmintic and as part of gonnorrhoea medicine. Root bark and stem are used as anti diarrheic, smoke from burning root is inhaled against head ache, rhinitis and bronchitis. Leavs: The juice is used against throat inflammations, cardiac trouble, amoebic dysentery, syphilis and gonorrhoea, relewve pain in the joints. Bark: Decoction is used for cleaning wounds.

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 239, 1983

BOTANICAL NAME: *Deinbollia borbonica* Scheff. (**Sapindaceae**)

C: Tanzania
V: Mpwapwaka

ETHNOMEDICAL USES: Powder of roots rubbed on the forehead to treat head ache. Decoction of the root with incense drunk against constipation. Decoction of the root is used against gonorrhoea and stomach ache and vomiting in infants. A soup from roots and unripe bananas is used to treat increased heart beat and nervousness. A decoction of the stem + roots of *Ximenia caffra* Sond is used against mental illness. Water extract of leaves + lime juice is used against dysenteric diarrhoea. Fresh leaves + chicken heart and little water is used against increased heartbeat and nervousness.

Others: Ground roots and leaves applied on wounds to facilitate healing. A decoction of the roots and leaf juice are used against mental illness and as sedative. Decoction of roots is used against worms and against tachycardia. Roots are used as remedy for stomach complaints and abdominal pains.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 248, 1983

BOTANICAL NAME: *Delphinium ajacis* L. (Ranunculaceae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: The root contains Norditerpenoid alkaloids: Ajadelphine, ajadelphinine, delcosine, delsoline, deltline, gigactonine, 18-methoxygadesine, delphisine.

REFERENCES: S.W. Pelletier, S. Bhandaru, H.K. Desai, S.A. Ross and H.M. Sayed: Two new norditerpenoid alkaloids from the roots of *Delphinium ajacis*: *Journal of Natural Products* **55**:736-743, 1992.

BOTANICAL NAME: *Dichatanthera corymbosa* Jack-Felix

C: Rwanda

V: Ikeba

ETHNOMEDICAL USES: Used for the treatment of dysentery.

BIOLOGICAL ACTIVITY: Leaf extract was tested for antiulcer activity and found to have no activity.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Dichrostachys cinerea* Wight et Arn *ssp. Africana*.
(Mimosaceae)

Syn: *Dichrostachys glomerata* Brenan & Brannmitte,
Dichrostachys glomerata Chiov *ssp glomerata* Brenan. *D. glomerata* Chiov *ssp nyassana* Brenan, *D. nyassana* Taub. *D. nutans* Benth *var grandiflora* Lanza, *D. platycarpa* Oliv. *Mimosacinerea glomerata* Forsk, *M. nutans* Pers.

C: ^{1,2}Tanzania

V: ¹Kikwetembe.

ETHNOMEDICAL USES: ¹Leaves chewed by the healer then given to patient to swallow for cure of poisoning. Snake bite (leaves chewed and decoct of the root applied on the bite).

Others: Roots mixed with food and eaten as aphrodisiac. Decoct is used as an astrigent to scorpion bite. Root used for chest complaints, leprosy and syphilis. It is diuretic and purgative. The smoke of the root is inhaled to treat pulmonary tuberculosis. The vapour of boiling root is used to treat mental diseases. Stembark: a decoction is drunk against elephantiasis, applied cold after circumcision to heal the wound. Skin infection, relieve post partum pain, emetic, diuretic, used against tooth decay. Leaves: juice used against leprosy, ash of leaves + oil for treatment of leprosy. The juice of leaf drunk against pneumonia. Extract of the leaves mixed with a little salt for conjunctivitis and

stomachache. Produces anaesthesia when applied locally, treatment of ulcers, gonorrhoea, indigestion and diarrhoea. Fresh leaves for the treatment of abscesses. A cold water infusion of powdered leaf applied into nose and mouth to relieve headache. Smoke of leaf for pulmonary tuberculosis. A decoction used for vaginal douche, catarrh, sore throat, colic, bronchitis, pneumonia and epilepsy. Aqueous extract of stem bark is used for treatment of furuncle and blemorrhoea.

²Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: ²Weak antifeedant activity against larvae of *Nudaulelia belina* from its petroleum extract and dichloromethane extracts of the stem bark.

CHEMICAL CONSTITUENTS: ¹Alkaloids, saponins (leaves and roots).

REFERENCES: ¹Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

²S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudaulelia belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Dicoma anamola* Sond. (Astraceae)

C: Rwanda

V: Umwanzurunya

ETHNOMEDICAL USES: Used in the treatment of wounds, leprosy, gastrointestinal pain.

BIOLOGICAL ACTIVITY: Extract from leaves shows antiulcer activity in albino rats at a dose of 500mg/kg plant extract then after 30 minutes, administration with indomethacin suspended in 0.5% carboxy methyl cellulose, sacrificed after 4 hours and stomachs examined for ulcers.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Diplolophium buchanani* Norman (Apiaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antifungal activity mainly due to oxypeucedanin comparable to miconazole. When tested in a larvicidal bioassay using *Aedes aegypti* larvae as target myristicin and oxypeucedanin were larvicidal at concentrations similar to that of the reference compound β -asarone.

CHEMICAL CONSTITUENTS: Phenyl propanoids, furanocoumarins, myristicin, elemicin, trans-isoelemicin, oxypeucedanin and oxypeucedanin hydrate.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Diospyros zombensis* White (Ebenaceae)

C: Malawi

ETHNOMEDICAL USES: It is used in Africa as a chewing stick. The plant is used in Malawi for the treatment of schistosomiasis

BIOLOGICAL ACTIVITY: Molluscicidal activity due to monodesmosidic saponins (3ppm within 24 hours).

CHEMICAL CONSTITUENTS: Flavonoid glycosides, naphthoquinones (7-methyl juglone) and isodiospyrin, saponins i.e. bidesmosidic saponins (inactive against *Biomphalaria glabrata*), monodesmosidic saponins (active against *Biomphalaria glabrata*).

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Diplolophium buchanam* Norman (Umbelliferae)

C: Malawi

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antifungal compounds in a tlc bioautography test using *Clasosporium cucumeinum*: Compounds 1-4 below have larvicidal activity against *Aedes aegypti*.

CHEMICAL CONSTITUENTS: Leaves contain phenylpropanoids: myristicin, elemicin and trans-isolemicin. Furanocoumarins, oxypeucedanin, and oxypeucedanin hydrate.

REFERENCES: A. Marston, K. Hostettmann and J.D. Msonthi: Isolation of antifungal and larvicidal constituents of *Diplolophium buchanani* by centrifugal partition chromatography. *Journal of Natural Products* **58**:128 – 130, 1995

BOTANICAL NAME: *Discopremna caloneura* (Pax) Prain (Euphorbiaceae)

C: Cameroon, Nigeria

ETHNOMEDICAL USES: In Nigeria the fruits are used for birth control in women. In Cameroon, the stembark is used for stomach disorders and infected sores.

BIOLOGICAL ACTIVITY: Tested for antileishmanial activity.

CHEMICAL CONSTITUENTS: Clerodane diterpene and labdane diterpenoids.

REFERENCES: T.Pierre, J.F. Ayafor and O.Sterner: Unsaturated diterpenoids from *Discopremna caloneura*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 79, Dar-es-Salaam*. University of Dar-es-Salaam

BOTANICAL NAME: *Dissotis senegambiensis* Gill et Perr (**Melastomaceae**)

C: Rwanda

V: Umumyu w'Intama

ETHNOMEDICAL USES: Used for treatment of herpes, yaws, wounds, epilepsy.

BIOLOGICAL ACTIVITY: Extract tested for antiulcer activity but found to have no activity.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Distemonanthus benthamianus* Baill. (**Caesalpinioideae**)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Flavonoid 5'-hydroxy-3,5,7,2',4'-pentamethoxy flavone, quercetine-3,5,3',4'-tetramethyl ether.

REFERENCES: E.N. Happi and T.N. Mpondo: Two polymethoxylated flavones from *Distemonanthus benthamianus*. *Journal of Natural Products*. **57**:291 – 293, 1994.

BOTANICAL NAME: *Dodonea viscosa* Jacq. (Sapindaceae)
Syn: *Ptelea viscosa* L

C: Tanzania
V: Njitwe

ETHNOMEDICAL USES: A decoction of the roots is used against irregular menstruation, periods, indigestion, peptic ulcers.

Others: Decoct of roots for stimulation of milk production in animal and man. Leaves: Used as atopic antipruritic in skin rashes, internally as febrifuge, against sore throat antirheumatic, against haemorrhoids. Chewed as a stimulant and has anaesthetic properties. Plant used as a fish poison. Suspect in death of calves and camels. Leaves as vermifuge and externally against dermatitis. Undidentified plant parts: Stomach disorders.

BIOLOGICAL ACTIVITY: An aqueous and ethanol extracts of the leaves exhibit cardioinhibitory and coronary constricting properties. Spasmolytic activity on smooth muscles, intestine and guinea pig uterus are also noted. The extract has also an antihypotensive effect, unaffected by atropine. Extract of the leaf has given negative antimalarial tests.

CHEMICAL CONSTITUENTS: Leaf contains an alkaloid glucoside, resins, flavonoids, sterols, and tannins, saponins, isorhamnetin-3-O-rutinoside, quercetin-3-O-galactoside, quercetin-3-O-rutinoside from leaves and pods. Hautriviatic acid, a diterpene carboxylic acid, has been isolated.

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 248, 1983.

BOTANICAL NAME: *Dolichos kilimandsharius* Taub. (Papilionaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Tubers induce molluscidal action against *Biomphalaria pfeifferi* snails N = 20 (LD₅₀ = 30 ppm, LD₉₅ = 99 ppm) minimum concentration for 100% mortality for WHO is 100mg/ml.

CHEMICAL CONSTITUENTS:

REFERENCES: D.H.K. Matemu: Natural Products as pesticides for the control of medical vectors: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 109 - 115. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Dolichos marginata ssp. Erecta* E.Mey (Bak.) Verd.
(Leguminosae)
Syn: *Sphenostylis erecta* E. Mey.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Fungicidal activity in the TLC assay using the spores of *Cladosporium cucumerinum* due to sphenostylins A-D. Activity due to inhibition of growth of fungus were 6.25µg, 10µg, 50µg and 20µg.

CHEMICAL CONSTITUENTS: Sphenostylins A-D (Active)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Dolichos trilobus* L. (Papilionaceae)
Syn: *Dolichos angolensis* Bak., *Dolichos debilis* A. Rich.
Dolichos falcatus Willd. *Dolichos schliebenii* Harms

C: Tanzania

ETHNOMEDICAL USES: Juice from leaves is boiled cooled and applied to the eye for treatment of cataract.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 239, 1983.

BOTANICAL NAME: *Dombeya cfr. cincinnata* K. Schum. (Sterculiaceae)

C: Tanzania

V: Mkwelengala

ETHNOMEDICAL USES: Decoction of the root is one of the ingredients in a remedy against dysmenorrhoea.

Others: The leaf and root are used in witchcraft.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 250, 1983.

BOTANICAL NAME: *Dombeya shupangae* K.Schum (Sterculiaceae)

Syn: *Dombeya spectabilis sensu sim.*

C: Tanzania

V: Gare

ETHNOMEDICAL USES: A decoction of the roots is used against amenorrhoea. Dried powder stem bark is taken in tea for stomach pains or constipation.

Others: Dried powdered leaves are applied in wounds to facilitate healing. Juice of leaves drunk to prevent abortion.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 250, 1983.

BOTANICAL NAME: *Dorstenia poinseffifolia* var *angusta* Engl. (Moraceae)

C: Cameroon

ETHNOMEDICAL USES: Leaves of the plant are used for the treatment of yaws and infected wounds.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Geranylated flavononoids: Poinsettifolin-A and Poinsettifolin-B, 5,7,4-trihydroxy-8-dimethyl allylflavone, 4,2,4,6-tetrahydroxy-5-methyl allyl chalcone and 2,4,6-trihydroxy-4,5-O-dimethyl pyranochalcone, triterpenes, carotenoid.

REFERENCE: J.F. Ayafor, O.Sterner, A.Tsopmol, P. Kamnaing and D. Ngnokam: Geranylated flavonoids from *Dorstenia poinseffifolia*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 52, Dar-es-Salaam*. University of Dar-es-Salaam

BOTANICAL NAME: *Ectiadiopsis oblongifolia* Schlecht (Periplocaceae)

C: Malawi

ETHNOMEDICAL USES: In West Africa it is used as an aphrodisiac, in stomach diseases and pains.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Xanthone pigments

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 180-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Ekebergia benguelensis* (Meliaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: No antimalarial activity

CHEMICAL CONSTITUENTS: Coumarines, polyhydroxysequalene

REFERENCES: M.H.H. Nkunya, S.A. Jonker: Antiprotozoan and other natural products from Tanzanian lians, shrubs and small trees. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 4-5, Dar-es-Salaam*. University of Dar-es-Salaam.

BOTANICAL NAME: *Ekebergia capensis* Sparrm (Meliaceae)

C: ^{1,2}South Africa

ETHNOMEDICAL USES: ¹The bark is used as an emetic and in the treatment of dysentery and for tanning. An extract of the root relieves headaches, chronic coughs. Leaves for intestinal worms, used in child birth.

²Used during childbirth

BIOLOGICAL ACTIVITY: ¹Extracts have uterotonic properties.

²Extracts from the plant have shown it to have uterotonic properties.

CHEMICAL CONSTITUENTS: ¹Leaves have yielded kaempferol 3-O-glucoside, lupeol. The bark yielded methyl-2,4,-dihydroxy-3,6-dimethyl benzoate, sitosterol, lupeol, oleanolic acid and 3-*epi*-oleanolic acid. Seeds contain ekebergin and capnosolactones (limonoids), sucrose, β -sitosterol and its palmitate and oleate esters, oleanolic acid, lupeol and 3-*epio*leanolic acid

²Triterpenoids, β -sitosterol, palmitate and oleate esters of β -sitosterol, oleanolic acid, lupeol and 3-*epio*leanolic acid. (wood and bark). The seed has yielded limonoids, such as capnosolactones A and B

REFERENCES: 1. K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 204-205, 1996. University of Zimbabwe Publications. Harare.

2. D.A. Mulholland. The chemistry of South African *Ekebergia* species. *Natural Products Research Network for Eastern and Central Africa*. Seventh NAPRECA symposium on Natural Products, 17-22 August 1997. Dar-es-Salaam. Tanzania. University of Dar-es-Salaam.

BOTANICAL NAME: *Ekebergia pterophylla* Hofmeyr (Meliaceae)

C: ^{1,2}South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹The seeds have yielded pterianin, ekebergin and ekebergolactones. The leaves: lupeol. 5-methyl coumarins (bark and wood) methyl ether of tartaric acid, sitosterol, oleanic acid, β -amyrin, β -amyrone and the coumarins pterophyllin 1 and 2. Pterophyllin 3,4,5 and 6 have been isolated from the bark.

²Furano and pyranocoumarin (Bark and wood), and limonoids of the ekebergin-type.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 206, 1996. University of Zimbabwe Publications. Harare.

²D.A. Mulholland: The chemistry of South African *Ekebergia* species: Natural Products Research Network for Eastern and Central Africa. Seventh NAPRECA symposium on Natural Products. 17 – 22 August 1997, Dar-es-Salaam, Tanzania. P 6.

BOTANICAL NAME: *Embelia schimperi* Vatke (Myrsinaceae)

C: Tanzania

ETHNOMEDICAL USES: Used as an anthelmintic.

BIOLOGICAL ACTIVITY: The extracts of this plant at 10mg/kg dose rate exhibited slightly hypotensive activity for 40 minutes. It also strongly suggested the extract to exhibit adrenergic α -blocker action. A dose of 25mg/kg produced abrupt fall in blood pressure.

CHEMICAL CONSTITUENTS:

REFERENCES: M.M.J. Minja: Acute toxicity and cardiovascular activity of three Tanzanian Medicinal Plants: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 93 - 100. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Emex spinosus* (Polygalaceae)

C: Kenya, Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity (leaves) on *Saccharomyces cerevisiae*

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Entandrophragma caudatum* Sprague (Meliaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY

CHEMICAL CONSTITUENTS: The bark contains phragmalin esters, on hydrolysis give phragmalin. The wood contains entandrophragmin (a limonoid). The seed yields protolimonoids melianone, 3-*epi*-melianol and phragmalin esters.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 199-202, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Entandrophragma spicatum* Sprague (Meliaceae)

C: Angola

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Timber contains entandrophragmin, spicatin (a protolimonoid)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 200, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Epinetrum cordifolium* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL MEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Cycleanine, isochndodendrine, norcycleanine (roots, stems and leaves)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.69,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Epnetrum mangelotii* (Menispermaceae)

C: Nigeria

ETNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Cycleanine, isochondodendrine, norcycleanine (roots, tems and leaves)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.69,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Epinetrum villosum* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

CHEMICAL CONSTITUENTS: Alkaloids: Cycleanine, isochondodendrine, norcycleanine (roots, stems and roots)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.70,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Erythrina abyssinica* (Leguminosae)

C: Kenya, Tanzania

ETHNOMEDICAL USES: Used as a medicinal plant for ailments like Malaria and syphilis.

BIOLOGICAL ACTIVITY: Broad activity at 100 µg/ml (root bark)

CHEMICAL CONSTITUENTS: Pterocarpans: erythrabyssins I, II; flavonones: Abyssinones I, II, III, VI and V; chalcones: Abysinone IV. Pterocarpans: Phaseolin, and phaseollidin.

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Erythrina acanthocarpa* (Papilionoideae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Protein inhibitors due to DE-1 and DE-2 . DE-2 inhibits α -chymotrypsin strongly and has no action on trypsin.

CHEMICAL CONSTITUENTS: DE-1 and DE-2 contain 163-164 amino acids (Molecular weight 18000) including 4 half-cystine residues.

REFERENCES: F.J. Joubert: Purification and some properties of two proteinase inhibitors from *Erythrina acanthocarpa* seed: Journal of Natural Products **45**:427-433, 1982.

BOTANICAL NAME: *Erythrina burana* Chiov. (Fabaceae)

C: Ethiopia (only)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Exhibited moderate but selective activity towards DNA repair-deficient yeast mutants. Phaseollidin was found to be cytotoxic.

CHEMICAL CONSTITUENTS: Pterocarpans (Barks): Phaseollidin, cristacarpin. Alkaloids from seeds; erythraline, erythratidine and erythrinine.

REFERENCES: E.Dagne, A.A.L. Gunatilaka, D.G. I. Kinston, M. Alemu, G. Hofmann, and R. K. Johnson: Two bioactive pterocarpans from *Erythrina burana*. *Journal of Natural Products*. **56**: 1831-1834, 1993

BOTANICAL NAME: *Erythrina burttii* Ad

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: From stem bark, flavones: Abyssionone V-4' methyl ether and burtinone, abyssionone V-neorautenaol, bildwillon (isoflavanone), isobavachalcone, erythrinasinatate (cinnamyl ether)

REFERENCES: J.O Midiwo, A. Yenesew and M.G. Peter: Flavonoids from the bark of *Erythrina burttii* and *E. saculeuxii*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p.8, Dar-es-Salaam*. University of Dar-es-Salaam.

BOTANICAL NAME: *Erythrina eriotricha* (Leguminosae)

C: ^{1,2}Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹From stem bark: Flavones: 3-prenylnaringenin; isoflavones: 8-prenylluteone, 2'-hydroxy-5'-methoxybiochanin A. 6,8-diprenylgenistein, 6,8-diprenylorobol, auriculatin, auriculasin, dihydroauriculatin, warangalone, abyssinone V and erythrinassinatate B.

²Flavonoids from the stem bark: Erythrinasinatate, abyssinone V; 3'-prenylnaringenin and 2'-hydroxy-5'-methoxybiochanin A.

REFERENCES: ¹A.E. Nkengfack, Z.T. Fomum: New prenylated flavonoids from *Erythrina eriotricha*: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 200. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

²A.E Nkengfack, D.R. Sanson, M.S. Tempesta and Z.T. Fomum: Two new flavonoids from *Erythrina eriotricha*: *Journal of Natural Products* **52**:320-324, 1989.

BOTANICAL NAME: *Erythrina excelsa*

C: Kenya, Tanzania.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: No antimicrobial activity even at 500 µg/ml (root bark)

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Erythrina indica* (Leguminosae)

C: Cameroon

ETHNOMEDICAL USES: Used in the treatment of trachoma, elephantiasis and microbial infections.

BIOLOGICAL ACTIVITY: Antimicrobial due to 3-phenylcoumarin, indicamine A. Microorganisms tested were *Staphylococcus aureus* 209P, *Escherichia coli* RL 265 and *Mycobacterium smegmatis* ATCC607 (*in vitro*)

CHEMICAL CONSTITUENTS: 3-phenylcoumarin, indicanine A, robustin acid, daidzein (rootbark), indicanine B, indicanine C (isoflavone), 5,4-di-O-methyl alpinumisoflavone and cajanin.

REFERENCES: A.K. Waffo, G.A. Azebaze, A.E. Nkengfack, Z.T. Fomum, M. Meyer, B. Bodo, F.R. Van Herden: Indicamine B and C, two isoflavonoid derivatives from the root bark of *Erythrina indica*. *Phytochemistry* **53**:981 – 985, 2000.

BOTANICAL NAME: *Erythrina saculeuxii*

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Stem bark; Sacleanone-A (isoflavanone), isoflavones: 2',5'-dimethoxybiochanin A, 3'-prenyl biochanin A, 3-hydroxy-5'-prenylbiochanin A and sacleanone B.

REFERENCES: J.O Midiwo, A. Yenesew and M.G. Peter: Flavonoids from the bark of *Erythrina burttii* and *E. saclexii*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p.8, Dar-es-Salaam*. University of Dar-es-Salaam.

BOTANICAL NAME: *Erythrina senegalensis* DC. (Leguminosae)

C: ¹Cameroon
^{2,3}Nigeria

ETHNOMEDICAL USES: Used in the treatment of infertility, stomach pain and gonorrhoea.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹Stem bark contains prenylated isoflavones: Erysenegalensein B and erysenegalensein C.

²Prenylated flavonone: Senegalensein.

³Prenylated isoflavanone: 2,3-dihydroauriculatin, auriculatin, 6,8-diprenylgenistein.

REFERENCES: ¹J. Wandji, Z.T. Fomum, F. Tillequin, F. Libot and M. Koch: Erysenegalensein B and C, two new prenylated isoflavanones from *Erythrina senegalensis*. *Journal of Natural Products*: **58**:105 – 108, 1995.

²Z.T. Fomum, J.F. Ayafor and J. Wandji: Senegalensein, A novel prenylated flavanone from *Erythrina senegalensis*; *Journal of Natural Products* **50**: 921-922, 1987.

³R.B. Taylor, D.G. Corley, M.S. Tempesta, Z.T. Fomum, T.F. Ayafor, J. Wandji and P.N. Ifeadike: 2,3-dihydroauriculatin, a new prenylated isoflavone from *Erythrina senegalensis*, application of the selective INEPT technique: *J. Natural Products* **49**: 670-673, 1986.

BOTANICAL NAME: *Erythrina sigmoidea* Hua (Leguminosae)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Prenylated flavonoids: Sigmoidin D and sigmoidin C.

REFERENCES: R. Promsattha, M.S. Tempesta, Z.T. Fomum, J.F. Ayafor and J.T. Mbafor: Sigmoidin D: A new prenylated flavone from *Erythrina sigmoidea*: *Journal of Natural Products* **49**: 932-933, 1986.

BOTANICAL NAME: *Erythrina sigmoidea* Hua (Fabaceae)

C: ^{1,2,3}Cameroon

ETHNOMEDICAL USES: ¹Extracts of leaves, barks and roots are used for treating various diseases including microbial infections.

²Treatment of female infertility, stomach pain and gonorrhoea.

BIOLOGICAL ACTIVITY: ¹Neobavaisoflavone exhibited significant antibacterial potency *in vitro* against *Staphylococcus aureus*.

²The dichloromethane extract of the root bark is active against *Staphylococcus aureus*. Neobavaisoflavone shows significant *in vitro* antibacterial activity against *Staphylococcus aureus* (MIC = 3.2 µg/ml) and antifungal activity against *Aspergillus fumigatus* and *Cryptococcus neoformans* (MIC = 50 µg/ml).

CHEMICAL CONSTITUENTS: ¹Sigmoidin H (isoflavanone) and 4-hydroxy coumesterol, erythrabyssin II, Phaseollin, abyssinone IV, abyssinone II and neobaraisoflavone.

²Rootbark contains isoflavone, sigmaidin J, a coumestan derivative. Sigmoidin K, also contains neorautenol (pterocarpan) and erythrinassinate B, erythrabyssin II and neobavaisoflavone.

³Stem bark contains Bisprenylated flavone: (-)- Sigmoidin E and abyssinone V.

REFERENCES: ¹A.E. Nkengfack, T.Vouffo, M. Meyer and T. Fomum, A novel isoflavone and a coumestan from *Erythrina sigmoidea*. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 79-80. Printed by EMPDA - Ethiopia

²A.E. Nkengfack, T.W. Vouffo, J.C. Vardamides, Z.T. Fomum: Sigmoidins J and K, two new prenylated isoflavonoids from *Erythrina sigmoidea*. *Journal of Natural Products* **57**:1172 – 1177, 1994.

³R. Promsattha, M.S. Tempesta, Z. Tanee Fomum and J.T. Mbafor: (-)- sigmoidin E: A new prenylated flavonoid from *Erythrina sigmoidea*. *Journal of Natural Products* **51**:611-613, 1988.

BOTANICAL NAME: *Erythrococca kirkii* Prain (Euphorbiaceae)

Syn: *Cladoxylon kirkii* Mull Arg. *Erythrococca mitis* Pax

C: Tanzania

V: Mnyembeule

ETHNOMEDICAL USES: A decoction of the toots together with roosts of *Ehretia amoena* Klotzsch is drunk against fevers with convulsions in children.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Eucalyptus sp.* (Myritaceae)

C: Tanzania

ETHNOMEDICAL USES: Medical and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Antifeedant activity from dichlormethane and methanol extracts of the stem bark against larvae of *Nudauleria belina*.

CHEMICAL CONSTITUENTS: Saponis, tannins, sterol glycosides (Cardiotonics) and anthrocyanosides.

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Euclea divinorum* Hiern. (Ebenaceae)

Syn: *Euclea keniensis* R.E.Fries, *E. willensis* Gurk., *E. lanceolata* auct. non. *E. mey*

C: Tanzania

V: Mdala va shasi

ETHNOMEDICAL USES: A piece of root is boiled with 7 pieces of sugar cane and the decoction is drunk against stomach pains or constipation.

Others: Roots decoction + roots of *Croton megalocarpus* treats chest pain, pneumonia, internal body swellings. Soup of root and bark is purgative, it is also a worms medicine and tonic.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Eugenia caryophyllata* Thunberg (**Myrtaceae**)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Essential oils can be potential source for the discovery of natural anticarcinogenic agents using GST enzyme assay.

CHEMICAL CONSTITUENTS: β -Caryophyllene, β -caryophyllen oxide, α -humulene, α -humulene epoxide, eugenol.

REFERENCES: Guo-Qiang Zheng, P.M. Kenny and L.T. Lam: Sesquiterpenes from clove (*Eugenia caryophyllata*) as potential anticarcinogenic agents: *Journal of Natural Products* **55**: 999-1003, 1992.

BOTANICAL NAME: *Euphorbia candelabrum* Tramaux (**Euphorbiaceae**)

Syn: *Euphorbia calycina* N.E. Br., *E. murieli* N.E. Br.

ETHNOMEDICAL USES: Roots boiled with chicken or fatty meat, decoction drunk against general stomach pains and treat infertility.

Others: Latex is used as an arrow poison as an emetic in the treatment of snake and to treat eye tumors. A decoction of stems is given to women after childbirth to clear out the afterbirth, the latex is used as a drastic laxative (dose 2 drops in porridge)

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Euphorbia coerulescans* Haw. (Euphorbiaceae)

C: South Africa

V: Soetnoor

ETHNOMEDICAL USES: Highly attractive to honeybee therefore used by beekers as an inexpensive means to feed bees but honey obtained from bees which feed on this has strong burning sensation in the mouth and throat. It increases on drinking water. It is an animal fodder.

BIOLOGICAL ACTIVITY: Irritant activity registered as to be used as honey plant in South Africa.

CHEMICAL CONSTITUENTS: Mono and diesters of 12-deoxy phorbol (tiglane type): 12-Deoxy-16-hydroxyphorbol-13-angelate-16-(2-methylbutyrate)

REFERENCES: S.Sosath, H.H.Ott and E. Hecker: Irritant principles of the sprunge family (Euphorbiaceae) XIII. Oligocyclic and macrocyclic diterpene esters from lattices of some *Euphorbia species* utilized as source plants of honey: *Journal of Natural Products* **51**:1062-1074, 1988.

BOTANICAL ACTIVITY: *Euphorbia heterochroma* Pax (Euphorbiaceae)

Syn: *Euphorbia impervia* Berger, *E. stulmanii* Schweinf.

C: Tanzania

ETHNOMEDICAL USES: A decoction of fresh roots and stems is drunk for cough and to treat tuberculosis.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Euphorbia hirta* L. (Euphorbiaceae)

ETHNOMEDICAL USES: In Mali it is used to treat diarrhoea, dysentery and asthma.

In Ghana the leaves are used in sore and wound healing.

In Malay peninsula and Liberia, the latex is used in treating conjunctivitis and ulcerated cornea.

BIOLOGICAL ACTIVITY: Anti ulcer due to protocatechic acid and gallic acid, stops the amoebic dysentery epidemic. Dose one bag (10g of powdered plant) three times a day.

CHEMICAL CONSTITUENTS: The plant contains flavonoids, triterpenes, mucilage and some acids e.g. ellagic acid, tannins, leucoanthocyanins, sterols, coumarins, sugars, volatile oils, fatty acids, alkaloids, phenyl acetate-13-deoxy-12-hydroxy-4-phorbol

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 101, 238-239, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Euphorbia kamerunica* Pax (Euphorbiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Triester of ingol: 3,12-diacetyl-ingol-7-tigliate

REFERENCES: K.A. Abo and F.J. Evans, a triester of ingol from the latex of *Euphorbia kamerunica*. *Journal of Natural Products* **45**:365-366, 1982.

BOTANICAL NAME: *Euphorbia lateriflora* Schun & Thonner

C: Nigeria
V: Enukokure

ETHNOMEDICAL USES: Latex used as a cure for ringworm and in dilute aqueous solution as a purgative.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Jatrophone diterpenoid: Enukokurin.

REFERENCES: C.O. Fakunle, J.D. Connolly, D.S. Rycroft: The structure of enukokurin, a new jatrophone diterpenoid from the latex of *Euphorbia lateriflora* : *Journal of Natural Products* **52**:279-283, 1989.

BOTANICAL NAME: *Euphorbia ledienii* Berg. (Euphorbiaceae)

C: South Africa
V: Suurnoors

ETHNOMEDICAL USES: Highly attractive to honeybees therefore used by beekeepers as an inexpensive means to feed bees, but honey obtained from bees which feed on this has a strong, burning sensation in the mouth and throat; it increases on drinking water.

