

Full Length Research Paper

Indigenous uses of economically important flora of Margallah Hills National Park, Islamabad, Pakistan

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Accepted 6 February, 2009

Informal interviews provided data about 245 useful plants of 77 families of 55 trees, 54 shrubs, 105 herbs, 15 climber, 10 grasses and 6 crops recorded from the Margallah Hills National Park, Islamabad. Two hundred and fifteen local/ vernacular names were noted of total plants. The inhabitants of the park have for a long time been dependent on surrounding plant resources for their food, health care, fodder, fuel wood and other cultural purposes. A list of plant species along with their local name, plant part/s used, popular uses (or troubles treated) are given. The pastoral nomads of the area make use of 159 (64.89%) as native medicine, 79 (32.24%) as fodder for their livestock, 47(19.18%) as fuelwood, 33 (13.46%) as food (fruits), 18 (7.34%) as vegetables, 14 (5.71%) as timber, 6 (2.44%) as industrial, 4 (1.63%) as tannin, 3 (1.22%) as gum and 2 (0.81%) as fiber. Medicinal uses of the 126 plant species have also been described. This information will serve as reference for the benefit of pharmacists, researchers, Hakims (herbalist), veterinarians and public at large.

Key words: Indigenous uses, flora, Margallah Hills National Park, Islamabad, Pakistan.

INTRODUCTION

Margallah Hills National Park, occupying an area of 15,883 hectares in North East of the National Capital Islamabad in the province of Punjab is lying 33° 43' N latitude and 72°55' E longitude (Ibrar and Khan, 1998). The topography of the area is rugged, varying in elevation from 465 to 1600 m comprising mainly of steep slopes and gullies where the rock structure is basically limestone (Nasir and Robina, 1987). The area falls in the far end of monsoon zone and the bulk of monsoon precipitation occurs in July and August, with monthly average of 267 and 309 mm respectively (Maqsood, 1991). The soil of the area is derived from wind, water laid deposits and sedimentary rocks (Hijazi, 1984). The average maximum and minimum temperature are 33.3 and 19.5°C, respectively. The hottest months are May and June when the temperature may raise up to 42°C and the coldest months are December and January when temperature falls below zero (Hussain, 1986).

Pakistan is rich in medicinal plant resources due to its varied climatic and edaphic factors. Of the almost 6000

species of vascular plants reported to occur in Pakistan, about 1000 species have been recognized to possess phyto-chemical properties. Between 350 - 400 species are traded in different drug markets of the country and are used by leading manufacturing units of Unani and Homeopathic medicines. Besides, a number of medicinal plants and their derivatives required by pharmaceutical industries are also imported under a liberal import policy of the Government for those drug plants whose cultivation is not feasible in the country. Furthermore, about 40,000 - 50,000 tabibs (practitioner of Greco-Arabic medicine), vaidis (practitioner of Ayurvedic and folk-medicine) and a number of un-registered practitioners scattered in rural and remote hilly areas use more than 200 drug plants in traditional and folk-medicines as household remedies for several diseases.

In recent years, there has been a consistent growth in the demand for plant-based drugs and several plant products from a variety of species. This has given rise to large-scale collection and habitat degradation. It has resulted in the scarcity of a number of valuable medicinal plant species and their wide range of chemical diversity is diminishing with the present scale of selective extraction from natural habitats.

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Hijazi (1984) reported that *Dodonaea viscosa* was the most common shrub of Margalla Hills National Park. Khattak and Ahmed (1990) compared the vegetation on the north and south facing slopes of Margalla Hills and reported the presence of *Pinus roxburgii*, *Apluda mutica* and *Quercus incana* community on the north facing slopes and *Acacia modesta*, *Woodfordia fruticosa*, *D. viscosa* community on the south facing slopes. According to them, the north facing slopes showed greater species diversity as compare to the south facing slopes having the similarity index as 46%.

Population is randomly distributed, mostly located near water streams and springs. In a census of Capital Development Authority CDA acquired land in August 1991, there were 5744 people in 23 settlements (villages). These people are living in 975 houses and own 3910 heads of livestock. People allow their livestock to graze freely, they cut trees for fuel, gather fodder for animals and divert water for cultivated plots. Livestock also compete with the native animals for food and space. Maqsood (1991) estimates that of the 7,000 domestic ungulates in the park, 42% are goats, 31% are cattle, and 25% are water buffaloes. It is not possible to protect the viable population of Grey Goral and Barking Deer if livestock are also permitted to graze in the same area. They unwittingly deplete the natural system of biomass and diversity. The principal direct cause of degradation of Pakistan's rangelands and forests is the rapidly increasing domestic livestock population. Between 1945 and 1986, numbers of cattle almost doubled, while the numbers of buffaloes, sheep and goats more than tripled. Overall livestock numbers continue to increase at a rate of 2% per year. While much of this increase has been fed by the production of fodder within irrigated areas, persistent over-grazing has reduced forage production in Pakistan's rangelands to one-third the potential (a loss of almost 50 million tonnes per year), and in some areas to as low as 15% of potential forage production (GOP/JRC, 1992).

Villagers are only partially supported by the cash economy, consequently they dependent for their survival on livestock, gardens, fuel wood, fodder, medicinal uses, food, shelters etc. Different parts of the *Napoleona imperialis* are used for different purposes in the West Africa including mulching and fodder (leaves and twigs), and firewood, chewing stick and ethno-medicine (stem and root) (Osei-Owusu, 1981; Okafor and Fernandez, 1987). Humans consume the juice from the fruits and pods and the seeds are discarded. The seeds have very low human food preference or any industrial use as of now and could therefore form an alternative feeding redient for livestock production. Quarries, abandoned roads and villages, springs and eroded trails are the significant areas of impact. People invariably ignite wild land fires in Margallah Hills. Some fires are probably caused by carelessness.

An over-riding aspect of the indigenous knowledge system is that it tends to be held by the older, as opposed

to the younger generations. The major loss of indigenous knowledge in the population of villages is the disruption of the traditional channel of oral communication due to shift to written exchange of communications. This made it difficult for the older generation to pass their knowledge on to the younger generation. Depletion of flora at an increasing rate is another crucially important problem of Margallah Hills meaning that important economic species are being lost. The exploitation of ethnobotanical values (Table 1) of Margallah Hills will be helpful in a variety of ways particularly focusing on exploitable potential, status and value for disease control, status and value for disease control, commercialization, marketing aspects and create awareness about the related issues.

MATERIALS AND METHODS

Knowledgeable and reliable elderly people, plant lovers and Hakim from Margallah Hills National Park were contacted to record the first hand knowledge about the economical/medicinal uses of native species of the area. The ethno-botanical information were collected by using a specifically designed questionnaire incorporated in Table 2. Data on parts (leaves, twigs, fruits, pods) of plant species used and ethno-botanical values viz. fodder, medicinal, fiber, food (vegetable, fruit), fuel wood, timber, industrial, tanning and gum were collected. For medicinal uses, in addition to information on the plant parts used, their collection, processing, preparation of drugs, properties of medicine and diseases cured by them were also collected.

RESULTS AND DISCUSSION

About 245 plant species belonging to 77 families of which 55 trees species, 54 shrubs, 105 herbs, 15 climbers, 10 grasses and 6 fodder crops have been identified. It has been observed that all of these plant species are being used by the people of Margallah Hills National Park for their varied ethno-botanical importance (Table 2). The ethno-botanical uses of plants can be categorized into ten broad categories (Table 3).

Major proportion of these plant species are used as native medicine (64.89%) and second major use of these plant species is as fodder (32.24%) for their livestock. Forty seven plants (19.18%) are used as fuel wood, thirty three (13.46%) are used as food (fruit), eighteen (7.34%) as food (vegetable), fourteen (5.71%) as timber, six (2.44%) as industrial, four (1.63%) as tannin, three (1.22%) as gum and two (0.81%) are used as fiber.

The Margallah Hills National Park has sustained these ethnobotanical uses for long time. The uses of these plant species are restricted to local people who collect these plant species as and when required (Table 4).

Indigenous uses of medicinal plants of Margallah Hills

Timbar (*Zanthoxylum armatum*) fresh and dried both of one cup is used in the morning and one in the evening

Table 1. Ethno-botanical values of plants of Margallah Hills National Park.
a. Trees.

