

## ETHNOBOTANICAL STUDIES OF MAHAL KOHISTAN (KHIRTHAR NATIONAL PARK)

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### Abstract

Ethnobotanical survey conducted in Mahal Kohistan (Khirthar National Park) revealed that the local people use 50 species of plants in traditional health care system and miscellaneous uses. Plants have healing powers to combat various ailments viz., anaemia, arthritis, asthma, biliousness, boils, bronchitis, cholera, colic, constipation, diabetes, diarrhoea, dipsia, dropsy, dysentery, dyspepsia, enlargement of spleen, epilepsy, epistaxis, erysipelas, fevers, gripping, hemicrania, hepatitis, hicoughs, hydrophobia, impotence, jaundice, laryngitis, leprosy, leucoderma, leucoma, mania, mastitis, measles, nyctalopia, otalgia, ophthalmia, piles, rashes, ringworm, scabies, scurvy, stomatitis, syphilis, tumours, tuberculosis, toothache, ulcers and vertigo.

Miscellaneous uses include (i) agricultural implements (ploughs, yokes), shafts, beams, pins (ii) turnery, household articles, dippers, stirrers, spoons, chiks (door-screens), kilks (pens), huts (pillars), doors, cots, frames, mats, sandals, fans, baskets, brooms, chhaj (winnowing fans), ropes, cordage, making shawls and handkerchiefs, stuffing pillows and quilts (iii) building items (pillars, beams, rafters), (iv) foods, vegetables, pickles, culinary (v) fodder for cattle, goats, sheep, camels, horses, asses and onagers (vi) fencing, hedging (vii) tanning leather, dyeing (viii) cementing broken pottery (shreds), (ix) fuel, tinders (x) Magico-religious, cultural (tattooing), and rosaries.

### Introduction

The term Ethnobotany deals with the dynamic relationship, interactions between human populations, cultural values and plants. The relationship is obligating that it existed long before the civilization of man. However, the interaction of plants with human society varies due to their uses, relative importance, varying social, cultural and ethnic factors.

Many workers have documented the traditional knowledge about the plants and their conservation. The traditional use of plants for curing various diseases and health problems is one of the major utilities. Murray (1881), Kirtikar *et al.*, (1935), Dastur (1952a, b), Nadkarni (1954), Chopra *et al.*, (1949, 1958), Tewari (1979), Caius (1986), Zafer (1994), Mhaskar *et al.*, (2000), Behl & Srivastava (2002), and Sharma (2003) documented traditional knowledge about the medicinal plants used to treat a range of health problems including hydrophobia (rabies), dysentery, earache, epilepsy, eye and liver complaints, fever, hair loss, snake-bites and toothache and many other ailments in various parts of India.

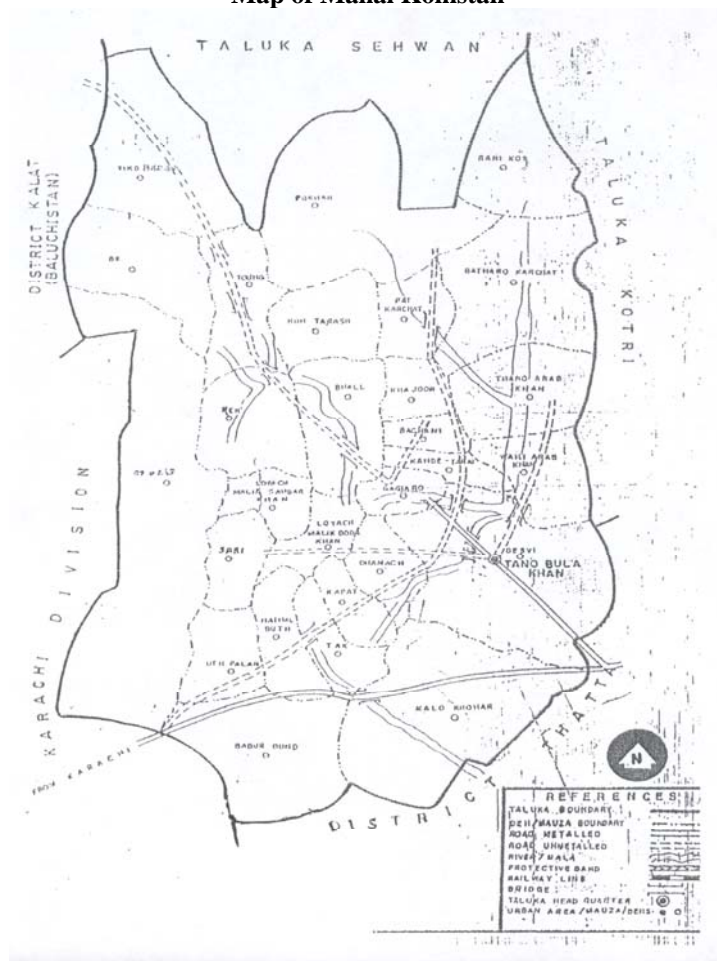
Ethnobotanical studies have been carried out in the world as reported by Duke (1986), Jain (1981), Tabata *et al.*, (1994), Alcorn (1995), Anderson (1995), Davis (1995), Prance (1995), Schultes & von Reis (1995), Alexiades (1996), Ody (2000), Paye (2000), Saxena (2000), Trivedi & Nargas (2000), and Dhiman (2003).