BIOLOGICAL ACTIVITY: Irritant activity. Registered to be used as honey plant in South.

CHEMICAL CONSTITUENTS: 12-deoxyphorbol and 12-deoxy-16-hydroxyphorbol esters (tiglane type): 12-deoxyphorbol-13-isobutyrate, 12-deoxyphorbol-13-tiglate, 12-deoxyphorbol-13-(2-methyl butyrate), 12-deoxyphorbol-13-isobutyrate-20-acetate, 12-deoxyphorbol-13-tiglate-20-acetate, 12-deoxyphorbol-13-(2-methylbutyrate)-20-acetate, 12-deoxy-16-hydroxyphorbol-13-angelate-16-isobutyrate, 12-deoxy-16-hydroxyphorbol-13-angelate-16-isobutyrate-20-acetate, 12-deoxy-16-hydroxyphorbol-13-angelate-16-(2-methyl butyrate)-20-acetate, Incol-7,8,12-acetate, ditiglate. Incol-3,7,8-acetate, 2-methylbutyrate, tiglate, Incol-3,7,8,12-diacetate(2methylbutyrate)ditiglate, Incol-3,7,8,12-triacetate,tiglate.

REFERENCES: S.Sosath, H.H.Ott and E. Hecker: Irritant principles of the sprunge family (Euphorbiaceae) XIII. Oligocyclic and macrocyclic diterpene esters from lattices of some *Euphorbia species* utilized as source plants of honey: *Journal of Natural Products* **51**:1062-1074, 1988.

BOTANICAL NAME: *Euphorbia quinqueostata* (Euphorbiaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Evaluated for phorbol dibutyrate receptor binding (PDBu) test system demonstrated higher potency ($IC_{50} = 0.014 \mu\text{g/ml}$)

CHEMICAL CONSTITUENTS: Ingenane diterpene: $3\beta,4\beta,5\beta,17$ -tetrahydroxy-1,6-ingenadien-9-one 20 hexadecanoate; ent-atisane diterpene: ent- $16\alpha,17$ -ihydroxy atis 3-one and $3\beta,16\alpha,17$ -trihydroxyatisane. 22'-dihydroxy-4,6-dimethoxy-3-methylacetophenone.

REFERENCES: Z.H. Mbwambo, S.K. Lee, E.N. Mshiu, J.M. Pezzuto and A.D. Kinghorn: Bioactive constituents from stem wood of *Euphorbia quinquecostata* and *Meroneuron cucullatum*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 73, Dar-es-Salaam*. University of Dar-es-Salaam

BOTANICAL NAME: *Euphorbia tirucalli* L. (Euphorbiaceae)

C: Rwanda

V: Umuyenzi

ETHNOMEDICAL USES: Used for the treatment of bronchitis, cough and as antimalarial.

BIOLOGICAL ACTIVITY: Tested for antiulcer activity and found to be inactive.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Euphorbia tringularis* Desf. (Euphorbiaceae)

C: South Africa

V: Riviernaboom

ETHNOMEDICAL USES: Hihly attractive to honeybees, therefore used by beekeepers as an inexpensive means of feeding honeybees but honey obtained form bees which feed on this has stornng burning sensation in the mouth and throat, it increases on drinking water.

BIOLOGICAL ACTIVITY: Moderate skin irritant activity due to diterpenes. Potent tumor promoter of mouse skin. Latex of this plant used as an inferior source of rubber for manufacture of chewing gum.

CHEMICAL CONSTITUENTS: Diterpene esters of 12-deoxyphorbol (tigliane type): 12-Deoxyphorbol-13-acetate.

REFERENCES: S.Sosath, H.H.Ott and E. Hecker: Irritant principles of the sprunge family (Euphorbiaceae) XIII. Oligocyclic and macrocyclic diterpene esters from lattices of some *Euphorbia species* utilized as source plants of honey: *Journal of Natural Products* **51**:1062-1074, 1988.

BOTANICAL NAME: *Fagara chalybea* (Rutaceae)

C: Kenya, Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity.

CHEMICAL CONSTITUENTS: Alkaloids N-methyl flindersine and flindersine

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Fagara holtziana* (Rutaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity

CHEMICAL CONSTITUENTS: Alkaloids: N-methyl flindesine and flindersine.

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Fagara macrophylla* Engl. (Rutaceae)

Syn: *Zanthoxylum macrophyllum* Miq., *Zanthoxylum gilletti*

C: ¹Guinea, ²Nigeria ³Ghana ⁴Tanzania and Kenya

ETHNOMEDICAL USES: ¹Used as fish poison and arrow poison.

BIOLOGICAL ACTIVITY: ¹Toxicity to *Artemia salina* (bark Et OAc) LD₅₀ =3.3 µg/ml. Cytotoxicity against lung tumor cells (IC₅₀ = 33.8µg/ml. The Et Oac extract tested at NCI against HIV virus showing a "moderate activity" (EC₅₀ =23.4µg/ml, IC₅₀ =57.1µg/ml). Activity of pure chemical compounds range from 2.4=89.2µg/ml. Sesamine

is known as an insecticidal synergist and inhibits the growth of *Bombax mori*, arborinine has antispasmodic activity.

²Attracts insects.

³Alkaloids isolated have a potent activity against P-388 mouse leukemia.

⁴No antimicrobial activity found

CHEMICAL CONSTITUENTS: ¹Furoquinoline alkaloids: skimmianine, benzo[c]phenanthridine alkaloids, neutral compounds N-isobutylamides, (-)-sesamin, N-isobutylamide-sanshool, 1-hydroxy-3-methoxy-N-methyl-acidone, arborinine, xanthoxoline, 1-hydroxy-3-methoxy-acuridone.

²Terpene hydrocarbons, aldehydes, ketones, and scopoletin, volatile oils components listed.

³Benzo[c]phenanthridine alkaloids: Nitidine chloride, 6-oxynitidine, 6-methoxy-5,6-dihydronitidine (may be artifact formed from nitidine chloride).

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 238-251, 1996. University of Zimbabwe Publications. Harare.

²J. Reisch, D. Bergenthal, S.K. Adesina, D.D. Akinwusi and A.O. Olatunji: Constituents of *Fagara macrophylla* and *Zanthoxylum rigidifolium* pericarps: *Journal of Natural products* **49**:119 – 1171, 1986.

³M.E. Wall, M.C. Wani and H. Taylor: Plant antitumor agents, 27. Isolation, structure and structure activity relationships of alkaloids from *Fagara macrophylla*: *Journal of Natural Products* **50**:1095-1099, 1987.

⁴ M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Fagaropsis angolensis* Dale (Rutaceae)

Uganda

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: dihydrochelerythrine, dihydronitidine, dihydrosanguinarine, 6-hydroxymethyldihydronitidine; limonoids.

REFERENCES: S.A. Khalid and P.G. Waterman, 6-hydroxymethyldihydronitidine from *Fagaropsis angolensis*: *Journal of Natural Products* **48**:118-119, 1985.

BOTANICAL NAME: *Ficus cfr. vogelii* Miq. (Moraceae)

Syn: *Ficus kaba* De Wild. *F. senegalensis* Miq., *Urostigma vogelii* Miq.

ETHNOMEDICAL USES: Decoction of roots drunk against hernia.

Others: Infusion of bark for leprous ulcers, stomachic, astrengent antidiarrhoeic and antidyenteric, decocti of bark against diarrhoea and colic. Used in preparations against sterility.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Funtumia elastica* Stapf. (Apocynaceae)

C: Zaire

ETHNOMEDICAL USES: Leaves are used in the treatment of haemorrhoids. The latex of the stem is used for washing wounds.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Seeds contain alkaloids, Irehdiamine A,B,C and D, as major alkaloids and 3 β , 20 β epimer of irehdiamine I, conamine conessine and N,N'-tetramethylhorrhimine as minor alkaloids.

From leaves, alkaloids irehine, irehdiamine A, irehdiamine B, konkurchine and irehamine.

REFERENCES: M.D.L Totela and P. Foche. Minor alkaloids of the seeds of *Funtumia elastica* of Zaire. *Planta Medica* **35**:48-50, 1979.

BOTANICAL NAME: *Garcinia epunctata* Staff. (Guttiferae)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Flavonol; Taxifolin 6-C-glucoside.

REFERENCES: J.T. Mbafor, Z.T. Fomum, R. Promsattha, D.R. Sanson and M.S. Tempesta: Isolation and characterization of taxifolin 6-C-glucoside from *Garcinia epunctata*: *Journal of Natural Products* **52**:417-419, 1989.

BOTANICAL NAME: *Garcinia kola* Heckel (Guttiferae)

C: Nigeria

ETHNOMEDICAL USES: Used for the treatment of coughs, mouth infections. Treatment of liver disorders. Served as adjuvant to the true cola nut. Aphrodisiac, treatment of diarrhoea and dysentery.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Seeds: Triterpenes, xanthenes and biflavonoids, flavonoids: apigenin-5,7,4' trimethyl ether, apigenin-4'methylether and fisetin. Biflavonoids: Amentoflavone, kolaflavanone I-3'-II-3-I-4'-I-5-II-5-I-7-II-&=7-octahydroxy-II-3'-methoxy-3/8''-biflavone and GBI II-3-I-4'-II-4'-I-5-II-5-I-7-heptahydroxy-3/8''-biflavone.

REFERENCES: M. Iwu and O. Igboko: Flavonoids of *Garcinia kola* seeds: *Journal of Natural Products* **45**:650-651, 1982.

BOTANICAL NAME: *Gardenia jovis tonantis* (Rubiaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects

BIOLOGICAL ACTIVITY: No antifeedant activity against larvae of *Nudauleria belina* from stem bark extract.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Gnidia kraussiana* Meissin (Thymelaeaceae)

ETHNOMEDICAL USES: Roots, stems and leaves are used as mulluscidal agents, arrow poisons (extracts), fish poison and homicida poison. Decoction of the root for abdominal pain, sore throat, purgative, wounds, burns and snake bites.

BIOLOGICAL ACTIVITY: Antileukemic activity (P-388, ED₅₀ less than 10⁻³ µg/ml) activity in the P-388 lymphcytic leukemia system in cell culture gridilatin NSC-266489, ED₅₀ less than 10⁻³ µg/ml, gnidilatin NSC-261422, ED₅₀ less than 10⁻³ µg/ml, Excoecaria toxin, NSC-363005, ED₅₀= 0.00024 µg/ml, Pamelea factor P₂, NSC-334694, ED₅₀ = 0.0023 µg/ml, kraussianin, NSC-363005, ED₅₀ =0.00078 µg/ml.

CHEMICAL CONSTITUENTS: Daphnane esters, gnidilatin, gnidlatidin, expecarcia toxin, Pimelea factor P₂, krausianin (daphnane esters)

REFERENCES: R.P. Borris and G.A. Cordell: Studies of the thymelaeaceae II. Antineoplastic principles of *Gnidia kraussiana*: *Journal of Natural Products* **47**:270-278, 1984.

BOTANICAL NAME: *Grewia forbesii* Mast ex Harv. (Tiliaceae)

Syn: *Grewia latiunguiculata* K. Schum, *Grewia pilosa* var *glandifolia* Kuntze

C: Tanzania

V: Mkole

ETHNOMEDICAL USES: Leaf extract mixed with oil and drunk for treatment of bloody stools accompanied by stomach pains. Decoction of roots mixed with roots of mvumbasha given to children to treat convulsions.

Others: A decoction is used against ascaris and together with juice of the leaves as an aphrodisiac. Decoction of roots is drunk against lumbago and stiff neck. Leaves: Juice of leaves is drunk and also rubbed on the body in the treatment of malaria.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 252, 1983.

BOTANICAL NAME: *Cfr Grewia goetzeana* K. Schum. (Tiliaceae)

Syn: *Grewia pedicellata* K. Schum.

C: Tanzania

ETHNOMEDICAL USES: A decoction of fresh root mixed with roots of *Premna chrysoclada* Guerke is drunk against mental illness.

Others: Roots are used for glandular disorders.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 252, 1983.

BOTANICAL NAME: *Grewia plagiophylla* K. Schum (**Tiliaceae**)

C: Tanzania

V: Mkongodeka

ETHNOMEDICAL USES: Vapours from boiling leaves for fumigation of patients with mental illness characterized by hallucinations also decoction from leaves and roots.

Others: Decoction of roots as a remedy for kidney trouble and gonorrhoea. Root is used as an ingredient in remedy for bubonic plague. Leaves: Infusion is used against stomachache. Fibres in water are used for washing an eye affected by an irritating substance such as pepper.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 252, 1983

BOTANICAL NAME: *Guizotia scabra* (Vis) Chlov. (**Astraceae**)

C: Rwanda

V: Igishikashike

ETHNOMEDICAL USES: Gastrointestinal pain, hepatitis, fever and abortive.

BIOLOGICAL ACTIVITY: Leaf extract tested for antihepatotoxic and antiulcer activity. Showed no activity in both.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Hagenia abyssinica* (Bruce) Gmel. (**Rosaceae**)

C: ¹Ethiopia. V: Koso
²Tanzania and Kenya

ETHNOMEDICAL USES: ¹A suspension of the flowers in water is drunk to expel *Taenia saginata*, a beef tapeworm.

BIOLOGICAL ACTIVITY: ¹Toxicity on frogs (lethality tests). High toxicity on mice and chicks.

²Antimicrobial activity against *Bacillus subtilis* (Leaves)

CHEMICAL CONSTITUENTS: ¹Kosotoxin

REFERENCES: ¹E. Dagne and D. Abate: Bioactive compounds from plants and fungi of Ethiopia. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 33-34. Printed by EMPDA – Ethiopia.

²M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993

BOTANICAL NAME: *Hannoa chlorantha* Planch. (Simaroubaceae)

C: Angola

ETHNOMEDICAL USES: Used in Angolese traditional medicine.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Quassinoids: 14-hydroxychapparinone, undulatone, desacetylundulatone, chapparinone, klaineanone and 11-dehydroklaineanone.

REFERENCES: C. Diakanamwa, B. Diallo, R. Vanhaelene-Fastre, M. Vanhaelen and R. Ottinger: 14-hydroxychapparinone, a new quassinoid form *Hannaa chlorantha*. *Journal of Natural Products* **56**:1817-1820, 1993.

BOTANICAL NAME: *Harungana madagascariensis* Lam ex Porr¹(Clusiaceae)
²(Guttiferae)

C: ¹Rwanda

V: ¹Umshayishayi

C: ²Tanzania and Kenya

ETHNOMEDICAL USES: Antimalarial

BIOLOGICAL ACTIVITY: ¹Stem extract tested for antitrichomonas and antitrypanosoma activities, but no results given. The same extract was tested for antiulcer activity and found to be slightly active.

²Antimicrobial activity on *Bacillus subtilis* (root)

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Harrisonia abyssinica* Oliv. (Simaroubaceae)

Syn: *Zanthoxylum guineense* Stapf, *Harrisonia occidentalis* Engl.

C: Tanzania

V: Mkusu, mdengwe

ETHNOMEDICAL USES: A decoction of root + roots of *Securinega virosa* Pax & K. Hoffm. Drunk against hernia (Hydrocoele). One of ingredient plants in a remedy for painful swellings of the male sexual organ or severe stomach pain in women.

Others: Roots: A decoction is used against severe abscesses dysmenorrhoea, malaria, and as vermifuge against ascaris. A decoction is remedy for fever, insomnia, nausea, vomiting, bubonic plague, swelling of testicles and tuberculosis. Root is one of ingredients in remedy for bubonic plague, oxyuricide and ascaricide. The smoke of roots is swallowed in treatment of ancylostomiasis. Decoction drunk to treat swellings of the testicles. Root is rubefacient.

BIOLOGICAL ACTIVITY: Extracts of the root has given negative antimalarial tests.

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 249, 1983

BOTANICAL NAME: *Heinsia* *cfr. crinita* G. Tayl *ssp parviflora* Verdic
(Rubiaceae)

Syn: *Gardenia crinita* Afzel, *Heinsia jasminiflora* DC., *H. pulchella* K. Schum.

C: Tanzania

V: Mfyofyo

ETHNOMEDICAL USES: Fumes from burning fresh leaves inhaled in the treatment of convulsive fever so as the decoction when drunk.

Others: Scrapings of the fresh roots eaten against malaria, epilepsy (powdered root bark, leaf juice). Ash of plant rubbed into cuts on the neck and shoulders for injured neck.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 245, 1983

BOTANICAL NAME: *Helichrysum nitens* Oliv. & Hiern. (Asteraceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Fungicidal activity against *Cladysporium cucumerinum*

CHEMICAL CONSTITUENTS: Methoxylated flavonoids (aerial parts)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Helichrysum odoratissimum* Less (Asteraceae)

Syn: *Helichrysum hochstetteri* Hook. f.

Helichrysum hochstetteri var *scabrum* Moeser

C: Rwanda
V= Umutamtama, Manayeze, Umunyarugabo, Umutaranuha,
Rukanjabyuma.

ETHNOMEDICAL USES: It is used to relieve abdominal pains, heartburn, coughs, colds and wounds. In Rwanda it is used to treat female sterility, menstrual pain and eczema.

BIOLOGICAL ACTIVITY: Antimicrobial activity in MeOH extract of flowers.

CHEMICAL CONSTITUENTS: Flavonoids: 3,5-dihydroxy-6,7,8-trimethoxy flavone and 3-O-methylquercetin (antimicrobial activity) and chalcone: Helichrysetin.

REFERENCES: L. van Puyvelde, N. De Kimpe, J. Costa, V. Munyjabo, S. Nyirankuliza, E. Hakizamungu and N. Schamp: Isolation of flavonoids and chalcones from *Helichrysum odoratissimum* and synthesis of Helichrysetin: *Journal of Natural Products* **52**:629-633, 1989.

BOTANICAL NAME: *Heteromorpha trifoliata* Eckel & Zeyn (Umbelliferae)

C: ^{1,2}Malawi

ETHNOMEDICAL USES: ¹Antimalaria (Leaves)

²In Central and East Africa it is used as antimalarial and antscabies activities.

BIOLOGICAL ACTIVITY: ¹Fungicidal activity due to polyacetylene falcirindiol and sarisan.

²Antifungal, anti-inflammatory properties using 12-O-tetradecanoylphorbol acetate (TPA)- Induced edema test, exhibited by saikosaponins.

CHEMICAL CONSTITUENTS: ¹Falcirindiol and sarisan (Polyacetylenes).

²Saikosaponins: 16 β -23-dihydroxy-13,28epoxyolean-11-en-3 β -yl-[β -D-glucopyranosyl(1 \rightarrow 2)]-[β -D-glucopyranosyl(1 \rightarrow 3)]- β -D-

fucopyranoside, and 16 β ,23,28-trihydroxy-11 α -methoxyolean-12-en-3 β -yl-[β -D-glucopyranosyl(1 \rightarrow 2)]-[β -D-glucopyranosyl(1 \rightarrow 3)]- β -D-fucopyranoside.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

²M del C-Recio, M.J. Just, R.M. Giner, S. Manez, J.L. Rios and K. Hostettman: Antiinflammatory activity of saikosaponins from *Heteromorpha trifoliata*. *Journal of Natural Products* **58**: 140 – 144, 1995.

BOTANICAL NAME: *Hibiscus micranthus* L. (Malvaceae)

C: Tanzania

V: Mchungang'ombe

ETHNOMEDICAL USES: The fresh plant is crushed juice taken for snake bite. Decoction of the root drunk for the same. Fresh plant boiled + roots of *Conyza pyrrhopappa* A.Rich. ssp. *oblongifolia* Wild for treatment of miscarriage. Decoction of fresh roots used against convulsive fevers in children.

Others: Decoction of root treat bronchitis, leaves for treating earache. The fruit of the leaf is a renal remedy.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Hoslundia opposita* Vahl. (Lamiaceae)

Syn: *Hoslundia oppositifolia* P. Beau, *Hoslundia verticilla* Vahl.

C: ^{1,3}Cameroon

²Tanzania. V: Mvuma

ETHNOMEDICAL USES: ¹Remedy for stomach troubles, yellow fever mental disorders and epilepsy. The leaves are used a purgative, diuretic, antibiotic and in perfumery. In Tanzania used for treatment of malaria.

²Decoction of root drunk to drive out devil plus inhalation of smoke from burnt leaves, or mixed with leaves from *Premna chrysoclada* Gurke for the same purpose. Decoction of roots with roots of *Cyphostemma adenocaula* against stomach pain and reduce menstrual excessive bleeding. Used to treat bad breath accompanied by aching of head and chest, the leaves mixed with *Cissus rotundifolia* Vahl, dried and the powder smoked. Decoction of roots against vomiting and diarrhoea. To treat measles-like swelling on the skin. Leaves boiled with leaves of other plants and inhaled to treat polio. Roots boiled with roots of *Conyza pyrrhopappa* A. Rich ssp *oblongifolia* Wild and decoction taken against convulsions in children. Decoction of root with roots of *Harrisonia abyssinica* Oliv. used against painful swelling of male genital organs and severe pain in women. Decoction of roots mixed with roots of *Mytenus putterlickioides* Exell and Mendonca drunk against irregular menstruation.

Others: Decoction used against malaria, cough remedy. Roots: water extract against fever and colds. Roots + beans for stomach pains. Leaves for malaria. Chewed leaves applied on wounds, snake bite. Whole plant indicated for gonorrhoea, liver disease, worms

BIOLOGICAL ACTIVITY: Extract has shown to have antibacterial activity. Root bark extract exhibit inhibition of growth of *Plasmodium bergeri* in mice also has *in vitro* activity against *Plasmodium falciparum*.

CHEMICAL CONSTITUENTS: ¹Abiene type esters, flavonoids: Hoslundal, hoslundin, hoslunddiol, oppositin and 5-O-methylhoslundin. Triterpenoids: α and β -amyrins, euscaphic acid, oleanolic and ursolic acids.

³Pyrone-substituted flavanoid. Hosloppin.

REFERENCES: ¹B.T. Ngadjui, E. Dongo, J.F. Ayafor, J.D. Connolly and D.S. Rycroft. Flavonoids from the twigs of *Hoslundia opposita* (Lamiaceae): *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 101-103. Printed by EMPDA – Ethiopia.

²Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

³B.T. Ngadjui, A. Tsopmo, J.F. Ayafor, J. Connolly and H. Tambolie: Hosloppin, a new pyrone-substituted flavonoid from *Hoslundia opposita*: *Journal of natural products* **58**:109 – 111, 1995.

BOTANICAL NAME: *Hugonia casteneifolia* Engl. (Linaceae)

C: Tanzania

ETHNOMEDICAL USES: Used in the treatment of intestinal worms.

BIOLOGICAL ACTIVITY: Exhibited Brine Shrimp toxicity.

CHEMICAL CONSTITUENTS: Rosane type of diterpenoids: hugoresenone, 18-hydroxyhugorosenone, hugorosediol, hugonone A and hugonone B.

REFERENCES: M.H.H. Nkunya, S.A. Jonker: Antiprotozoan and other natural products from Tanzanian lians, shrubs and small trees. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 4-5, Dar-es-Salaam.* University of Dar-es-Salaam.

BOTANICAL NAME: *Hugonia penicillanthemum* Baill ex Pancher et Sebert
(Linaceae)

C: Niger

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Pyrrolizidine type of alkaloids: Absouline, isoabsouline, N-oxide of absouline, N-oxide of isoabosouline, methoxy-5N,N-dimethyl tryptamine.

REFERENCES: K. Ikhiri, A. Ahond, C. Poupat, P. Potier, J. Pusset and T. Sevenet: *Plants de nouvelle Calédonie 109. Asouline, alcaloïde pyrrolizidinique. Nouveau isolé de Hugonia oreogena et Hugonia penicillanthemum: Journal of Natural Products* **50**:626-630,1987.

BOTANICAL NAME: *Hugonia oreogena* Schlechter (Linaceae)

C: Niger

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Pyrrolizidine type of alkaloids: Absouline, isoabsouline, N-oxide of absouline, N-oxide of isoabosouline, methoxy-5N,N-dimethyl tryptamine.

REFERENCES: K. Ikhiri, A. Ahond, C. Poupat, P. Potier, J. Pusset and T. Sevenet: *Plants de nouvelle Calédonie 109. Asouline, alcaloïde pyrrolizidinique. Nouveau isolé de Hugonia oreogena et Hugonia penicillinthemum: Journal of Natural Products* **50**:626-630, 1987.

BOTANICAL NAME: *Hunnemanianthus fumariaefolia* Sweet (Papaveraceae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Extracts of the tops inhibit the growth of a variety of microorganisms.

CHEMICAL CONSTITUENTS: Alkaloids: allocryptopine, berberine, chelerythrine, chelilutine, chelirubine, corysamine, escholidine, hunnemanine, protopine, oxydrastine. Flavonol glycosides: isorhamnetin-3 β -D-glucopyranosido-7 α -L-arabinopyranoside A.

REFERENCES: M.A. El-shanawany, A.M.El-Fishaway, D.J. Slatkin and P.L. Schiff. Jr.: The alkaloids of *Hunnemanianthus fumariaefolia*: *Journal of Natural Products* **46**: 753-754, 1983.

BOTANICAL NAME: *Hunteria zeylanica* (Apocynaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity against *Bacillus subtilis*.

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Hypericum revolutum* Vahl. (Guttiferae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Fungicidal in the TLC assay due to benzopyran ketones, cytotoxic due to hyperevolutin A and B.

CHEMICAL CONSTITUENTS: Benzopyran ketones, pentacyclic dimmers from leaves and twigs (no activity), Hyperevolutin A and B

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp 175-176, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Hypoestes rosea* (Acanthaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Terpenoids: roseatoxide, dihypoeostoxide

REFERENCES: A. Akinbo Adesomaju and J.I.Okogun: Roseatoxide and dihypoxetoxin: Additional new diterpenoids from *Hypoestes rosea*: *Journal of Natural Products* **47**:308 – 311, 1984.

BOTANICAL NAME: *Hypoestes verticillaris* Sond ex Roem. & Schult. (Acanthaceae)

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antineoplastic activity, growth inhibitory (Murine P-388 lymphocytic leukemia) ($ED_{50} = 10^{-5} \mu\text{g/ml}$)

CHEMICAL CONSTITUENTS: Phenanthroindolizidine alkaloids: hypoestatin 1, hypoestatin 2.

REFERENCES: G.R.Pettit, A.Goswami, G.M. Cragg, J.M. Schmidt and Ji-Chun Zou: Antineoplastic agents, 103. The isolation and structure of hypoestatin 1 and 2 from the East African *Hypoestes verticillaris*: *Journal of Natural Products* 913-919; 1984.

BOTANICAL NAME: *Hypoxis nyasica* Bak. (Hypoxidaceae)

C: Malawi

ETHNOMEDICAL USES: Rhizomes are used in Africa for the treatment of urinary infections, prostatic hypertrophy and internal cancer.

BIOLOGICAL ACTIVITY: Nyasoside showed cytotoxic activity on KB cells ($IC_{50} = 12 \mu\text{g/ml}$) and P-388 doxorubicine-resistant cells ($IC_{50} = 8 \mu\text{g/ml}$)

CHEMICAL CONSTITUENTS: Rhizomes: Nyasoside, mononysins A and B glucosides of nyasol, norlignan diglucoside hypoxoside, nyaside (a triglycoside) nyasicoside.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 101, 1996. University of Zimbabwe Publications. Harare.

²C. Galeffi and G. Palassino: New norlignan glucoside from Hypoxidaceae. *Fifth NAPRECA Symposium on Natural Products*. September 19-23, 1993

BOTANICAL NAME: *Hypoxis obtuse* Burch. (Hypoxidaceae)

C: Mozambique

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Hypoxoside, obtuside A, obtuside B (norlignans)

REFERENCES: C.Galeffi and G. Palazzino: New norlignan glucosides from hypoxidaceae. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p109-111. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Hypoxis rooperi* (Hypoxidaceae)

C: South Africa.

ETHNOMEDICAL USES: Extracts from the plant are used as tonic, rejuvenator, treatment for testicular tumors, internal cancers, hypertrophy of the prostate and urinary diseases.

BIOLOGICAL ACTIVITY: Clinical studies were carried out on cancer patients and patients with HIV. Patients received 1200-3200 mg of dried methanolic extract of the dried corms of the plant per day. Patients with HIV had taken the methanolic extract of corms of the plant for 2 years. Their CD4 lymphocyte count remained stabilized. Nineteen non-small cell lung cancer patients on hypoxoside therapy survived for 4 months, 5 survived for more than one year and one survived for 5 years. On HIV, a decrease in serum p24 HIV antigen and a decreased expression of the HLA-CD8 lymphocyte.

CHEMICAL CONSTITUENTS: Contains hypoxoside (CE-1,5-bis(4'- β -D-glucopyranosyl-3'-hydroxyphenyl-4-en-1-yne) a nor lignan diglucoside. Activity is due to rooperol, and aglycone of hypoxoside.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. -L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 302-307, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Hyptis suaveolens* Poit. (Labiatae)

C: Tanzania
V: Kifumbasi

ETHNOMEDICAL USES: To treat convulsions in children by bathing the child in a mixture of mother's urine and crushed leaves.

Others: Flowers introduced in nostrils against head ache and cold. Stem with flowers and fruits infusion as an expectorant. Decoction as tonic, powdered plant against migraine.

BIOLOGICAL ACTIVITY: Aqueous extract toxic to mice (1 mg/kg i.p.) causes contraction of guinea pig ileum. Ethanol extract not toxic but contract guinea pig ileum, both extracts have no effect on rat uterus, the heart and duodenum of the rabbit or on the blood pressure of the dog.

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Indigofera africeps* (Leguminosae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: No antimicrobial activity found (root bark)

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Indigofera circinella* (Leguminosae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: No antimicrobial activity (root bark) found.

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Indigofera erecta* Hochst (Fabaceae)

C: Rwanda

V: Umusororo

ETHNOMEDICAL USES: It is used in the treatment of gastrointestinal pain, leprosy, worms, cough, scabies and abscess.

BIOLOGICAL ACTIVITY: Extracts from roots was tested for antiulcer activity and found to be slightly active. It was also tested for anti-inflammatory activity but no results given.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Indigofera paniculata* (Leguminosae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity (root bark) against *Bacillus subtilis*

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Isolana cauliflora* Verdc. (Annonaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Prenylindoles, caulindoles(root and stem bark)

REFERENCES: : S.A Jonker and Mayunga H.H. Nkunya: The caulindoles and lettowianthones: Novel terpenyl substituted natural products from Tanzanian Annonaceae. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 28, Dar-es-Salaam.* University of Dar-es-Salaam

BOTANICAL NAME: *Jateorhiza palmata* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Palmatine, columbamine, Jatrorrhizine, bisjatrorrhizine

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.70,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Jasminum azorium* L. (Oleaceae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: α -Amyrin, β -amyrin, ceryl alcohol, β -sitosterol, linoleic acid, oleic acid, palmitic acid, myristic acid, lauric acid, quercetrin, kaempferol-3-o-rhamnoside, kaempferol-3-O-rhamnoglucoside, rutin, mannitol. Iridoids, jasiniglucoside, sambacin glucoside, azoricin.