S#	Botanical name	Family	Vernacular name	English name	Part used	Use freq	Ethnobotanical values
1	<i>Acacia catechu</i> (L.f.) Willd.	Mimosaceae	Khair, Katha		Entire plant	R	Medicinal, fuelwood
2	<i>A. farnesiana</i>	Mimosaceae	Vilaiti kikar		Entire plant	R	Fodder, fuel wood, Industrial
3	<i>A. modesta</i> Wall.	Mimosaceae	Phulai		Entire plant	C	Medicinal, fuelwood
4	<i>A. nilotica</i> (L.) Delile	Mimosaceae	Kikar	Babul	Entire plant	C	Medicinal, fuelwood
5	<i>Aesculus indica</i> (Wall.ex Camb.) Hook. f.	Hippocastanaceae	Bankhor	Horse chestnut	Entire plant	C	Fodder, fuel wood, medicinal
6	<i>Albizia lebbek</i> (L.) Benth.	Mimosaceae	Shareen	Siris	Entire plant	C	Fodder, fuel wood, medicinal
7	<i>Bauhinia variegata</i> L.	Caesalpinaceae	Kachnar		Buds, leaves, fruit	C	Fodder, food (Vegetable), medicinal
8	<i>Bombax ceiba</i> L.	Bombacaceae	Simbal, Simal	Silk cotton tree, Cotton tree, Kapok tree	Bark, stem, roots, seed	R	Fuelwood, medicinal, Industrial
9	<i>Broussonetia papyrifera</i> (L.) L' Herit ex Vent	Moraceae	Kaghzi tut, Malaing	Paper Mulbery	Bark, leaves, stem	C	Fodder, Industrial
10	<i>Butea monosperma</i> (Lam.) O. Kuntz.	Papilionaceae	Palas, dhak, Chichra	Flame of the forest	Bark, leaves, stem	R	Fodder, fuel wood, fiber, medicinal, gum
11	<i>Callistemon citrinus</i> (Curtis) Skeels	Myrtaceae		Bottle-Brush Tree	Entire plant	R	Food (Honey production)
12	<i>Cassia fistula</i> L.	Caesalpinaceae	Kingo, Amaltas	Golden Shower, Pudding pip-tree, Indian Laburnum	Stem, leaves, seeds, root, bark	C	Medicinal, fuel wood, tannin, timber
13	<i>Cedrus deodara</i> (Roxb. ex D. Don) G. Don	Pinaceae	Deodar	Himalayan Cedar	Entire plant	R	Timber, medicinal
14	<i>Celtis eriocarpa</i> Decne.	Ulmaceae	Batkhar, Kharak	Nettle tree	Leaves, stem, fruit	C	Fodder, food (Fruit)
15	<i>Cordia oblique</i> Willd. Phytogr	Boraginaceae	Lasura	-	Fruit, stem	C	Medicinal, fruit, fuelwood,
16	<i>Dalbergia sissoo</i> Roxb. ex DC	Papilionaceae	Tali, Sissoo	Shisham	Leaves, stem, roots and bark	C	Fodder, fuel wood, medicinal, timber
17	<i>Ehretia obtusifolia</i> Hochst ex DC.	Boraginaceae	Puna	-	Stem, fruit,	R	Fuel wood, fruit, timber
18	<i>Erythrina suberosa</i> Roxb.	Papilionaceae	Dhaldak	Coral tree	Stem, bark	R	Fuel wood, medicinal

Table 1. Cont.

19	<i>Ficus auriculata</i> Lour. Syn: <i>F. roxburghii</i> Wall. Ex Miq.	Moraceae	Trembal, Dusi	-	Leaves, fruit	R	Fodder, fruit
20	<i>Ficus benghalensis</i> L.	Moraceae	Bohr	Banyan	Leaves, root, bark, seeds	R	Medicinal
21	<i>Ficus religiosa</i> L.	Moraceae	Pipal	-	Seed, bark, fruit, wood	R	Medicinal, fodder, fruit, timber
22	<i>Ficus virgata</i> Wall. ex Roxb	Moraceae	Phagwara	-	Fruit, leaves	C	Fodder, medicinal
23	<i>Flacourtia indica</i> (Burm.f.) Merrill	Flacourtiaceae	Kokoh	-	Fruits, gum	C	Fruit, gum, medicinal
24	<i>Grevillea robusta</i> Cunn. Ex R. Br.	Proteaceae	-	Silky oak	Stem	R	Fuelwood, timber
25	<i>Grewia optiva</i> Drummond .ex Burret	Tiliaceae	Dhaman, Salat	-	Leaves, fruit, stem	C	Fodder, fruit, fuel wood
26	<i>Jacaranda mimosifolia</i> D. Don (<i>J. ovalifolia</i> R. Br.)	Bignoniaceae	Nila Gul-Mohar	Green-ebony, Sharp leaf Jacaranda	Stem	R	Fuel wood
27	<i>Juglans regia</i> L.	Juglandaceae	Akhraot	Himalayan Walnut	Fruit, bark, leaves	R	Fruit, fodder, medicinal
28	<i>Lannea coromandelica</i> (Houtt)Merrill	Anacardiaceae	Kamlai	-	Bark, leaves	R	Medicinal
29	<i>Mallotus phillipensis</i> (Lam.) Muell.Arg	Euphorbiaceae	Kamila, Kambal	-	Fruits, leaves, bark	C	Medicinal
30	<i>Maytenus royleanus</i> (Wall.ex Lawson) Cufodont.	Celastraceae	Pataki, Pataki	-	Seeds, stem, leaves	C	Medicinal, fodder
31	<i>Melia azedarach</i> Linn.	Meliaceae	Dhrek, Bakain	China berry, Bead tree, Persian Lilac	Stem, leaves, flowers, leaves	C	Fodder, timber, medicinal
32	<i>Moringa oleifera</i> Lam.	Moringaceae	Sohanjna	-	Leaves, flowers, fruits, bark	C	Fodder, food (Vegetable), gum
33	<i>Morus alba</i> L.	Moraceae	Tut, Chitta tut, Spin tut	White Mulberry	Leaves, stem, bark, fruit	C	Medicinal, fruit, fuel wood, fodder
34	<i>Olea ferruginea</i> Royle	Oleaceae	Kao, Kahu, Khuwan	Wild olive	Fruit, leaves, bark, wood	C	Medicinal, fodder, fuel wood
35	<i>Parkinsonia aculeata</i> Linn.	Leguminosae	Kabuli kikar, vilayeti Kikar	Jerusalem Thorn	Stem, leaves,	C	Fuel wood, fodder

Table 1. Contd.

36	<i>Prunus cerasoides</i> D.Don	Rosaceae			Fruit	R	Fruit
37	<i>Pyrus pashia</i> Buch.-Ham.ex D.Don	Rosaceae	Batangi, Medlar		Fruit, leaves, stem,	C	Fruit, fodder, fuel wood
38	<i>Prunus persica</i> (L.) Batsch.	Rosaceae	Aru	Peach	Fruit	R	Fruit
39	<i>Pinus wallichiana</i> A. B. Jackson (<i>P. excelsa</i> Wallich ex D. Don)	Pinaceae	Biar	Himalayan Blue Pine	Stem	R	Timber
40	<i>Phoenix sylvestris</i> (L.) Roxb	Palmae	Jangli khajur	Wild Date Palm	Fruit, juice of tree, root, kernel	C	Fruit
41	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Amla, Ambli, Aonla		Fruits, food, flowers, seed, root bark	C	Medicinal, Fruit, food (vegetable)
42	<i>Pinus roxburghii</i> Sargent	Pinaceae	Chir	Chil	Wood, resin	C	Timber, fuelwood
43	<i>Pistacia chinensis</i> subsp. <i>Integerrima</i> (J.L. Stewart) Rech.	Anacardiaceae	Kakar singhi Kangar		Entire plant	C	Fodder, timber, medicinal
44	<i>Platanus orientalis</i> L.	Platanaceae	Chenar	Oriental Plane	Stem	R	Fuel wood, timber
45	<i>Prunus armeniaca</i> L.	Rosaceae	Hari	Apricot	Fruit	R	Fruit
46	<i>Pyrus communis</i> L.	Rosaceae	Nashpati	Pear	Fruit	R	Fruit
47	<i>Quercus floribundula</i> Lindley ex A Camus (<i>Q. dilatata</i> Lindley)	Fagaceae	Barungi		Entire plant	C	Fodder, fuel wood, tannin
48	<i>Quercus leucotrichophora</i> A. Camus	Fagaceae	Rin, Shah Baloot, Ban	Oak	Entire plant	R	Fodder, fuelwood, timber
49	<i>Robinia pseudoacacia</i> Linn.	Leguminosae		False acaia, Black loust	Entire plant	R	Fodder, fuel wood
50	<i>Salix babilonica</i> Oinn.	Salicaceae	Bed Majnu	Weeping willow	Entire plant	C	Fuel wood, fodder, tannin
51	<i>Sapium sebiferum</i> (L.) Roxb.	Euphorbiaceae	Makkhan charbi, Vilayiti shishtum	Chinese Tallow Tree	Stem	C	Fuel wood
52	<i>Sorbus lanata</i> (D.Don) Schauer	Rosaceae	Doda		Fruit	C	Fruit
53	<i>Taxus baccata</i> L. subsp. <i>Wallichiana</i> (Zucc.) Pilger	Taxaceae	Barmi	Himalayan Yew	Entire plant	R	Timber, fruit, fodder
54	<i>Tecomella undulata</i> (Roxb.) Seeman	Bignoniaceae	Lahura		Bark, seed, wood	R	Medicinal, fuel wood, timber
55	<i>Zizyphus oxyphylla</i> Edgew.	Rhamnaceae	Phitni, Amlai		Fruit	R	Fruit