Likewise elsewhere in the world such studies have been made by Hill (1937), Bisset (1944), Ayensu (1979,1981), Boulos (1983), Duke & Ayensu (1985), Novy (1997), Bhattacharjee (1998, 2004), Cunningham (2001), Brown (2002) and Arber (2003). Baquar & Tasnif (1967), Zaman & Khan (1970), Ikram & Hussain (1978), Haq (1983, 1993), Mahdihassan (1984), Baquar (1989), Farooq (1990), Haq & Rehman (1990), Usmanghani *et al.*, (1997), Anwar *et al.*, (1998) and Shinwari & Khan (1999) studied some medicinal plants of Pakistan.

The ethnobotany of plants of Swat NWFP (Haq & Rehman, 1990), Prighar Hills S.Waziristan, NWFP (Badshah *et al.*, 1996), National Park Machyara, Muzaffarabad Azad Jammu & Kashmir (Bukhari, 1996), Dabargai Hills, District Swat, NWFP (Hussain *et al.*, 1996), Kharan District, Balochistan (Shinwari & Shah, 1996), Margalla Hills, National Park of Islamabad (Shinwari & Khan, 1998), Maidhani Hills, Muzaffarabad, Azad Jammu & Kashmir (Dastagir, 2001), Potowar Region (Badshah *et al.*, 2001), Shogran valley, NWFP (Matin *et al.*, 2002), Nushki District Chagai, Balochistan (Durrani *et al.*, 2003), District Buner NWFP (Hamayun, 2003a), Utror-Gabral Valleys, Swat, NWFP (Hamayun *et al.*, 2003b, c), Malam Jabba valley, District Swat, NWFP (Iqbal & Hamayun, 2003) and Palas Valley (Saqib & Sultan 2003) has also been reported.

The traditional knowledge about the medicinal plants of Sindh (Memon *et al.*, 1988a, b), Southern Balochistan (Goodman & Ghafoor, 1992), Kharan (Shinwari & Shah, 1996) and Plants & Drugs of Balochistan (Khan, 2004) has been reported.

### Map of Mahal Kohistan



Description of the area

Mahal Kohistan is spread on an area of about 110 square kilometers surrounded by Taluka Sehwan (North), District Thatta (South), Taluka Kotri (East), District Kalat (Baluchistan) and District Karachi (West) occupying south corner of Pakistan in the Province of Sindh, District Jamshoro. It is situated between 67.5° to 68.25° East latitude and 25.5° to 26.5° South to North longitude. The area of Kohistan is comprised of Khirthar ranges of tertiary period sedimentary rocks (Pithawalla, 1959; Farshory, 1972; Akhtar, 2003).

The population of the Mahal Kohistan consists of three major ethnic groups viz., Sindhi, Baloch and Brahvi. The major languages spoken are Sindhi, Balochi, Brauhvi, Urdu and Hindi (Hindus are major traders of the area).