REFERENCES: S.A. Ross and M.A. Abdel Hafiz: Constituents of *Jasminum azorucum*: *Journal of Natural Products* **47**:736, 1984.

BOTANICAL NAME: *Justicia betonica* (Acanthaceae)

C: Uganda

ETHNOMEDICAL USES: It is used to treat malaria fever in Uganda. Fresh leaves are given in form of decoction. In Kenya shoots are used in cases of snake bites through administration per oral to the bitten person. In Kenya, roots are roasted and chewed for cough remedy.

BIOLOGICAL ACTIVITY: Performed Brine Shrimp lethality test. Antimalarial activity and antibacterial activity, results not shown.

CHEMICAL CONSTITUENTS:

REFERENCES: C. Katuura,; Bioactivity of *justicia betonica* with special reference to its antimalarial activity. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 71, Dar-es-Salaam.* University of Dar-es-Salaam

BOTANICAL NAME: *Kigelia africana* (Bignoniaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Antifeedant activity against larvae of *Nudauleiria belina* from stem bark petroleum ether extract.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudauleiria belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Khaya grandifoliola* (Meliaceae)

C: Uganda

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Stembark is toxic to nematodes (ED_{50} 0.06 ± 0.01) of the type *Pratylenchus brachyurus* a banana nematode

CHEMICAL CONSTITUENTS: Stembark contains terpenoids, emodol, tannins, and reducing sugars.

REFERENCES: A.M. Kezimbira and O.Odyek: Toxicity tests of some plants on a banana nematode *Pratylenchus brachyurus*: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 93 - 100. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Kigelia africana* L. (Flacourtiaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Leaves contain gynocardin.

REFERENCES: D.Raubenheimer and J.F. Elsworth: Gynocardin from the leavews of *Kigelia africana*: *Journal of Natural Producs* **51**:779, 1988.

BOTANICAL NAME: *Kolobopetalum auriculatum* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Magnoflorine, N-methyl corydine, O-methylflavinanthine (Leaves and twigs)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.70,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Lantana camara* L. (Verbenaceae)

Syn: *Lantana antidotalis* Thonning

C: Tanzania

V: Kiwepe

ETHNOMEDICAL USES: Decoction of roots is used against stomach ache and vomiting in infants. Leaves soaked in water and used for bathing to treat skin rashes and itching.

Others: Roots: Used as febrifuge, in malaria (resistant). Leaves: Ashes from leaves + salts for sore throat, cough, conjunctivitis and toothache. The vapour of boiling leaves, inhaled is used in the treatment of headache and cold. In West Africa, the leaf is used for coughs and colds, diaphoretic, stimulant, jaundice, chest diseases and rheumatism. Entire plant: The plant is toxic to sheep and cattle. Fruits: Children become ill after eating the fruits or even death. Others dispute it and say it is eaten without effects.

BIOLOGICAL ACTIVITY: An extract of leaves injected intraperitoneally into rats produces hypotension and increased rate of breathing at dose of 10g fresh leaves/kg body weight. This continues after 24 hours. Death to 2 out of 5 occurs after 48 hours. Intravenous injection (5g plant/kg) caused hypotension reduced the rate of breathing, trembling head and convulsion. Intraperitoneally in rats at 10g/kg of fresh plant, the extract prolongs barbiturate induced sleeping time. An aqueous extract of the root causes hypotension and increased respiration rate in cats. An alcoholic extract has no effect on the respiration. The aqueous extract is more toxic to mice than the ethanol extract but not toxic to fish. The extract stimulates the toad heart and contracts the duodenum of the rabbit and the rat uterus. The alkaloid fraction of the leaves lowers the blood pressure, accelerates deep respiration and causes shivering in dogs. It stimulates intestinal movements and inhibits uterine motility in rats. 2gm of lantadenes A given per os to a

sheep and exposed to direct sunlight causes photosensitization and severe icterus. Lantadene B does not cause photosensitization. Lancamarone is a fish poison at a concentration of 1ppm and is radioactive. Lantadene A apparently inhibits active secretion of bile acids into canaliculi but has no toxic action on the ductules.

CHEMICAL CONSTITUENTS: The leaves contain lantadene A and B. Lantadene A is 22-angeloyloxyoleanolic acid. Lantadene B is 22 β -(β -dimethylacryloyloxy)oleanolic acid. Leaves also contain keto steroid called lancamarone. An alkaloid fraction has been isolated.

REFERENCE: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 253 – 254, 1983

BOTANICAL NAME: *Lantana trifolia* L. (Verbenaceae)

C: Rwanda

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Due to umuhengerin, it has antibacterial and antifungal activities in concentrations of up to 200 μ g/ml. No antiviral activity.

CHEMICAL CONSTITUENTS: Flavonoid: umuhengerin

REFERENCES: P.C. Rwangabo, M. Claeys, L.Pieters, J. Corthout, D.A. Vanden Berghe and A.J. Vlietinck: Umuhengerin, a new antimicrobially active flavonoid from *Lantana trifolia*. *Journal of Natural Products* **51**:966-1988.

BOTANICAL NAME: *Lantana viburnoides* Vahl. (Verbenaceae)

C: Tanzania

V: Mvuti

ETHNOMEDICAL USES: A decoction of the roots with the roots of *Vernonia lasiopus* O. Hoffm. Treats infertility

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 255, 1983.

BOTANICAL NAME: *Lathyrus sativus* L. (Leguminosae)

C: Ethiopia

ETHNOMEDICAL USES: It is used as food in times of shortages.

BIOLOGICAL ACTIVITY: Cumulative poison causing paralysis of lower limbs in man.

CHEMICAL CONSTITUENTS: β -N-oxalyl-L- $\alpha\beta$ -diamino propionic acid

REFERENCE: B. Abegaz, A. De Bruyn, N. Kebede, F. Lambein and P. Nunn: Chemistry of Grass pea toxin and related N-oxalyl amino acids. *Fifth Natural Product Symposium on Natural Products. September 19-23, 1993. Antananarivo, Madagascar.* P.1-4. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Launaea cornuta* Hochst ex div & Hiern (Asteraceae)

C: Tanzania

ETHNOMEDICAL USES: Used as a cure for measles and swollen testicles.

BIOLOGICAL ACTIVITY: The extracts from the plant did not possess either hypertensive or hypotensive action on cats anaesthetized with pentobarbitone sodium 30mg/kg i.v. The dose of 50mg/ml was still well tolerated.

CHEMICAL CONSTITUENTS:

REFERENCES: M.M.J. Minja: Acute toxicity and cardiovascular activity of three Tanzanian Medicinal Plants. *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 93 - 100. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Lawsonia inermis* (Lythraceae)

C: Nigeria

V: Lali

ETHNOMEDICAL USES: Leaves used as cosmetics, ingredient in local medicinal preparations in Middle Eeast and Asia.

BIOLOGICAL ACTIVITY: Water extract of leaves has shown to posses antimicrobial activity *in vitro*.

CHEMICAL CONSTITUENTS: β -sitosterol glucoside, flavonoids, quinoids, naphthalene derivatives, gallic acid, coumarins, xanthones, luteolin, phenolic glucosides: lawsoniaside and lolioside.

REFERENCES: Y. Takeda, and M.O. Fatope: New phenolic glucosides from *Lawsonia innermis*. *Journal of Natural Products* **51**: 725 – 729, 1988.

BOTANICAL NAME: *Leonotis mollissima* Guerke (Labiatae)

Syn: *Leonotis intermedia* Lindl. *L. velatina* Fenzl ex Benth, *L. dysophylla* Benth. *L. rugosa* Benth in Meyer, *L. melleri* Bak

ETHNOMEDICAL USES: Decoction of roots against infertility.

Others: Decoction against dizziness, malaria, heart trouble. Decoction of root and leaves + *Lippia javanica* Spreng. used against wounds, sores, interstitial worms. Infusion against dysentery and internal disorders. Leaves: Juice is used against dizziness, malaria, heart trouble. Juice mixed with juice of *Biophytum sensitivum* DC. against encephalitis. Young leaves and buds for conjunctivitis. Leaves for cramp in the stomach. Plant for indigestion. Leaf as snake bite remedy.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Leonotis ocymifolia* Iwarason *var raineriana* Iwarason
(Labiatae)

C: Ethiopia

ETHNOMEDICAL USES: Ascaricide, anticancer. Treatment of ulcers and wounds. Recorded as a narcotic and habitat forming.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Diterpenes: Leonitin, 6 β -acetoxy-9 α ,13 α -epoxylabda-20(19),16(15)-diol dilactone; 20-acetxy-9 α ,13 ξ -dihydroxy-15(16)-epoxylabd-14-en-6 β (19)-lactone.

REFERENCES: S. Habtemariam, A.I. Gray and P.G. Waterman: Diterpenes from the leaves of *Leonotis ocymifolia var raineriana*: *Journal of Natural Products* **57**: 1570 – 1574, 1994.

BOTANICAL NAME: *Leptadenia hastata* Decne. (Asclepiadaceae)

C: Senegal

ETHNOMEDICAL USES: Used as an anti-inflammatory and antitumour drug in Senegal.

BIOLOGICAL ACTIVITY: All compounds were tested for cytotoxicity on Raji cells (a human lymphoblatoid cell line from Burkitt's lymphoma) but were shown to be inactive at doses used.

CHEMICAL CONSTITUENTS: Polyoxypregnane esters: 12-O-acetylsarcostin, 12,20-O-dibenzoylsarcostin, 12-O-benzoyl-20-O-cinnamoylsarcostin, 12-O-cinnamyl-20-O-acetylsarcostin, 12-O-nicotinyl-20-O-acetylsarcostin, 12-O-nicotinoylmetaplexigenin.

Glycosides: 3-O- β -D-cymaropyranosyl-12-O-benzoyl-20-O-cinnamosylsarcostin, 3-O- β -D-oleandropuranosyl-(1 \rightarrow 4)- β -D-cymaropyranosylpenupogenin, and 3-O- β -D-oleandropuranosyl-(1 \rightarrow 4)- β -D-cymaropyranosyl-12-O-benzoyl-20-O-cinnamoylsarcostin, penupogenin, gagaminin, kidjolanin, metaplexigenin, cynantoridin

REFERENCES: R. Aquino, C. Pizza, N. de Tomasi and F. de Simone: New polyoxypregnane ester derivatives from *Leptadenia hastata*. *Journal of Natural Products* **58**: 672–679, 1995.

BOTANICAL NAME: *Lettowianthus stellatus* Diels (Annonaceae)

C: ^{1,2}Tanzania

ETHNOMEDIAL USES: ¹The stem bark is used as a remedy for fevers, stomach disorders and malaria.

²Used for treatment of stomach disorders and malaria related fevers.

BIOLOGICAL ACTIVITY: ¹Insect juvenile hormone.

²Extract from the bark had weak antimalarial activity *in vitro* against multidrug resistant K1 strain and the chloroquine sensitive NF54 strain of *Plasmodium falciparum*.

CHEMICAL CONSTITUENTS: ¹Actylenic fatty acid, aporphine alkaloids, lethewianthones (bis geranyl products). Insect juvenile hormone.

²Root bark contains Telisantin-type of aporphinoids: lettoeianthine and 11-methoxy lethewiantine. Sesquiterpene: 11-hydroxyguaia-4,6-diene, liriodenine, (z)-7-octadecen-9-ynoic acid, methyl (2E,6E,10R)-10,11-epoxy-3,7,11-trimethyl-2,6-dodecadienoate, methyl(2E,6E,10R)-10,11-dihydroxy-3,7,11-trimethyl-2,6-dodecadienoate and 3,4,5-trimethoxy phenol.

REFERENCES: ¹S.A. Jonker and Mayunga H.H. Nkunya: The caulindoles and lethewianthones: Novel terpenyl substituted natural products from Tanzanian Annonaceae. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 28, Dar-es-Salaam*. University of Dar-es-Salaam

²M.H.H Nkunya, S.A. Jonker, J.J. Makangara, R.Waibel and H. Achenbach: *Phytochemistry*: **53**:1067 – 1073, 2000

BOTANICAL NAME: *Limaciopsis loangensis*

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Berbamine, cycleanine (roots), Isotetrandrine (roots, stembark, leaves), isotetrandrine 2'-N-oxide(roots), isoterandrine 2'-chlomethyl, liriodenine, 8-oxo-palmatine, thalrugosamine, thalrugosine.

REFERENCES: : F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.70,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Limonium sinuatum* Mill (Plumbaginaceae)

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL USES:

CHEMICAL CONSTITUENTS: Flavonol glucoside: myricetin-3'-methyl ether, 7-O- β -D-glucopyranoside, isorhamnetin-7-O- β -D-glucopyranoside.

REFERENCES: S.A. Ross: Myricetin-3'-methyl ether-glucoside from *Limonium sinuatum*: *Journal of Natural Products*: **47**:862-864, 1984.

BOTANICAL NAME: *Lippia javanica* Spreng (Verbenaceae)

C: Zimbabwe

ETHNOMEDICAL USES: Mosquito repellent

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCE: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 321-325, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Lippia ukambensis* Vatke (Verbenaceae)

C: Tanzania

ETHNOMEDICAL USES: Leaves have preservative effect on foods, used to wrap meat. Remedy for abdominal complaints.

BIOLOGICAL ACTIVITY: Essential oils and leaf extracts showed no insecticidal, insect repellent or significant antimicrobial properties.

CHEMICAL CONSTITUENTS: Essential oils; camphor (36.5%), 4-thujanol (18.5%) and other terpenoid substances. Extracts of leaves contain fatty acids, stigmasterol, phytol, ursolic acid, and camphene.

REFERENCES: J. Chogo and G. Crank: Essential oil and leaf constituents of *Lippia ukambensis* from Tanzania: *Journal of Natural Products* **45**: 186-188, 1985.

BOTANICAL NAME: *Lonchocarpus sericeus* H.B. & K. (Papilionidae)

C: Ghana

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Chlacones: Lonchocarpin, derricin, derricidin (cordoin), isocordin, and 4-hydroxylochocarpin and a flavone, isolochocarpin, flemistricin-B.

REFERENCES: El-Hadi N. Mohmoud, P.G. Waterman: Flemistricin-B: A chalcone from the seeds of *Lonchocarpus sericeus*: *Journal of Natural Products* **49**:1179 –1180, 1986.

BOTANICAL NAME: *Lophira lanceolata* Van Tiegh. Ex. Keay (**Ochnaceae**)

C: ^{1,2,3}Cameroon
V: Kwet, mbantou

ETHNOMEDICAL USES: ¹Antiviral activity.
²Antibacterial and antiviral activity
³Used for the treatment of toothache, liver infection, female sterility, dysentery and cough.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹From stemheart wood: Nitrile glycoside esters: Lanceolins A and B.

²Stembark and stem heart wood: Flavonoids.
Leaves: Biflavonoids, lanceolatins A and lanceolatin B

³Cleaved biflavonoids: Lophirone D and Lophirone E. Isomeric biflavonoids: Lophirone A, B and C.

REFERENCES: ¹E.W.Tih, R.G. Tih. B.L. Sondengam, M.T. Marin, and B. Bodo: Lanceolins A and B: Nitrile glycoside esters from *Lophira lanceolata*: *Journal of Natural Products* **57**: 971 – 974, 1994.

²D.E Pegnyemb, R. Ghogo, Mu-Tih, B.L. Sondengam, M.T. Martin and B. Bodo: Minor biflavonoids of *Lophira lanceolata*. *Journal of Natural Products* **57**:1275 –1278, 1994.

³R. Gnogomu Tih, B.L. Sondengam, M.T. Martin and B. Bodo: Lophirones A and E, Two new cleaved biflavonoids from *Lophira lanceolata*: *Journal of Natural Products* **52**:284-288, 1989.

BOTANICAL NAME: *Lonchocarpus bussei* Harms (Papilionaceae)

Syn: *Lonchocarpus fischeri* Harms, *Lonchocarpus menyhartii* Schinz.

C: Tanzania

V: Muwale

ETHNOMEDICAL USES: Decoction of root + leaves from *Ocimum suave* + scale of Pangulin is used to speed up delivery and extraction of after birth. Decoction of root is used against infertility, palpitation and bilharzias.

Others: Paste of root or bark applied at the back and breast to improve lactation. Decoction of root is used as cough remedy and in gonorrhoea, infusion of the bark and root as diuretic. Root is used as galactagogue and in gonorrhoea.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 239, 1983

BOTANICAL NAME: *Lupinus termis* Forsk (Leguminosae)

C: ¹Sudan

²Egypt

ETHNOMEDICAL USES: ²Seeds used in traditional medicine for the treatment of diabetes and eczema.

BIOLOGICAL ACTIVITY: ¹Effective in the treatment of chronic eczema. Results statistically comparable those obtained with cortocoid therapy (extract from seeds)

²Hypoglycemic effect of (-)-multiflorine on streptozotocin-induced diabetic mice.

CHEMICAL CONSTITUENTS: ²Lupine alkaloids: (±)-termisine (seeds), (-)- Δ^5 -dehydromultiflorine, (-)- Δ^5 -dehydroalbine, (-)-multiflorine.

REFERENCES: ¹M.O. Antoun and O.M.A. Taha: Studies on Sudanese medicinal plants. II. Evaluation of an extract of *Lupinus termis* seeds in chronic eczema: *Journal of Natural Products* **44**: 179-183, 1981.

²M.H. Mohamed, A.N. El-Shorbagi; (±)-Termisine, a novel lupine alkaloid from the seeds of *Lupinus termis*; *Journal of Natural Products* **56**:1999-2002, 1993.

BOTANICAL NAME: *Macaranga capensis* Sim. (Euphorbiaceae)

Syn: *Macaranga bachmanii* Pax. *M. usambarica* Pax & K. Hoffm. *Mollutus capensis* Muell. Arg. *Mappa capensis* Baill.

C: Tanzania

V: Mkumba

ETHNOMEDICAL USES: Decoction of roots mixed with roots of *Cassia didymobotrya* Fres. *Momordica calantha* Gilg. *Sorindeia madagascariensis* DC. and *Myrica salifolia* Hochst ex A. Rich is drunk against mental illness.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Maprounea africana* Muell-Arg. (Euphorbiaceae)

C: ^{1,4,5}Tanzania,

^{2,3}Central African Republic.

ETHNOMEDICAL USES: ³The roots used as purgative and cure for syphilis, in withch craft and as a facial lotion, for ailments of the eye. The sap as dressing of the penis after circumcision.

⁴Toxic plant

BIOLOGICAL ACTIVITY: ¹Inhibition of HIV-RT activity with IC₅₀ Values in the range of 3-5 μ M, but less active toward HIV-2RT.

²Phorbol esters with ant-HIV and phorbol ester receptor binding activity. Phorbol esters of Daphnane type were in trace amounts. The triterpene were found to be devoid of activity.

⁵7 β -hydroxy derivatives of mapronic acid exhibited *in vivo* P-388 activity.

CHEMICAL CONSTITUENTS: ¹Pentacyclic triterpenes: Maprounic acid, mparounic acid acetate, 1 β -hydroxymaprounic acid 3-p-hydroxybenzoate and 2 α -hydroxymaprounic acid 2,3-bis-p-hydroxy benzoate.

²Koumbalones A and B (casbane diterpenes), bersnacolone.

³Diterpenes. Bershacolone, koumbalines A and B. Triterpenoids: 1 β -hydroxyaleuritolic acid 3-p-hydroxybenzoate, aleuritolic acid 3-p-hydroxybenzoate, 2 α -hydroxyaleuritolic acid 2-p-hydroxybenzoate.

⁴Cucurbitacins, hydroxylated taraxerane-type of triterpenes and diterpenenoid. 1 β ,24 α -dihydroxyaleuritolic acid 2,3-bis-p-hydroxybenzoate, 2 α -hydroxyaleuritolic acid 3-p-hydroxybenzoate, 2 α -hydroxyaleuritolic acid 2,3-bis-p-hydroxybenzoate, aleuritolic acid 3-p-hydroxybenzoate, aleuritolic acid, aleuritolic acid 3-acetate.

⁵Pentacyclic triterpenes: mapronic acid, mapronic acid 3-p-hydroxybenzoate, 7 β -hydroxymapronic acid 3-p-hydroxy benzoate and 2 α -hydroxymapronic acid 2,3-bis-p-hydroxybenzoate.

REFERENCES: ¹T. Pengsuparp, L.Cai, H.H.S. Fong, A.Douglas Kinghorn, J.M. Pezzuto, M.C. Wani, and M.E. Wall: Pentacyclic triterpenes derived from *Maprounea africana*, are potent inhibitors of HIV-1 Reverse transcriptase. *Journal of Natural Products*. **57**: 415 – 418, 1994.

²Y. Kashman, M.W. Bernart, M.Tischler, J.H. Cardellina II, and M.R. Boyd.: Koumbalones A and B, new casbane diterpenes from *Maprounea africana*. *Journal of Natural Products*, **57**:426 –430, 1994.

³J.A. Bentler, Y. Kashman, M. tischler, J.H. Cardellina II, G.N. Gray, M.J. Currens, M. E. Wall, M.C. Wani and M. Boyd.: Reinvestigation of *Maprounea* triterpenes. *Journal of Natural Products* **58**:1039 –1046, 1995.

⁴S.K. Chaudhuri, F. Fullas, D.M. Brown, M.C. Wani, M.E. Wall, L. Cai, W. Mars. K. Lee, Y. Luo, K. Zaw, H.H.s. Fong, J.M. Pezzuto and A. Douglas Kinghorn: Isolation and structure elucidation of Pentacyclic triterpenoids from *Maprounea africana*. *Journal of Natural Products* **58**: 1-9, 1995.

⁵M.C. Wani, J.P. Schaumberg, H.L. Taylor, J.B. Thompson and M.E. Wall: Plant antitumor agents, 19. Novel triterpene from *Maprounea africana*: *Journal of Natural Products* **46**:537-543, 1983.

BOTANICAL NAME: *Maprounea membranacea* Pax & K. Hoffman
(Euphorbiaceae)

C: Central African Republic.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Barks contain triterpenoids: 2 α -hydroxyaleuritolic acid 2-p-hydroxybenzoate, 2 α -hydroxyaleuritolic acid 2,3, bis(p-hydroxycinnamate, 3 α -hydroxyaleuritolic acid 2 β -p-hydroxybenzoate.

REFERENCES: J.A. Bentler, Y. Kashman, M. tischler, J.H. Cardellina II, G.N. Gray, M.J. Currens, M. E. Wall, M.C. Wani and M. Boyd.: Reinvestigation of *Maprounea* triterpenes. *Journal of Natural Products* **58**:1039 –1046, 1995.

BOTANICAL NAME: *Margaritaria cfr discoidea* Webster (Euphorbiaceae)

Syn: *Cicca discoides* Baill, *Flueggea bailloniana* Pax, *F. tagiflia* Pax., *F. nitida* Pax., *F. obovata* Webster, *Phyllanthus discoideus* Mull. Arg., *Phyllanthus flacourtioides* Hutch. *Securigea bailloniana* Pax.

C: Tanzania

V: Msereganga

ETHNOMEDICAL USES: Decoction or infusion of fresh root drunk for abortion.

Others: Roots: decoction against bilharzias, gonorrhoea, malaria, abscess, stomach disorders, purgative, stimulant for conception. Stem bark: A decoction is used for post partum pain, anthelmintic, ash of the bark + indigenous salt for treatment of

lumber pain, relief of amenorrhoea, stimulant and tonic (through scarification), leaves is used for malaria (decoct), poultice of leaf and twig for jugger sores.

BIOLOGICAL ACTIVITY: Securinine has strychnine like CNS stimulant, sympathomimetic activity, in Soviet Union is used for treatment of poliomyelitis-induced paresis as a stimulating agent, to treat hypotension. Phyllochristine has CNS-stimulating activity, provokes medullary excitation. Phyllabine has dypatomimetic effects.

CHEMICAL CONSTITUENTS: Alkaloids: Phyllalbine, Phyllochrysine, securinine, phyllantidine.

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Melia volkensii* Guerke (Meilaceae)

C: ^{1,2,3}Kenya

ETHNOMEDICAL USES: ¹Leaves are used for insect control and for making concoctions for deworming, dermatological ailments, malaria and insect control (Aqueous extract). Plant is used as a livestock fodder.

²Tea prepared from the bark is used for pain, it is poisonous in an overdose.

³Tea from the bark is used for alleviation of pain. It is poisonous in an overdose.

BIOLOGICAL ACTIVITY: ¹Most of the activity is found in 80% methanol as solvent. Leaf extract is effective as insect growth inhibitor and antifeedant. Fruit extract is most active. Mosquito control and protection against phytophagous insect pests.

²Extracts of the seed kernels have a potent antifeedant activity against nymphs and adults of the desert locust *Schistocerca gregaria*.

³Extracts of the seed kernels have potent antifeedant activity against nymphs and adults of desert locust, *Schistocerca gregaria*. Antifeedant against larvae of the fall army worm *Spodoptera frugiperda* (due to limonoid volkensin).

CHEMICAL CONSTITUENTS: ²Volkensin, salannin (Limonoids). In fruits are tetranortriterpenes: 1-cinnamoyltrichilin, 1-tigloyl trichilin and 1-acetyl trichilin, o-chinin-3-acetate.

³Limonoids: volkensin and salannin.

REFERENCES: ¹D.H.K. Matemu: Natural Products as pesticides for the control of medical vectors. *Natural Products Research Network for Eastern and Central Africa*, (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 117 - 123. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

²M.S. Rajab and M. Bentley: Tetranor-triterpenes from *Melia volkensii*: *Journal of Natural Products* **51**:840-844, 1988.

³M.S. Rajab, M.O. Bentley, A.R. Alford and M.J. Mendel: A new limonoid insect antifeedant from the fruit of *Melia volkensii*: *Journal of Natural Products* **51**:168-171,1988.

BOTANICAL NAME: *Melinis minutiflora* P.Beauv.

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Active compounds are sabinene, 2-pentylnona-1,3,7-triene, β -cubebene and β -caryophyllene. The compounds elicit behaviour in some phytophagous insects.

CHEMICAL CONSTITUENTS: Hexanal, α -pinene, sabinene, myrcene, (z)-3-hexenyl acetate, limonene, 1,8 cineole, (E)- β -ocemene, α -cubenene, 4,8-dimethyl nona-1,3,7-triene, methylsalicylate, α -cubenene, α -ylangene, β -cubenene, β -caryophyllene and α -humulene. Steam distillate contains, toluene, hexanal, 3-hexen-1-ol, 2-heptanone, heptanal, (E)-2-octenal, nonanal, methyl salicylate, decanal, β -caryophyllene and α -humulene.

REFERENCE: S.C. Chhabra, S.M. Kimani and W. Lande: Volatile phytochemicals from wild non-host plant *Melinis minutiflora* of the pest partellus. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 68, Dar-es-Salaam.* University of Dar-es-Salaam

BOTANICAL NAME: *Meroneuron cuculatum*

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimutagenic activity when evaluated utilizing *Salmonella typhimurium* strain-TM677

CHEMICAL CONSTITUENTS: 3,5,4'-trihydroxy stilbene (resveratrol) piceatannol, isoliquiritigenin, apigenin and scirpucin A.

REFERENCES: Z.H. Mbwambo, S.K. Lee, E.N. Mshiu, J.M. Pezzuto and A.D. Kinghorn: Bioactive constituents from stem wood of *Euphorbia quinquecostata* and *Meroneuron cucullatum*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 73, Dar-es-Salaam.* University of Dar-es-Salaam

BOTANICAL NAME: *Millettia merrilli* (Leguminosae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Cytotoxicity on cancer cell lines and activity recorded i.e. Breast ($IC_{50} = 0.001\mu\text{g/ml}$), lung $IC_{50} = 0.01\mu\text{g/ml}$) and colon ($IC_{50} = 0.02\mu\text{g/ml}$).

CHEMICAL CONSTITUENTS: From fruits, (-) isoloncocarpin and 3,4-dimethoxy cinnamic acid.

REFERENCE: C.K.Mutayabarwa: Activity of (-)-isolonchocarpin from *Millettia merrillii*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 44, Dar-es-Salaam.* University of Dar-es-Salaam

BOTANICAL NAME: *Millettia laurentii* De Wild. (Leguminosae)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Has an insecticidal activity.

CHEMICAL CONSTITUENTS: Alkaloids (seeds): Millaurine, acetylmillaurine and millettanine (stem bark). Guanidine alkaloids: 5a,9a-dihydro-5a-hydroxymillaurine (seeds)

REFERENCES: D. Ngamga, S.N.Y.F. Free, Z.T. Fom, M.T. Martin and B. Bodo: A new guanidine alkaloid from *Millettia laurentii*. *Journal of Natural Products* **57**:1022 – 1024, 1994.

BOTANICAL NAME: *Mirabilis jalapa* (Nyctaginaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: No antifeedant effect on extracts for the whole plant.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudaulea belina* (Westwood) (Saururaceae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Mitragyna rubrostipulata* Havil (Rubiaceae)

C: Rwanda

V: Umuzibaziba

ETHNOMEDICAL USES:Used for the treatment of Pneumonia, dysentery, antiseptic and gastro enteritis.

BIOLOGICAL ACTIVITY: Leaf extract was tested for antiulcer activity, showed no activity. It was also tested for antimicrobial activity but no results given.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Monodora tenuifolia* W.Ash (Annonaceae)

C: Nigeria

ETHNOMEDICAL USES: The plant is used un the treatment of dysentery (leaves) dermatitis (root) headache (stembark), tooth ache and as vermifuge. The aromatic seeds are uded as condiment in soup or as seasoning.

BIOLOGICAL ACTIVITY: Antibacterial: *Mycobacterium smegmatis*, *Staphyllacoccus aureus*, *Bacillus subtilis*. Antifungal (*Candida albicans*, *Saccharomyces cerevisiae* and *Cryptococcus neofrormans* and *Trichophyton mentagrophytes*, *Pycnoporos sangunens* and *Helminthosporum sp*)

CHEMICAL CONSTITUENTS: 3-dimethylallyl indole.

REFERENCES: A.O. Adeoye, B.O. Oguntimein, A.M. Clark and C.D. Hufford: 3-dimethylallylindole: An antibacterial and antifungal metabolite from *Monodora teuifolia*: *Journal of Natural Products* **49**:534-537, 1986

BOTANICAL NAME: *Mormodica foetida* Schumae (Cucurbitaceae)

C: Rwanda

V: Umwishywa

ETHNOMEDICAL USES: Used in the treatment of bronchitis, yaws, otitis, and antiulcer

BIOLOGICAL ACTIVITY: Tested for antiulcer activity, found to be active.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Morinda morindoides* Milne Redh. (**Rubiaceae**)

C: Zaire

ETHNOMEDICAL USES: Adecoction of the leaves is used in Zaire against malaria, amoebiasis, scabies, haemorrhoids, worms, and gonorrhoea. Decoctions of this plant are used for the treatment of patients (children) recovering from surgery or suffering from chronic disease.

BIOLOGICAL ACTIVITY: Quercetin, quercetin 3-O-rhamnosides (quercitrin) and rutin showed similar anticomplementary activities (inhibition) on the CP of complement. On AP complement, quercetin and mixture of kaempferol triglycosides had respectively more pronounced inhibitory and activatory effects than the other tested flavonoids.