Table 1b. Shrubs

S#	Botanical name	Family	Vernacular name	English name	Part used	Use freq	Ethnobotanical values
1	<i>Acacia hydaspica</i> J.R. Drummond ex Parker	Mimosaceae			Leaves, stem	C	Fodder, fuel wood
2	<i>Barleria cristata</i> L.	Acanthaceae	Tadrelu, Bansa siyah		Whole plant	C	Medicinal
3	<i>Berberis lycium</i> Royle	Berberidaceae	Sumbal	Kashmal, Zarch	Whole plant	C	Medicinal, fuel wood
4	<i>Buddleja asiatica</i> Lour	Buddlejaceae	Batti, Banna		Wood	C	Walking sticks
5	<i>Buxus papillosa</i> C.K.Schneid	Buxaceae	Shamshad		Entire plant	C	Fuel wood
6	<i>Calotropis procera</i> (Willd.) R. Br.	Asclepiadaceae	aak	Sodom's Apple	Entire plant	C	Medicinal
7	<i>Capparis decidua</i> (Forssk.) Edgew.	Capparidaceae	Karir, Karildelha		Fruit, flowers	C	Medicinal
8	<i>Carissa opaca</i> Stapf ex Haines	Apocynaceae	Granda		Entire plant	C	Medicinal, fuel wood
9	<i>Colebrookia oppositifolia</i> Smith	Labiatae	Shakardana		Entire plant	C	Medicinal
10	<i>Cotinus coggyria</i>	Anacardiaceae	Bhan, Wig	Smoke tree	Leaves	C	Fodder
11	<i>Daphne mucronata</i> Royle	Thymeleaceae	Kuttikal		Fruit	C	Fruit
12	<i>Debregeasia saeneb</i> (Forssk.) Hepper & Wood	Urticaceae	Chajul		Fruit	C	Fruit
13	<i>Dodonaea viscosa</i> (L.) Jacq.	Sapindaceae	Sanatha		Leaves, bark, seed, wood	C	Medicinal, fuel wood
14	<i>Euphorbia milli</i> Des Moul.	Euphorbiaceae		Crown-of-Thorns	Entire plant	R	Protect the tops of wall
15	<i>Euphorbia pulcherrima</i> Willd. Ex Klotzsch	Euphorbiaceae		Poinsettia	Entire plant	C	Hedge plant
16	<i>Embelia ribes</i> Burm.	Myrsinaceae	Babrun, Baobirung		Seeds	R	Medicinal
17	<i>Euphorbia royleana</i> Boiss.	Euphorbiaceae	Danda thor		Entire plant	C	Medicinal, hedge plant
18	<i>Grewia asiatica</i> L.	Tiliaceae	falsa		Fruit	R	Fruit
19	<i>Grewia tenax</i> (Forssk.) Fiori	Tiliaceae	Kango, Gwangi		Leaves	R	Fodder
20	<i>Indigofera heterantha</i> Wall. ex Brandis	Papilionaceae	Kainthi		Leaves	R	Fodder
21	<i>Jasminum humile</i> var <i>humile</i> f. <i>pubigerum</i> (D.Don) Grohmann	Oleaceae	Peeli chambeli		Flower, root, juice	C	Medicinal
22	<i>Jasminum officinale</i> L.	Oleaceae	Chambeli		Entire plant	R	Medicinal
23	<i>Justicia adhatoda</i> L.	Acanthaceae	Bhaikar		Leaves, flowers, roots, stem	C	Medicinal, fuel wood
24	<i>Lantana camara</i> L.	Verbenaceae	Panch phali	Hedge-flower	Entire plant	C	Medicinal, fuel wood

Table 1b. Contd.

25	<i>Lantana indica</i> Roxb.	Verbenaceae	Ghaneri		Leaves, stem	C	Medicinal, Fuel wood
26	<i>Mimosa rubicaulis</i> Lam. subsp. <i>Himalayana</i> (Gamble) Ohashi	Mimosaceae	Arlu, ral, Shiah-kanta		Entire plant	C	Medicinal
27	<i>Myrsine africana</i> L.	Myrsinaceae	Gukoon, Khokal, Baybring		Entire plant	C	Medicinal, fodder, fuel wood
28	<i>Nannorrhops ritchieana</i> (Griff.) Aitchison	Palmae	Chatai palm, Mazri		Entire plant	R	Medicinal, industry
29	<i>Nerium oleander</i> L. Syn: <i>N. indicum</i> Mill.	Apocynaceae	Kanair, Ganira	Oleander, Rose Bay	Entire plant	C	Medicinal
30	<i>Opuntia monacantha</i> (Willd.) Ham.	Cactaceae	Nagphana	Prickly Pear	Entire plant	F	Medicinal
31	<i>Otostegia limbata</i> (Benth.) Boiss.	Labiatae	Chiti Buti, Bui, Phut kanda	Marjoram	Leaves	C	Medicinal, fuel wood
32	<i>Pavetta tomentosa</i> Roxb. ex Smith	Rubiaceae	-	-	Leaves, roots	R	Medicinal
33	<i>Rabdosia rugosa</i> (Wallich ex Benth.) Hara (<i>Plectranthus rugosus</i> Wallich ex Benth.).	Labiatae	-	-	Leaves	R	Fodder
34	<i>Plectranthus coetsa</i> (Buch. – Ham. ex D. Don) Hara	Labiatae	-	-	Leaves	R	Fodder
35	<i>Prinsepia utilis</i> Royle	Rosaceae	Bakal		Seeds	R	Medicinal
36	<i>Prunus bokhariensis</i> Royle ex C. Schneider	Rosaceae	Aloochoa, Alu bokhara		Fruit	R	Fruit
37	<i>Pteracanthus urticifolius</i> (Kuntze) Bremek Syn. <i>Strobilanthes alatus</i> Nees	Acanthaceae			Entire plant	R	Fodder
38	<i>Punica granatum</i> L.	Punicaceae	Anar, Daruna	Wild pomgranate	Entire plant	C	Medicinal, fuel wood
39	<i>Rubus ellipticus</i> Smith.	Rosaceae	Aakain		Fruit, leaves	C	Fruit, fodder
40	<i>Rubus fruticosus</i> L.	Rosaceae	Karwara	Blackberry	Fruit, leaves	R	Medicinal, fruit
41	<i>Rubus sanctus</i> Schreber <i>R. ulmifolius</i> L.	Rosaceae			Fruit	R	Fruit
42	<i>Reinwardtia indica</i> Dumort. (<i>R. trigyna</i> (Roxb.) Planchon)	Linaceae	Basant		Leaves	C	Fodder
43	<i>Ricinus communis</i> L.	Euphorbiaceae	Arand, Arind	Castor oil plant	Seed, leaf, bark, root	C	Medicinal
44	<i>Rosa macrophylla</i> Lindley	Rosaceae	Ban gulab	Himalayan Musk Rose	Fruit, leaves	C	Fruit, fodder
45	<i>Solanum incanum</i> L.	Solanaceae	-	-	Entire plant	C	Medicinal
46	<i>Staphylea emodi</i> Wallich ex Brandis	Staphyleaceae	Chitra	-	Stems	R	Medicinal
47	<i>Viburnum cotinifolium</i> D. Don	Caprifoliaceae	Taliana	-	Fruit	R	Fruit
48	<i>V. grandiflorum</i> Wall. ex DC.	Caprifoliaceae	Guch	-	Fruit, wood	C	Fruit, fuel wood

Table 1b. Contd.