### Materials and Methods

The information about the traditional uses of plants was inquired from local inhabitants of Mahal Kohistan. An effort was also made to confirm the medicinal uses from local healers (Hakeems) and herbal dealers (Pansars) in the Thanu Bula Khan Bazaar. The plants were collected and identified with the help of available literature (Nasir & Ali, 1971-1995; Ali & Qaiser, 1986, 1995-2002; Ali & Nasir, 1991-2003; Stewart, 1972, 1982) and confirmed in the local herbaria. The voucher specimens were kept in herbarium Institute of Botany, University of Sindh, Jamshoro

### Results and Discussion

It was observed that 75% among men and 25% among women were knowledgeable about plants. It was noted that elder people had more knowledge about the folk uses of medicinal plants than younger generation. In the remote areas like Mahal Kohistan, modern health care facilities are lacking. The populace depends upon the local resources around them particularly on plants.

The local inhabitants use 50 species of plants for treating various ailments. Most species had multi uses. The plants were mostly used in the crude form.

The local people depend on fuel wood and other needs on these rain-fed lands. Overgrazing and up rooting of medicinal plants for fuel wood and commercial exploitation has resulted in poor vegetation cover, promoted soil erosion and deterioration of habitat. There is need to conserve the medicinal recourses of the area through local participation, better awareness and sustainable harvest.

This information offers basic information to the pharmaceutical industry for further research in the treatment and control of ailments. It will also cater food for thought in preservation of plant wealth being depleted by human interference such as chopping of plants lavishly and overgrazing of animals.

**Traditional medicinal and miscellaneous uses:** A brief description of the uses of plants along with Local / Vernacular names (Sindhi) has been given. The plants have been arranged alphabetically. The information reported below is purely that provided by the local inhabitants.

**1. *Acacia senegal* (L.) Willd.**

Syn: *Mimosa senegal* L.

(Family: Fabaceae).

Vernacular: Babur

The powdered gum is used to check severe epistaxis. The wood is used for making agricultural implements i.e. ploughs / yokes, huts (pillar) and household articles also used for fuel by the tribals. Young branches are lopped for goats (*Capra hircus*) and sheep (*Ovis aries*) as fodder.

**2. *Aerva javanica*** (Burm. f.) Juss ex Scult.

Syn: *A. persica* (Burm. f.) Merrill.

*A. tomentosa* Forssk.

*Iresine persica* Burm. f.

(Family: Amaranthaceae).

Vernacular: Booh .

The decoction of the plant is used to remove swellings. Cotton wool is used to stuff pillows and quilts.

**3. *Albizia lebbek*** (L) Benth.

Syn: *Mimosa lebbek* L.

(Family: Fabaceae).

Vernacular: Sireenh.

The bark is bitter cooling, anthelmintic cures leucoderma, itching and piles; also used by the tribals for tanning leather which is black to brown colour. The flowers are used as a cooling medicine and also externally applied in boils eruption and swellings. The leaves are useful in ophthalmia and nyctalopia. The wood has high local timber value for agricultural implements, furniture, for huts and houses (beam and doorframe).

**4. *Alhahi maurorum*** Medic.

Syn: *A. camelorum* Fisch.

*A. pseudalhaji* (M.Bieb) Desv.

(Family: Fabaceae).

Vernacular: Kas kundero

The extract from fresh leaves is used as eye-drops to relieve soreness and redness. The powdered roots are taken as anti-diabetes. As fodder relished by camels (*Camelus dromedarius*) and goats (*Capra hircus*). It is also used in making door screens.

**5. *Amaranthus viridis*** L.

Syn: *A. gracilis* Desf.

(Family: Amaranthaceae).

Vernacular: Chil gah

Whole plant used as emollient for ulcer problems. Leaves cooked as vegetable. Fodder for camels (*Camelus dromedarius*), goats (*Capra hircus*) and sheep (*Ovis aries*).

**6. *Anagallis arvensis*** L.

(Family: Primulaceae).

Vernacular: Bili booti.

It is used in cerebral affections, leprosy, hydrophobia, dropsy, epilepsy and mania.

**7. *Blepharis indica*** Stocks ex Anders.

(Family: Acanthaceae).

Vernacular: Assad.

The seeds are used as cure for Otagia.

**8. *Calotropis procera* R. Br.**

(Family: Asclepiadaceae).

Vernacular: Ak.

The bast fibre obtained from the stem is used for making ropes and cordage. The silky coma of seeds is used for stuffing pillows, making shawls and handkerchiefs. Leaves are also used as poultice for sprains. Flowers useful in cholera. Milky juice (latex) is useful for toothache. The whole plants are used for the fencing and fodder for goats (*Capra hircus*).

**9. *Capparis decidua* (Forssk.) Edgew.**Syn: *C. aphylla* Roth.

(Family: Capparidaceae).