CHEMICAL CONSTITUENTS: Quercetin, quercetin 7,4'-dimethyl ether, luteolin 7-O-glucoside, apigenin 7-O-glucoside, quercetin 3-O-rhamnoside, kaempferol 3-O-rhamnoside, quercetin 3-O-rutinoside, kaempferol 3-O-rutinoside, chrysoeriol 7-O-neohesperidoside and chrysoeriol.

REFERENCES: K. Cimanga, T. de Bruyne, A. Lasure, B. van Poel, L. Pieters, D.V. Berghe, A. Vlietick, K. Kambu and L. Tona: *In vitro* anticomplementary activity of constituents from *Morinda morindoides*: *Journal of Natural Products* **58**:372-378, 1995.

BOTANICAL NAME: *Moringa pterygosperma* (Moringaceae)

ETHNOMEDICAL USES: Roots and root bark are used by the Indians to treat mouth sores.

BIOLOGICAL ACTIVITY: Wound healing as normal cell growth promoters, antimicrobial activity. Intra muscular injection or local administration of spirochin is antiseptic and prophylactic against wound infections. Analgesic and antipyretic.

CHEMICAL CONSTITUENTS: Roots contain a gum made up of bassorin and enzymes. Cytokinins, zeatin and zeatin riboside.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 101, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Moringa stenopetala*

C: Ethiopia

ETHNOMEDICAL USES: Fresh leaves are used as vegetables, the roots are used against malaria and other pathogenic protozoa and against stomach pain. The seeds are used to clear muddy water. The leaves are used to expel placenta in women after delivery.

BIOLOGICAL ACTIVITY: Leaf and root extract. Antiprotozoa activity on *Leishmania donovani* in vitro concentrations of 6000 to 1500 µg shows non-motile promastigotes.

CHEMICAL CONSTITUENTS:

REFERENCES: Y. Mekonnen: The medicinal use of *Moringa stenopetala*: A preliminary in vitro and in vivo study. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 74, Dar-es-Salaam*. University of Dar-es-Salaam

BOTANICAL NAME: *Musanga cecropioides* R.Br. (Urticaceae)

C: ¹Cameroon
²Nigeria

ETHNOMEDICAL USES: ¹It is used as antihypertensive, antidiabetic, galactogenic, facilitates delivery and in treatment of sexually transmitted diseases.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹Saponins of the type pentacyclic triterpenes and acid methyl esters were isolated from stem bark: Methyl kalaate, methyl ursolate, methyl oleanolate, methyl 2 α -hydroxyursolate, methyl 2 α -hydroxyoleanolate and methyl pomolate.

²Rootwood contains triterpene acids, tormentic acid, 2-acetyl tormentic acid, 3-acetyl tormentic acid and euscaphic acid.

REFERENCES: ¹D. Lontsi, B.L. Sondengam, B. Bodo and M.T. Martin: Kalaic acid, A new ursane-type saponin from *Musanga cecropioides*. *Planta Medica* **64**:189-191, 1998.

²C.M. Ojinnaka and J.I.Okagun: The chemical constituents of *Musanga cecropioides*: *Journal of Natural Products*: **48**:337, 1985.

BOTANICAL NAME: *Myrianthus arboreus* P. Beauv (Urticaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Hypoglycemic properties (stem) and antitussive properties (leaves)

CHEMICAL CONSTITUENTS: Triterpene acids, β -sitosterol, sitosterol 3-O- β -D-glucopyranoside, ursolic acid, tormentic acid, euscaphic acid, myrianthic acid and 2 α ,3 α ,19 α ,23-tetrahydroxyurs-12-en-28-oic acid.

REFERENCES: C.M.Ojinnaka and L. Kenne: Studies on Nigerian Medicinal Plants: Components of the stems of *Myrianthus arboreus*: *Journal of Natural Products* **48**:1002-1003, 1985.

BOTANICAL NAME: *Myrica kandtiana* Engl. (Myricaceae)

C: Rwanda

V: Isubyo

ETHNOMEDICAL USES: Used in the treatment of anthrax, small pox, and as an antidote in poisoning.

BIOLOGICAL ACTIVITY: Leaf extract showed antulcer activity.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Myrica salicifolia* Hochst ex A.Rich (Myricaceae)

C: Tanzania

V: Mchegeshe

ETHNOMEDICAL USES: A decoction of the leaves + leaves of *Momordica calanth* Gilg., *Saturega punctata* Brig., *Clutia abyssinica* Jaub & Spach, *Coleus barbatus* Benth for treatment of swellings of the cheek and face. Stembark is used for cough.

Others: Tooth ache, tonic, stomach troubles (roots), used for skin diseases when young leaves are mixed with ghee.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Nauclea diderrichii* Merr. (Rubiaceae)

C: Gabon

ETHNOMEDICAL USES: Decoction of the bark is used to eliminaste parasites and other tropical diseases.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Terpenoid glycoside: Marounoside.

REFERENCES: M. Lamidi, E. Ollivier, G. Balansard, R. Faure, L. Debrauwer and L.Nze-Ekekang: A. new terpenoid glycoside from *Nauclea diderrichii*: *Journal of Natural Products* **58**:921 – 923, 1995.

BOTANICAL NAME: *Nauclea pobeguinii* Merrill (Rubiaceae)

C: Zaire

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: The rootbark contains Atrictosamide, quinovic acid glycosides. Alkaloids: Angustine, naufoline, angustoline, nauclefine, O-acetyl angustoline and 3,14-dihydroangustine.

REFERENCES: M. Zeches, B. Richard, L.G.M'Bahia, L.L. Men-oliver and C. Delaude: *Constituants des ecorces de racine de Nauclea pobeguinii*: *Journal of Natural Products* **48**:42-46,1985.

BOTANICAL NAME: *Neorautanenia amboensis* Schinz. (Leguminosaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Isoflavones: Genistin, ambonin, ambonin heptaacetate, neobanin, neobanin heptaacetate, neobacin, neobacin heptaacetate. Sugars, aminoacids and 2-benzylidihydrobenzofuran glucosides.

REFERENCES: J.C. Breytenbach: Isoflavone glycosides from *Neorautanenia amboensis*: *Journal of Natural Products* **49**:1003 – 1009, 1986.

BOTANICAL NAME: *Neorautanenia mitis* Verdcourt (Leguminosae)
Syn: *Dolichos pseudopachrhizus*, *Dolichos mitis*, *N. orbicularis*, *N. pseudopachyrrhiza*.

C: ^{1,2}Rwanda

V: ²Igitembatenibe, Amakubwe

ETHNOMEDICAL USES: ¹The powder from tubers mixed with butter is used to treat calves for scabies.

²Poisonous: used as fish poison and insecticide. In Central Africa it is used against syphilis and treatment of female frigidity.

BIOLOGICAL ACTIVITY: ¹The tuber possesses acaricidal and antiscabies activity. In humans in form of tincture and ointment (containing the liquid extract) is used for the same purpose.

²Possible use in killing bilharzias carrying fresh water snails of genera *Bulinus* and *Biophalaria*. Petroleum extract of roots inhibits completely the oviposition of the female tick *Rhipicephalus appendiculatus* (conc. 2.5 mg/ml due to 12 α -hydroxyrotenone (mic=50 μ g/ml). Methanol extract of roots had insecticidal activity against defoliant caterpillar *Acraea aurata* which attacks leaves of sweet potatoes (*Ipomea batatus*).

CHEMICAL CONSTITUENTS: ¹Isoflavones: 12 α -hydroxyrotenone (active)

²Isoflavanone type of compounds: Neotenone, pachyrrhizine, dolineone, neoduline, dehydroneotenone, 12 α -hydroxydolineone and 12 α -hydroxyrotenone.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 229-230, 1996. University of Zimbabwe Publications. Harare.

²L.Van Puyvelde, N. De Kimpe, J.P. Mudaheranwa, A. Gasiga, N. Schamp, J.P. Declercq and M. Van Meerssche: Isolation and structure elucidation of potentially insecticidal and acridal isoflavone-type compounds from *Neorautanenia mitis*: *Journal of Natural Products* **50**:349-356, 1987.

BOTANICAL NAME: *Neostenanthera gabonensis* Excell (**Annonaceae**)

C: Ghana

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: (-)-stenantherine, (-)-N-methylstenantherine. Aporphine alkaloids: (-)-liridkinine, (-)-O-methyl isopiline, (+)-isopiline, (+)-O-methyl moschatoline, (+)-N-methyl isopiline, (+)-lirinidine, (+)-caaverine and proaporphine(-)-N_methyl-crotsparine.

REFERENCES: C-Renner and H.Achenbach: Stenantherine and N-methylstenantherine, new aporphines from *Neosthanthera gabonensis*: *Journal of Natural Products* **51**:973-976,1988

BOTANIACL NAME: *Nymania capensis* Lindb. (**Meliaceae**)

C: South Africa.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: The bark and wood yield prieurianin and nymania compounds.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 202, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Ocimum canum* Sims (**Lamiaceae**)

C: Zimbabwe

ETHNOMEDICAL USES: Mosquito repellent

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCE: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 321-325, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Ocimum suave* Willd (**Labiatae**)

Syn: *Ocimum dalabaense* A. Chev., *O.trichodon* Bak. ex Gurke

C:^{1,2} Tanzania

V: Kivumbasi

ETHNOMEDICAL USES: ¹Decoction of roots and leaves drunk against extension of the rectum with stomach pain.

Others: Scrapings of root + scraping of *Zingiber officianle* Roscoe- applied to inflamed tonsils, angina. Leaves: crushed leaves applied to gums and throat for stomatitis: Leaves into rectum for constipation, hemorrhoids. Crushed leaves are snuffed for treatment of blocked nostril, sores, eyes, ear trouble and cough. Infusion of leaves is applied as disfenctant and as insecticide. Entire aerial plant: Stomachic and as an anticarthatic, smoke as mosquito repellent.

²Flavouring of tobacco and snuff, body perfume, mosquito repellent, insecticide for mosquitoes and other insects. Extracts from the pant are used for treating coughs, eye and ear complaints and abdominal pains.

BIOLOGICAL ACTIVITY: ²Mosquito repellent, antimicrobial activity.

CHEMICAL CONSTITUENTS: ²Essential oils containing eugenol (75%), β -pinene, cis- β -ocemene, linalool, β -aryophyllene, β -cubebene, β -bisabolene, palmitic acid, linoleic and linolenic acids and their esters. Oleanolic acid, β -sitosterol, stigmasterol, phytol, and fatty acids.

REFERENCES: ¹Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

²J.B. Chogo and G. Crank: Chemical composition and Biological activity of the Tanzanian *Ocimum suave*: *Journal of Natural Products* **44**:309-311, 1981.

BOTANICAL NAME: *Ocimum trichodon* Baker ex Guerke (**Lamiaceae**)

C: Rwanda

V: Ikonoranzobe, Umwenya, Wifumbi

ETHNOMEDICAL USES: To cure cough and headache, analgesic after childbirth.

BIOLOGICAL ACTIVITY: Antimicrobial activity against some bacteria and fungi.

CHEMICAL CONSTITUENTS: Essential oils: Eugenol (dominates), oct-1-en-3ol and β -caryophyllene epoxide (only oxygenated components) others see paper

REFERENCES: L. Ntezurubanza, J.J.C. Scheffer and A.B. Svendsen: Composition of the essential oils of *Ocimum trichodon* grown in Rwanda. *Journal of Natural Products* **49**: 945-947, 1986

BOTANICAL NAME: *Ochna calodendron* Gilg ex Mildbr. (**Ochnaceae**)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Iso-biflavonoids, calodenone. β -sitosterol- β -D-glucoside, lophirone A.

REFERENCES: B.B Messanga, R.G. Tih, S.F. Kimbu, B.L. Sondengam, M.T. Martin and B. Bodo: Calodenone, a new isobiflavonoid from *Ochna calodendron*: *Journal of Natural Products* **55**:245-248, 1992.

BOTANICAL NAME: *Odyendyea zimmermanni*

ETHNOMEDICAL USES: Used for the treatment of malaria.

BIOLOGICAL ACTIVITY: Antimalarial activity against *Plasmodium falciparum* malaria parasites in vitro.

CHEMICAL CONSTITUENTS:

REFERENCES: L.S. Kinabo and H.H. Nkunya: Chemical studies of some Tanzanian anti-malarial plants: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 201. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Otanthus maritimus* Hoffmg et Link. (Compostae)

C: Egypt

ETHNOMEDICAL USES: It is used in dysentery, inflammation of the urinary bladder.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Acacetin-7-O neohesperidoside. Acetin 5,7-dihydroxy 4'-methoxy.

REFERENCES: S.M. Khafgy, N. Nazmi Sabri, N.A. Abd El-Salam and A.A. Seif El-Din: Isolation of sesamin-like compound and acacetin 7-O Neohesperidoside from *Otanthus maritimus*. *Planta Medica* **35**:186-187.

BOTANICAL NAME: *Ophrypetalum odoratum* (Annonaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antiprotozoal active. Some of the acetogenins and pyrones exhibited Brine Shrimp test toxicity.

-Actogenins showed trypanocidal activity.

-Epoxyprone- Mild activity in trypanocidal and malarial effects.

CHEMICAL CONSTITUENTS: Ophrypetalin, rolliniastatin 1, desacetyluricin, dieporeticenin 1 and 2, pyrones, phenethylcinnamamide.

REFERENCES: M.H.H. Nkunya, S.A. Jonker: Antiprotozoan and other natural products from Tanzanian lians, shrubs and small trees. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 4-5, Dar-es-Salaam*. University of Dar-es-Salaam.

BOTANICAL NAME: *cfr. Opilia celtidifolia* Endel ex. Walp. (Opiliaceae)

Syn: *Groutia celtidifolia* Guill & Perr. *Opilia amentacea* Roxb. *var tomentella* Oliv., *Opilia amentacea* sensu Oliv. FTA1-non Roxb. *O. angiensis* De Wild, *O. ruwenzoriensis* De Wild, *O. tomentella* Engl, *O. parviflora* A. Peter

C: Tanzania

V: Mwevumbulo

ETHNOMEDICAL USES: A decoction of the roots + roots of *cfr. Grewia goetzeana* K. Schum against mental illnesses.

Others: Roots: decoction is used against head ache, fever, influenza, purgative, diuretic. Leaves: used as anthelmintic (with salt). Cold water extract used against oedema and tooth abscess.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Saponins with oleanolic acid or hederagenin as the aglycone.

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Pachystela msolo* Engl. (Sapotaceae)

Syn: *Amorphospermum msolo* Baehni, *Chrysophyllum msolom* Meeuse, *Pachystela ulugurensis* Engl, *Pouteria msolo* Meeuse

ETHNOMEDICAL USES: Decoction of stem bark and sugar cane is used as a lactagogue.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 248 – 249, 1983

BOTANICAL NAME: *Pancratium maritimum*. L.

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Flowers have antiviral activity and cancerostatic properties due to lycorine. Antineoplastic activity due to maritidine, analgesic activity and acetylcholinesterase inhibitor due to galanthamine.

CHEMICAL CONSTITUENTS: Flowers contain alkaloids lycorine, maritidine, lycoramine and galnthamine.

REFERENCES: D.T.A. Youssef and A.W. Fralim: Alkaloids of the flowers of *Pancratium maritimum*. *Planta Medica* **64**:669-670, 1998.

BOTANICAL NAME: *Paramacrolobium caeruleum* Leonard (Fabaceae)

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Inhibit the activity of 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase (due to acetylenic acid)

CHEMICAL CONSTITUENTS: Long chain fatty acids: oleic acid stearic acid (C18). (2)-7-octadecen-9-ynoic; (E)-7-octadecen-9-ynoic; 9-octadecynoic; 7a-octadecadiynoic; 7,9-tetradecadiynoic; (E)-5-octadecen-7,9-diynoic; (2)-5-octadecen-7,9-diynoic; 3-(1,33-dodecadiynyl)-6-oxiranebutanoic; 6-hydroxy-7,9-octadecadiynoic and (Z)-9-octadecenoic acid.

REFERENCES: A.D. Patil, J.A. Chan. P.L. Flamberg, R.J. Mayer and J.W. Westley: Novel acetylenic acids from the rootbark of *Paramacrolobium caeruleum*: Inhibitors of 3-hydroxy-3- methylglutaryl coenzyme A reductase. *Journal of Natural Products* **52**:153-161, 1989.

BOTANICAL NAME: *Pararistolochia flos-avis* Hutch & Diaz (Aristolochiaceae)

C: Ghana

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Aristolactam-A II showed cytotoxicity against PS and KB cells in culture.

CHEMICAL CONSTITUENTS: Aristolactams: Aristolactam-FI and aristolactam-FII, aristolactam-I and aristolactam-A II.

REFERENCES: N.J. Sun, M. Antoun, C.J. Chang, and J.M. Cassady: New cytotoxic aristolactams from *Pararistolochia flox-avis*: *Journal of Natural Products* **50**:843-846,1987.

BOTANICAL NAME: *Parinari excelsa* (Chrysobalanaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Weak antifeedant activity against larvae of *Nudauleiria belina* from stem bark extract.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudauleiria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Paveta lanceolata* (Rubiaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Has molluscicidal properties.

CHEMICAL CONSTITUENTS: Iridoids from leaves.

REFERENCES: REFERENCES: S.E Drewes, M.M. Horn and M.Ochse: Iridoids from leaves from South African Rubiaceae. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 24, Dar-es-Salaam.* University of Dar-es-Salaam.

BOTANICAL NAME: *Peddiea fischeri* Engl. (Thymelaeaceae)

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Chloroform extract of roots displayed activity in the P-388 lymphocytic leukemia test system *in vitro* (ED₅₀ = 0.038 µg/ml)

CHEMICAL CONSTITUENTS: 2,6-dimethoxy benzoquinone, coumarins: daphnoretin and umbelliferone.

REFERENCES: S.S. Handa, A. Douglas Kinghorn, G.A. Cordell and N.R. Farnsworth: Plant anticancer agents. XXVI. Constituents of *Peddiea fischeri*; *Journal of Natural Products* **46**:248-250,1983.

BOTANICAL NAME: *Penianthus zenkeri* (Menispermaceae)

Syn: *Heptacyclum zenkeri*

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Jatrorrhizine, magnoflorine, palmatine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden.* P.70,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage

BOTANICAL NAME: *Pentadiplandra brazzeana* Baillon (**Pentadiplendraceae**)

C: Cameroon

ETHNOMEDICAL USES: Root bark served to mothers after birth to stimulate milk production. Root bark decoction is used against piles and haemorrhoids.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Urea derivatives: N-benzyl, N'-(4-methoxy benzyl) urea, Benzylated ureas, thiourea derivatives and P-methoxythiobenzaldehyde. Contains proteins (the sweet principle).

REFERENCES: A.Tsopmo, D. Nganokam, J.F. Ayafor and O. Sterner,: Urea derivatives from *Pentadiplandra brazeana*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 75-76, Dar-es-Salaam*. University of Dar-es-Salaam

BOTANICAL NAME: *Pentas longifolia* (Rubiaceae)

C: Rwanda

ETHNOMEDICAL USES: Powder from the root used in the treatment of pityriasis versicolor.

BIOLOGICAL ACTIVITY: Antimycotic.

CHEMICAL CONSTITUENTS: Naphthoquinone (active)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 231-232, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Pericopsis angolensis* Van Meeuwen (**Papilionaceae**)

Syn: *Afromosia angolensis* De Wild. *Var brasseuriana* Louis, *Afromosia angolensis* De Wild. *var subtomentosa* Louis, *A. bequaertii* D. Wild., *A. schliebenii* Harms., *Ormosia angolensis* Bak. *O. brasseuriana* De Wild. *Pericopsis schliebenii* Van Meeuwen.

C: Tanzania

V: Mfumbiri

ETHNOMEDICAL USES: One of the plants for remedy against excessive menstrual bleeding.

Others: Leaf juice is used against ascaris. Roots: Decoction is used against hydrocele. Stembark: Maceration is used against diarrhoea. Bark is used against stomach ailments. Vapours from boiling bark, used for tooth ache.

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 240, 1983

BOTANICAL NAME: *Percopsis laxiflora* Benth (**Papilionaceae**)

Syn: *Afromosia laxiflora* Harms

C: Guinea

ETHNOMEDICAL USES: Employed for the treatment of various infirmities e.g. fever, pain and snakebite.

BIOLOGICAL ACTIVITY: Display lethality to *Artemia salina* larvae, highest activity of EtOAc extract ($LD_{50} = 190.3 \mu\text{g/ml}$). That of pure compounds range from 2.4-89.2 $\mu\text{g/ml}$

CHEMICAL CONSTITUENTS: Bark consists of alkaloid N-methylcystine, flavonoids and neutral metabolites from heart wood and leaves. α -methyldeoxy benzoin, R-(-)-angolesin, R-(+)-2-O-methyl-angolensin, (-)-maackioidin (a pterocarpan)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. -L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 245-251, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Peucedanum galbanum* (Apiaceae)

C: South Africa

ETHNOMEDICAL USES: Photodermatitis results when leaves come in contact with the skin. An infusion of the plant is used as an abortifacient. Used in the treatment of vesical catarrh, in kidney and bladder ailments, prostate problems, swelling of the glands and retention of urine. The infusion added with *Mentha longifolia* and *Pelargonium grossularioides* for suppression menses and in conjunction with *Diosma vulgaris* used as a diuretic and in renal diseases.

BIOLOGICAL ACTIVITY: Phototoxic, mutagenic, and photocarcinogenic due to Bergapten, psoralen, and xanthotoxin.

CHEMICAL CONSTITUENTS: Essential oils (leaves and stems): p-cynene, xanthotoxin, *trans*- β -ocimene, nonan-4-one psoralen, p-menththienes, (p-mentha-1,3,8-triene) bergapten, isopimpinellin, imperatorin heraclenol, marmesin, prangol, and heraclenin.

REFERENCES: W.E. Campbell, S.Mathee and F.Wewers: Phytochemical studies on the Blister bush, *Peucedanum galbanum*. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 27-28. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Phyllanthus amarus*

C: Tanzania

ETHNOMEDICAL USES: Aerial parts used to control symptoms of non-insulin dependent *Diabetes mellitus*

BIOLOGICAL ACTIVITY: A water extract of aerial parts, 0.1/kg body weight enhanced clearance of glucose from plasma in OGTT test using normal fasted albino rabbits. At 1g/kg body weight, further clearance of glucose (PS 0.05). Inactive in unfed rabbits

CHEMICAL CONSTITUENTS: Flavonoids from water extracts.

REFERENCE: M.J. Moshi, F.C. Uiso, Z.H. Mbwambo, M.C. Kapingu and R.L.A. Mahunnah: A study of the hypoglycemic activity of extracts of *Phyllanthus amarus*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca*

Symposium on Natural Products, 17-22 August 1997, p. 59, Dar-es-Salaam. University of Dar-es-Salaam

BOTANICAL NAME: *Phyllanthus discoideus* Mull Arg. (Euphorbiaceae)

C: Ivory Cost

ETHNOMEDICAL USES: The leaves used as tonic and in various infectious diseases. The bark is taken as a purgative and antipyretic.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Root bark and stem bark contains alkaloids: Securinine, allosecurinine. Leaves: 14,15-ihydroallosecurinin-15 β -ol, virsecurinine, viroallosecurinine.

REFERENCES: J.L. Mensah, J. Gleye, C.Moulis and I.Fouraste: Alkaloids from the leaves of *Phyllanthus discoideus*: *Journal of Natural Products* **51**:1113 – 1115, 1988.

BOTANICAL NAME: *Phyllanthus fraternus sub. Sp. togoensis* Brunel and Roux (Euphorbiaceae)

C: Ghana

ETHNOMEDICAL USES: It is used for treating skin infections in children, treatment of malaria.

BIOLOGICAL ACTIVITY: Antispasmodial activity.

CHEMICAL CONSTITUENTS: Alkamides, alkadienamides E,E-2,4-octadienamide and E,Z-2,4-decadienamide.

REFERENCES: A.A. Sittie, E. Lemmich, C.E. Olsen, L.Hviid and S.B. Christensen: Alkamides from *Phyllanthus fraternus*. *Planta Medica* **64**:192-193, 1998.

BOTANICAL NAME: *Phyllanthus reticulatus* Poir (Euphorbiaceae)

Syn: *Phyllanthus prieurianus* Muell. Arg.

C: Tanzania

V: Mkasiri

ETHNOMEDICAL USES: Decoction of roots used against venereal diseases. Decoct of roots + roots of *Combretum cfr molle* R.Br ex. D.Don and *Combretum cfr collinum* Fres is used against diarrhoea with annal bleeding.

Others: Roots decoction drunk against dysmenorrhoea, abscess and spasms. Infusion used for gonorrhoea, purgative, hookworm. Root and fruit are used for criminal poisoning. Leaves: Juice to treat spasms, leaf + bark to treat as diuretic, powdered leaf. Applied locally to sores, burns, supprations and chafes of the skin; entire aerial part used as a remedy for anaemia and intestinal haemorrhage.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Phytolacca dodecandra* L'Herit (Phytolacaceae)

C: Ethiopia,

V: Endod

ETHNOMEDICAL USES: In Ethiopia it is used as soap substitute (dried barriers)

BIOLOGICAL ACTIVITY: Water extract has molluscicidal activity from berries due to the contents of saponins.

CHEMICAL CONSTITUENTS: Triterpene glycosides, aglycone Oleanolic acid and its pentacyclic glycosylated saponins, bayogenin, hederagenin and bidesmosidic saponins.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 282-293, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Pierreodendron kerstingii* Little (Simaroubaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Quassinoids: ailanthinone, 2'-acetylglauucarubinone, glaucaubinone and dehydroailanthinone, excelsin, 2'-acetylglauucarubin, glauucarubin. Nonquassinoid compounds: 8-hydroxycanthinone, aurantiamide acetate (asperglauclide).

REFERENCES: S.A. Ampofo and P.G. Waterman; Aurantiamide acetate, quassinoids and canthinone from the stem bark of *Pierreodendron kerstingii*: *Journal of Natural Products* **48**:863-864, 1985.

BOTANICAL NAME: *Piper capense* L.

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antifeedant activity of the stem extract against larvae of *Maurca testulalis*, the pest for cowpea.

CHEMICAL CONSTITUENTS: Lignan: dihydrocapensedin 1.

REFERENCES: I.O. Jondiko: A new antifeedant neolignan isolated from the stem of *Piper capense* L.: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P. 203 Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Plantago major* (Plantaginaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Active as antifeedant against larvae of *Nudauleiria belina* from dichlormethane extract of the whole plant.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudauleiria belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Plectranthus cfr assurgens* Morton (Labiatae)
Syn: *Coleus assurgens* Bak.

C: Tanzania

V: Msasio

ETHNOMEDICAL USES: Powdered leaves snuffed against headache and abdominal pain.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Plectranthus longipes* Baker (Lamiaceae)

C: Rwanda

V: Igucunshu

ETHNOMEDICAL USES: It is used in the treatment of syphilis, bronchitis and as an antiseptic.

BIOLOGICAL ACTIVITY: The leaf extract has been tested for antiulcer activity and found to be active. It has also been tested as an antimicrobial agent, but no results given.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Polygala nyikensis* (Polygalaceae)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antifungal, active against plant pathogenic fungus *Cladosporium cucumerinum* at the minimal amount of 0.6 and 0.4 µg respectively.

CHEMICAL CONSTITUENTS: Xanthones

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 180-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Polygala virgata* Thumb. (Polygalaceae)

C: Malawi

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Xanthones, sinapoyl glycosides, methoxylated isoflavones.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 180-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Polygonum senegalense* Meisn(**Polygonaceae**)

C: ^{1,2}Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ¹Toxicity towards brine shrimp and mosquito larvae (*Aedes aegypti*) antifeedant activity towards locust (*Locust migratoria*) and *Schistocerca gregaria*) and growth inhibition towards pathogenic fungi (*Colletotrichum coffeum* and *Fusarium spp.*)

²Anti-larvicidal activity.

CHEMICAL CONSTITUENTS: ¹Flavonoids: 2'-hydroxy-3',6'-dimethoxy chalcone, 2',4'-dihydroxy-3',6'-dimethoxy chalcone, 2',6'-dihydroxy-3'-4'-dimethoxy chalcone, 2',6'-dihydroxy-4'-methoxy-dihydrochalcone, 2',6'-dihydroxy-4'-methoxy chalcone, 2',4'-dihydroxy-6'-methoxychalcone, 5-hydroxy-7-methoxy flavonone, 7-hydroxy-5,8-dimethoxyflavonone, 7-hydroxy-5-methoxyflavanone, 3,7-dihydroxy-5,8-dimethoxyflavanone, 2',4'-dihydroxy-6-methoxy-dihydrochalcone and 3',6'-dihydroxy-2',4',5'-trimethoxychalcone.

²A-ring tetraoxygenated chalcones: 2'-hydroxy-3',4'- dimethoxychalcones; 2',3'-dihydroxy-4'6'-dimethoxy chalcone.

REFERENCES: ¹J.O. Midiwo and F.A.O. Owour. Epicuticular flavonoids of *Psiadia punctulata* and *Polygonum senegalense* *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 27-28. Printed by EMPDA - Ethiopia

² J.O. Midiwo, O.M. Wanjaru and R.W. Mwangi: Insect anti-feedant principles from leaves of *Polygonum senegalense*: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 40 -53. Published by NAPRECA TANZANIA, Department of Chemistry Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Polygonum setosulum* (Poygonaceae)

C: Rwanda

V: Umuryanyoni

ETHNOMEDICAL USES: Used for the treatment of wounds, burns, and snake bite.

BIOLOGICAL ACTIVITY: The leaf extract was tested for antiulcer activity that was negative. The extract was also tested for antimicrobial activity but no results given.

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Premna chrysoclada* Guerke (Verbenaceae)

Syn: *Premna zansibarensis* Vatke, *Vitex chrysoclada* Boj. Ex schauer

C: Tanzania

V: Mvuma

ETHNOMEDICAL USES: Leaves used to drive out the devil (inhaled and drunk). Snake bite, mental illness + *Uvaria licida* Benth *ssp lucida* is used. A decoction of the roots and roots of *cfr Grewia goetzeana* K. Schum is used to treat mental illness.

Others: Roots: a decoction of roots as remedy for kidney troubles and dysentery. Roots uses as purgative, snakebite: Leaves: used as a cooling wash to cure fever, venereal diseases externally on affected sexual organ.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 255, 1983.

BOTANICAL NAME: *Pseudobersama mossambicensis* Verdc. (Meliaceae)

C: ¹South Africa
²Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ²Selective activity towards DNA repair deficient yeast mutants (RAD57 Yeast strain). Cytotoxicity towards wild type P-388 murine leukemia cells.

CHEMICAL CONSTITUENTS: ¹Twigs and leaves yielded 24-methylene cholest-5-ene-3,7-diol and related compounds.

²Sterols: Ergosta-5-24(28)-diene-3 β ,7 α -diol; 24,28,-epoxy ergost-5-ene-3 β ,7 α -diol; ergost-5-ene-3 β -7 α ,24,28-tetraol.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 208, 1996. University of Zimbabwe Publications. Harare.