49	<i>Vitex negundo</i> L.	Verbenaceae	Nirgud	Marwani, banua	Leaves, roots, wood	C	Medicinal, fuel wood
50	<i>Woodfordia fruticosa</i> (L.) S.Kurz	Lythraceae	Dhawi	-	Flowers, leaves, wood	C	Medicinal, fuel wood
51	<i>Zanthoxylum armatum</i> DC	Rutaceae	Timbar, Timer	Kababe	Bark, fruit, stem, seeds	C	Medicinal
52	<i>Zizyphus mauritiana</i> var <i>spontanea</i> (Edgew.)	Rhamnaceae	Ber, Beri, Bera	-	Fruits, leaves	C	Medicinal, fuel wood
53	<i>Zizyphus nummularia</i> Burm. Syn: <i>Rhammus hummularia</i> Burm.	Rhamnaceae	Jher beri, Mala, Ber	-	Entire plant	C	Medicinal
54	<i>Zizyphus oxyphylla</i> Edgew.	Rhamnaceae	Phitni	-	Fruit	C	Fruit

C. Herbs

S#	Botanical name	Family	Vernacular name	English name	Part used	Use freq	Ethnobotanical values
1	<i>Achillea millefolium</i> L.	Compositae	Akarkara	Yarrow	Whole plant	R	Medicinal
2	<i>Achyranthus aspera</i> L.	Amaranthaceae	Latjira, Charchita, Poth kant	-	Entire plant	R	Medicinal
3	<i>Aconitum heterophyllum</i> Wallich ex Royle	Ranunculaceae	Atis	-	Tubers	C	Medicinal
4	<i>Adiantum capillus-veneris</i> L.	Polypodiaceae	Sumbul, Hansraj	-	Entire plant	C	Medicinal
5	<i>Amaranthus viridis</i> L.	Amaranthaceae	Chanlai, Dhindo	-	Leaves	C	Medicinal
6	<i>Anagallis arvensis</i> L.	Primulaceae	Dhabbar, Jonkmari	Blue pimpernel	Entire plant	C	Medicinal
7	<i>Androsace rotundifolia</i> Hardwicke	Primulaceae	-	-	Entire plant	R	Fodder
8	<i>Argemone mexicana</i> L.	Papaveraceae	Sial Kanta, Pila Dhatura	Prickly Poppy	Entire plant	C	Medicinal
9	<i>Argyrolobium roseum</i> (Camb.) Jaub. & Spach	Papilionaceae	Makhan Booti	-	Entire plant	C	Medicinal
10	<i>Artemisia brevifolia</i> Wall. ex DC. Syn.: <i>A. maritima</i> L. sensu Hook.f.	Compositae	-	-	Entire plant	R	Medicinal
11	<i>Bellis perennis</i> L.	Compositae		Daisy	Entire plant	R	Fodder
12	<i>Boerhavia procumbens</i> <i>Banks ex Roxb.</i>	Nyctaginaceae	Itsit	-	Leaves, roots	C	Food (Vegetable) , medicinal
13	<i>Cajanus cajan</i> (L.) Huth (<i>C.indicus</i> Sprengel)	Leguminosae	Arhar		Seed	C	Food (vegetable)
14	<i>Colchicum luteum</i> Baker	Colchicaceae	Surinjan Talakh		Seeds and corm	C	Medicinal

Table 1c. Contd.

15	<i>Colchicum aitchisonii</i> (Hook.f.) E. Nasir	Colchicaceae	Surinjan Shirin		Seeds and corm	C	Medicinal
16	<i>Chenopodium album</i> L.	Chenopodiaceae	Bathueya, Batho		Entire plant	C	Medicinal
17	<i>Chenopodium ambrosioides</i> L.	Chenopodiaceae	Chandan bathwa		Entire plant	C	Medicinal
18	<i>Commelina benghalensis</i> L.	Commelinaceae	Kanchara		Entire plant	C	Medicinal
19	<i>Commelina paludosa</i> Blume	Commelinaceae	Kanjuna		Roots	C	Medicinal
20	<i>Convolvulus arvensis</i> L.	Convolvulaceae	Hiranpadi, Lehli, Hirran khurry	Bindweed	Entire plant	C	Fodder, medicinal, food (vegetable)
21	<i>Convolvulus prostratus</i> Forssk.	Convolvulaceae	Shirin Dodak		Entire plant	C	Fodder, food (vegetable)
22	<i>Calendula arvensis</i> L.	Compositae	Gul-e-Ashrafi	Field Marigold	Flowers, leaves	C	Medicinal
23	<i>Cannabis sativa</i> L.	Cannabaceae	Bhang	Hemp	Leaves and flowering tops	C	Medicinal
24	<i>Carthamus oxycantha</i> M. Bieb.	Compositae	Pohli	Carthamus	Seeds	C	Medicinal
25	<i>Cichorium intybus</i> L.	Compositae	Kasni, Chicory		Entire plant	C	Medicinal
26	<i>Cissampelos pareira</i> Linn.	Menispermaceae	Pilligar, Pilajar		Leaves, roots	C	Medicinal
27	<i>Colocasia esculenta</i> (L.) Schott. (<i>C. untiqorum</i> Schott)	Araceae	Arbi	Elephant's Ear, Taro, Dasheen	Tubers, leaf-stalks	R	Food (vegetable), medicinal
28	<i>Conyza canadensis</i> (L.) Cronquist.	Compositae	Paleet	Canadian Fleabana	Entire plant	C	Medicinal
29	<i>Coriandrum sativum</i> L.	Umbelliferae	Dhania	Coriander	Entire plant	C	Medicinal
30	<i>Datura innoxia</i> Miller	Solanaceae	Dhatura, Sada Dhatura		Leaves, seed	R	Medicinal
31	<i>Datura stramonium</i> L.	Solanaceae	Dhatura, Sada Dhatura	Thorn Apple	Leaves, seeds, fruits	R	Medicinal
32	<i>Dioscorea deltoidea</i> Wall. ex Griseb.	Dioscoreaceae	Kunj		Root	R	Industry
33	<i>Daucus carota</i> L.	Umbelliferae	Gajar	Carrot	Root	C	Food (vegetable)
34	<i>Duchesnea indica</i> (Andr.) Focke	Rosaceae		Yellow-Flowered Strawberry	Fruit, leaves	C	Fruit, fodder
35	<i>Euphorbia helioscopia</i> L.	Euphorbiaceae	Chhatri dodak	Sun Spurge	Roots milky juice	C	Medicinal
36	<i>Evolvulus alsinoides</i> (L.) L.	Convolvulaceae	Sunkha pushpi		Entire plant	C	Medicinal
37	<i>Fragaria nubicola</i> Lindl. Ex Lacaita	Rosaceae	Mewa	Wild Strawberry	Fruit	R	Fruit
38	<i>Fumaria indica</i> (Hauskn.) Pugsley	Fumariaceae	Pit papra	Fumitory	Entire plant	C	Medicinal
39	<i>Geranium ocellatum</i> Camb.	Geraniaceae	Bhand		Entire plant	C	Medicinal
40	<i>Geranium rotundifolium</i> L.	Geraniaceae	Choti Rattan jot		Entire plant	R	Medicinal, fodder

Table 1c. Contd.

41	<i>Geranium wallichianum</i> D. Don ex Sweet	Geraniaceae	Rattan jot		Entire plant	R	Medicinal, fodder
42	<i>Gerbera gossypina</i> (Royle) Beauv.	Compositae	Chit patra		Entire plant	C	Fodder
43	<i>Habenaria digitata</i> Lindl.	Orchidaceae			Entire plant	R	Fodder
44	<i>Impatiens bicolor</i> Royle	Balsaminaceae			Entire plant	R	Fodder
45	<i>Impatiens edgeworthii</i> Hook. f.	Balsaminaceae			Entire plant	R	Fodder
46	<i>Lathyrus aphaca</i> L.	Papilionaceae	Jungli-matar, Rawan, Dokani	Yellow Vetchling	Seeds, flowers	C	Medicinal
47	<i>Lathyrus sativus</i> L.	Papilionaceae	Khasri dal, Kasari		Entire plant	C	Fodder
48	<i>Lathyrus sphaericus</i> Retz.	Papilionaceae			Entire plant	C	Fodder
49	<i>Lactuca serriola</i> L. Syn: <i>L. scariola</i> L.	Compositae	Kahu, Khas salad		Entire plant	C	Medicinal
50	<i>Leucanthemum vulgare</i> Lam.	Compositae	Marguerite	Ox-eye Daisy	Entire plant	R	Fodder
51	<i>Leucas capitata</i> Desf. Syn: <i>L. cephalotes</i> (Roth) Spreng.	Labiatae	Chatra, Gulloda, Goma		Entire plant	R	Medicinal
52	<i>Linum usitatissimum</i> L. FLAX	Linaceae	Alsi		Entire plant	C	Fiber, medicinal
53	<i>Lotus corniculatus</i> L.	Papilionaceae		Bird's-foot Trefoil	Entire plant	C	Fodder
54	<i>Meililotus indicus</i> Linn.	Papilionaceae	Sinji		Entire plant	C	Medicinal
55	<i>Malva neglecta</i> Wallr.	Malvaceae	Saunchal, Khubsai		Entire plant	C	Medicinal
56	<i>Malvestrum coromandelionum</i> (L.) Garcke	Malvaceae	Yard sonchal		Entire plant	C	Medicinal
57	<i>Martynia annua</i> L.	Martyniaceae	Choa, Hath jori	Tiger's Claw	Fruit	R	Medicinal
58	<i>Mentha royleana</i> L.	Labiatae	Jangli podina		Entire plant	R	Medicinal
59	<i>Micromeria biflora</i> (Buch.- Ham. ex D. Don) Benth	Labiatae	Chai boti		Entire plant	C	Medicinal
60	<i>Mimulus strictus</i> Benth.	Scrophulariaceae			Entire plant	C	Fodder
61	<i>Mirabilis jalapa</i> L.	Nyctaginaceae	Gul-e-Abbasi	Four O'clock Plant	Entire plant	C	Medicinal
62	<i>Misopates orontium</i> (L.) Rafin. Syn.: <i>Antirrhinum</i> <i>orontium</i> L.	Scrophulariaceae			Entire plant	R	Fodder
63	<i>Nepeta laevigata</i> (D. Don) Hand.-Mazz.	Labiatae			Entire plant	R	Fodder
64	<i>Nepeta erecta</i> (Benth.) Benth.	Labiatae			Entire plant	R	Fodder
65	<i>Rorippa nasturtium-</i> <i>aquaticum</i> (L.) Hayek (<i>Nasturtium officinale</i> R. Br.)	Brassicaceae	Piriya Halim	Water Cress	Entire plant	C	Food (vegetable), medicinal
66	<i>Nelumbo nucifera</i> Gaertn.	Nymphaeaceae	Kanwal	Water Lily, Lotus	Entire plant	C	Food (fruit), medicinal
67	<i>Oenothera rosea</i> L' Herit ex Ait. Syn.: <i>Hartmannia</i> <i>rosea</i> (L'Herit. Ex Ait.) G. Don	Onagraceae	Mirchi	Evening Primrose	Entire plant	C	Fodder