Vernacular: Kurrur.

The bark is used as an analgesic, diaphoretic, laxative, anthelmintic, antitussive. The fruit is useful in cardiac troubles and also used in pickles. Wood is used for agricultural implements (ploughs and yokes) and for making roofs of huts and for household articles like spoons, dippers and stirrers. Fodder for goats (*Capra hircus*) and camels (*Camelus dromedarius*).

**10. *Citrulus colocynthis* (L.) Schrad.**Syn: *Cucumis colocynthis* L.

(Family: Cucurbitaceae).

Vernacular: Truh.

Root is useful in mastitis, arthritis. The fruit is bitter pungent cooling, purgative, anthelmintic antipyretic, carminative, cures tumours, ascites, leucoderma, ulcers, asthma bronchitis, jaundice, enlargement of spleen, tuberculous glands, dyspepsia, constipation, anaemia, laryngitis. Fruit is administered to cattle for intestinal disorders.

**11. *Clerodendrum phlomoides* L.f.**

(Family: Verbenaceae)

Vernacular: Gharayat.

The root is used as a bitter tonic and is given in the convalescence of measles. The juice of the leaves is useful in syphilis.

**12. *Coccinea grandis* (L.) Voigt.**Syn: *C. indica* W. & A.*Bryonia grandis* L.*Cephalandra cordifolia* (L.) Cogn.*C. grandis* (L.) Kurz.*C. indica* Naud.*Momordica monadelphpha* Roxb.

(Family: Cucurbitaceae).

Vernacular: Golaru, Kanduri.

The fresh juice extracted from the roots and leaves are given in the treatment of diabetes. The leaves of this plant are boiled in gingelly oil and applied externally in ringworm. The fruit is an aphrodisiac; allays thirst; useful in biliousness.

**13. *Cocculus pendulus* (J.R. & G. Forst.) Diels.**Syn: *C. leaeba* (Del.) DC*Cebala pendula* (J.R. & G. Forst.).*Epibatrium pendulum* J.R. & G. Forst.

Family: Menispermaceae.

Vernacular: Zamhar.

Whole plant is used in the treatment of intermittent fevers.

**14. *Commiphora wightii* (Arn.) Bhandari**

Syn: *C. mukul* Hk. f. ex Stocks

(Family: Burseraceae).

Vernacular: Guggul, Mukul..

The gum is aphrodisiac, demulcent, aperient, carminative; useful in nervous diseases, urinary disorders and skin diseases. Dry gum resin is used in religious ceremonies. Hindus as they believe that fumes of resin ward off evil spirits. The gum is also used to cement the broken pottery.

**15. *Convolvulus arvensis* L.**

(Family: Convolvulaceae).

Vernacular: Naro.

The roots possess the cathartic properties. Whole plant used as fodder for goats (*Capra hircus*) and sheep (*Ovis aries*).

**16. *Corchorus depressus* (L.) Stocks**

(Family: Tiliaceae).

Vernacular: Mundhiri.

The plant is sweetish hot sharp acrid; removes tumours and pain; cures piles. It is given as a cooling medicine in fevers. The leaves are emollient. The seeds in decoction with milk and sugar are given as a tonic.

**17. *Cordia gharf* (Forssk.) Ehren. ex Asch.**

Syn: *C. rothii* Roem. & Schult.

(Family: Boraginaceae).

Vernacular: Lyar.

The decoction of the bark possesses astringent properties and is used as a gargle. The wood is used for making small agricultural implements (ploughs & yokes) and household articles. Ripe fruit (drupe) is eaten.

**18. *Crotalaria burhia* Buch. Ham. ex. Bth.**

Family: Fabaceae.

Vernacular: Sim.

Bast fibre extracted from the stem by the tribals used for ropes and cordage. The tribals make huts (walls, roof) using dry plants. The branches and leaves are used as a cooling agent to alleviate fever.

**19. *Cuscuta reflexa* Roxb.**

Family: Cuscutaceae.

Vernacular: Bepari, Kasus.

The plant is purgative. The seeds have a bitter bad taste sedative, emmenagogue, diuretic; useful in diseases of the liver, spleen, quartan fever, chronic fevers, griping, hicoughs. Seeds are bruised they are used for washing the hair.

**20. *Cynodon dactylon* L.**

Family: Poaceae.