²A.A.Gunatilaka, G. Samaranayake, D.G. Kingston, G.Hoffmann and R.K. Johnson: Bioactive Ergost-5-ene-3 β -7 α -diol derivatives from *Pseudobersama mossambicensis*; *Journal of Natural Products* **55**:1648-1654, 1992.

BOTANICAL NAME: *Psiadia punctulata* (Compositae)

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Toxicity towards the nauplii of the brine shrimp and larvae of mosquito (*Aedes aegypti*), antifeedant activities towards locusts (*Locusta migratoria* and *Schistocerca gregaria*, growth inhibition towards pathogenic fungi (*Colletotrichum coffenum*) and *Fusarium spp.*

CHEMICAL CONSTITUENTS: Flavonoids; 5,7-hydroxy-2',4',5'-trimethoxyflavonol, 5-hydroxy-2',3,4',5,7-pentamethoxy flavonone and 5,7-dihydroxy-2',3,4'5'-tramethoxyflavanone.

REFERENCES: J.O. Midiwo and F.A.O. Owour. Epicuticular flavonoids of *Psiadia punctulata* and *Polygonum senegalaense*. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 81. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Psidium guajava* (Mrytaceae)

C: Togo

ETHNOMEDICAL USES: Prophylactic for acute diarrhoea in Togo leaves decoction taken orally.

BIOLOGICL ACTIVITY: Leaf alcoholic extract exhibited spontaneous and electrically coaxially stimulated contraction of isolated guinea pig ileum.

CHEMICAL CONSTITUENTS: Flavonol glycosides: quercetin-3-O- α -L-arabinoside (guaijavarin); quercetin-3-O- β -D-glucoside (isoquercetin), quercetin and quercetin-3-O-gentiobioside.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 215-216, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Psorospermum corymbiferum* Hochr

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Cytotoxic and antitumor activity.

CHEMICAL CONSTITUENTS: Roots contain: Actylvimione F and vismione G.

REFERENCES: G.Cassinelli, C.Geroni, B.Botta, G.D. Monache, F.D. Monache: Cytotoxic and antitumour activity of Vismiones isolated from *Vismieae*: *Journal of Natural Products* **49**:929-931, 1986

BOTANICAL NAME: *Psorospermum febrifugum* Spach (Guttiferae)

ETHNOMEDICAL USES: ¹The roots in Africa are used for treating wounds and the leaves and barks for skin diseases. It is supposedly a febrifuge and antileprosy.

BIOLOGICAL ACTIVITY: ¹Tetrahydroanthracene and anthraquinone show *in vitro* cytotoxic activity against the Co-115 human carcinoma cell line. Their cytotoxicities approached the LD₅₀ found for clinically-important antitumor agent 5-fluorouracil, but less active than vinblastine.

²Cytotoxic and antitumour activity

CHEMICAL CONSTITUENTS: ¹Anthracene and anthraquinone derivatives, tetrahydroanthracene, vimcone D (root bark).

²Fruits contain tetrahydroanthracene nucleus with non-aromatic A ring: Vismione C, vismione D and vismione E.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 182-185, 1996. University of Zimbabwe Publications. Harare.

²G.Cassinelli, C.Geroni, B.Botta, G.D. Monache, F.D. Monache: Cytotoxic and antitumour activity of Vismiones isolated from *Vismieae*: *Journal of Natural Products* **49**:929-931, 1986

BOTANICAL NAME: *Psorospermum glaberrimum* Hochr

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Cytotoxic and antitumor activity.

CHEMICAL CONSTITUENTS: Roots contain tetrahydroanthracene nucleus with nonaromatic A ring: Acetylvismione F, vismione F, and vismione G.

REFERENCES: G.Cassinelli, C.Geroni, B.Botta, G.D. Monache, F.D. Monache: Cytotoxic and antitumour activity of Vismiones isolated from *Vismieae*: *Journal of Natural Products* **49**:929-931, 1986.

BOTANICAL NAME: *Psorospermum tenuifolium* Hook

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Cytotoxic and antitumor activity

CHEMICAL CONSTITUENTS: Roots contain tetrahydroanthracene nucleus with non-aromatic A ring: Vismione H and acetylvismione D.

REFERENCES: G.Cassinelli, C.Geroni, B.Botta, G.D. Monache, F.D. Monache: Cytotoxic and antitumour activity of Vismiones isolated from *Vismieae*: *Journal of Natural Products* **49**:929-931, 1986

BOTANICAL NAME: *Premna oligotricha* Baker (Verbenaceae)

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Weak activity against gram-positive bacteria *Bacillus pamilus*, *Bacillus subtilis*, *Staphylococcus aureus* and *Streptococcus faecalis*

CHEMICAL CONSTITUENTS: Aerial parts: Sesquiterpene: 7 α -hydroxy-6,11-cyclofarnes-3(15)-en-2-one.

REFERENCES: S. Habtarniam, A.I.Gray and P. Waterman: A new antibacterial sesquiterpene from *Premna oligotricha*; *Journal of Natural Products* **56**:140-143, 1993.

BOTANICAL NAME: *Ptericarpus angolensis*

C: Zimbabwe

ETHNOMEDICAL USES: Treatment of urinary schistosomiasis.

BIOLOGICAL ACTIVITY: Anti-schistosomal activity from water extract. Efficacy was comparable to praziquantel [egg count 241 and worm load 9(100), Praziquantel egg count 137 and worm load 1(100)].

CHEMICAL CONSTITUENTS:

REFERENCES: J. Ndamba, N. Nyazema, N. Makaza, C. Anderson and K.C. Kaondera: The efficacy of herbal remedies used for the treatment of schistosoma haematobium in Zimbabwe. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 93-95. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Pterotaberna inconspicua* Staff (Apocynaceae)

C: Zaire

ETHNOMEDICAL USES: The leaves are used to treat hypertension, gastrointestinal upsets and several kinds of aches.

BIOLOGICAL ACTIVITY: Methuende (most potent) and 16-epi methuenine have non competitive antagonist against acetylcholine ($pD'_2=5.13\pm 0.11$) and histamine ($pD'_2=5.13\pm 0.14$) in guinea pig ileum. Potency of methuenine is comparable to that of papaverine. Anticholinergic antihistaminic.

CHEMICAL CONSTITUENTS: 2-acyclindole alkaloids: methuenine, 16-epimethuenine, 6-oxomethuenine, methuenine N-oxide.

REFERENCES: P. Bakana, G.M. Laekeman, J.Totle, A.G. Herman and A.J. Vleintick : Stereochemical considerations in relation to the pharmacological activity of *Pterotaberna* alkaloids; *Journal of Natural Products* **48**:766-771,1985.

BOTANICAL NAME: *Putterlichia verrucosa* Szyszyl (Celastraceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antileukaemic due to normaytancyprine (a microlide) it exhibits a significant *in vivo* activity against P388 lymphocytic leukemia in mice (T/C= 145-300% at 0.4 - 12.5µg/kg) and cytotoxicity against the Kbcell culture (ED₅₀ 10⁻⁵ –10⁻⁶ µg/ml.)

CHEMICAL CONSTITUENTS: Normaytancyprine (maytansinoid)

REFERENCES: A.T. Sneden, W.C. Sumner Jr. and S. Morris Kupchan: Normaytancyprine, a minor antileuemic ANSA macrolide from *Putterlikia verrucosa*: *Journal of Natural Products* **45**:624 – 681, 1982.

BOTANICAL NAME: *Ramnus prinoides* (Rhamnaceae)

V: Gesho, C: Ethiopia

ETHNOMEDICAL USES: Leaves are used as an ingredient in traditional beverages. Fruits are used in the treatment of ringworms infection.

BIOLOGICAL ACTIVITY: Leaf extract is toxic to rabbits, assay for cytotoxicity of geshoidin was negative, Brine Shrimp test also negative.

CHEMICAL CONSTITUENTS: Fruits contain anthracene derivatives: Emodin, physcion, emodinanthrone, emodinbianthrone, rhamnazin and prinoidin. Mon-,di- and

triacetates of emodin. Leaves contain chrysophanol, rhamnocitrin, rhamnezin, quarcetin, and 3-O-methyl quercetin, sorigenin, musizin, geshoidin.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 159-169, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Rauwolfia mombassiana* (Verbenaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Weak antifeedant activity against larvae *Nudauleria belina* from stem bark extracts.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Retama raetam* Webb. (Leguminosae)

Syn: *Lygos raetam* Heywood

C: Egypt

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Flavonoids: Apigenin 7glucoside, Luteolin 7glucoside, chrysoeriol 7glucoside, oiventin 4'-glucoside, apigenin 6,8-di-C-glucoside, daidzein, daizein 7,4'-dimethyl ether.

REFERENCES: M.F. Abdalla and N.A.M. Saleh: Flavonoids of *Retama raetam*: *Journal of Natural Products* **46**:755-756, 1983.

BOTANICAL NAME: *Rhigiocarya racemifera* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Loriodenine, magnoflorine, menisperine(N-methyl isocorydine), O-methylflavinanthine, palmatine

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.70,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Rhoicissus revoilii* Planch (Vitaceae)

Syn: *Roicissus erythrodes* var *ferruginea* sensu Eyles, *R. Sansibariensis* Gilg. *R. schlechteri* Gilg. & Brandt

C: Tanzania

V: Mfungang'ombe

ETHNOMEDICAL USES: Decoction of the root is used to avoid abortion.

Others: Roots for the treatment of wounds, root mixed with milk and fed to a calf whose mother has less milk. Stem sap applied to cuts, sores, and burns as it has healing and analsthetising properties.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 256, 1983.

BOTANICAL NAME: *Rhus pyroides*

C: Botswana

ETHNOMEDICAL USES: The plant is avoided by corn cricket (*Heterodes popus* L.)

BIOLOGICAL ACTIVITY: Weak antifeedant properties due to rhuschalcone (Bichalcone)

CHEMICAL CONSTITUENTS: Bichalcone: 2',4'',2'''-trihydroxy-4'4'''-dimethoxy-4-O-5'''-bichalcone.

REFERENCES: I.B. Masesane, S.O. Yeboah, J. Libscher, C. Mugge and B.M. Abegazi: A bichalcone from the twigs of *Rhus pyroides*: *Phytochemistry* **53**:1005 – 1008.

BOTANICAL NAME: *Rhus undulata var undulata* Jack (Anacardiaceae)

C: South Africa

V: Kuni-bush

ETHNOMEDICAL USES: Used in infective disorders of the gastrointestinal tract.

BIOLOGICAL USES: Antiinflammatory shows 25% inhibition (75mg/kg dose) [Phenylbutazone (reference), 81% inhibition at 75 mg/kg dose] of the phlogistic response (carrageenan-induced edema) in the rat.

CHEMICAL CONSTITUENTS: 5 hydroxy-4',7 dimethoxyflavone (epigenin dimethyl ether)

REFERENCES: T.G. Fourie and F.O.Snychers: A flavone with antiinflammatory activity from the roots of *Rhus undulata*: *Journal of Natural Products* **47**: 1057-1058

BOTANICAL NAME: *Rhyncosia albissima* Gandoger (**Papilionaceae**)

C: Tanzania
V: Mzirapeku

ETHNOMEDICAL USES: Decoction of roots and Mtonga is used against impotence and as aphrodisiac.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 240, 1983

BOTANICAL NAME: *Rumex abyssinicus* Jacq. (**Polygonaceae**)

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Chrysophanono, physcion, emodin, palmidin C, chrysophanol-8- β -D-glucoside, emodin-8- β -D-glucoside.

REFERENCES: Y.Fassil, A. Bezabeh, B.Abgaz, B. Botta, G.D. Monache and F.D. Monache: *Journal of Natural Products* **48**:148, 1985.

BOTANICAL NAME: *Rumex usambarensis* Engl. Dammer (**Polygonaceae**)
Syn: *Rumex nervosus* Vahl *var usambarensis* Dammer, *Rumex trinervius* Rech. f.

C: ²Rwanda
V: ²Umufumbageshi

ETHNOMEDICAL USES: ¹Fresh root decoct is used against bilharzias.

Others: Leaves extract is used for stomach pains and cough. Juice from leaves is used for stomach pains and constipation in children and abdominal pain during pregnancy. Juice with fat applied to skin eruptions. Entire plant: Decoct for pains in stomach and as a treatment for small pox, thirst (chewed)

²Used for treatment of gastrointestinal pain, gonorrhoea, yaws, dysentery, worms and diarrhoea.

BIOLOGICAL ACTIVITY: ²The leaf extract has been tested for antiulcer activity and found to be active. The extract was also tested for antimicrobial activity but results were not revealed.

CHEMICAL CONSTITUENTS:

REFERENCES: ¹Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 242, 1983

²E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Salecia madagascariensis* DC. (**Celastraceae**)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antileukemic activity against P-388 lymphocytic leukemia *in vivo* (T/C 147 at 1.00 mg/kg, 125 at 0.75 mg/kg) and *in vitro* against KB cell culture (ED₅₀ 0.24 µg/ml). Toxicity of isoiguesterin at doses above 1.0-2.0 µg/kg often overrides any therapeutic effect.

CHEMICAL CONSTITUENTS: Bisnortriterpene: Isoiguesterin.

REFERENCES: A.I. Sneden: Isoiguesterin, a new antileukemic bisnortriterpene from *Salicia madagascariensis*: *Journal of Natural Products* **44**: 503-507, 1981

BOTANICAL NAME: *Santiria trimera* Aubrev. (Burseraceae)

C: Cameroon.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Lanostane derivatives including 6β-acetoxy-3,23-dioxo-9β,20β-lanost-7,24-dien-26-oic acid.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 196, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Satureja punctata* Briq. (Labiatae)

Syn: *Micromeria purtschelleri* Benth

Micromeria purtschelleri Gurke

C: Tanzania.

V: Kidimdim

ETHNOMEDICAL USES: Decoction of leaves drunk against swellings on cheeks and face. Boiled leaves used to mop swollen area. Leaves from *Mormodica calantha* Gilg. are combined with *Myrica salicifolia* Hochst ex A. Rich, *Clutia abyssinica* Jaub & Spach and *Coleus barbatus* Benth.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *cfr. Scutia myrtina* Kurz. (Rhamnaceae)

Syn: *Rhamnus capensis* Thumb, *Rhamnus circumscissa* L.f., *R. lucida* Roxb., *R. myrtina* Burm. f., *Scutia buxifolia* Hutch & Moss, *Scutia capensis* G.Don, *S. capensis* G.Don var *parvifolia* Eckl & Zeyh, *S. commersonii* Brongn, *S. hutchinsonii* Suesseng, *S. indica* Brongn, *S. indica* Brongn var *grandispina* Engl, *S. indica* Brongn var *oblongifolia* Evhard, *S. natalensis* Krauss, *S. obcordata*

C: Tanzania

V: Msiluga

ETHNOMEDICAL USES: Decoction of fresh roots drunk for gonorrhoea and bilharzias.

Others: Decoction of root used against intestinal worms. Leaf used as an ointment to hasten parturition of both child and placenta.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Tetratriacontan-22-ol-13-one, β -sitosterol, tetratriacontanoic acid, quercetin-3-O- β -D-glucoside and leucocyanidin have been isolated from the plant.

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 242, 1983

BOTANICAL NAME: *Securidaca longipedunculata* Fresen (Polygalaceae)

²C: Tanzania

V: Mbazo

³C: Senegal

ETHNOMEDICAL USES: ¹It is used in Africa for treatment of rheumatism.

²Water extract of the root as one of plants mixed for treatment of gonorrhoea. Infusion in porridge is used against heart pains.

Others: Root rubbed into scarification on the neck and forehead to cure cyclic headache. Infusion of roots used as a wash to cure dropsy and oedema. Root decoct as purgative, in disorders of genital organs, adstringent and harten birth, overdose produces poisoning. Root decoct for rheumatism. A cold water infusion for people who are posed with evil spirit. Infusion causes vomiting and diarrhoea. An infusion drunk for dysmenorrhoea, decoct uses as mouth wash for gum boil. Water extract used for nose bleeding (dropped into the nose), infusion of bark for venereal diseases, root bark used as gastric tonic. Cold infusion as used an eye remedy, purative, emetic. Small pieces of bark (root) chewed to relieve impotence. Crushed roots are inserted into the vagina to commit suicide, as a remedy for snakebite. Roots effective against intestinal parasites. A decoction is used against bronchitis, lepra, venereal diseases, abdominal diseases and black water fever. Powder snuffed against migraine. Leaves: Powdered leaves used for wounds and sores, young leaf decoct for cough. Infusion against venereal diseases, purgative. Stem bark infusion for treatment of syphilis, venereal diseases, decoct as antidote in poisoning and as taenifuge. Powdered bark in beer as abortifacient, ordeal poison. Seeds: soap and bleaching agent.

³In Senegal it is used as an anti-inflammatory and antibacterial effects.

BIOLOGICAL ACTIVITY: ¹Has been reported to be toxic, death has occurred as a result of introduction into the vagina. Ingestion of the oil from seeds is fatal within a few hours.

²Root extract has no effect on isolated uterus. The aqueous extract and saponin fraction cause bradycardia and higher doses stop the heart in diastole. Water extract is lethal to fresh water mollusk *Taphinus glabratus* anti-inflammatory action for treatment of eczema, psoriasis, multiple sclerosis and in the prevention of graft rejections.

CHEMICAL ACTIVITY: ¹Methyl salicylate (roots), xanthone with rare oxygenation 1,2,7.

²Roots smell of methyl salicylate, gaultherin, at 40°C in water gives methyl salicylate and primaverose, saponin. Roots contain triterpene saponin, aglucone.

³Sinapic acid, caffeic acid, 4,5-dicaffeoyl D-quinic acid; 3,4,5-tricaffeoyl D-quinic acid, β -D-(3,4-disinapoyl)fructofuranosyl- α -D-(6-sinapoyl)glucopyranoside and β -D-(3-sinapyl)fructopyranosyl- α -D-(6-sinapoyl)glucopyranoside.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 180-186, 1996. University of Zimbabwe Publications. Harare.

²Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 240 - 242, 1983

³N. De Tomasi, S. Piacente, F. De Simone, C. Pizza: New sucrose derivatives from the bark of *Securidaca longipendunculata*: *Journal of Natural Products* **56**:134-137, 1993.

BOTANICAL NAME: *Securinega virosa* Pax & K. Hoffm. (Euphorbiaceae)

Syn: *Fluggea microcarpa* Blume *F. villosa* Baill., *Phyllanthus virosus* Roxb. Ex Willd., *Securinega microcarpa* Pax & Hoffm ex Aubrev.

ETHNOMEDICAL USES: Decoction of roots mixed with roots of *Grewia plagiophylla* K. Schum is used against diseases caused by witchcraft. Decoction of roots + roots of *Uvaria lucida* Benth ssp. *lucida* has antiacid and stomach pains. Decoction of roots + roots of *Harrisonia abyssinica* Oliv. Is used against hernia.

Others: Decoction used against syphilis, dysmenorrhoea and oedema, stomach ache, roots and fruits for snake bite, infusion for malaria, roots for gonorrhoea, rheumatism, bilharzias, architis, frigidity, sterility, gonorrhoea, renal calculus and black water fever. Leaves: Juice for treatment of epilepsy and mental illness: leaf + tobacco destroys worms in sores. Stem bark: used for diarrhoea and pneumonia; entire plant is a fish poison (India)

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Norsecurinine, dihydronorsecurinine, hordenine (roots). Virosecurinine, viroallosecurinine (leaves).

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Senecio hieracioides* DC.

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: 9,10-dehydrofuranoeremophilane, ligularenolide, eremophila-7(11)9dien-8,12,-olide and 8 β -hydroxyeremophil-7(11)9-dien-9,12 olide

REFERENCES: F.Bohlmann, J. Jakupovic and D. Mohammadi: Shikimic acid derivatives from *Senecio hieracioides*. *Journal of Natural Products* **47**:718-720, 1984

BOTANICAL NAME: *Senna didymobotrya* (Fabaceae)

Syn: *Cassia didymobotrya*

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: In leaves: Chrysophanol, physcion, aloe emodin, fallacinol, rhein, parietinic acid, and the preanthraquinone, torosachrysone.
In pods: Knipholone and bianthrone.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 159-169, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Senna longiracemosa* (Fabaceae)

Syn: *Cassia longiracemosa*

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: In leaves, chrysophanol, physcion, torachrysone, rubrofusarin, nataloe-emodin, 10,10'-bichrysophanol, 10-10' chrysophanol-physcion, 10,10'-chrysophanol isophyscion, 10,10'-bisophyscion and 10-hydroxy-10,7'-(chrysophanol-anthrone)-chrysophanol, 2-methoxy stypannone.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. -L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 159-169, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Senna multiglandulosa* (Fabaceae)

Syn: *Cassia multiglandulosa*, *Senna tomentosa*, *Cassia tomentosa*.

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Leaves and stems: Chrysophanol emodin, physcion and bianthrone, floribundone-1, torosamin-a, 10-quinone, anhydrophlegamin-9, 10-quinone and 1,4 quinone, 9(physcion-7-yl)-5,10 dihydroxy-2-methoxy-7-methyl-1,4-anthraquinone (sengulone)

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. -L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 159-169, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Senna septemtrionalis* (Fabaceae)

Syn: *Cassia laevigata*, *Cassia floribunda*, *Senna floribunda*.

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Purgative

CHEMICAL CONSTITUENTS: ¹8-mono- and digalactosides of physcion, chrysophanol and emodin, bianthroquinone pigments, floribundane-1 and floribundane-2, N¹N⁸-dibenzoyl-spermidine, ²physcionanthrone, torosachrysone, torosamin-9¹⁰-quinone.

REFERENCES: 1. K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 37-39, 1996. University of Zimbabwe Publications. Harare.

2. Natural Products Research Network for Eastern and Central Africa. Seventh NAPRECA Symposium on Natural Products, 17-22 August, P. 64, 1997.

BOTANICAL NAME: *Senna sophera* L. (Leguminosae)

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: From roots, flowers and heartwood: Physcion, physcion bianthrone, xanthorin, floribundone-1, senglone, isosenglone and anhydrophlegmacin-9,10¹-quinone A2 and B2.

REFERENCE: G. Alemayehu, B. Woldeyesus, B.M. Abegaz and W. Kraus: New anthracene derivatives from *Senna septemtrionalis* and *Senna sophera*. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 64, Dar-es-Salaam*. University of Dar-es-Salaam

BOTANICAL NAME: *Serugeda zanzibariensis* Baill. (Euphorbiaceae)

Syn: *Gelonium zanzibariensis* Mull. Arg.

C: Tanzania

V: Mdimu wa chakani

ETHNOMEDICAL USES: Decoction of roots mixed with roots of *Acalypha fruticosa* Forsk, drunk against infectious skin disease. Leaves used for skin infection.

Others: Decoction of roots and stem bark used against hookworm, roots boiled in water drunk as a purgative. Infusion of roots drunk for snakebite. Leaves: juice for hookworm, leaf and fruit used for snake bite and abdominal pain.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Sesamum angolense* (Pedaliaceae)

ETHNOMEDICAL USES: Fungitoxic

CHEMICAL CONSTITUENTS: Naphthoxirene derivatives and their glycosides. Iridoid glucosides, sesamosides, phlomiol, pulchellose and 6 β -hydroxypolamiide (all inactive), phenylpropanoid glycoside verbascoside.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Sesbania bispinosa* (Fabaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Weak activity against extracts of whole plant.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudaulea belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Sezamum indicum* L. (Pedaliaceae)

C: Rwanda
V: Igonde

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Leaf extract tested for antiulcer activity, found to be inactive. Also tested for antimicrobial activity but no results shown.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Sida rhombifolia* L. (Malvaceae)

C: Tanzania
V: Uvuvundi

ETHNOMEDICAL USES: The roots are boiled with roots of *cfr. Cissampelos Pereira* L. *V. orbiculata* Miq. decoction used against frequent abortions.

Others: Root as abortifacient, snake bite. Leaves: Emollient poultice for inflammations. Entire aerial parts: snake bite remedy. Tuberculosis and against rheumatism. In Vietnam it is used as purgative, in Queensland is used as a diarrhoeic remedy.

BIOLOGICAL ACTIVITY: An extract of plant: contractions of the guinea pig ileum equivalent to 90% maximal acetylcholine contraction, in a dose corresponding to 13mg fresh plant material per ml both fluid.

CHEMICAL CONSTITUENTS: Given negative tests for bitterness, alkaloid, volatile oil, hydrocyanic acid, saponin and triterpenoids.

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Solanum dasyphyllum* Schum et Thonn (**Solanaceae**)
C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Potent local anticonvulsant in mice anticonvulsant activity (65% protection).

CHEMICAL CONSTITUENTS: Fruits contain scopoletin, diosgenin, stitosterol, ferulic acid, p-coumaric acid, umbeliferone, scoparone, aesculetin, aesculin, solanine, tomatidenol and solasodine.

REFERENCES: S.K. Adesina: Constituents of *Solanum dasyphyllum* fruit: *Journal of Natural Products* **48**: 147, 1985.

BOTANICAL NAME: *Solanum incanum* L. (**Solanaceae**)
Syn: *Solanum coagulans* Forsk, *S. antum*. L.

C: Tanzania
V: Mtula

ETHNOMEDICAL USES: Decoction of roots and leaves, used against vomiting and diarrhoea.

Others: Roots: Decoction is used against diarrhoea and vomiting, abdominal pains, dyspepsia, fever, stomachache, and indigestion. Roots used for toothache. The root is poisonous. It is used with the root of *Amorphophaelus dracontoides* for preparation of arrow poison. Roots used for abdominal pain, liver troubles, carbuncle, cough, colic, sore

throat, gonorrhoea and syphilis, snakebite. Leaves used in form an infusion into the ear for earache, cough, colic, sore throat, syphilis. Juice is used as an expectorant, laryngitis, gonorrhoea, eye disease, headache, hurting teeth and caries. Fruits: used for treatment of sores around the nails containing pus, on fresh wounds, skin diseases. Sheep cough, fruits as emetic to children (toxic). Fruit juice is remedy for dandruff, snakebite, earache. Juice as stomachic, poultice or an infusion of the fruit is said to be effective in removal of external benign tumours. Fruits are used in the treatment of epilepsy. The fruits and seeds used externally in the treatment of inflammations, earache and headache. Flowers and fruits are used in the treatment of constipation and diarrhoea. Unidentified part of the plant: Used in chest pains, ring worm, syphilis, roasted plant for pleurisy and pneumonia, tooth ache, sore throat.

BIOLOGICAL ACTIVITY: Pure compound of phosphorylated structure is effective inhibitor of gram-positive, gram-negative bacteria, yeasts, dermatophytes and some agricultural pathogens. High concentrations of this compound cause hemolysis.

CHEMICAL CONSTITUENTS: Unripe fruit: diosgenin and yomogenin. Ripe fruits and leaves do not contain these. Solamarine (alkaloid glycoside). Nitrosodiethyl amine (fruits) phosphorylated structure similar to purine adenine

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 249 - 250, 1983

BOTANICAL NAME: *Solanum nigrum* (Solanaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity against *Saccharomyces cerevisiae* (Leaves)

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993

BOTANICAL NAME: *Solenostemma argel* Hyne (Asclepiadaceae)

C: Egypt

ETHNOMEDICAL USES: Used as a purgative antipyretic, expectorant, antispasmodic, in bile congestion. Used in herbal mixtures in the treatment of viral B and C hepatitis and as an immunostimulant, used in the treatment of hypercholesterolemia.

BIOLOGICAL ACTIVITY: Antibacterial activity from the stem extract.

CHEMICAL CONSTITUENTS: Kaempferol, quercetin, rutin, monoterpene glycosides: 6,7-dihydroxy-dihydrolinalool 3-O- β -glucopyranoside and 6,7-dihydroxy-dihydrolinalool 7-O- β -glucopyranoside. Pregnane glucoside: Pregn-5-ene 3,14- β -dihydroxy-7,20 dione 3-O- β -apiofuranosyl-(1 \rightarrow 6)- β -glucopyranoside, 2-phenylethyl O- α -arabinopyranosyl (1 \rightarrow 6)- β -glucopyranoside, astragalin and kaempferol-3-O- α -rhamnopyranosyl-(1 \rightarrow 6)- β -glucopyranoside.

REFERENCES: M.S. Kamel, K.Olitani, H.A. Hasanain, M.H. Mohamed, R.Kasai, K. Yamasaki: Monoterpene and pregnane glucosides from *Solenostemma argel*: *Phytochemistry* **53**:937 – 940, 2000.

BOTANICAL NAME: *Sophora velutina* Lindl. var *Zimbabwensis* Gittett and Brummitt
(Leguminosae)

C: Zimbabwe

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Lipinane type of alkaloids: (+)-lamprolobine, (+)-9 β -hydroxylamprolobine, cytosine.

REFERENCES: K. Asres, W.A.Gibbons, J.D. Philipson and P. Mascagni: The alkaloids of *Sophora velutina*: *Journal of Natural Products*: **49**:117 – 121, 1986.

BOTANICAL NAME: *Sorghum bicolor* Moench

C: Kenya

V: Serena

ETHNOMEDICAL USES: Cereal crop.

BIOLOGICAL ACTIVITY: (Z)-3-hexen-1-ol acetate and (Z)-3-hexen-1-ol are components of blend of plant volatiles that was found to be attractive to adult Colorado potato beetles, *Leptinotarsa decemlineata*, (Z)-3-Hexen-1-ol was found to be attractant for the adult *Acidepiopsis assectella*. Hexanal is a component of a blend of plant odor compounds that was found to increase trap catches of the adult carrotfly *Psila rosae* and induced strong antennal responses in the cereal aphid *Sitobion avenae* and *Psila rosae* while (Z)-3-hexen-1-ol acetate induced strong antennal responses in the oak flea weevil *Rhychoenus Yponomeuta padellus* and both antennal and single sensillum responses in the cabbage white butterfly *Pierpis barassicae*. (Z)-3-Hexen-1-ol evoked strong antennal and single sensillum responses in *Leptinotarsa decemlineata*.

CHEMICAL CONSTITUENTS: Volatiles: Toluene, Hexanol, (Z)-3-hexen-1-ol, m-xylene, (Z)-3-hexen-1-ol acetate, Nonanal and Decanal.

REFERENCES: W. Lwande and M.D. Bentley: Volatiles of *Sorghum bicolor* seedlings: *Journal of Natural Products* **50**:950-952, 1987.

BOTANICAL NAME: *Spathodea campanulata* P. Beauvais (Bignoniaceae)

C: Nigeria

ETHNOMEDICAL USES: Used for the management of malaria.

BIOLOGICAL ACTIVITY: Antimalarial, blood schizonticidal action of the alcoholic extract of leaves and root bark against *Plasmodium berghei berghei* in mice.

CHEMICAL CONSTITUENTS: Caffeic acid, 20 β -hydroxy ursolic acid, tomentosolic acid (3 β -hydroxyurd-12-19-dien-28-oic acid) and ursolic acid.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 309-313, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Sphenocentrum jollyanum* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Jatrorrhizine, palmatine (roots, stems and leaves)

REFERENCES: : F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Ibadan*. P.70,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage

BOTANICAL NAME: *Spirostachys africana* Sond. (Euphorbiaceae)

Syn: *Excoecaria africana* Mull, *E. agallocha* Benth., *E. synandra* Pax. *Excoecariopsis dinteri* Pax. *E.synandra* Pax. *Maprounea africana* Mull, *Sapium africanum* O.Kuntze, *Spirostachys synandra* Pax. *Stillingia africana* Baill.