Table 1c. Contd.

68	<i>Oxalis corniculata</i> L.	Oxalidaceae	Khatti Buti, amlika, Khatamitha chukha	Yellow Wood Sorrel	Entire plants	C	Medicinal, Food (Vegetables)
69	<i>Origanum vulgare</i> L.	Labiatae	Banjawain	Wild Marjoram	Leaves	C	Food (vegetable)
70	<i>Polygonum amplexicaulis</i> D. Don	Polygonaceae	Anjbar, Masloon		Entire plant	R	Fodder, medicinal
71	<i>Polygonum plebeium</i> R. Br.	Polygonaceae	Dremak	Bistort	Entire plant	C	Medicinal
72	<i>Potentilla nepalensis</i> Hook. f.	Rosaceae			Entire plant	R	Fodder
73	<i>Potentilla supina</i> L.	Rosaceae			Entire plant	C	Fodder
74	<i>Paeonia emodi</i> Wall. ex Royle	Paeoniaceae	Mamekh	Himalayan Peony	Entire plant	C	Medicinal
75	<i>Peganum harmala</i> L.	Zygophyllaceae	Harmal		Seeds, leaves	C	Medicinal
76	<i>Phyla nodiflora</i> (L.) Greene Syn.: <i>Lippia nodiflora</i> (L.) L. C. Rich.	Verbenaceae	Makna, Jal Nim, Makra		Leaves	C	Medicinal
77	<i>Plantago lanceolata</i> L.	Plantaginaceae	Baltanga	Ribwort Plantain	Entire plant	R	Medicinal
78	<i>Podophyllum hexandrum</i> Royle	Podophyllaceae	Ban Kakri	May Apple	Root, fruit	R	Medicinal, fruit
79	<i>Primula denticulata</i> Smith	Primulaceae		Dog-tooth Primula	Entire plant	C	Fodder
80	<i>Prunella vulgaris</i> L.	Labiatae		Self-heal	Leaves	R	Fodder, Food (Vegetable)
81	<i>Rumex chelepeensis</i> Mill.	Polygonaceae	Ambavati		Root	C	Medicinal
82	<i>Solanum surratense</i> Burm. f.	Solanaceae	Kundiari, Momoli Mokri	Night-shade	Entire plant	C	Medicinal
83	<i>Solanum americanum</i> Mill. (<i>Solanum villosum</i> Miller)	Solanaceae	Muko	Black Fruit, Yellow/Orange Fruit	Entire plant	C	Medicinal
84	<i>Salvia mocroftiana</i> Wallich ex Benth.	Labiatae	Kallijarri, Gahikand, Lupra	Sage	Leaves, seeds, roots	R	Medicinal
85	<i>Saussurea heteromalla</i> (D. Don) Hand.-Mazz	Compositae	Batula, Kali ziri		Seeds	C	Medicinal
86	<i>Sauromatum venosum</i> (Aiton) Kunth (<i>S. guttatum</i> Schott)	Araceae	Sanp the boti	Cobra Plant	Rhizome	F	Medicinal
87	<i>Senecio chrysanthemoides</i> DC.	Compositae			Entire plant	R	Fodder
88	<i>Sesamum orientale</i> L. Syn. <i>S. Indicum</i> L.	Pedaliaceae	Til, Sesame		Seeds	C	Industry
89	<i>Sida cordata</i> (Burm.f.) Boiss	Malvaceae	Simak, Bariar, Kungya bala	Common Mallow	Entire plant	C	Medicinal
90	<i>Silene conoidea</i> L.	Caryophyllaceae	Chhota takla	Catchfly, Campion	Entire plant	C	Medicinal
91	<i>Silybum marianum</i> (L.) Gaertner	Compositae	Kandiali	Milk thistle	Leaves, seeds	C	Medicinal
92	<i>Sisymbrium irio</i> L.	Cruciferae	Jangli sarson, Khaksi, Khub kalan		Leaves, seeds	C	Medicinal

Table 1c. Contd.

93	<i>Sonchus arvensis</i> L.	Compositae	Dodal	Corn Snow thistle	Entire plant	F	Medicinal
94	<i>Stachys parviflora</i> Benth.	Labiatae	Bui, Kirimar, Baggibuti		Entire plant	F	Medicinal
95	<i>Stellaria media</i> (L.) Vill.	Caryophyllaceae	Gandel		Entire plant	C	Medicinal
96	<i>Taraxacum officinale</i> Weber	Compositae	Hand, Dudal, Kanphul	Dandelion	Leaves, roots	C	Medicinal
97	<i>Trichodesma indica</i> (L.) R. Br.	Boraginaceae	Kallri Booti, Chota kulfa, Nila karaji		Entire plant	C	Medicinal
98	<i>Urtica dioica</i> L.	Urticaceae	Bichchu buti	Stinging nettle	Shoots	R	Food (Vegetable)
99	<i>Veronica anagallis- aquatica</i> L.	Scrophulariaceae		Water Speedwell	Entire plant	C	Medicinal
100	<i>Viola canescens</i> Wall. ex Roxb.	Violaceae	Banafsha		Entire plant	F	Medicinal
101	<i>Verbascum thapsus</i> L.	Scrophulariaceae	Gidar Tambaku		Leaves, flowers, seeds	C	Medicinal
102	<i>Vetiviria zizanioides</i> (L.) Nash. Syn: <i>Andropogon muricatus</i> Rotz.	Plantaginaceae	Khas		Root	C	Medicinal
103	<i>Vicia sativa</i> L.	Papilionaceae	Rewari, Ankra		Entire plant	C	Medicinal
104	<i>Vinca major</i> L.	Apocynaceae	Sada-Bahar	Myrtle, Blue periwinkle	Entire plant	F	Medicinal
105	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Aksan, Asgand, Nagsor		Entire plant	R	Medicinal

d. Climbers

S#	Botanical name	Family	Vernacular name	English name	Part used	Use freq	Ethnobotanical values
1	<i>Asparagus adscendens</i> Roxb.	Liliaceae	Safed musli		Root	C	Medicinal
2	<i>Clematis grata</i> Wall.	Ranunculaceae	Bilri		Stem and leaves	F	Medicinal
3	<i>Caesalpinia decapetala</i> (Roth) Alston	Caesalpinaceae	Kanderi, Urian		Bark, root	F	Tannin, medicinal
4	<i>Cuscuta reflexa</i> Roxb	Cuscutaceae	Nila tar, akash bel, Zarbuti		Stem, fruits and seeds	C	Medicinal
5	<i>Gloriosa superba</i> L.	Liliaceae	Kariari, Kalihari, Mulim	Climbing lily, Crisped Glory Lily	Tubers	R	Medicinal
6	<i>Hedera nepalensis</i> K.Koch	Araliaceae	Kurie, Banbatkari	Himalayan Ivy	Leaves	C	Medicinal, fodder
7	<i>Hiptage benghalensis</i> (L.) Kurz	Malpighiaceae	Endra		Leaves	F	Medicinal
8	<i>Ipomoea purpurea</i> (L.) Roth	Convolvulaceae	Bindweed	Morning Glory	Entire plant	C	Medicinal

Table 1d. Contd.