Vernacular: Chhabbar.

The extract of whole plant is useful in curing diarrhoea and ophthalmia. The decoction from roots is used to treat gonorrhoea and other urogenital ailments. It affords fodder for horses (*Equus caballus*) and onagers (*Equus hemionus onager*).

**21. *Cyperus rotundus* L.**

Family: Cyperaceae.

Vernacular: Kabah.

The root is cooling, astringent, appetiser, stomachic, antelmintic, diuretic, diaphoretic; useful in leprosy, thirst, fever, blood diseases, biliousness, dysentery, vomiting, epilepsy, ophthalmia, erysipelas.

Whole plant is used as fodder for goats and sheep.

**22. *Datura metel* L.**Syn: *D. alba* Nees*D. fastuosa* L.

(Family: Solanaceae).

Vernacular: Dhaturu.

Extract of leaves is helpful in toothache, headache and epilepsy. Leaves extract effect the nervous system, overdose may induce vomiting, coma and even death. Seeds are antipyretic anti-rabies and narcotic.

**23. *Desmostachya bipinnata* (L.) Stapf.**

(Family: Poaceae).

Vernacular: Dabh.

The root is sweet cooling useful in thirst, asthma, jaundice, biliousness, diseases of the blood, The plant is sweet acrid, cooling, oleaginous, aphrodisiac, diuretic. The culms are said to possess diuretic and stimulant properties. Hindus keep the grass at the time of solar and lunar eclipses in the belief that edible things will not be affected by harmful radiation.

**24. *Echinops echinatus* Roxb.**

(Family: Asteraceae)

Vernacular: Tik.

The plant is bitter; stomachic, antipyretic, analgesic, anti-inflammatory, appetizer; stimulates the liver.

**25. *Eclipta alba* (L.) Hasskl.**Syn: *E. prostrata* L.

(Family: Asteraceae).

Vernacular: Tik.

The plant has a bitter sharp dry taste, tonic, expectorant, antipyretic, anodyne, stomachic, useful in diseases of the spleen, stomatitis, hepatitis; cures vertigo. In tattooing the natives after puncturing the skin rub the juicy green leaves over the part which gives the desired indelible color viz., a deep bluish black.

**26. *Fagonia bruguieri* DC**

Syn: *F. cretica* L.

*F. mysorensis* Roth.

(Family: Zygophyllaceae)

Vernacular: Drummahu.

Whole plant is acrid and bitter cooling useful in asthma, fever, thirst, vomiting; cures dysentery, ophthalmia, toothache, stomatitis, leucoderma, biliousness and snakebite.

**27. *Flacourtia indica* (Burm.) Merrill.**

Syn: *Gmelina indica* Burm.f.

(Family: Flacourtiaceae).

Vernacular: Bhutankas.

The fruits are sweet, appetising and digestive are useful in jaundice and enlarged spleen. Seeds are ground to a powder with turmeric and rubbed all over the body after parturition, to prevent rheumatic pains.

**28. *Nannorrhops ritchieana* H. Wendl.**

(Family: Arecaceae).

Vernacular: Pish.

The young leaf or cabbage is eaten, also used in the treatment of diarrhoea and dysentery. Mats, sandals, ropes, fans, baskets, and brooms are made from the leaves. The reddish moss like wool of the petioles is used as tinder. The seeds are used into rosaries.

**29. *Nerium oleander* L.**

(Family: Apocynaceae).

Vernacular: Zangi Gul.

Decoction of leaves in paste form is applied externally on the skin to cure certain skin diseases. The root is bitter aphrodisiac, tonic, good for chronic pain in the abdomen and pain in the joints; very poisonous but an antidote to snake venom. Flowers are sacred to Hindu deity Siva and are used by Hindus in religious ceremonies. Highly toxic for humans as well as livestock, camels (*Camelo dromedarium*) sometimes eat the leaves of the plant but they always prove fatal.

**30. *Ocimum basilicum* L.**

(Family: Lamiaceae).

Vernacular: Nazbo, Sabajhi.

The plant is pungent and dry stomachic, anthelmintic, antipyretic, improves the taste useful in diseases of the heart and blood. The juice of the leaves forms an excellent nostrum for the cure of ringworm and bruised leaves for scorpion stings. The flowers possess stimulant, diuretic and demulcent properties. The seeds are mucilaginous and cooling given in infusion in gonorrhoea, diarrhoea and chronic dysentery. A cold infusion is said to relieve the after pains of parturition. The powder (dried leaves) is used in culinary.