C: Tanzania

V: Msalaka

ETHNOMEDICAL USES: Latex in water for diarrhoea and vomiting. Decoction of root bark or stem bark is used against worms and treatment of severe diarrhoea.

Others: Decoction used against syphilis as a purgative; stem bark : decoction with porridge used against worms, infusion in small doses is purgative (Death occurs as a result). Decoction of bark as emetic; bark as a fish poison.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Diosphenol and diterpene ketones and ketols.

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Spondias mombin* L. (Anacardiaceae)

C: Ghana

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: β -lactamase inhibition activity (hexane extract of leaves). The inhibition of SB-202742 had an IC_{50} of 5.0 μ g/ml against TEM-1 but no inhibitory activity against the *staphylococcus aureus* enzyme. Class 1 β -lactamases and PSE4 showed a significant level of inhibition by SB-202742. Preincubation of TEM-1 with SB-202742 did not improve the IC_{50} values showing that it is a reversible inhibitor. Eadie-Hofstee plots demonstrated that SB-202742 was a non-competitive inhibitor of nitrocefin hydrolysis by TEM-2 β -lactamase, with nitrocefin at a range of concentrations between 25 and 400 μ M. In bioassay plates SB-202742 extraction with concentration of penicillin G elevated to 20 μ g/ml for maximum sensitivity, the minimum detectable concentration of SB-202742 was 1 μ g/ml. SB-202742 at a concentration of 100 μ g/ml did not display a useful level of synergy with amoxycilin against range of β -lactamase-producing bacteria. SB-202742 also displayed a weak antibacterial activity against gram-positive organisms with MIC values for staphylococcus spp in the 2-32 μ g/ml range.

CHEMICAL CONSTITUENTS: SB-202742 (Anacardic acid 6-(heptadecatrien-8(z),11(z)-yl-2-hydroxybenzoic acid)

REFERENCES: N.J. Coates, M.L. Gilpin, M. N. Gwynn, D.E. Lewis, P.H. Milner, S.R. Spear and W.Taylor.: SB-202742, A novel β -lactamase inhibitor isolated from *Spondias mombin*. *Journal of Natural Products* **57**:654 –657, 1994.

BOTANICAL NAME: *Staudtia kamerunensis* Warb. (Myristaceae)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Diterpene acid: Staudtienic acid.

REFERENCES: B.E. Noumbissie, H. Kpnang, Z.T. Fomum, M.T. Martin and B. Bodo: Staudtienic acid, a diterpene acid from *Staudtia kamerunensis*: *Journal of Natural Products* **55**:137-139, 1992.

BOTANICAL NAME: *Steganotaenia araliaceae* Hochst (Umbelliferae)

Syn: *Peucedanum araliaceum* Benth, *Paucedanum fraxinifolium* Hiern ex Oliv.

C: ¹Tanzania

²Guinea, ²Ethiopia

V: ¹Mnyonga mpembe

ETHNOMEDICAL USES: Roots are part of remedy for serious abdominal pains accompanied by constipation.

Others: Decoction is used as a remedy for malaria and an analgesic in rheumatism (only small amount is drunk as it causes dizziness). Root used as remedy for bilharzias and gonorrhoea. Root chewed for sore throat, snakebite, infusion of root for treatment of swelling due to allergy. Stembark: Burnt bark's ashes are rubbed onto scarification in the treatment of rheumatism. Decoct in milk is used for dysentery and carminative, asthma. Leaves: used for treatment for swellings due to allergy. Used to treat diseases from goats and calves with difficulty in breathing. Unidentified parts: Cures liver and lung diseases in cattle. Produces abortion in goats.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ²Bisbenzocyclooctadiene lignan: Neoisostegane.

REFERENCES: ¹Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 253, 1983.

²M. Taafrout, F.Rouessac, J. Pierre Robin, R.P. Hicks, D.D. Shillady and A.T. Sneden: Neoisostegane, a new bisbenzocyclooctadiene lignan laclone from *Steganotaenia arariaceae*: *Journal of Natural Products* **47**:600-606, 1984.

BOTANICAL NAME: *Stephania abyssinica* Walp (Menispermaceae)

C: ¹Nigeria
²Ethiopia

ETHNOMEDICAL USES: ²Leaves used as purgative, emetic, roots used in the treatment of roundworms, menorhagia and boils.

BIOLOGICAL ACTIVITY: ²Moderate anticancer activity using a mechanism based bioassay with DNA repair-deficient and repair-proficient yeast mutants

CHEMICAL CONSTITUENTS: ¹Alkaloids: Metaphanine, lanuginosine (rhizome), xylopine, stephavanine, protesphabyssine, stephabyssine, stephaboline, 6-dihydroepistephaniamine-6-acetate.

²Husubanan alkaloids: stephavanine and 4'-O-methyl stephavanine.

REFERENCES: ¹F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Ibadan*. P.70,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage

²E. Dagne, A.A. Gunatilaka, D.G. I. Kingston and M. Alemu: 4'-O-Methyl stephavanine from *Stephania abyssinica*: *Journal of Natural Products* **56**:2022-2025, 1993

BOTANICAL NAME: *Stephanic dinklagei* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Dicentrine, isocorydine, corydine, roemarine (roots), norcorydine, stephalgine, stepharine, steporphine, N-methylcorydine, N-methylglaucine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.71,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Sterculia cfr. appendiculata* K.Schum

C: Tanzania
V: Mfunu

ETHNOMEDICAL USES: A decoction of the stem bark + stem bark of *Adansonia digitata* L. one used to treat abdominal pains accompanied by mild bleeding from the vagina. Fresh roots are ingredients of remedy for treating blood stools and to treat prolaps of the rectum.

Others: Roots: A decoction is drunk against hookworm. Stem bark: A decoction is used to bathe children as tonic after malaria attack. Snakebite, decoction of bark and leaves is used to treat palsy. Leaves: leaf and petiole as purgative for the relief of abdominal pains.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCE: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 251, 1983.

BOTANICAL NAME: *Sterculia cfr stenocarpa* H. Winkler (Sterculiaceae)

C: Tanzania
V: Mhoza

ETHNOMEDICAL USES: A decoction of the fresh stem bark + stem of *Adansonia digitata* and *Sterculia cfr appendiculata* K. Schum is used to cure abdominal pains accompanied by mild bleeding from the vagina.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 251, 1983.

BOTANICAL NAME: *Strychnos aculeata* Solered (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Fruit, bark, seeds and fruit extracts: Muscle relaxant.

CHEMICAL CONSTITUENTS: Alkaloids: Strychnofendlerine (root bark), N_a-acetyl-isostrychnosplendine (Stem-bark), N_a-acetyl-O-methyl-strychnoplendine (Stem-bark).

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.12,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange.

BOTANICAL NAME: *Strychnos afzelii* Gilg (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Stem and root bark, leaves: Muscle relaxant.

CHEMICAL CONSTITUENTS: Alkaloids: Bisnordihydrotoxiferine, bisnor-C-alkaloid H, caracurine V, willand-Gumlich aldehyde, diaboline, bisnordihydrotoxiferine mono N-oxide, bisnordihydrotoxiferine di N-oxide, caracurine V mono N-Oxide, longicaudatine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.12,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange.

BOTANICAL NAME: *Strychnos alaeocarpa* Gilg ex Leeuwenberg (**Loganiaceae**)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Muscle-relaxant.

CHEMICAL CONSTITUENTS: Decussine type of alkaloids: Decussine, dihydrodecussine and bisnordihydrotoxiferine. Akagerine type of alkaloids.

REFERENCES: W.N.A. Rolfsen, A. A. Olanyi, R. Verpoorte, L. Bohlin: Some new ducussine-type alkaloids from *Strychnos decussata*, *Strychnos dale*, and *Strychnos elaeocarpa*: *Journal of Natural Products* **46**:415-421, 1981.

BOTANICAL NAME: *Strychnos angolensis* Gilg. (**Loganiaceae**)

C: ^{1,2}Nigeria, ³Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ¹Has convulsant and muscle-relaxant effects.

²Branches, stem bark and root bark extract has muscle relaxant activity.

³Muscle relaxant effect due to 11-methoxy-macusine A.

CHEMICAL CONSTITUENTS: ¹Alkaloids, 11-methoxy-WGA, 17-O-methyl-11-methoxy-WGA, 11-methoxy-diaboline and ep-17-O-methyl-11-methoxy-diaboline.

²Alkaloids: Angustine, angustidine (Leaves); Tubotaiwine, 11-methoxy-diaboline, caracurine V, 11-methoxy-wieland-Gumlich aldehyde, 11-methoxy-17-O-methyl-wieland-gumlich aldehyde (stem bark and root bark).

³Quarternary alkaloids: 11-methoxy-macusine A.

REFERENCES: ¹L. Bohlin, W. Rolfsen, J. Stronbom and R. Verpoorte. Alkaloids and Biological Activity of *Strychnos angolensis*. *Planta Medica* **35**:19-30, 1979.

²F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p12,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange.

³R.Verpoorte, L.Bohlin, D. Dwumabadu, W. Rolfsen and J. Strombom: 11-methoxy-macusine A, a new quaternary alkaloid from *Strychnos angolensis*, *Journal of Natural Products* **46**:572-575. 1983

BOTANICAL NAME: *Strychnos barteri* Solerod (Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Stem-bark: Muscle relaxant.

CHEMICAL CONSTITUENTS: Alkaloids: Akagerine (Stem bark and roots); Nigritamine (Stems); 10-hydroxy-nigritamine (Leaves); 18-dehydro-nigritamine (stem bark and leaves); oxindole I, oxindole II and 18-dehydro-10-hydroxy-nigritanine (Leaves)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.13,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange.

BOTANICAL NAME: *Strychnos camptoneura* Gilg. et. Busse (Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Root bark and stem bark have muscle relaxant activity.

CHEMICAL CONSTITUENTS: Alkaloids: Alstonine, serpentine (stem bark and root bark); retulin N-oxide, camptoneurine (Stem bark); retuline, antirrhine, antirrhine methobromide, angustine (leaves); akagerine, kribine (stem bark).

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.13,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos chrysophylla* Gilg. (Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Stem bark and root bark have muscle relaxant activity.

CHEMICAL CONSTITUENTS: Alkaloids: Longicautine (Stem bark)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*, p.13 1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage

BOTANICAL NAME: *Strychnos dale* De Wild. (**Loganiaceae**)

C: ¹Nigeria, ²Cameroon.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ¹Muscle relaxant from the stem bark, leaves and root bark.

²Muscle relaxant.

CHEMICAL CONSTITUENTS: ¹Alkaloids from stem bark: Akangerine, 17-O-methyl-akangerine, kribine, 21-O-methyl-kribine, epi-21-O-methyl-kribine, decussine, 3,14-dihydrodecussine.

²Decussine type of alkaloids: Decussine, dihydrodecussine (Stem bark) also present are akangerine type of alkaloids.

REFERENCES: ¹F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.13,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage

²W.N.A. Rolfsen, A. A. Olanyi, R. Verpoorte, L. Bohlin: Some new dwcussine-type alkaloids from *Strychnos decussata*, *Strychnos dale*, and *Strychnos elaeocarpa*: *Journal of Natural Products* **46**:415-421, 1981.

BOTANICAL NAME: *Strychnos decussata* (Pappe) ex Gilg. (**Loganiaceae**)

C: ¹Nigeria, ²Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ¹Muscle relaxant (Stembark and root bark)

²Muscle relaxant due to decussine (*in vitro and in vivo*)

CHEMICAL CONSTITUENTS: ¹Alkaloids, gluco alkaloid; akagerine, 17-O-methyl-akagerine, 10-hydroxy-17-O-methyl akagerine, 10-hydroxy-21-O-methyl-kribine, 10-hydroxy-epi 21-O-methyl kribine, 10-hydroxy-akagerine lactone, decussine, 3,14 dihydro-decussine, rouhamine, bisnordihydrotoxiferine, macusine B, O-methyl-macusine, O-methyl-macusine A or C, malindine.

²Indole alkaloids: Decussine, bisnordihydrotoxiferine; 3,14, dihydrodecussine; 10-hydroxy-3,14-dihydrodecussine.

REFERENCES: ¹F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.13,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

²W.N.A. Rolfsen, A. A. Olanyi, R. Verpoorte, L. Bohlin: Some new dwcussine-type alkaloids from *Strychnos decussata*, *Strychnos dale*, and *Strychnos elaeocarpa*: *Journal of Natural Products* **46**:415-421, 1981.

BOTANICAL NAME: *Strychnos dinklagei* Gilg. (Loganiaceae)

C: ¹Nigeria
^{2,3,4}Ivory Coast

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Muscle relaxant + tonic convulsions (leaves, stem bark and root bark)

CHEMICAL CONSTITUENTS: ¹Alkaloids: Ellipticine, 17-oxo-ellipticine, ellipticine N-oxide, 18-hydroxy-ellipticine, 10-hydroxy-ellipticine, 3,14 dihydroellipticine, 3,14,4,21-tetrahydro-ellipticine, 17-oxo-ellipticine N-oxide, gentiamine, venoterpine (stem bark)

²Stembark contains alkaloids: brafouedine, isobrafouedine.

³From stembark: Monoterpene alkaloids: Gentiamine, venoterpine, pyrido 4,3b1carbazoles: Ellipticine, N₆oxy-ellipticine; 3,14-dihydroellipticine and 3,14,4,21-tetrahydroellipticine. 17-oxoellipticine, 10-hydroxyellipticine, N₆-oxoellipticine; and 18-hydroxyellipticine. Neutral compounds: Methyl syringate, liriioresinol A and liriioresinol B.

⁴Monoterpene alkaloids: dinklageine, strychovoline, gentianine, cantleyine; Monoterpene.

REFERENCES: ¹F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.14,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

²S.Michael, F. Tillequin and M. Koch: Brafouedine and isobrafouedine; New indole alkaloids from *Strychnos dinklagei*: *Journal of Natural Products*: **49**:452-455,1986

³S Michael, F. Tillequin et Michael Kotch, L.A. Assi : *Alkaloides des ecorces de triges de Strychnos dinklagei*: *Journal of Natural Products* **45**:489-494, 1982.

⁴S. Michael, A.L.Skaltsounis, F. Tillequin, M. Koch and L.A. Assi: *Alkaloides des feuilles de Strychnos dinkagei*; *Journal of Natural Products* **48**:86-92, 1985.

BOTANICAL NAME: *Strychnos dolichothyrsa* Gilg. ex Onochie et Hepper
(Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Muscle relaxant (Stem bark and root bark)

CHEMICAL CONSTITUENTS: Alkaloids: 18-dhyroxy-wieland-Gumlich aldehyde bisnor-c-curarine, bisnor-c-alkaloid D, bisnordihydrotoxifrine di-N-oxide, caracurine V mono N-oxide, caracurine V di-N-oxide, bisnordihydrotoxiferine, bisnor-c-alkaloid H, caracurine V, bisnor-c-alkaloid H di N-oxide, dichocurine, dolichothrine, wieland-

Gumlich aldehyde, tubotaiwine, condylocarpine, nor-c-flurocurarine, 11-methoxydinboline, nor-macusine B, longicaudatine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.14,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos elaeocarpa* Gilg. ex Leeuwenberg (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Aqueous extract from the bark had antileukemic activity. Root barkm, stem bark and leaves have muscle relaxant effect.

CHEMICAL CONSTITUENTS: Alkaloids: Akagerine, 17-O-methyl akagerine, kribine, 21-O-methyl-kribine, epi 21-O-methyl-kribine, strychnocarpine, decussine, 3,14-dihydrodecussine, bisnordihydrotoxiferine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.14,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos floribunda* Gilg. (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Muscle relaxant (Stembark, root bark)

CHEMICAL CONSTITUENTS: Alkaloids: Angustine (leaves), akagerine, decussine, strychnocarpine, desacetyl-isoretuline, bisnordihydrotoxiferine, isorosibiline, rouhamine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.15,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos gossweileri* Exell (Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Root extract quaternary fraction: Antimicrobial activity. Rootbark and stem bark: Muscle relaxant effect.

CHEMICAL CONSTITUENTS: Alkaloids: Dolichantoside, alstonine, diploceline, isodolichantoside, 16-epidiploceline, strychnofluorine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.15,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos henningsii* Gilg. (Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Holstine, holstiline, condensamine, retuline, rinline, diaboline, henningsamine, henningsoline, O-acetyl-henningsoline, 11-methoxy-diaboline, 2,16-dehydro-diaboline, 2,16-dhydro-11-methoxy-diaboline, tsilamine, 10-methoxy-tsilamine (seeds) O-demethyl-tsilamine(leaves), 12-demethyl-tsilamine, O-demethyl-10-methoxy-tsilamine, tsilanimbine, N_a-desacetyl-18-hydroxy-isoretuline, N_a-desacetyl-18-hydroxy-17-O-methyl-isoretuline, O-acetyl-retuline.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.15,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos icaja* Bail. (Loganiaceae)

C: ¹Nigeria
²Zaire

ETHNOMEDICAL USES: ²Roots used for the preparation of arrow and ordeal poisons. Pygmies tribes of Cameroon treat malaria with roots of this plant.

BIOLOGICAL ACTIVITY: ¹Quarternary fraction from the root extract had muscle relaxant, cardiotoxic activity. Root bark and leaves had tonic convulsions activity.

²Antispasmodial activity (root extract), antimalarial (*in vitro*) asexual erythrocytic stages of *Plasmodium falciparum*. Cytotoxicity: Against W138-Hela and KB cell lines Hela. Sungucine, isosungucine and 18-hydroxy isosungucine were found to be toxic against human cancer cell lines HeLa and KB and fibroblasts W138 KB cells and W138 cells were more sensitive to sungucine and isosungucine than Hela cells.

CHEMICAL CONSTITUENTS: ¹Alkaloids from leaves: Vomisine, icajine, 19,20, α -epoxy-novacine. From roots: Strychnine, 12-hydroxy-strychnine, pseudo strychnine, 19,20 α -epoxy-vomisine, 19,20, α -epoxy-15- hydroxy-novacine, 19,20 α -epoxy-15-hydroxy-icajine, 19,20 α -epox 11-methoxy-vomisine, 19,20 α -epoxy-10-icajine, 19,20 α -epoxy-15-hydroxy-vomisine, 15-hydroxy-icajine, 19,20 α -epoxy-12-methoxy-icajine, bisnorhydrotoxisferine, sungucine, N_b-methyl-strychnine.

²Roots contain methyl-strychnine, icajine, α -epoxynovacine and 19,20 α -epoxy, 15-hydroxynovacine, bisnordihydrotoxisferine and sungucine. Sungucine derivatives: isosungucine, 18-hydroxy-sungucine, 18-hydroxyisosungucine. I strychnine, vomisine, 19,20- α -epoxynovacine.

REFERENCES: ¹F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.15,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

²M.Frderich, M.C.De Pauw, G. Labres, M. Tits, M.P. Hayette, V. Brant, J. Penelle, P. De Moe and L. Angenot: New antimalarial and cytotoxic sungucine derivatives from *Strychnos icaja* roots: *Planta Medica* **66**:262 – 269, 2000.

BOTANICAL NAME: *Strychnos longicaudata* Gilg. (Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Muscle relaxant, tonic convulsions (Root bark, stem bark).

CHEMICAL CONSTITUENTS: Alkaloids: Longicaudatine, bisnor-c alkaloid H. (root bark)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.16,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos malacoclados* C.H.Wright (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Leaves and roots bark, stem bark: Muscle relaxant effect, muscle relaxant+ tonic convulsions.

CHEMICAL CONSTITUENTS: Alkaloids from stem bark: 11-methoxy-diaboline, 19,20-dihydro-11-methoxy-diaboline, nor mecusine B.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.16,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos memecyloides* S.Moore (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Weak muscle relaxant (bark).

CHEMICAL CONSTITUENTS: Usambarensine

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.52-53, 1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange.

BOTANICAL NAME: *Strychnos ngouniensis* Pellegr (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Stem bark has muscle-relaxant effect.

CHEMICAL CONSTITUENTS: Alkaloids: Ngouniensine, longicaudatine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.16,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos nigrifolia* Bak. (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Stem bark, root bark: no effect.

CHEMICAL CONSTITUENTS: Alkaloids: Nigritamine, 10-hydroxy-nigritanine, 18-dehydro-10-hydroxy-nigritanine, akagerine, kribine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.17,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos potatorum* L. (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Strychnine like activity, Hypotensive, cardiac depressant (Seed, bark and leaf extract); muscle relaxant + tonic convulsions

CHEMICAL CONSTITUENTS: Alkaloids: Angustine, angustidine (Leaves); diaboline, acetyl-diaboline.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.17,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICA NAME: *Strychnos samba* Duvign (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Muscle relaxant (stem bark, leaves); muscle relaxant + tonic convulsions (root bark).

CHEMICAL CONSTITUENTS: Alkaloids: Angustine, angustidine, angustoline (leaves).

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.17,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos scheffleri* Gilg. (**Loganiaceae**)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Muscle relaxant (root bark)

CHEMICAL CONSTITUENTS: Alkaloids: Angustine, angustidine, angustoline, N_a-acetyl-strychnosplendine, N_a-acetyl-O-methyl-strychnosplendine. Strychnobrasiline, strychnofendlerine, desacetyl-isoretuline, bisnordihydrotoxiferine, mavacurine, fluorocurine.

REFERENCE: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.17,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos soubrensis* Hutch et Dalz. (**Loganiaceae**)

C: Ivory Coast

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Weak strychninelike (convulsant) activity and much stronger muscle relaxant effect (due to alkaloids)

CHEMICAL CONSTITUENTS: Alkaloids (stem bark) strychnofendlerine, strychnobrasiline, isosplendine, 14- β -hydroxy-strychnobrasiline.

REFERENCES: F.C. Ohiri, R. Verpoorte, A. B. Svendsen, J.Karlsen, A. Mostad: Alkaloids of *Strychnos soubrensis*: *Journal of Natural Products* **46**:369-373,1983.

BOTANICAL NAME: *Strychnos spinosa* Lam. (**Loganiaceae**)

²Syn: *Strychnos buettneri* Gilg, *S. cardiophylla* Gilg & Busse, *S. carvalhoi* Gilg., *S. courteti* A.Chev, *S. cuneifolia* Gikg. & Busse, *S. dulcis* A. Chev, *S. erarginata* Bak, *S. euryhylla* Gilg & Busse, *S. gillettii* De Willd, *S. gracillima* Gilg. var *paucispinosa* De Willd., *S. harmsii* Gilg & Busse, *S. laxa* Solered, *S. leiocypala* Gilg. & Busse, *S. lokua* A. Rich., *S. madagascariensis* Poir., *S. megalocarpa* Gilg. & Busse, *S. miniungansembe* Gilg., *S. muegbe* Choiv., *S. amphlicarpa* Gilg. & Busse, *S. pluvialis* A.Chev., *S. radiosperma* Gilg. & Busse, *S. rhombifolia*, *S. susibariensis* Gilg., *S. schweinfurthii* Gilg. *S. Spinosa* sensu Dale 1952 non Lam, *S. spinosa* Lam var *pubescens* Bak. *S. volkensii* Gilg.

C: ¹Nigeria

²Tanzania, V: Mtonga

ETHNOMEDICAL USES: ¹The fruit is used in Nigeria as a constituent of an arrow, poison eaten in other areas.

²Water extract of root bark for stomach pains.

Others: Root juice dropped in the ear. Decoction of roots for colds, root decoction for dropsy, roots chewed for snake bite, roots with other plants for syphilis and other diseases, roots as febrifuge, emetic, sore eyes. Roots + roots of *Afromosia laxifolia*

as febrifuge. Removal of jiggers. A decoction of the root used as analgesic, bark for cough. Leaf juice against malaria and meningitis: leaf and stems for treating retarded children (growth) also in metrorrhagia. Fruits as emetic, seeds toxic, produces nausea.

BIOLOGICAL ACTIVITY: ¹Stem bark, leaves, stem and root bark: muscle-relaxant.

²Seeds, fruit shell, stem and leaf are non toxic to guinea pig and the mouse. Weak muscle relaxant activity has been found in extracts of stem bark and stem with leaves.

CHEMICAL CONSTITUENTS: ¹11-methoxy-diabolone, usambarensine.

²Fruits and seeds, contain small amounts of alkaloids in fruit shell (0.009%) and entire fruit with seeds (0.012%).

REFERENCES: ¹F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Ibadan*. P.50,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage.

²Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Strychnos splendens* Gilg. (Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Muscle relaxant (root bark and stem bark)

CHEMICAL CONSTITUENTS: Alkaloids: Strychnosplendine (stem bark, fruits); splendoline (leaves), isosplendoline (stem bark), isostrychnosplendine (leaves, stem bark), N_a-acetyl-isostrychnosplendine, isosplendine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Ibadan*. p.17,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage

BOTANICAL NAME: *Strychnos soubrensis* Hutch. ET DAIZ (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Weak strychnine like (Convulsant) effect and muscle-relaxant (stronger) bark extract. Leaves, stem and root bark; Muscle relaxant and tonic convulsions.

CHEMICAL CONSTITUENTS: Stem bark strychnofendlerine, isosplendine, strychnobrasiline(N_a-acetyl indole alkaloids), 14-β-hydroxy-strychnobrasiline alkaloids.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.44-49,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange.

BOTANICAL NAME: *Strychnos tchibangensis* Pellegr (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids; 5',6'-dihydro-usambarensine (stem bark, root bark)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.17,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos trichoneura* Leeuwenberg (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Angustine, angustidine, angustoline (leaves)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.18,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos usambarensis* Gilg. (Loganiaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Quarternary fraction of the root extract has muscle relaxant. Chloroform extract of the leaf showed antileukemic activity.

CHEMICAL CONSTITUENTS: Alkaloids from the rootbark: Usambareusine, N_b-methyl usambarensine, 5',6'-dihydro-usambaresine, N_b-methyl,5',6'-dihydro-usambarensine, usambarine (leaves), harmine, 5,,6-dihydro flavopereirine, angustine, dihydrotoxiferine, C-curarine, C-calebassine, afrocurarine, ahagerine, mucasine-β-O-methyl-macusine, O-methyl-dihydro-macusineB (root bark), 18,19-dihydro-usambarine, usambardine Vi, strychnobaridine, strichnopentamine, strychnofoline, isostrychnofoline, strychnophylline, isostrychnophylline (leaves), descarbomethoxy-dihydrogambirtanine (fruits), fluorocurarine, melinonine F₁ N_b-methyl-norharmane (root bark).

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.18,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Strychnos variabilis* De Wild (Loganiaceae)

C: ¹Nigeria, ²Zaire

ETHNOMEDICAL USES: ²Toxic plant

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹Desacetyl-retuline, strychnobiline, isostrychnoboline, 12'-hydroxy-isostrychnobiline, desacetyl-isoretuline, retuline, isoretuline, acetyl-isoretuline, retulinal, isoretulinal, 12-hydroxy-retulina, 12-hydroxy-isoretulinal, rosibiline, strychnopvotine, 16-hydroxy-isoretulinal, mavacurine, fluorocurine, iso-rosibiline, desacetyl-N-formyl-retuline.

²Bis-indole alkaloids: 12'-hydroxystrychnobiline
(root bark)

REFERENCES: ¹F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.19,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

²M.Tits, L. Angenot and D. Tavernier: 12'-hydroxystrychnoboline, a new unsymmetrical bisindole alkaloid from *Strichnos variabilis*: *Journal of Natural Products*. **46**:638-645,1983.

BOTANICAL NAME: *Strychnos xantha* Leeuwenberg (**Loganiaceae**)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Braches have a muscle relaxant effect; Stme bark and root bark have tonic convulsions; leaves have no effect.

CHEMICAL CONSTITUENTS: Alkaloids from leaves: Angustinem angustidine, angustoline.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. p.20,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Swartzia madagascariensis* (**Leguminosae**)

ETHNOMEDICAL USES: Tanzania

BIOLOGICAL ACTIVITY: Aqueous extracts of the seed pods contain large amounts of saponins with high molluscicidal activity.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 37-39, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Swertia calycina* (Gentianaceae)

ETHNOMEDICAL USES: Rwanda

BIOLOGICAL ACTIVITY: Dichloromethane extract had an antifungal activity against *Cladosporium cucumerinum* and *Candida albicans*. Activity was strongly given by 2-methoxy-1,4-naphthaquinone.

CHEMICAL CONSTITUENTS: Xanthones mainly decussating, 2-methoxy-1,4 naphthoquinone, secoiridoids.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 32-36, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Symphoria globulifera* L. f. (Clusiaceae)

C: Rwanda

V: Umushishi

ETHNOMEDICAL USES: Used as a cosmetic.

BIOLOGICAL ACTIVITY: The root extract was tested for antiulcer activity, found to be inactive. The extract was also tested for inhibition of growth on wheat rootlet, no results given.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and*

Central Africa (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Synadenium glaucescens* Pax (Euphorbiaceae)

C: Tanzania

V: Mnuu

ETHNOMEDICAL USES: Root bark in cold water with sugar drunk for three days for cough and tuberculosis.

Others: Leaves used as purgative. Latex: applied to peanuts, two peanuts eaten as a drastic purgative. The latex is used in the treatment of boils, root and latex can be toxic.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Synadenium grantii* (Euphorbiaceae)

C: Rwanda

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Latex contains n-alkanes (C₁₄ – C₁₉) Triterpenic ketones, tetracyclic triterpenoids, euphol, tirucallol, euphorbol, sugars, n-fatty acids, aromatic acids (benzoic acid, phenylacetic acid, ionol), cis-1,4-polyisoprene isomer.

REFERENCES: P.C. Karenzi, B.Uzaba Kiliko, J.M.V.Maniraho, C.Sebugaze: Research on latex plants from Rwanda: *Natural Products Research Network for Eastern and*

Central Africa (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 131-136. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Synaptolepsis kirkii* Oliv. (Thymelaceae)

C: Kenya

ETHNOMEDICAL USES: Used in the treatment of epilepsy, and antidote for snakebites, produces emesis, used in the treatment of cancer.

BIOLOGICAL ACTIVITY: Irritant activity on the ear of NMRI mice. Tumor-promoting activity on the black skin NMRI mice.

CHEMICAL CONSTITUENTS: From roots: Daphnane type-esters of 5 β -hydroxy resiniferol-6 α ,7 α -oxide. Esters of 5 β ,12 β -dihydroxyresiniferonol-6 α ,7 α -oxide. 1 α alkyl daphnane types.

REFERENCES: W. Adolf, E.H. Seip and E. Hecker and S.F. Dossaji: Irritant principles of the mezereon family (Thymelaceae) V-New skin irritants and tumor promoters of the daphnane and 1 α -alkyl daphnane type from *Synaptolepsis kirkii* and *Synaptolepsis retusa*: *Journal of Natural Products* **51**:662 – 674,1988.