9	<i>Lathyrus aphaca</i> L.	Papilionaceae			Seed and flowers	C	Medicinal
10	<i>Porana paniculata</i> Roxb.	Convolvulaceae	Safed Bel	Bridal Wreath	Stems	C	Industrial
11	<i>Psium sativum</i> L.	Leguminosae	Desi mattar	Pea	Fruit	F	Food (Vegetable)
12	<i>Pueraria tuberosa</i> (Roxb. ex. Willd.) Dc.	Papilionaceae	Bidhari qand		Tubers	C	Medicinal
13	<i>Rosa brunonii</i> Lindley	Rosaceae	Jungli gulab, Kuji, Karir, Palwari, Tarni	Himalayan Musk Rose	Entire plant	F	Medicinal
14	<i>Smilax aspera</i> L.	Smilacaceae			Roots		Medicinal
15	<i>Trichosanthes cucumerina</i> L.	Cucurbitaceae	Jangli Chachinda		Fruit		Food (Vegetable), medicinal

Table 1e. Grasses

S#	Botanical name	Family	Vernacular name	English name	Part used	Use freq	Ethnobotanical values
1	<i>Apluda mutica</i>	Poaceae	Lundar		Entire plant	C	Fodder
2	<i>Aristida cyanatha</i>	Poaceae			Entire plant	C	Fodder
3	<i>Cynodon dactylon</i> Linn.	Poaceae	Talla, Dhab khabal		Entire plant	F	Medicinal
4	<i>Dendrocalamus strictus</i> (Roxb.) Nees	Poaceae	Bans		Leaves and stem	C	Medicinal
5	<i>Dicanthium foveolatum</i> (Del.) Roberty	Poaceae	Palwa		Entire plant	C	Fodder
6	<i>Heteropogon contortus</i> (L.)	Poaceae	Suriala		Entire plant	C	Fodder
7	<i>Phragmites karka</i> (Retz.) Trin. Ex Steud.	Poaceae	Dila		Entire plant	C	Fodder
8	<i>Setaria pumila</i> (Poir.) Roemer and Schultes	Poaceae	Kaie		Entire plant	C	Fodder
9	<i>Sorghum halepense</i> L. Pers.	Poaceae	Buron		Entire plant	C	Fodder
10	<i>Themeda anathera</i>	Poaceae			Entire plant	C	Fodder

to cure jaundice. It is also grinded, mix with egg and then women wash their hairs, it used as a conditioner. Its fruit is grinded with Jangli podina (*Mentha royleana*) and mixes with salt for curing pain in stomach. It is sold 7 - 8 rupees per kg. Amla (*P. emblica*), Timbar (*Z. armatum*), Jangli podina, (*M. royleana*), ajwain (*Trachyspermum ammi*) and black salt are mix to make medicine for indigestion. The fruit of Gukoon (*Myrsine africana*) is used for killing the worms in abdomen, for improving

digestion and for relief of cough. Green Gukoon is sold 20 rupees per kg while dried is sold 100 rupees per kg. It is collected in December and January, dried and sold.

Sumbal (*Berberis lycium*) root is boiled in water then mixed with milk when this become thick then Desi ghee, sooji flour of maize, sugar and almond is added and used for the pains and arthritis. Sumbal (*B. lyceum*) bark is taken off, dried and then sold for the treatment of pimples. Bhaikar (*Justicia adhatoda*) is used for curing

Table 1f. Fodder crops grown

S#	Botanical name	Family	Vernacular name	English name	Part used	Use freq	Ethnobotanical values
1	<i>Avena sativa</i>	Poaceae	Jandar		Entire plant	R	Fodder, food
2	<i>Brassica compestris</i>	Poaceae	Sarsoon		Entire plant	F	Fodder, food (Vegetable)
3	<i>Cicer arietinum</i> L.	Leguminosae	Channa	Gram, Chickpea	Entire plant	R	Fodder, food (Vegetable)
4	<i>Penisetum americanum</i> (L.) Schuman	Poaceae	Bajra		Entire plant	R	Fodder, food
5	<i>Triticum vulgare</i>		Gundum		Entire plant	C	Fodder, food
6	<i>Zea mays</i>	Poaceae	Makai	Maize	Entire plant	C	Fodder, food

F = Frequent, A = Abundant, R = Rare; C = common.

Table 2. Collection of ethno-botanical information from Margallah Hills National Park.

Parts used	Purpose of use	Status
Buds	Medicinal	Rare
Leaves	Fodder	Frequent
Fruit	Fuelwood	Common
Bark	Food (Fruit)	
Stem	Food (vegetable etc.)	
Roots	Timber	
Seed	Industrial	
Flowers	Tannin	
Root bark	Gum	
Shoots	Fiber	
Rhizome		
Corms		
Tubers		

Table 3. Ethnobotanical properties of plant species collected from Margallah Hills National Park.

S/N	Ethno-botanical uses	Number of species used	Plant species (%) used ethno-botanically (n = 245)
1	Medicinal	159	64.89
2	Fodder	79	32.24
3	Fuelwood	47	19.18
4	Food (Fruit)	33	13.46
5	Food (Vegetable etc.)	18	7.34
6	Timber	14	5.71
7	Industrial	6	2.44
8	Tannin	4	1.63
9	Gum	3	1.22
10	Fiber	2	0.81

Table 4. Medicinal plants of Margallah Hills National Park.

Botanical name	Local name	Medicinal uses
Trees		
<i>Acacia catechu</i>	Khair, Katha	Astringent, applied in spongy gums
<i>Acacia modesta</i>	Phulai	Tonic, stimulant, ash is used in snuff preparation
<i>Acacia nilotica</i>	Kikar	Diarrhea, dysentery, somachic, astringent, expectorant, aphrodisiac
<i>Aesculus indica</i>	Bankhor	Tonic, febrifuge, rheumatic pain
<i>Albizia lebbek</i>	Shareen	Restorative, astringent, piles, diarrhea, gonorrhoea, carbuncle, boils, swelling, snake bite, treatment of lymphatic gland, tuberculosis
<i>Bauhinia variegata</i>	Kachnar	Alterative, anthelmintic, tonic, astringent, skin diseases, ulcer, scrofula, dysentery, piles, diarrhea, worms, dyspepsia, antidote to snake bite
<i>Bombax ceiba</i>	Simbal, Simal	Astringent, alterative, restorative, tonic, stimulants
<i>Butea monosperma</i>	Palas, dhak, Chichra	Anthelmintic, astringent, diarrhea, dysentery, tonic, diuretic, depurative, aphrodisiac, snake bite, diabetes
<i>Cassia fistula</i>	Kingo, Amaltas	Laxative, emollient, tonic, febrifuge, constipation, cathartic, emetic, astringent, purgative, pustules
<i>Cedrus deodara</i>	Deodar	Carminative, diuretic
<i>Cordia oblique</i>	Lasura	Cough, disease of chest
<i>Dalbergia sissoo</i>	Tali, Sissoo	Stimulant, gonorrhoea, astringent, alterative, leprosy, boils, eruptions, vomiting
<i>Erythrina suberosa</i>	Dhauldak	Febrifuge
<i>Ficus benghalensis</i>	Bohr	Pains and bruises, rheumatism and lumbago, poultice, abscesses, gonorrhoea, astringent, tonic, diabetes, leucorrhoea, cooling, aphrodisiac
<i>Ficus religiosa</i>	Pipal	Cooling, alterative, laxative, astringent, gonorrhoea, purgative, scabies
<i>Ficus virgata</i>	Phagwara	Laxative, demulcent, constipation, lungs and bladder diseases
<i>Flacourtia indica</i>	Kokoh	Jaundice, enlarged spleen, cholera
<i>Juglans regia</i>	Akhraot	Anthelmintic, astringent, rheumatism
<i>Mallotus philippensis</i>	Kamila, Kambal	Vermifuge, purgative, cure parasitic skin diseases, used for poulticing in cutaneous diseases
<i>Maytenus royleanus</i>	Pataki, Pataki	Toothache
<i>Melia azedarach</i>	Dhrek, Bakain	Cathartic, emetic, emmenagogue, resolvent, poultice to relieve nervous headaches, hysteria, rheumatism, splenic enlargement, diabetes
<i>Morus alba</i>	Tut, Chitta tut, Spin tut	Diaphoretic, emollient, inflammation of throat, cooling, laxative, sore throat, dyspepsia, melancholia, anthelmintic, astringent
<i>Olea ferruginea</i>	Kao, Kahu, Khuwan	Toothache, astringent, antiseptic, antiperiodic, diuretic, hoarseness of voice, rubefacient, diabetes, asthma
<i>Phyllanthus emblica</i>	Amla, Ambli, Aonla	Cooling, refrigerant, diuretic, laxative, astringent, hemorrhage, diarrhea, dysentery, jaundice, dyspepsia, anemia, inflammation of the eye, asthma, bronchitis, biliousness, refrigerant, aperiant
<i>Pistacia chinensis</i>	Kakar singhi	Expectorant
<i>Tecomella undulata</i>	Kangar Lahura	Vermifuge
Shrubs		
<i>Barleria cristata</i>	Tadrelu, Bansa siyah	Swelling, cough, rheumatism, pneumonia, snake bite, ear and eye ailments
<i>Berberis lycium</i>	Sumbal	Ophthalmia, cooling, laxative, internal wounds, intestinal colic (antispasmodic), pharyngitis, throat pains, diabetes, bone fractures
<i>Calotropis procera</i>	Aak	Dysentery, tonic, sudorific, alterative, antispasmodic, expectorant, emetic, digestive, stomachic, purgative, guinea worms
<i>Capparis decidua</i>	Karir, Karildelha	Sporadic
<i>Carissa opaca</i>	Granda	Treatment in worm infested sores of animals, fly repellent, stimulants, asthma

Table 4. Contd.