**31. *Olea ferruginea* Royle**

Syn: *O. cuspidata* Wall. ex DC.

(Family: Oleaceae).

Vernacular: Khan, Khau.



Leaves used in toothache, astringent, antiseptic, diuretic, anti-periodic, sore throat. The root is applied for scorpion sting. Fruit is eaten, anti-diabetic. Wood is used for making agricultural tools (ploughs and yokes) also fuel.

**32. *Oxystelma esculenta* (L. f) R. Br.**

(Family: Asclepiadaceae).

Vernacular: Dudhi.

The fruit is bitter; tonic, expectorant, anthelmintic; juice is useful in gleet, gonorrhoea, pain in the muscles, cough, leucoderma; milky sap forms a wash for ulcers. The natives eat the fruit in famine. The whole plant is fodder for goats (*Capra hircus*) and sheep (*Ovis aries*).

**33. *Peganum harmala* L.**

(Family: Zygophyllaceae).

Vernacular: Hurmal.

The seeds contain the alkaloids Harmalin, Harmalol and Harmine; the seeds are antispasmodic, narcotic, hypnotic, anodyne, emetic, emmenagogue, stimulant, alternative, aphrodisiac, lactagogue, antehelminic and abortifacient; they are also used in remittent and intermittent fevers, colics, retention of urine, cough and other pectoral disorders. A decoction of crushed seeds is also useful in mouthwash in laryngitis. The seeds yield a dye, which tribals use for dyeing the hair of sheep (*Ovis aries*) and goats (*Capra hircus*) as an identification mark.

**34. *Phyla nodiflora* (L.) Greene**

Syn: *Lippia nodiflora* (L.) Rich.

(Family: Verbenaceae).

Vernacular: Bukan.

The plant is hot and dry; diuretic, useful in fevers and colds. A poultice of fresh plant is maturant for boils. Infusion of tender stalks and leaves is useful to children suffering from indigestion and to women after parturition. Chutney made from the leaves and fruit is eaten to relieve the irritation of internal piles. It is fodder for goats (*Capra hircus*) and sheep (*Ovis aries*).

**35. *Prosopis cineraria* (L.) Druce**

Syn: *P. spicigera* L.

(Family: Fabaceae).

Vernacular: Kandee.

The pod is considered astringent. The bark is used as a remedy for rheumatism. Women eat the flowers during pregnancy to safeguard them against miscarriage. The ashes are rubbed over the skin to remove hair. The natives eat mealy pulp contained in the pod having a sweetish taste, either raw or cooked as a vegetable. Hindus worship trees during the Dussera festival. The wood is used for making agricultural implements viz., ploughs, yokes and beams. Branches lopped as fodder for goats (*Capra hircus*).

**36. *Rhazya stricta* Dcne.**

(Family: Apocynaceae).

Vernacular: Sainwar.

The infusion of fresh leaves is used in bath water as cooling agent. The powdered leaves and fruits are applied on skin to treat rashes. The extract from fresh fruits is used in treating sore eyes. The fruits and leaves are considered efficacious in cases of boils and eruption. Also remedy for snake bite, tooth and eye diseases. The roots are used as a febrifuge.

**37. *Saccharum bengalense* Retz.**

Syn: *S. munja* Roxb.

(Family: Poaceae).

Vernacular: Sar, Sirkee.

Culms are cooling, aphrodisiac useful in burning sensations, thirst, erysipelas, blood troubles urinary complaints, eye disease, also used for hut making, Cheekhs (screen), fencing and pens (Kilks). On the occasion of Holi and Diwali festivals Hindus worship the culms bearing inflorescence (arrows) called Hira Moti with the belief that the year will bring prosperity and fortune. Stems and leaves fibre is obtained by maceration and beating which is made in to good serviceable ropes for cots and cordage.

**38. *Salvadora oleoides* Dcne.**

(Family: Salvadoraceae).

Vernacular: Khabbar.

The plant is adapted to xeric conditions and is used for hut fencing. The fruit has sharp pungent, acrid and sweet sour taste with a flavour; appetiser, laxative, carminative, useful in piles, tumours, bronchitis, billiousness, ascites. The root bark is used as a vesicant. The leaves are used as an antitussive and as a purgative. Fodder for camels (*Camelus dromedarius*).