BOTANICAL NAME: *Synaptolepsis retusa* H.H.W.Pearson (Thymelaeaceae)

C: Benin

ETHNOMEDICAL USES: In West Africa , it is utilized as a component of arrow poison and for the treatment of cancer.

BIOLOGICAL ACTIVITY: Irritant activity, tumor promoting activity.

CHEMICAL CONSTITUENTS: Roots contain Daphnane type esters of 5 β -hydroxyresiniferonol-6 α ,7 α -oxide. Esters of 5 β ,12 β -dihydroxyresiniferonol-6 α ,7 α -oxide 1 α allyl daphnane types.

REFERENCES: W. Adolf, E.H. Seip and E. Hecker and S.F. Dossaji: Irritant principles of the mezereum family (Thymelaeaceae) V-New skin irritants and tumor promoters of the daphnane and 1 α -alkyldephnane type from *Synaptolepis kirkii* and *Synaptolepis retusa*: *Journal of Natural Products* **51**:662 – 674,1988.

BOTANICAL NAME: *Synclisia scabrida* Miers (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES: Used in Nigeria for treatment of lower abdominal pain in women, listlessness and mental strain.

BIOLOGICAL ACTIVITY: Cycleanine has been shown to possess anti-inflammatory, analgesic, anticonvulsive, antipyretic, antihypotensive, cytotoxic/-antitumour and sedative properties. N,N'-dimethyl cycleanine has hypotensive and curare like properties. Cocsuline has been reported to possess antibacterial activity.

CHEMICAL CONSTITUENTS: Alkaloids: cycleanine, cocsoline, norcycleanine, cycleanine N-oxide.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.90-94,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhage.

BOTANICAL NAME: *Tabernaemontana chippii* Pichon (Apocynaceae)
Syn: *Conopharyngia chippii* Stapf.

C: Ivory Coast.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Diameric alkaloids possess strong anti-microbial activity against gram positive bacteria and moderately weak activity against gram negative bacteria. Weak antifungal and antiyeast activity.

CHEMICAL CONSTITUENTS: Alkaloids from rootbark: Isositosirikine, 16-epi-isositsirikine, normacusine B, pericyclivine, vobasinol, akiammiline, desacetyl akuaminiline, picraline, pleiocarpamine, 12-hydroxyakiammicine, apparicine, tubotaivine, voaphylline, conopharyngine, 3R/S-hydroxyconophyryngine, 3-oxoconopharyngine, conopharyhydroxyindolenine; 3R/S-hydroxy conopharynginehydroxyindolenine, coronaridine, ibogaline, isovoacangine, 3R/S-hydroxyconodurine, 3R/S-hydroxy-16-decarbomethoxy conodurine, 3R/S-hydroxovoacamine, vobparivine, vobparicine-N₄-oxide, monogagaine, chippiine, TC-A, TC-B, TC-D, Tacroline, Desacetyltacraline, TC-E, (M⁺ 416), TC-F(M⁺600), TC-G(M⁺588), TC-H(M⁺606)

REFERENCES: T.A VanBeek, R. Verpoorte, A.B. Svendsen and R. Fokkens: Antimicrobially active alkaloids from *Tabernaemontana chippii*: *Journal of Natural Products* **48**:400-423, 1985.

BOTANICAL NAME: *Tabernaemontana pachysiphon* Stapf. (Apocynaceae)

C: Kenya

ETHNOMEDICAL USES: Leaves are used for the treatment of headache, lice and jigger fleas.

BIOLOGICAL ACTIVITY: Leaves have antimicrobial, amoebicidal and cytotoxic activities, nutrient.

CHEMICAL CONSTITUENTS: Apparicine alkaloids, tubotaiwine, tubotiwine-N-oxide and isovoacangine.

REFERENCES: M.Hoft, R. Verpoorte, E. Beck.: Leaf alkaloid contents of *Tabernaemontana pachysiphon* as influenced by Endogenous and Environmental factors in the natural habitat. *Planta Medica* **64**:148-152,1998.

BOTANICAL NAME: *Tabernaemontana ventricosa* Hochst ex A. DC.

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Strychnan alkaloids (stem bark): 10-hydroxyheyneanine; 16-epi-isositsirkine, apparicine, tubotaiwine; norfluorocuranine, akuammicine, akuammicine N-oxide, 10-hydroxycoronaridine.

REFERENCES: J. Schripsema, A.H. Lokkerbol, R. Van Der Heijden, R. Verpoorte, A. Baerheim, Svendsen: Alkaloids of *Tabernaemontana ventricosa*: *J. Natural Products*. **49**:733-734, 1986.

BOTANICAL NAME: *Tabernanthe pubescens*

C: Zaire

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: coronaridine, voaphylline, tetrahydroalstonine, voaphylline hydroxy-indolenine, 11-hydroxy tabersonine, ibogemine, ibogaine, ibogaline, iboxygaine, voacangine, voacangine hydroxy-indoline, voacristine, 3,6-oxido iboxygaine, 10-hydroxy coronaridine, 10-hydroxy heyneanine, 3,6-oxido ibogaine.

REFERENCES: T. Mulamba, C. Delaude, L. Lemen-Olivier et J. Levy: *Alkaloides de Tabernanthe pubescens*: *Journal of Natural Products* **44**:184-189, 1981.

BOTANICAL NAME: *Talinum tenuissimum* Dinter (Portulacaceae)

C: Malawi

ETHNOMEDICAL USES: It is used for the treatment of schistosomiasis.

BIOLOGICAL ACTIVITY: Molluscicidal activity. The aqueous extract of the plant kills *Biomphalaria glabrata* snails at a concentration of 25 ppm within 24 hours. Activity due to monodesmosidic saponins.

CHEMICAL CONSTITUENTS: Bidesmsidic saponins and monodesmosidic saponins.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Teclea nobilis* (Rutaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: No antimicrobial activity found.

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Teclea ouabanguiensis* Aubrev and Perr. (Rutaceae)

C: ^{1,2}Cameroon

ETHNOMEDICAL USES: ¹Remedy against cough and asthma.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹Limonoids: 7-deacetylazadirone, 7-deacetylproceranone, tecleanin, lupeol, 7-deacetoxy-7-oxoazadirone and auabanginone.

²Furoquinoline alkaloids: Tecleaverdoorine, tecleine, flindersiamine, montrifoline (nkolbisine) kokusaginine, tecleamine

REFERENCES: ¹J.F. Ayafor, B.L. Sondengam, A.N. Bilon and J.D. Connolly: Limonoids of *Teclea oubanguinsis*: *Journal of Natural Products* **49**:583-587, 1986.

²J.F. Ayafor, B.L.Sondengan, A. Ngo Bilon, E. Tsamo. S.F. Kimbu and J. I. Okogun: Furanoquinoline alkaloids of *Teclea oubanguinensis*. *Journal of Natural Products* **45**: 714-717, 1982

BOTANICAL NAME: *Teclea trichocarpa* (Rutaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity (root bark) against *Bacillus subtilis*.

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Teclea verdoorniana* Excell & Mendonca (Rutaceae)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Furoquinoline alkaloids: Nkolbisine, flindersiamine (trunk bark); limonoids: 7-deacetylazadirone, kokusaginine, tecleaverdoornine, tecleaverdinem tecleine.

REFERENCES: J.F. Ayafor, J.I. Okogun: Nkolbisine, a new furoquinoline alkaloid and 7-deacetylazadirone from *Teclea verdoorniana*: *Journal of Natural Products* **45**:182 – 185, 1985.

BOTANICAL NAME: *Tephrosia elata* Deflers (**Leguminosae**)

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Flavones as feeding deterrents for *Spodoptera eximpta*, *Eelolana saccharina* and *Maruca testulalis* larvae.

CHEMICAL CONSTITUENTS: Isopongaflavone, tephrosin. Flavones, 8-(3,3-dimethyl allyl)-5,7-dimethoxy flavone and obovatol methyl ether, warugalone(scandenone), pterocarpan, (+)-pisatin, and (-)-maackiain. Rotenoid tephrosin (roots)

REFERENCES: W. Lwande, C.S. Greene and M.D. Bantley: Flavonoids from the roots of *Tephrosia elata*: *Journal of Natural Products* **48**:1004-1005, 1985.

BOTANICAL NAME: *Tephrosia hildebrandtii* Vatke (**Leguminosae**)

C: Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Hildecarpin has antifeedant and antifungal properties.

CHEMICAL CONSTITUENTS: Hildecarpin (a 6a-hydroxypterocarpin), β -substituted flavans, 8-C-prenylated flavones: 5,7-dimethoxy-8(3''-hydroxy-3''-methyl-trans-but-1-enyl)flavone, 5,7-dimethoxy-8-(3''-methyl-trans-but-1,3-dimethy)flavone, named trans tephrostachin and trans-anhydrptephrostachin respectively.

REFERENCES: W. Lwande, A. Hassanali. M.D. Bentley and F.O. Monache: 8-C-prenylated flavones from the roots of *Tephrosia hildebrandtii*. *Journal of Natural Products*: **49**:1157, 1986.

BOTANICAL NAME: *Tephrosia nubica* Baker (Papilionoideae)

ETHNOMEDICAL USES: Fish poison

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Retinoids, isoflavone, flavonones/chalcones, flavonols, flavones: Semiglabin, pseudosemiglabrin, apollinine, laneolatin.

REFERENCES: N.M. Ammar, B.B. Jarvis: Major flavonoids of *Tephrosia nubica*, *Journal of Natural Products* **49**:719-720,1986.

BOTANICAL NAME: *Tephrosia semiglabra* Sond (Leguminosae)

C: Lesotho

ETHNOMEDICAL USES: Antidepressant and/or antihypertensive agent. A decoction of the root is used as a sedative to soothe those who sorrow or are depressed, particularly widows, also for heart trouble.

BIOLOGICAL ACTIVITY: Platelet aggregation inhibitor activity of semiglabin is $IC_{50} = 5\mu\text{g/ml}$ which compares well with prostacyclin (PGI₁) as a standard.

CHEMICAL CONSTITUENTS: Flavones: Semiglabin and pseudosemiglabrin.

REFERENCES: L.T. Jonathan and M.F Gbeassor: Phytochemical and Biological screening of *Tephrosia semiglabra*: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 58 - 63, 1989, P 17 – 23. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Terminalia brachystemma* (Combretaceae)

ETHNOMEDICAL USES: In Zimbabwe it is used in haematuria, bilious vomiting, constipation and diarrhoea.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Gum exudates of arabinogalactan proteins.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Terminalia brevipes* (Combretaceae)

ETHNOMEDICAL USES: In Somalia, it is used for hepatitis and malaria.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Terminalia serica* (Combretaceae)

ETHNOMEDICAL USES: In East Africa, it is used for the treatment of bilharziasis, stomach troubles.

In Botswana, it is used to arrest purging.

In South Africa, it is used to treat stomach disorders, bilharziasis and diabetes.

In Tanzania, it is used for stomach disorders and bilharziasis.

In Zimbabwe, it is used for the treatment of diarrhoea, epistaxis, prolapsed rectum of infants, backache, to widen vagina, wounds, abdominal pains, worms on arms, antimeic, infertility in women, tonic, depressed fontanelle, sore throat, gonorrhoea, bilharziasis, abortion, dilated birth canal.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Gum exudates

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Terminalia stenostachya* (Combretaceae)

ETHNOMEDICAL USES: In Zimbabwe, it is used to treat epilepsy, antidote in poisoning.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 121-141, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Tetracera boiviana* Baill (Dilleniaceae)

C: Tanzania

V: Mgoto-ugotoke, makalafisi

ETHNOMEDICAL USES: A decoction of roots is drunk against the influence of witch craft. A decoction of roots mixed with roots of *Rhinchosia albissima* Gandoger is drunk to induce delivery in women pregnant for more than nine months.

Others: Piece of root tied to the wrist by members of the family against influenza or pneumonia during an epidemic. Domestocks protects from wild predators when a piece of the roots is tied to neck of one adult female of each kind.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983.

BOTANICAL NAME: *Tetradenia riparia* (Lamiaceae)

C: Rwanda

ETHNOMEDICAL USES: Used for preserving beans.

BIOLOGICAL ACTIVITY: Antimicrobial activity against *Pseudomonas solanacearum*, antispasmodic, antitrichomonas and inhibits the growth of wheat rootlets.

CHEMICAL CONSTITUENTS: A diterpenediol; 8(14),15-Sandaracopimaradiene-7a,18-diol (most active).

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 231, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Tetraplaura tetraptera* Taub (Leguminosae)

C: Ghana

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: First compound was 100% lethal to *Biomphalaria glabrata* at 20 ppm while the second was not molluscicidal at the same concentration. Stem bark extract was found to be mutagenic utilizing *Salmonella typhimurium* strain TM677 in the absence of metabolic activating system (S-9). The other compounds (1 and 2) were not mutagenic.

CHEMICAL CONSTITUENTS: Triterpene glycosides: 3-O-[β -D-glucopyranosyl-(1''-6')-2' acetamido-2'-deoxy- β -D-glucopyranosyl]olean-12-en-28-oic acid; Echynocystic acid-3-O-sodium sulfate(2); Aridanin; 3-O-(2'-acetamido-2'-deoxy- β -Oglucopyranosyl)-16 α -hydroxyolean-12-en-28-oic acid; echnocystic acid, 3-O-[β -D-glucopyranosyl-(1''-6')- β -D- β -glucopyranosyl]-27-hydroxyolean-12-en-28-oic acid; 3-O-[β -D-galactopyranosyl-(1''6)-2'acetamido-2'-deoxy- β -D-glucopyranosyl]olean-12-en-28-oic acid.

REFERENCES: O. Ngassapa, C.W. Beecher, J.M. Pezzuto, N.R. Farnsworth, T.O. Henderson, and G.L. Boye: Isolation of echnocystic acid-3-D-Sulfate, a new triterpene from *Tetrapleura tetraptera* and evaluation of the mutagenic potential of molluscicidal extracts on isolates: *Journal of Natural Products* **56**:1872, 1993.

BOTANICAL NAME: *Teucrium polium* L. (Lamiaceae)

C: Egypt

ETHNOMEDICAL USES: It is used as an appetizer, expectorant and hypoglycemic. It is also used to treat stomachache and to promote wound healing.

BIOLOGICAL ACTIVITY: Volatile oil have been found to posses antispasmodic activity.

CHEMICAL CONSTITUENTS: Diterpenoids, iridoids and flavonoids. Sesquiterpenoids comprise the major part of the volatile oil also the oil contains alcohols like β -eudesmol, 10-cadinol, α -cadinol, 7-epi-eudesm-4(15)-ene-1 β ,6 α -diol, 7-epi-eudesm-4(15)-ene-1 β ,6 β -diol.

REFERENCES: A. Kamel: 7-epi-eudesmanes from *Teucrium polium*: *Journal of Natural Products* **58**: 428 –431, 1995.

BOTANICAL NAME: *Tiliacora dinklagei* (Menispermaceae)

C: Ghana

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Bisbenzyl isoquinoline biphenyl alkaloids: Dinklacorine and tiliagenine, oblongine.

REFERENCES: D. Dwuma-Badu, J.S.K. Ayim, T.T. Dabra, M.M. El-Azizi, P.L. Schiff Jr, D.J. Slatkin and J.E. Knapp: Constituents of West African Medicinal Plants XXV. Isolation of obongine from *Tiliacora dinklagei* and sysnthesis of oblongine and related benzyliisoquinoline alkaloids: *Jounal of Natural Products* **46**:342-349, 1983.

BOTANICAL NAME: *Tiliacora dinklagei* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Tiliagenine, tiliacorlnine, funiferine, nortiliacorinine-A, dinklacorine, oblongine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.71,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Tiliacora funifera* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Funiferine, tiliacorine, nortiliacorine-A, nortiliacorinine-A, funiferine N-oxide (roots), isotetrandrone, thalrugonisine, tiliafunimine (leaves), N,N-dimethylfuniferine, oblongine (roots).

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.13,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Tinospra bakis*

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Palmatine, berberine (roots)

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.71,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Toddalia asiatica* Lamk (Rutaceae)

C: ^{1,2}Tanzania

ETHNOMEDICAL USES: ¹Used as a cardi tonic, stimulant and antipyretic and diuretic. In East Africa it is used for treatment of nasal pains and paralysis caused by snakebite.

²Medicinal and/or repelling properties against insects

BIOLOGICAL ACTIVITY: ¹Antifeedant against anomalous emperor moth, *Nudeulera belina* larvae due to compounds dihydrochelerthrina toddanol, dihydrotoddanol and toddalactone.

²Antifeedant activity against the larvae of *Nudaulelia belina* that feeds on *Mangifera indica* (mango) and *Anacardium occidentale* (Cashewnuts) at a concentration of 1% of extract (root bark) of petroleum ether extract.

CHEMICAL CONSTITUENTS: ¹Benzophenanthridine alkaloid: Dihydrochelerthrine and coumarins: Toddanol, dihydrotoddanol and toddalactone, toddaculin, toddanon.

²Methanol extract of the stem bark contains flavonone aglycones, coumarins, sterol and triterpenes, alkaloid salts.

REFERENCES: ¹S.R. Kagaruki and B.S. Kaoneka: Antifeedants against *Nudaulelia belina* larvae from *Toddalia asiatica* Lamk: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 17 – 23. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

²S.R. Kagaruki, B.S. Kaoneka and H.V. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudaulelia belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124 - 130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Trametes pubescens* (Fr.) Pil (**Polyporaceae**) (a fungus)

C: Ethiopia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antifungal against *Candida albicans* (MIC=50-100 µg/ml), *Candida tropicalis* (50-100) and *Rhodotorula glutinis* (10-20). It also inhibits spore germination of molds at 1-5µg/ml

CHEMICAL CONSTITUENTS: Trans-3-expoxydeca-4,6,8-triyn-1-ol

REFERENCES: E. Dagne and D. Abate: Bioactive compounds from plants and Fungi of Ethiopia: *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 33-34. Printed by EMPDA - Ethiopia

BOTANICAL NAME: *Trema guineensis* (Ulmaceae)

C: Tanzania and Kenya

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity (leaves) against *Bacillus subtilis*

CHEMICAL CONSTITUENTS:

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993

BOTANICAL NAME: *Trichilia dregeana* Sonder (Meliaceae)

C: South Africa

ETHNOMEDICAL USES: Bark soaked in warm water and liquid used as emetic. Seeds are ground and boiled in water. The surface of the water is skimmed to separate the oil which is rubbed in cuts made on a fractured limb to hasten healing and to anoint the body generally. The oil is taken internally to treat rheumatism, made into soap. The leaves induce sleep when put in bed at night. A hot infusion of leaves applied to bruises as a soothing lotion.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: The leaves produce 13-epimanoyloxide. Seeds produce limonoids of prierianin type.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 207, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Trichilia emetica* Vahl. (Meliaceae)

C: South Africa.

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Anti-feedant activity against the southern Army worm (due to trichilins A-D)

CHEMICAL CONSTITUENTS: The seed contains trichilins A-D.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 207, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Trichodesma africanum* L (Boraginaceae)

C: Egypt

ETHNOMEDICAL USES: The above ground parts when eaten by animals have been implicated as a causative agent of toxicity.

Others: In Asia, the use of leaves as decoct and infusion is purgative in humans, when made into a paste the roots may be applied to swollen joints and body surface to reduce swellings and inflammation. Aqueous infusion relieves dysentery in children.

BIOLOGICAL ACTIVITY: Acute toxicity when injected intraperitoneally in mice and rats (saponins). Toxin causes muscle contraction and drop in blood pressure.

CHEMICAL CONSTITUENTS: Pyrrolizidine alkaloids: Trichodesmine. Toxin (peptide with 11 amino acids) β -sitosterol and stigmasterol.

REFERENCES: M.Omar, J. DeFeo, H.W. Youngken Jr. Chemical and toxicity studies of *Trichodesma africanum*: *Journal of Natural Products* **46**:153-156,1983

BOTANICAL NAME: *Triclisia dictyophylla* Diels (Menispermaceae)

Syn: *Triclisia gillettii* Staner

C: ^{1,2}Nigeria

³Ghana

ETHNOMEDICAL USES: ²Treatment of anemia, malaria, diarrhoea, joint pains and swelling of the extremities and as arrow poison.

³Extracts have been used for the treatment of diarrhoea, pyrorrhea and as an arrow poison.

BIOLOGICAL ACTIVITY: ²Tests for analgesic activity done compared to morphine on mice were negative for tridictyophylline.

CHEMICAL CONSTITUENTS: ¹Alkaloids: Phaeanthine, N,N'-dimethyl phaeanthine (roots, stem and leaves), O-methyl moschatidine, cocsuline (seeds), osotetrandrine, gillettine, trigilltimine (stem and root) stebisimine, isogillettine N-oxide, obanegine (leaves), tridictyophylline (whole plant).

²Morphinan alkaloid: tridictophylline, bisbenzylisoquinoline; dibenzyladixoin alkaloids: cocsuline, and trigillettine, N,N-dimethylphaeanthine.

³Benzyl isoquinoline alkaloids: St4ebisimine, gillettine (leaves) isotetrandine and trigillettine (stems and roots); cocsuline (stems), phaeanthine. Oxoaporphine alkaloids: O-methylmoschatoline and [1,2,3-ij]isoquinoline. Bisbenzyl isoquinoline dibenzodioxin: iaogillein-N-oxide; bisbenzylisoquinoline quinoline alkaloids: obamegine.

REFERENCES: ¹F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.72,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange.

²A.I Spiff, V.Zabel, W.H. Watson, M.A. Zemaitis, A.M. Ateya, D.J. Slatkin, J.E. Knapp and P.L. Schiff Jr. Constituents of West African medicinal plants XXX. Tridictyophylline, A new morphinan alkaloid from *Triclisia dictyophylla*: *Journal of Natural Products* **44**:160-165, 1981.

³P.D. Owusu, D.J. Slatkin, J.E. Knapp and P.L. Schiff Jr.:
Constituents of West African medicinal plants XXVIII. Additional to alkaloids of
Triclisia gilletti: *Journal of Natural Products* **44**:61-66, 1981.

BOTANICAL NAME: *Triclisia gilletii* Staner (See *Triclisia dictyophylla* above)

BOTANICAL NAME: *Triclisia patens* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Phaeanthine, N,N-dimethylphaeanthine, pycnamine, cocsuline, trigillettine (root and stem), aromoline, o-methylmoschtholine.

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.72,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Triclisia subcordata* (Menispermaceae)

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Alkaloids: Tricordatine, fangchinoline, cocsuline, tetrandrine, magnoflorine, palmatine (roots).

REFERENCES: F.C.Ohiri: Contribution to the study of Nigerian medicinal plants. *Ph.D Thesis, University of Liden*. P.72,1983. Drukkerij J.H, Pasmans B.V., S-Gravenhange

BOTANICAL NAME: *Trimeria grandiflora* (Hochst) Warb. ssp **tropica** Sleum (Flacourtiaceae)

Syn: *Trimelia macrophylla* Bak., *Trimelia bakeri* Gilg.

C: Tanzania

V: Mdagha

ETHNOMEDICAL USES: Decoction of root mixed with roots of *Kwenge* cfr *Crassocephallum vitellinum* S. moore is drunk against sores on the body, mouth with fever and profuse sweating.

Others: A decoction is drunk against to treat swollen scrotum and testicles. Treatment of dysmenorrhoea, root decoction for treatment of gonorrhoea. Leaves: Infusion for treatment of abdominal troubles, gums for treating wounds.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberge, I., Hedberge, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Triphyophyllum peltatum* (Dioncophyllaceae)

C: West Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimalarial activity *in vitro* and in *in vivo* due to dioncophyllines B and C. Dioncophyllines A is active against *Biomphalaria glabrata*, the intermediate host of schistosomiasis.

CHEMICAL CONSTITUENTS: Naphthylisoquinoline alkaloids: Dioncophylline A, B and C.

REFERENCES: G.Bringmann: *Triphyophyllum peltatum* and related African lians-creative producers of pharmaceutically promising naphthyl isoquinoline alkaloids: Natural Products Research Network for Eastern and Central Africa. Seventh NAPRECA symposium on Natural Products. 17 – 22 August 19997, Dar-es-Salaam, Tanzania. P 2-3

BOTANICAL NAME: *Triumfetta cardifolia* Gill et Perr. (Tiliaceae)

C: Rwanda
V: Umunaba

ETHNOMEDICAL USES: Used in dysentery

BIOLOGICAL ACTIVITY: The leaf extract had no activity as an antiulcer agent. Also was tested for anticholinergic activity but results were not shown.

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Turraea floribunda* Hochst. (Meliaceae)

C: South Africa and East Africa

ETHNOMEDICAL USES: Used in rheumatism, dropsy and heart diseases using the roo and bark. The bark is used to induce a trance prior to performing divining dances. An overdose is said to be poisonous.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: The bark yields limonoids, the wood yields stigmasterol and limonoids. The seed yields limonoids with 8,30-14,15-conjugated diene systems.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 202-203, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Turraea mombasana* CDC. (Meliaceae)

C: Kenya

ETHNOMEDICAL USES: Roots are used for the treatment of excess bile and as an emetic. A decoction of the root is taken for the treatment malaria and other fevers.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Limonoids: mombasone, and mombasol.

REFERENCES: G.O. Adul, M. Bentley, B.W. Benson, Fu Yung Huang, L. Gelbaum, A. Hassanali: Two new prieurianin-class limonoids from *Turraea mombasana*; *Journal of Natural Products*: **56**:1414-1417, 1993.

BOTANICAL NAME: *Turraea nilotica* Kotschy and Peyr. (**Meliaceae**)

C: ¹South Africa
²Kenya

ETHNOMEDICAL USES: ²A decoction of the root is taken for upset stomach.

BIOLOGICAL ACTIVITY: ²Nilotin showed significant antifeedant activity in no choice feeding assays using 4th instar Colorado potato beetles, dose ED₅₀ = 7µg/ml.

CHEMICAL CONSTITUENTS: ¹Contains Niloticin and related compounds.

²Stem contains protolimonoids, nilotin (Limonoid)

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds) *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 203, 1996. University of Zimbabwe Publications. Harare.

²M.D. Bentley, G.O. Adul, A.R. Alford, Fu-Y. Huang, L. Gelbaum and A. Hassanali: An insect antifeedant limonoid from *Turraea nilotica*. *Journal of Natural Products* **58**:748 – 750, 1995.

BOTANICAL NAME: *Turraea obtusifolia* Hochst. (Meliaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: The leaves contain melianone and 3-keto analogue of spelin F, melianodiol, Melianotriol and 3 α -acetoxy-7 α -deacetoxyglabretal. The seed contains prieurianin prieurianin acetate and nymania I

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 203, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Turraea pulchella* (Meliaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Leaf and shoot yielded a mixture of protolimonois containing the 13,14,18 cyclopropane ring structure.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 204, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Turraea robusta* Gurke (Meliaceae)

C: ^{1,2}Kenya

ETHNOMEDICAL USES: ¹Root bark is used in traditional medicine for the treatment of stomach pains and diarrhoea.

²Zaramo tribes of Tanzania utilizes a tea prepared from the root bark called *mzikoziko* for treatment of stomach pain and diarrhoea, leaves used as antidote in poisoning.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ¹Limonoids: mzikonone, mzikonol, azadirone, 1,2-dihydroazadirone and nimbolin B, butyrospermol, turranolide.

²Limonoids: Mzikonol, azadirone, 1,2-dihydroazadirone, nimbolin B and mzikonone. Tetranortriterpene lactone: turranolide; triterpene: butyrospermol.

REFERENCES: ¹M.D. Bentley, F.E. Gaul and M.S. Rajab, A. Hassanali: Limonoids from *Turraea robusta*: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

²M.D. Bentley, F. Gaul, M.S. Rajab and A. Hassanali: Tetranortriterpenes from *Turraea robusta*: *Journal of Natural Products* **55**: 84-87, 1992.

BOTANICAL NAME: *Urginea epigea* R.A. Dyer (**Liliaceae**)

C: Swaziland

ETHNOMEDICAL USES: The plant is used for the treatment of colds and headache. The buld is used as a soap substitute for washing clothes.

BIOLOGICAL ACTIVITY: Butanol extracts from bulb and leaf show Molluscicidal activity which was determined on the bilharzias carrying snails *Bulinus africanus*.

CHEMICAL CONSTITUENTS: Triterpenoid glycoside

REFERENCE: O.O.G. Amusan, J.D. Msonthi and L.P. Makhumbu: Molluscidal activity of *Urgenea epigea* bulb and leaves. *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 70, Dar-es-Salaam.* University of Dar-es-Salaam

BOTANICAL NAME: *Uvaria accuminata* Oliv. (Annonaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity.

CHEMICAL CONSTITUENTS: Uvaretin

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants.* Pp. 2267-281, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Uvaria angolensis* Oliv. (Annonaceae)

C: ^{1,2,4}Tanzania
³Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ¹Antimicrobial activity.

³Antimicrobial activity (Anguvetin) against *Staphylococcus aureus* (1.5 µg/ml), *Bacillus subtilis* (0.2 µg/ml) and *Mycobacterium smegmatis* (1.5 µg/ml)

CHEMICAL CONSTITUENTS: ¹Isouvaletin, diuvaletin.

²Benzyl benzoate, C-benylated dihydrochalcones, C- and N-benzylated indoles, uvarindoles A-D, uvarisesquiterpene A, uvarisesquiterpene A acetate, uvarisesquiterpene A 5,6-epoxide, uvarisesquiterpene B, uvarisesquiterpene C.

³From roots; Flavanones: (\pm)-chamanetin 5-methyl ether and (+)-6,8-C-dimethyl pinocembrin 5-methyl ether. Dihydrochalcones: anguvetin, flavokawin B, uvaretin, isouvaretin, angoletin and uvangoletin.

⁴Stem bark contains indoles with 2-hydroxybenzyl substituents: uvaindole-A[1,2,3-tri-(2-hydroxybenzyl)indole], uvarindole-B[1,2,3,5-tetra(2-hydroxybenzoyl)indole], uvarindole C[2-(2-hydroxybenzoyl)-3-(2-hydroxybenzoyl)indole] and uvarindole-D[1,2,2-tri(2-hydroxybenzoyl)indole-3-one]. Dihydrochalcones: uvaretin 3'5' disubstituted diuvaretin, chamuvaritin.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants* p. 2267-281, 1996. University of Zimbabwe Publications. Harare.

²I. Muhammad and P. Waterman: Chemistry of the Annonaceae, part xxvi. The uvarisesquiterpenes, a novel type of benzylated sesquiterpene from *Uvaria angolensis*: *Journal of Natural Products* **51**:719-724, 1988

³C.D. Hufford and B.O. Oguntimein: New dihydrochalcones and flavanones from *Uvaria angolensis*, *Journal of Natural Products*: **45**: 337-342, 1982.

⁴I. Muhammad and P.G. Waterman: Chemistry of the Annonaceae, part 18. Benzylated indoles and dihydrochalcones in *Uvaria angolensis* from Tanzania; *Journal of Natural Products* **48**:571-580, 1985.

BOTANICAL NAME: *Uvaria chamae*. (Annonaceae)

C: West Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimicrobial activity.