<i>Dodonaea viscosa</i>	Sanatha	Astringent, gout, rheumatism, swelling, burns, fomentation
<i>Embelia ribes</i>	Babrun, Baobirung	Anthelmintic, alterative, tonic, carminative, stomachic
<i>Euphorbia royleana</i>	Danda thor	Cathartic, anthelmintic
<i>Jasminum humile</i>	Peeli chambeli	Astringent, tonic, ring worm, used for destroying the unhealthy lining walls of chronic sinuses and fistulas
<i>Jasminum officinale</i>	Chambeli	Diuretic, emmenagogue, anthelmintic, skin diseases, headache, weak eyes, scorpion sting, ulceration, eruptions, cons, otorrhoea
<i>Justicia adhatoda</i>	Bhaikar	Cough, bronchitis, asthma, rheumatism, stomachache, joints, eruption, dysentery, diabetes
<i>Lantana camara</i>	Panch phali	Diaphoretic, carminative, antiseptic, rheumatism, tetanus, malaria, tonic, atoxy of abdominal viscera
<i>Lantana indica</i>	Ghaneri	Snake bite
<i>Mimosa rubicaulis</i>	Arlu, ral, Shiah-kanta	Piles, burns, vomiting
<i>Myrsine africana</i>	Gukoon, Khokal, Baybring	Killing worms in abdomen, digestion purpose, cough
<i>Nannorrhops ritchieana</i>	Chatai palm, Mazri	Diarrhoea, dysentery, purgative
<i>Nerium oleander</i>	Kanair, Ganira	Skin diseases, leprosy, abortion, scorpion sting, snake bite, swellings
<i>Opuntia monacantha</i>	Nagphana	Laxative, poultice, expectorant, asthma, cough, hepatic congestion, gonorrhoea
<i>Otostegia limbata</i>	Chiti Buti, Bui, Phut kanda	Ophthalmia, gums, wounds
<i>Punica granatum</i>	Anar, Daruna	Stomachache, cardiac, cooling, refrigerant, astringent, anthelmintic
<i>Rubus fruticosus</i>	Karwara	Urticaria, diarrhea, cough, fever, diuretic
<i>Ricinus communis</i>	Arand, Arind	Boils, swelling, pain, healing wounds and sores, toothache, febrifuge, laxative, constipation
<i>Staphylea emodi</i>	Chitra	Snake bite
<i>Vitex negundo</i>	Nirgud	Pain, tooth brush, gum and skin diseases, headache, skin allergy
<i>Woodfordia fruticosa</i>	Dhawi	Astringent, stimulant, liver complaints, hemorrhoids, dysentery, menorrhagia, mucus membrane disorder
<i>Zanthoxylum armatum</i>	Timbar, Timer	Stomachache, carminative, toothache, tooth brush, tonic, aromatic, fever cholera, dyspepsia, fritters, piles
<i>Zizyphus mauritiana</i>	Ber, Beri, Bera	Herbal tea, blood purifier, fever, intestinal worms, dysentery
<i>Zizyphus nummularia</i>	Jher beri, Mala, Ber	Boils, scabies, astringent, cooling, bilious affections, herbal tea, blood purifier, fever, intestinal worms, dysentery, diabetes
Herbs		
<i>Achyranthus aspera</i>	Latjira, Charchita, Poth kant	Toothache, pain, dysentery, rheumatism, skin diseases, insect bites, bowel complaints, night blindness, cough, asthma
<i>Aconitum heterophyllum</i>	Atis	Tonic
<i>Adiantum capillus-veneris</i>	Sumbul, Hansraj	Aromatic, emollient, cough, febrifuge
<i>Amaranthus viridis</i>	Chanlai, Dhindo	Emollient, scorpion sting, snake bite
<i>Argemone mexicana</i>	Sial Kanta, Pila Dhatara	Jaundice, dropsy
<i>Argyrolobium roseum</i>	Makhan Booti	Aphrodisiac, tonic, used for increasing milk and butter production for goat
<i>Artemisia brevifolia</i>		Anthelmintic, worms
<i>Boerhavia procumbens</i>	Itsit	Diuretic, purgative, febrifuge, Anthelmintic
<i>Colchicum luteum</i>	Surinjan Talakh	Pain
<i>Colchicum aitchisonii</i>	Surinjan Shirin	Pain
<i>Chenopodium album</i>	Bathueya, Batho	Laxative, Anthelmintic, hepatic disorder, enlarged spleen, jaundice, urinary diseases, rheumatism, antidote to snake bite
<i>Chenopodium ambrosioides</i>	Chandan bathwa	Anthelmintic, piles
<i>Commelina benghalensis</i>	Kanchara	Skin inflammation, laxative

Table 4. Contd.

<i>Commelina paludosa</i>	Kanjuna	Snake bite, vertigo, fever
<i>Convolvulus arvensis</i>	Hiranpadi, Lehli, Hirran khurry	Purgative, skin diseases, worms
<i>Calendula arvensis</i>	Gul-e-Ashrafi	Stimulant, antispasmodic, emmenagogue, wounds
<i>Cannabis sativa</i>	Bhang	Refrigerant, tonic, narcotic, sedative, anodyne
<i>Carthamus oxycantha</i>	Pohli	Ulcer, itch
<i>Cissampelos pareira</i>	Pilligar, Pilajar	Stomachache, wounds, snake bite, malaria
<i>Conyza canadensis</i>	Paleet	Homeostatic, stimulant, astringent, diuretic, dysentery, diarrhea, hemorrhage
<i>Coriandrum sativum</i>	Dhania	Digestion
<i>Datura innoxia</i>	Dhatura, Sada Dhatura	Boils, narcotic, anodyne, gonorrhoea, hydrophobia, earache
<i>Datura stramonium</i>	Dhatura, Sada Dhatura	Boils, narcotic, anodyne, gonorrhoea, hydrophobia, earache
<i>Euphorbia helioscopia</i>	Chhatri dodak	Cathartic, cholera, eruption, anthelmintic
<i>Evolvulus alsinoides</i>	Sunkha pushpi	Tonic, asthma, vermifuge
<i>Fumaria indica</i>	Pit papra	Fever, diarrhea, worms, goiter, antipyretic, blood purifier, cooling , anti periodic, eruption, diabetes, bladder infection
<i>Geranium ocellatum</i>	Bhand	Astringent
<i>Geranium rotundifolium</i>	Choti Rattan jot	Diuretic, astringent
<i>Geranium wallichianum</i>	Rattan jot	Astringent, toothache
<i>Lathyrus aphaca</i>	Jungli-matar, Rawan, Dokani	Narcotic, resolvent
<i>Lactuca serriola</i>	Kahu, Khas salad	Cooling, sedative, diaphoretic, diuretic, antiseptic, hypnotic, expectorant, coughs, phthisis, bronchitis, asthma, pretties
<i>Leucas capitata</i>	Chatra, Gulloda, Goma	Antidote, snake bite, cough, cold
<i>Melilotus indicus</i>	Sinji	Emollient, swelling, fomentation, diarrhea, bowl complaints
<i>Malva neglecta</i>	Saunchal, Khubsi	Cooling, emollient, demulcent, piles, bronchitis, cough, ulcer, hemorrhoids, skin diseases
<i>Malvestrum</i>	Yard sonchal	Resolvent, emollient, cooling, sores and wounds, pectoral, diaphoretic
<i>coromandelionum</i>		
<i>Mentha royleana</i>	Jangli podina	Stomachache, carminative, diarrhea, dysentery
<i>Micromeria biflora</i>	Chai boti	Herbal tea
<i>Oxalis corniculata</i>	Khatti Buti, amlika, Khatamitha chukha	Stomach trouble, intoxication, refrigerant, worms, clean rusted vessels, scorpion sting
<i>Polygonum. amplexicaulis</i>	Anjbar, Masloon	Herbal tea
<i>Polygonum plebeium</i>	Dremak	Pneumonia, bowel complaints, diarrhea
<i>Paeonia emodi</i>	Mamekh	Nervous disorders, diarrhea, purgative, emetic
<i>Plantago lenceolata</i>	Baltanga	Toothache, dysentery
<i>Podophyllum hexandrum</i>	Ban Kakri	Cancer
<i>Rumex chelepeensis</i>	Ambavati	Astringent, coetaneous disorder
<i>Solanum surratense</i>	Kundiari, Momoli Mokri	Toothache, pain, demulcent, expectorant, cough, asthma, catarrh, animal diseases
<i>Solanum americanum</i>	Muko	Antiseptic, skin diseases, germicidal, carminative, tonic, alterative, diuretic, heart diseases, intestinal worms and swelling
<i>Salvia moocroftiana</i>	Kallijarri, Gahi kand, Lupra	Poultice, dysentery, cough, cold
<i>Saussarea heteromalla</i>	Batula, Kali ziri	Carminative, cure for horse bite
<i>Sauromatum venosum</i>	Sanp the boti	Stimulating poultice in snake bite
<i>Sida cordata</i>	Simak, Bariar, Kungya bala	Rheumatism, gonorrhoea, spermatorrhea, elephantiasis, demulcent, ophthalmia, astringent, stomachache, diuretic, febrifuge, aphrodisiac, laxative, gonorrhoea, colic tenseness, piles
<i>Silene conoidea</i>	Chhota takla	Emollient, fumigant