**39. *Salvadora persica* L.**

(Family: Salvadoraceae).

Vernacular: Khabbar.

The fruit is deobstruent, carminative and diuretic. Bark of the root is vesicant. The shoots and leaves are pungent and are used as an antidote to poisons of all sorts. Fodder for camels (*Camelus dromedarius*). The juice of the leaves is given in scurvy. The natives use root as toothbrush as it strengthens the gums, keeps them from becoming spongy, and improves digestion.

**40. *Solanum nigrum* L.**

Family: Solanaceae.

Vernacular: Pat Peroon.

The fruits (berries) are bitter, pungent, heating, laxative, alternative, aphrodisiac, tonic, diuretic, appetizer and useful in diseases of the heart, leucoderma, fever, diarrhoea, ophthalmia, hydrophobia.

**41. *Sueda fruticosa* (L.) Forssk. ex J.F. Gmelin.**

(Family: Chenopodiaceae).

Vernacular: Lanee.

Khar (crude soda) is prepared from this plant for washing purpose. The leaves are applied as poultice in ophthalmia and used sometimes infused in water as an emetic.

**42. *Tamarix aphylla* (L.) Karst.**Syn: *T. articulata* Vahl

(Family: Tamaracaceae).

Vernacular: Lai.

Branches used locally for basket making or partition screens. Galls obtained from the tree are used as an astringent and as a dye. The wood is used in turnery, for making agricultural implements (ploughs/yokes). The bark is bitter, astringent and aphrodisiac it is also used in treating eczema and capitis.

**43. *Tamarix indica* Willd.**

(Family: Tamaracaceae).

Vernacular: Lai.

The bark is bitter and an astringent, tonic. Fruit and leaves are useful for dysentery and chronic diarrhoea. The wood is of the greatest utility as fuel by the natives. Branches are used for basket making. Bark is astringent and tonic.

**44. *Tecomella undulata* (Roxb.) Seeman**

(Family: Bignoniaceae).

Vernacular: Lohiro.

The wood used for building items (pillar, beam, rafter) and agricultural implements (ploughs, yokes, shafts, beams). The bark of the young branches of the tree is employed as remedy in syphilis. It is also used to cure hepatitis, leucorrhoea and fevers. Fresh branches lopped as fodder for goats (*Capra hircus*) and camels (*Camelus dromedarius*).

**45. *Tribulus terrestris* L.**

(Family: Zygophyllaceae).

Vernacular: Bhurt.

The leaves are used as gargle for stomatitis. The fruits are cooling, diuretic, tonic and aphrodisiac. Also used in painful micturition, calculous affections, urinary disorders and impotence. Tribals eat the fruit as food especially in times of famine.

**46. *Trichodesma indicum* (L.) R.Br.**

(Family: Boraginaceae).

Vernacular: Gaozaban.

The whole plant as poultice is used as emollient. Leaves are anti-venom used to cure snakebite.

**47. *Withania coagulans* Dunal.**

(Family: Solanaceae).

Vernacular: Panir band.

The dried fruits sold as Punir-ja-fota are employed in dyspepsia and flatulent colic and other intestinal affections. The dried and fruit used for coagulating milk in the process of cheese manufacture. The fruit is pounded and used as a cure for colic. Wood is used for cleaning the teeth.

**48. *Withania somnifera* (L.) Dunal.**

(Family: Solanaceae).

Vernacular: Koori Chinothi.

The leaves are applied to tumours and to tuberculos glands. The roots are useful in rheumatism, dyspepsia and lumbago.

**49. *Zizyphus nummularia*** (Burm. f.) W. Arn.

Family: Rhamnaceae.

Vernacular: Ber.

The plant is used live and dead in field and hut fencing due to its straight stout and hooked spines. Branches lopped as fodder for goats (*Capra hircus*). The fruit is sweet, sour; wholesome, appetiser and stomachic. The leaves are used for the treatment of scabies and boils. Decoction of leaves used in washing of Muslim dead bodies.

**50. *Zygophyllum simplex* L.**

(Family: Zygophyllaceae).

Vernacular: Alethi.

The seeds are anthelmintic; swept up off the ground and eaten by the poor as food. It is camel's heartiest fodder. An infusion of leaves is useful in ophthalmia and leucoma.

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(Received for publication 14 February 2006)