CHEMICAL CONSTITUENTS: Isouvaletin, diuvaretin, flavones: chamanetin, isochamanetin, dichamanetin.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 2267-281, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Uvaria dependens* Engl. & Diels (Annonaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Crude extract from root bark was found to be active against *Plasmodium falciparum* malaria parasite *in vitro*.

CHEMICAL CONSTITUENTS: 5,7,8-trimethoxy flav-3-ene, 2-hydroxy-3,4,6 trimethoxy chalcone, dependensin (dimeric benzopyranoid), (-)-pipoxide, β -sitosterol and stigmasterol.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Uvaria doeringii* (Annonaceae)

C: West Africa

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: The pyrene 2,hydroxy 1,7,8-trimethoxy pyrene has an activity comparable to that of podophyllotoxin in the brine shrimp test.

CHEMICAL CONSTITUENTS: 1,2-dihydro-2,9-dihydroxy-10-methyl furan [2,3-a]phenanthrene. Pyrenes: 2,7-dihydroxy-1,8-dimethoxy pyrene, 2-hydroxy-1,7,8-trimethoxy pyrene.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Uvaria faulknerae* Verdc (Annonaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Tested for antimalarial activity.

CHEMICAL CONSTITUENTS:

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Uvaria kirkii* Hook. F. (Annonaceae)

C: ^{1,2}Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ¹Anti-microbial activity.

CHEMICAL CONSTITUENTS: ¹Diuvaretin.

²Uvaretin, 1,2,3,4,6,7-hexamethoxyanthone, 7-methyljuglone, diuvaretin, benzyl benzoate and 2-methoxy benzyl benzoate.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

²M.H. Nkunya: 7-methyljuglone, diuvarein and benzyl benzoates from the roo bark of *Uvaria kirkii*. *Journal of Natural Products* **48**:999-1000, 1985.

BOTANICAL NAME: *Uvaria leptocladon* Oliv. (Annonaceae)

C: ^{1,2}Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: ¹Triuvaretin and isotriuvaretin posses antimicrobial activity, uvaretin and isouvaretin also exhibit cytotoxicity.

²Uvaretin an diuvaretin showed *in vitro* activity against *Plasmodium falciparum* malaria parasites below 20g/ml

CHEMICAL CONSTITUENTS: ¹Dibenzyl dihydrochalcone: angoluvarin, chamuvaritin, isochamuvaritin. Tri-(O-hydroxy) benzyl dihydrochalcones: triuvaretin, isotriuvaretin, uvaretin, isouvaretin, diuvaretin, angoluvarin.

²Isomeric pairs of mono-, di and tribenzylated dihydrochalcones: uvaretin, isouvaretin, diuvaretin and isodiuvaretin and triuvaretin and isotriuvaletin.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

²M.H.H. Nkunya and H. Weenan: Constituents of some Tanzanian antimalarial plants. *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Uvaria lucida ssp lucida* Benth. (Annonaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Anti-microbial activity, anti-malarial activity, 2-hydroxy-1,7,8-trimethoxy pyrene had an activity comparable to podophyllotoxin in the brine shrimp test.

CHEMICAL CONSTITUENTS: Diuvaretin, flavanones: chamanetin, isochamanetin, dichamanetin, uvarinol, isouvarinol. Oxygenated pyrenes: 2,7-dihydroxy-1,8-dimethoxy pyrene and 2-hydroxy 1,7,8-trimethoxy pyrene (in the stem bark). Lucidene (benzopyranyl sesquiterpene), humulene. Sesquiterpenes: Cyperene and β -seline.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Uvaria pandensis* Verdc. (Annonaceae)

C: ^{1,2}Tanzania

ETHNOMEDICAL USES: ²Antimalarial plant.

BIOLOGICAL ACTIVITY: ¹Antibacterial, antifungal, and antitumor activity *in vitro*, (-) pipoxide was mildly active against *Plasmodium falciparum in vitro* (IC₅₀ = 8.37 μ g/ml. Anti-malarial activity due to chalcones.

²In vitro activity against *Plasmodium falciparum* malaria parasite below 20g/ml due to isolated compounds.

CHEMICAL CONSTITUENTS: ¹Stembark and root bark: cyclohexene epoxide, (+)-pandoxine, (-)-pipoxide, (+)- β -senepoxide and farnesylindoles, 5,7,8-trimethoxyflav-3-ene, 2 hydroxy-3,4-trimethoxychalcone and dependensin (dimeric benzopyranoid) β -sitosterol and stigmasterol.

²Cyclohexane epoxides (+)- β -senepoxide, (+) pandoxide and (-)-pipoxide; sesquiterpeneindoles: 3-farnesylindole (6',7'-dihydro-8'9'-dihydroxy)-3-farnesylindole and (8',9'-dihydroxy)-3-farnesylindole and a flavanone: 7-hydroxy-4',5,6,8-tetramethoxy flavanone.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

²M.H.H. Nkunya and H. Weenan: Constituents of some Tanzanian antimalarial plants. *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Uvaria schefflei* Diels (Annonaceae)

C: ^{1,2}Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antimalarial activity IC₅₀ between 5 and 9 µg/ml.

CHEMICAL CONSTITUENTS: ¹Condensed flavonoids,: Schefflerin, isoschefflerin (in stem bark) and 2',6'-dihydroxy-3',4-dimethoxy chalcone, triterpene D:β-friedo olean-5-en-3β-ol(glutin-5-en-3β-ol), 3-farnesylindole, 2-hydroxy-3',4'6'-trimethoxy chalcone, β-sitosterol and Benzyl benzoate.

²Chalcones: Schefflerin and isoschefflerin.

REFERENCES: ¹K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

²M.H.H. Nkunya and H. Weenan: Constituents of some Tanzanian antimalarial plants. *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Uvaria tanzaniae* Verdic. (Annonaceae)

C: Tanzania

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Tanzanene (a benzopyranyl sesquiterpene), diuvaretin, alloaromadendrene.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 267-281, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Uvariadendron connivers* R.E. Fries (**Annonaceae**)

C: Cameroon

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Phenylpropene derivatives: Elemicin, 3',4',5',-trimethoxycinnamaldehyde, 3',4',5', trimethoxycinnamyl alcohol.

REFERENCES: I. Mohammad and P.G. Waterman: Chemistry in the Annonaceae, XVII. Phenylpropene from *Uvariadendron connivers* seeds. *Journal of Natural Products* **48**:328-329, 1985.

BOTANICAL NAME: *Valeriana capense* (**Valerianaceae**)

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antifungal due to valepotriates. Valtrate was shown to possess a wide spectrum of antifungal activities in particular against different phytopathogenic fungi *Cladosporium cucumerinum*, *Erysiphe graminis*.

CHEMICAL CONSTITUENTS: Valepotriates including valtrate, isovaltrate, didrovaltrate, chlorovaltrate, valtrate hydrate B4, homovaltrate, dihomovaltrate, homodidrovaltrate, diavaltrate and isovalerohydroxydidrovaltrate.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 171-186, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Vangueria infusta* (Rubiaceae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects.

BIOLOGICAL ACTIVITY: Weak antifeedant activity against larvae of *Nudauleria belina* from stem bark extract.

CHEMICAL CONSTITUENTS:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some plant extracts with antifeedant activity against *Nudauleria belina* (Westwood) (Saturniidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Vantueria infausta* Burchell ssp. *rotunda* Verdc
(Rubiaceae)

C: Tanzania

V: Mvuru

ETHNOMEDICAL USES: Decoction of roots included with other plants for a remedy for swellings of the genital organs in men, women and children. A decoction of roots + root of *Securinaga virosa* Pax & Hoffm + roots of *Deinbolia barbonica* Scheff is drunk against swollen stomach. Decoction of root taken is against haernia.

Others: Decoction of root is taken against menstrual troubles, cough, chest complaints. Root is taken against malaria fever, pneumonia, round worms, purgative. Leaves: Decoct of leaves for nontraumatic swellings of limbs. Paultice of leaves applied to swellings on the leg of children. Infusion is taken for dental pain.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 245, 1983.

BOTANICAL NAME: *Vepris eugeniifolia* Verdoorn (**Rutaceae**)
Syn: *Teclea eugeniifolia* Engl., *Teclea simplicifolia* Verd.

C: Tanzania
V: Mndizi

ETHNOMEDICAL USES: A decoction of the root is used against kidney disorders.

Others: The leaf is used in the treatment of pneumonia. A decoct of leaf is administered with milk for lung diseases.

BIOLOGICAL ACTIVITY:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 245, 1983

BOTANICAL NAME: *Vepris stolzii* Verdoorn (**Rutaceae**)

C: ^{1,2}Rwanda
V: Umuzo

ETHNOMEDICAL USES: ¹Antiulcerogenic

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: ²Stem bark; alkaloids of the type furoquinolines: skimmianine, gamma-fagarine and the pyrano-2-quinolone veprisine. Pyrano-2-quinolones alkaloids: N-methyl-8-(3'',3''-dimethyl allyloxy)-flindersine, N-methyl-7-methoxy-8-(3'',3''-dimethylallyloxy)-flindersine and N-methyl-7-methoxy-8-(2'',3''-epoxy-3'',3''-dimethylallyloxy)-flindersine.

REFERENCES: ¹E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

²S.A. Khalid, P.G. Waterman: Furoquinoline and pyrano-2-quinolone alkaloids of *Vepris stolzii*. *Journal of Natural Products* **45**:343-346, 1982.

BOTANICAL NAME: *Vernonia amygdalina* Del. (Compositae)

C: ¹Nigeria,
²Rwanda, V= Umubirizi

ETHNOMEDICAL USES: ¹The leaves are used as vegetables in West Africa particularly in Nigeria. Leaves extracted with alcohol or water for treatment of malaria, anthelmintic and antianorexic activities as well as gynaecological applications. In South Africa chimpanzee use its juices to regain health.

²Used in gastrointestinal pain, hepatitis and treatment of worms.

BIOLOGICAL ACTIVITY: ¹Antimalarial, insect antifeedant sesquiterpene lactones. Feeding mice with diets containing 25% leaves of the plant, an alcoholic extract, a mixture of crude saponins or vernonioside D for 14 days influenced animal performance. Caused significant reduction in body weight and increased urine and fecal output. At necropsy, the liver weight and plasma cholesterol levels were significantly reduced due to saponins.

²Tested for antihepatotoxic, antimalarial, anthelmintic, antientamoeba, antitrichomonas and anticholinergic but no results

given. Leaf extract showed antiulcer activity in albino rats at a dose of 500mg/kg plant extract, then after 30min administered with indomethacine suspended in 0.5% methyl cellulose, sacrificed after 4hrs and stomachs examined for ulcers.

REFERENCES: ¹G. Igile, W.Oleszek, M. Jurzysta, R. Aquino, N. de Tomasi and C. Pizza.: Verniosides D and E, two novel saponins from *Vernonia amygdalina*. *Journal of Natural Products* **58**:1438 – 1443, 1995

²E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, University of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Vernonia brachycalyx* Hoffm. (Compositae)

C: Kenya

ETHNOMEDICAL USES: In Kenya it is used to treat malaria, fever, stomach ache, and as purgative.

BIOLOGICAL ACTIVITY: The compound 16,17-dihydrobrachycalyxoid had antiplasmodial and antileishmanial activity. Toxic due to inhibition of PHA induced proliferation of human lymphocytes. 5-methyl coumarins had weak activities on *Plasmodium falciparum* and *Lishmania pronuastigotes*.

CHEMICAL CONSTITUENTS: Sesquiterpene lactone, 16,17-dihydrobrachycalyxolid (plasmodial from leaves), and 5-methyl coumarin derivatives (root)

REFERENCES: H.O. Rabah, B.S. Christensen, S.F. Dossaji, C.Cornett, T.G. Thander, A. Khrazmi and E. Lemmich: Diverse antimalarial and antileishmanial compounds from *Vernonia brachycalyx* (Compositae). *Natural Products Research Network for Eastern and Central Africa. Seventh Napreca Symposium on Natural Products, 17-22 August 1997, p. 40, Dar-es-Salaam.* University of Dar-es-Salaam

BOTANICAL NAME: *Vernonia fastigiata* Oliver & Hiern. (Asteraceae)

C: Namibia

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Antibacterial activity using *Bacillus subtilis* as test organism with chloramphenicol as control (MIC = 0.5µg), Biological activity of sesquiterpene lactones.

CHEMICAL CONSTITUENTS: Sesquiterpene lactones: 13-Acetoxy-14 hydroxy-8S-methacryloyloxy-1S (10S), 4R,5R-diepoxylactone-7(11)-ene-6S,12-olide; 13-Acetoxy-14-hydroxy-8S-angeloyloxy-18(10S)4R,5R-diepoxylactone-7(11)ene-6S,12-olide; 13-Acetoxy-14-hydroxy-8S-methacryloyloxy-1S(10S),2R,3S,4R,5R-triepoxylactone-7(11)-ene-6S,12-olide.

REFERENCES: G. gross, H. Prawat, C.U. Walter, Klaiber, B. Volgler, J.-H. Guse and W. Kraus.: New sesquiterpene lactones with antibacterial activity from *Vernonia fastigiata*. *Planta Medica*, **64**:673-674, 1998.

BOTANICAL NAME: *Vernonia pogosperma* Klatt (Asteraceae)

C: Rwanda

V: Umubimbafuro

ETHNOMEDICAL USES: ¹Used in Rwanda for the treatment of hepatotoxicity and stomach disorders.

²Treatment of madness, women sterility

BIOLOGICAL ACTIVITY: ¹Methanol extract of the leaves has anti-microbial activity against *Mycobacterium smegmatis*. Antifungal *in vivo* (stem) methanol extract. Cytotoxicity activity from the steroidal sapogenin, pogosterol.

²Tested for antimicrobial activity. Shows antiulcer activity in albino rats at a dose of 500mg/kg plant extract, then after 30min administered with indomethacin suspended in 0.5% carboxymethyl cellulose. Sacrificed after 4hours and stomachs examined for ulcers.

CHEMICAL CONSTITUENTS: Pogosterol (Steroidal sapogenin).

REFERENCES: ¹J.Mungarulire, Y. Fujimoto, K. Kobayashi, M.Uramoto, and R.M. Munavu: Pogosterol from *Vernonia pogosperma*. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p 83-85. Printed by EMPDA - Ethiopia

²E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceedings of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 85 - 92. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Vismia orientalis* (Guttiferae)

C: Tanzania

ETHNOMEDICAL USES: Medicinal and/or repelling properties against insects

BIOLOGICAL ACTIVITY: Antifeedant activity against larvae of *Nudaulelia belina* from stembark extract of the methanol, dichlormethane and petroleum ether.

CHEMICAL ACTIVIY:

REFERENCES: S. R. Kagaruki, B.S. Kaoneka and H.N. Lyaruu: Phytochemical screening of some pant extracts with antifeedant activity against *Nudaulelia belina* (Westwood) (Saturnidae): *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 124-130. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Vitex payos* Merrill (Verbenaceae)

Syn: *V. glabrescens* Moldenke, *Allasia payos* Lour. *Vitex hildebrandtii* Vatke, *V. hildebrandtii* Vatke *var Zambesiaca* Pieper, *V. zambesiaca* Bak.

ETHNOMEDICAL USES: Powdered, dry root is mixed with chicken meat and boiled. The broath is eaten to treat infertility.

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 255, 1983.

BOTANICAL NAME: *Voacanga schweinfurthii* Stapf *var peberula* Pinchon
Syn: Voacanga puberula K. Schum.
C: Zaire

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Seeds contain alkaloids: (-)tabersonine, stem bark contain vobasine, perivine, vobasinol, coronaridine; rootbark: voacangine, ibogaine, bisindole alkaloids: voacamine, voacaminidine, 3-6 oxidovoacangine.

REFERENCES: B. Richard, C. Delaude, G. Massiot, L. Le Men-Olivier: Alkaloids from *Voacanga schweinfurthii var puberula*. *Journal of Natural Products* **46**:283-284, 1983

BOTANICAL NAME: *Waltheria indica* L. (Sterculiaceae)

Syn: Waltheria Americana L *var indica* K. Schum, *Waltheria Americana* L. *var subspicata* K.Schum. *Waltheria wildii* Suesseng.

ETHNOMEDICAL USES: Fresh leaves mixed with sodium bicarbonate applied on infected swollen finger to facilitate healing, also on wounds. Leaves are boiled and vapour inhaled by children in the treatment of convulsions.

Others: Roots: A decoction is used for the treatment of syphilis, against cough, astrigent and treatment of eye ache. Decoct of root is used for barrenness. Root is chewed for internal hemorrhages, as a purgative and restorative. Powdered roots are used externally in wound treatment, internally preparations of the roots are used for various diseases such as fever, dysentery and epilepsy. Leaves and flowers: applied to sores. Juice of the leaves is used for eye diseased. Underground plant parts: Febrifuge, astrigent, antisyphilitic, skin diseases, antiseptic to wounds. Medicine for infants at birth, teething and prevention of fevers, cough remedy, abortifacient, emollient.

BIOLOGICAL ACTIVITY: Adoutin Z has no antipyretic activity but induces hypothermia and sedation low dose levels and hyprexitability at high level LD₅₀ in mice = 52.5mg/kg body weight.

CHEMICAL CONSTITUENTS: Peptide alkaloids called adoutin X, Y, Y' and Z. Z is the main alkaloid.

REFERENCE: Hedberge, I., Hedberge, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 251 - 252, 1983.

BOTANICAL NAME: *Warburgia ugandensis* Sprague (Canellaceae)

C: ¹Uganda (Considered as endangered species)

²East Africa

ETHNOMEDICAL USES: ¹Stems and roots are used as expectorant for common cold and against fever malaria, stomachache, constipation, pain and diarrhoea. In Uganda the stem bark is used to treat snakebite and misles.

²Barks used in folk medicines and as food species.

BIOLOGICAL ACTIVITY: ¹Antifungal activity due to muzigadiol.

-Cytotoxicity of muzigadiol on B16-F10-BL6 mouse melanoma cells, IC₅₀ = 0.8 µg/ml.

-Antimalarial on *Plasmodium falciparum* (IC₅₀ = 0.5-2.0 µg/ml)

²Broad antimicrobial activity. Warburganal, muzigadiol and polygodial exhibited broad antimicrobial activity against all yeasts and molds tested especially against *Saccharomyces cerevisiae*, *Candida utilis* and *Sclerotinia libertiana*. Polygodial was the most active comparable to amphotericin B. An attempt to enhance antimicrobial activity of some of the purified antimicrobial agents was made; Polygodial was combined with several antibiotics such as actinomycin D and rifampicin. As a result, polygodial significantly enhanced the antifungal activity of these antibiotics but not vice versa. Polygodial also synergized the antifungal activity of benzoquinone, maesanin against *Candida utilis*.

CHEMICAL CONSTITUENTS: ¹Sesquiterpenes; Muzigadiol.

²Sesquiterpene dialdehydes: warbuganal and muzigadiol, polygodial, mukaadial, ugadensidial, epipolygodial

REFERENCES: ¹O. Odyek, D.Olila, C. Albrecht and E.Dagne: Muzigadial, a cytotoxic sesquiterpene from *Warburgia ugandensis*. *Fifth Natural Product Symposium on Natural Product. September 19-23, 1993. Antananarivo, Madagascar*, p.107-108. Printed by EMPDA - Ethiopia

² M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Warburgia stuhlmanii* (Canellaceae)

C: East Africa

ETHNOMEDICAL USES: Barks are used in East Africa as medicines and food species.

BIOLOGICAL ACTIVITY: Broad antimicrobial activity.

CHEMICAL CONSTITUENTS: Sesquiterpene dialdehydes: warburganal, muzigadial, polygodial.

REFERENCES: M. Taniguchi and I. Kubo: Ethnobotanical drug discovery based on medicine men's trials in the African savanna: Screening of East African plants for antimicrobial activity II: *Journal of Natural Products* **56**:1539-1546, 1993.

BOTANICAL NAME: *Ximenia caffra* Sond. (Olacaceae)

Syn: *Ximenia Americana* L. var. *caffra* Engl. *X. Americana* L. var. *tomentosa* Engl.

C: Tanzania

V: Machokuone

ETHNOMEDICAL USES: The roots are powdered and boiled with maize flour against sterility in women. Decoction of root drunk against dysmenorrhoea and bloody diarrhoea. Decoction of roots mixed with stems of *Deinbollia borbonica* Scheff. Against mental illness, stomach ache and colic.

Others: Roots: a decoct against abscess, malaria and bilharzias; root bark applied to syphilitic sores, root decoct is drunk against hookworm, chestpain, fever and diarrhoea, ancylostomiasis, purgative. Leaves: Malaria, in children and hookworm.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS:

REFERENCES: Hedberg, I., Hedberg, O., Madati, A.J., Mshigeni, K.E., Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania II of the families Delleniaceae-Opiliaceae. *Journal of Ethnopharmacology* **9**:105-128, 1983

BOTANICAL NAME: *Ximenia Americana* (Olacaceae)

ETHNOMEDICAL USES: It is applied to sores of domestic animals. In west Africa the pulverized bark and roots are used to dress ulcers.

BIOLOGICAL ACTIVITY:

CHEMICAL CONSTITUENTS: Hydrocyanic acid, tannins.

REFERENCES: K. Hostettmann, F. Chinyanganya, M. Maillano and J. –L Wolfender (Eds). *Chemistry, Biology and Pharmacological Properties of African Medicinal Plants*. Pp. 101, 1996. University of Zimbabwe Publications. Harare.

BOTANICAL NAME: *Xysmalobium undulatum* R.Br. (Asclepiadaceae)

C: South Africa

ETHNOMEDICAL USES:

BIOLOGICAL USES: Antidiarrhoeic, Antispasmodic.

CHEMICAL CONSTITUENTS: Roots contain glycosides, alloxymalorin, xysmalorin, allouzarin, uzarin.

REFERENCES: M.Ghorbani, M. Kaloga, H-H. Frey, G. Mayer and E. Eich: Phytochemical reinvestigation of xysmalobium undulatum roots. *Planta Medica* **63**:343-346. 1997.

BOTANICAL NAME: *Zahneria minutiflora* Jeffrey (Cucurbitaceae)

C: Rwanda
V: Umshishiro

ETHNOMEDICAL USES: Used for the treatment of syphilis, yaws, otitis and gonorrhoea.

BIOLOGICAL ACTIVITY: The leaf extract was tested for antiulcer activity but had no activity.

CHEMICAL CONSTITUENTS:

REFERENCES: E. Hakizamungu, J.D. Ntawukulilyayo and A. Ndagiza: Research on antiulcerogenic plants of Rwanda: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 31 - 39. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

BOTANICAL NAME: *Zanthoxylum chalybeum* Engl. (Rutaceae)

Syn: *Fagara chalybeum* Engl., *Fagara merkei* Engl., *Fagara mpwapwensis* Engl., *Fagara olitoria* Engl., *Zanthoxylum olitorium* Engl.

C: Tanzania
V: Mndungu

ETHNOMEDICAL USES: Decoction of root + root from *Suregada zanzibarensis* Baill drunk against asthma. Powdered root with water applied on painful areas for treatment of rheumatism. Decoct of root drunk to treat internal stomach boil yielding puss. Treatment of painful teeth, decoct of root used against bilharzias. Powdered roots, leaves/stem bark in warm water for hernia and stomach pains.

Others: Roots: Decoct is used for treatment hookworm, pneumonia. The bark of the root rubbed on swellings for treatment of kwashiorkor, decoct is used for treatment of chest pain, creeping disease. Roots for diarrhoea in goats. Powdered root + oxfat as ointment applied on swellings. Produces vomiting in fever. Stem bark: Decoction for the treatment of malaria, colds, coughs and dizziness, tooth ache, juice of bark for appetizing in children. Thin twigs: Tooth brushes. Leaves: decoct for treatment of oedema in kwashiorkor.

BIOLOGICAL ACTIVITY: In animals chelerythrine (3-5 mg/kg i.v) causes a temporary increase of the blood pressure. When given at 15-min intervals hypotension is produced in 40-60 min. It has also an analgesic effect. Potentiates the effects of morphine and prolongs the sleep induced by thiopenthal or chlorhydrate, it has antimicrobial activity. I.V infusion ornitidine chloride (10, 15 and 20mg/kg over 60 min) no pronounced activity in dogs, but effects on heart rate, respiratory rate, cardiac output and two indexes of left ventricular contractibility but no change in pressure or vascular resistance. Skimmiamine has spasmolytic activity and increased oxytocin-induced contractions of rat uterus. LD = 150-250mg/kg. It has hypothermic, antidiuretic, sedative, anticonvulsant it also potentiates the activity of barbamy and chlorhydrate, analgesic, adrenalin like effect. Oral administration to rats 50 – 200/kg it potentiates hypnotic action of chloralhydrate, barbamy, hexobarbital, urethane and ethanol. It has also an anticonvulsant effects LD₅₀ orally is 1.31g/kg. Administered orally to rabbits at 200mg/kg/dy or 50-100kg/kg/day for 10-22 days skimmianine has no effect.

Candicine had a negative effect on avoidance learning in mice. Injection of 20-30 µg of candicine into rat cerebral ventricles causes epileptiform wave pattern of electrocortical activation. Candicine iodide (0.2M) affected the firing pattern of most of the nerve cells of the periesophageal ganglionic ring of *Heobania vermiculata* tested on perfusion and ionophoretic application. The conversion of the quaternary nitrogen into tertiary nitrogen eliminates the cholinergic activity. Magnoflorine iodide has a curare like activity and causes hypotension. Acetylation of the two hydroxyl groups increases the toxicity 6.6 fold.

CHEMICAL CONSTITUENTS: Root bark contains tertiary alkaloid chelerythrine, nitidine, skimmianine Quaternary alkaloids: candicine, tembetarine, germacrone, N-methylflindersine and dihydrochelerythrine.

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 245-247, 1983

BOTANICAL NAME: *Zanthoxylum gillettii* Waterm. Jacq. (Rutaceae)
Syn: *Fagara macrophylla* Engl.

C: ¹Tanzania
²Nigeria

ETHNOMEDICAL USES: ¹Used for the treatment of malaria

BIOLOGICAL ACTIVITY: ¹Antimalarial activity against *Plasmodium falciparum* malaria parasites in vitro.

CHEMICAL CONSTITUENTS: ¹Fagaramide an N-isobutyl-2,4-decadienamide (IC₅₀ = 12.34 and 5.37 µg/ml respectively)

²Furoquinoline alkaloid: Skimmianine. Cinnamic acid amide, fagaramide Benzo[c]phenanthridine alkaloids: chelerythrine, dihydrochelerythrine and nitidine. Arnottianamide, N-isobutyl-(2E,4E)-dodecadienomide, lupeol, N-isobutyl-2,4,8,10,12,-tetradecapentaenamide(γ-sachool), sitosterol

REFERENCES: ¹L.S. Kinabo and H.H. Nkunya: Chemical studies of some Tanzanian anti-malarial Plants: *Natural Products Research Network for Eastern and Central Africa* (NAPRECA). Proceeding of the Third NAPRECA symposium on Natural Products and their applications. Arusha, Tanzania, May 15 –19, 1989, P 201. Published by NAPRECA TANZANIA, Department of Chemistry, Universtiy of Dar-es-Salaam. Tanzania.

²S.K. Adesina, J. Reisch. Arnottiamide and other constituents of *Zanthoxylum gillettii* root: *Journal of Natural Products* **51**:601-602, 1988.

BOTANICAL NAME: *Zanthoxylum rigidifolium* Waterm (Rutaceae)

Syn: *Zanthoxylum tessmannii* Ayafor

C: Nigeria

ETHNOMEDICAL USES:

BIOLOGICAL ACTIVITY: Attract insects

CHEMICAL CONSTITUENTS: Volatile oils compounds listed, long chain alkanes and alkenes farnesyl derivatives and sterols (in pericarps)

REFERENCES: J. Reisch, D. Bergenthal, S.K. Andesina, D.D. Akinwisi and A.O. Olatunji: Constituents of *Fagara macrophylla* and *Zanthoxylum rigidifolium* pericarps: *Journal of Natural Products* **49**:1169 – 1171, 1986.

BOTANICAL NAME: *Zanthoxylum zannthoxyloides* Waterm.

C: Nigeria

ETHNOMEDICAL USES: Used as a chewing stick and pungent when chewed.

BIOLOGICAL ACTIVITY: Insecticidal properties.

CHEMICAL CONSTITUENTS: Terpene hydrocarbons and terpenoids. Volatile constituents contain amides. Pellitorine, fagaramide (2E,4E,8Z,10E,12E)-N-Isobutyl-2,4,8,10,12-tetradecapentaenamidine- γ -sanshool, (-)asarimin, dihydrxymethyl benzoic acid, n-hexadecanoate; 9,12-octadecanoate; n-otadeacanoate, squalene, lupeol, skimianineand fagaradine. Pericarp etc.

REFERENCES: S.K. Adesina: Further novel constituents of *Zanthoxylum zanthoxyloides* root and pericarp. *J. Nat. Products*. **49**:715-716, 1986.

BOTANICAL NAME: *Ziziphus mucronata* Willd. ssp. *mucronata*.
(Rhamnaceae)

Syn: *Ziziphus adelensis* Del., *Z. baclei* DC., *Z. bubaline* Schdt, *nom superfl, illegit.*, *Z. madecassus* Perr., *Z. mitis* A. Rich, *Z. mucronata* Willd *var glabrata* Sond, *Z. glauca* Schinz, *Z. inermis* Engl., *Z. mucronata* Willd, *Z. pubescens* Sond.

C: Tanzania

V: Mgagawe

ETHNOMEDICAL USES: Roots boiled with chicken decoction drunk against asthma.

Others: Roots: decoction drunk as tonic and prevent abortion, snake bite, an infusion of root for dysentery. A decoction taken internally to treat glandular swellings lumbago and for scrofulous swellings. A decoction of root applied externally to treat pain, decoction is drunk for gonorrhoea. The root has diuretic properties and treat gonorrhoea and bilharzias, lepra, syphilis mental diseases and as an anthelmintic. Leaves: the juice is drunk to prevent abortion, emetic and used in chest troubles. Apoultice of the leaf applied to boils, carbuncles and other septic swellings of the skin. A paste of the leaf is applied to tubercular glandular swellings. It is used for treatment of measles and scarlet fever, leaves boiled and inhled while decoction is drunk. Stembark: Decoction is used for treatment of rheumatism and stomach troubles. Powdered bark as emetic in chest troubles

and cough. The stem bark is used against lepra syphilis, mental diseases and anthelmintic. Fruit and seeds: A cold water extract for treatment of urine incontinence.

BIOLOGICAL ACTIVITY: Mucronine-B is a strong inhibitor of photophosphorylation in spinach chloroplasts.

CHEMICAL CONSTITUENTS: Positive reaction for alkaloids and saponins. Peptide alkaloids: Mucrine-A-H and abyssenine-A-C isolated from stem bark. Mucronines G and H, Abyssenine-C and the isoquinoline alkaloid (+)N-methyl-coclaurine have been identified in leaves.

REFERENCES: Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K., E. Mshiu, E.N. and Samwelson, G.: Inventory of plants used in traditional medicine in Tanzania III of the families Papilionaceae - Vitaceae. *Journal of Ethnopharmacology* **9**: 242, 1983