Table 4. Contd.

<i>Silybum marianum</i>	Kandiali	Aperient, sudorific, demulcent, hemorrhage
<i>Sisymbrium irio</i>	Jangli sarson, Khaksi, Khub kalan	Expectorant, stimulant, restorative, poultice
<i>Sonchus arvensis</i>	Dodal	Diuretic, sedative, cooling, hypnotic, diaphoretic, antiseptic, expectorant, cough, bronchitis, asthma, phthisis
<i>Stellaria media</i>	Gandel	Cooling, astringent, vulnerary, kindling, broken bones, swellings
<i>Taraxacum officinale</i>	Hand, Dudal, Kanphul	Fomentation, Aperient, diuretic, tonic, chronic disorder of kidney and liver
<i>Trichodesma indica</i>	Kallri Booti, Chota kulfa, Nila karaji	Snake bite, diuretic, depurative, swelling , joints, dysentery
<i>Viola canescens</i>	Banafsha	Purgative
<i>Verbascum thapsus</i>	Gidar Tambaku	Diarrhea, dysentery, analgesic, antiseptic, wounds, aphrodisiac, narcotic, fish poison
<i>Vetivria zizanioides</i>	Khas	Diaphoretic, stimulant, refrigerant, febrifuge, emmenagogue, tonic
<i>Vicia sativa</i>	Rewari, Ankra	Anti poisonous
<i>Withania somnifera</i>	Aksan, Asgand, Nagsor	Pain, diuretic, tonic, rheumatism, alterative, astringent, aphrodisiac, sedative, coagulate milk
Climbers		
<i>Asparagus adscendens</i>	Safed musli	Glactagogue, demulcent, tonic, diarrhea, dysentery, general debility
<i>Clematis grata</i>	Bilri	Skin diseases
<i>Caesalpinia decapetala</i>	Kanderi, Urian	Purgative
<i>Cuscuta reflexa</i>	Nila tar, akash bel, Zarbuti	Anthelmintic, carminative, alterative, purgative, diuretic, jaundice, pains, paralysis, vomiting, bilious disorders
<i>Hedera nepalensis</i>	Kurie, Banbatkari	Diabetes
<i>Hiptage benghalensis</i>	Endra	Rheumatism, skin diseases
<i>Lathyrus aphaca</i>		Narcotic, resolvent
<i>Rosa brunonii</i>	Jungli gulab, Kuji, Karir, Palwari, Tarni	Skin and eye diseases, biliousness, tonic
Grasses		
<i>Cynodon dactylon</i>	Talla, Dhab khabal	Piles, irritation of urinary organs, dropsy, vomiting, dysentery
<i>Dendrocalamus strictus</i>	Bans	Tonic, astringent, acholics

Table 5. Medicinal plant values of plant species from Margallah Hills National Park.

Medicinal properties	Number of plants
Astringent	28
Tonic	23
Stimulant	10
Diarrhea	15
Dysentery	19
Somachic	1
Expectorant	8
Aphrodisiac	7
Febrifuge	8
Restorative	4
Carbuncle	1
Gonorrhea	8
Boils	6
Swelling	8
Treatment of lymphatic gland	1
Tuberculosis	1
Piles	8

Table 5. Contd.

Alterative	9
Anthelmintic	14
Skin diseases	13
Ulcer	4
Scrofula	1
Worms	12
Dyspepsia	4
Snake bite	14
Snuff preparation	1
Diuretic	17
Depurative	2
Diabetes	9
Laxative	11
Emollient	8
Constipation	3
Cathartic	4
Emetic	4
Purgative	11
Pustules	1
Carminative	8
Cough	14
Eruptions	5
Disease of chest	1
Leprosy	2
Vomiting	4
Pains and bruises	1
Rheumatism	13
Poultice	6
Abscesses	1
Leucorrhoea	1
Cooling	13
Scabies	2
Lungs and bladder diseases	2
Jaundice	5
Demulcent	6
Enlarged spleen	3
Cholera	3
Vermifuge	3
Toothache	9
Emmenagogue	4
Resolvent	4
Hysteria	1
Diaphoretic	6
Antiseptic	6
Refrigerant	5
Melancholia	1
Inflammation of throat	2
Antiperiodic	2
Asthma	10
Rubefacient	1
Hoarseness of voice	1
Hemorrhage	3
Anemia	1

Table 5. Contd.

Inflammation of the eye	1
Bronchitis	5
Biliousness	4
Aperiant	3
Pneumonia	2
Improvement of internal wounds	1
Digestive	3
Ear and eye ailments, Ophthalmia	5
Sudorific	2
Pharyngitis	1
Stomachache	9
Intestinal colic (antispasmodic)	3
Bone fractures	2
Sporadic	1
Fly repellent	1
Gout	1
Fomentation	3
Burns	2
Destroying the unhealthy lining walls of chronic sinuses and fistulas	1
Headache	2
Scorpion sting	4
Cons	1
Otorrhoea	1
Joints	2
Tetanus	1
Malaria	1
Atoxy of abdominal viscera	1
Abortion	1
Gums	2
Wounds	7
Cardiac	3
Urticaria	1
Hemorrhoids	2
Fever	3
Menorrhagia	1
Skin allergy	1
Liver complaints	3
Fritters	1
Herbal tea	4
Mucus membrane disorder	1
Aromatic	2
Blood purifiers	3
Bowel complaints	3
Insect bites	1
Night blindness	1
Dropsy	2
Increasing milk and butter production for goat	1
Vertigo	1
Narcotic	6
Itch	1
Sedative	4

Table 5. Contd.

Urinary diseases	1
Anodyne	1
Homeostatic	1
Hydrophobia	2
Goiter	1
Hypnotic	2
Cold	2
Antipyretic	1
Phthisis	1
Pretties	1
Pectoral	1
Intoxication	1
Clean rusted vessels	1
Cancer	1
Catarrh	1
Animal diseases	1
Germicidal	1
Horse bite	1
Spermatorrhoea	1
Elephantiasis	1
Colic tenseness	1
Fumigant	1
Vulnerary	1
Chronic disorder of kidney and liver	1
Kindling	1
Analgesic	1
Fish poison	1
Anti poisonous	1
Coagulate milk	1
Glactagogue	1
General debility	1
Paralysis	1
Acholics	1
Eaeche	1

diabetes, jaundice and pimples. Young leaves are crushed and juice is taken. It is used during summer. Kao (*Olea ferruginea*) has cold effect and is used in summer. Its leaves are grinded and juice is taken for pimples. Kao is used as favorite fodder and fuel wood. Kingo (*Cassia fistula*) fruit used as medicine and local people sell it. Their pods are used for curing constipation and pneumonia. These are boiled and decoction taken. The number of plant species used to cure different diseases incorporated in Table 5 showed that maximum plant species of Margallah Hills National Park are being used against the cure of astringent. Twenty three are used as tonic, nineteen against dysentery, seventeen against diuretic, fifteen for the cure of diarrhea, fourteen are used against anthelmintic, snake bite, cough, thirteen against skin diseases, rheumatism, cooling, twelve against worms,

eleven for the treatment of laxative, purgative and ten for the cure of stimulant, asthma. Ethnobotanical knowledge of the local people of Margallah Hills National Park provides an insight into the new or less known medicinal herbs of traditional medicine and also gives new material for the pharmacological research. This information will serve as a reference for the benefit of pharmacists, researchers, Hakims (herbalist), veterinarians and public at large.

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