

# Vegetation of Ranikot Fort Area, a Historical Heritage of Sindh, Pakistan

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## Abstract

The investigation on the vegetation and flora of the Ranikot Fort area was undertaken during 2009-2013. Ranikot Fort Area is a historical heritage of Sindh. So far there has been no publication on vegetation of this important historic site. 89 plant species belonging to 69 genera and 32 families are identified which include monocot, dicots and pteridophytes. This contribution provides information on plant biodiversity of Ranikot, a natural heritage of Sindh, Pakistan.

## Keywords

Diversity, Ranikot Fort, Families, Species

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## 1. Introduction

Ranikot is a talismanic wonder of Sindh, which is visible about 5 km way over the hills. Every structure in the Ranikot has its own uniqueness and beauty. The investigation on the vegetation of Ranikot Fort was undertaken to document the plant wealth found in an important historical site area. So far there is no account on the vegetation of this area. The origin of Ranikot Fort is controversial but archaeologists and historians generally believe that it was constructed around 500 BC which was later on renovated by Talpurs, around 1819 AD. A large number of fossil wood and snail shell are found inside and outside the Ranikot Fort. Inside the fort, a fresh water spring is also present. The water of the spring is used for cultivation by the people living in the surroundings of the fort. The site area under investigation is also a good fossiliferous locality. Many fossil woods including monocot, dicot and gymnosperms were identified by many workers e.g. Ref: [1] and [2]. At the higher elevation the stones are mostly bigger in size and their size becomes smaller and smaller with the decrease in the elevation. In the valleys their size approaches to almost small clay particles.

## 2. Site Area

Ranikot Fort is located at 25°45'N - 26°00'N, long 67°45'E - 68°00'E about 30 km south west of Sann Railway

Station, 109 km from Jamshoro City of Sindh, Pakistan, 120 km from Dadu, and 124 km from Hyderabad. The circumference of the fort is about 30 km, having walls constructed on about 8 km (personal com. Mr. Muhammad Siddiq Gabol, a guide of the Ranikot Fort area). At present the Indus River is about 18 miles away from the Fort. The study area is located at about 1480 feet above sea level. The site area comes under Khirther Range which falls under the Sahara-Sindhian region, Ref: [3]. The mean annual rainfall for Ranikot Fort Area is about 6 - 7 inches.

### 3. Materials and Methods

Survey and field collection of plants was carried out during September-October and February-March, 2009 to 2013. Herbarium sheets of the collected material were made following the standard techniques and were deposited in Sindh University Herbarium, at Jamshoro.

Most of the specimens collected from the site area were identified with the help of taxonomic key, description and illustrations provided in the flora of Pakistan. Ref: [3]-[9]. Every species is provided with a brief scientific description covering important taxonomic attributes, have been alphabetically arranged along with its family.

Vegetation of Ranikot Fort Area:

Family	Botanical name	Description
	<i>Barleria hochstetteri</i> (Nees)	A small woody spineless shrub, covered with soft hairs. Leaves oblong with appressed silky hair. Flower usually pinkish-white with few dark streaks. Fruit capsule.
<i>Acanthaceae</i> Juss	<i>Blepharis sindica</i> (Stock ex Anders)	A small prostrate erect dichotomously branched spiny herb. Leaves in whorls, linear-oblong with spiny bracts. Inflorescence a strobilate spike. Flowers mauve. Fruit capsule, ellipsoid. Vern. Assad/Bhangari.
	<i>Justica heterocarps</i> (Anders.)	A small herb with glandular hairs. Stem angular. Leaves ovate or ovate-lanceolate, entire. Flowers very small, pinkish, fruit dimorphic, capsule.
<i>Aizoaceae</i> Rudolphi.	<i>Carbichonia decumbens</i> (Forsk) Exell.	Fleshy, prostrate to semi-erect ± radish herb. Leaves elliptic-ovate to obovate, cartilagenous, grayish-green. Inflorescence cyme. Flower dark pink. Seed strophiolate, compressed, black, glossy.
	<i>Zaleya pentandra</i> (L.) Jeffrey	Prostrate herbs. Leaves oblong, obovate with sheathing base. Flowers solitary, white to pale pink. Seed black, rugose.
	<i>Achyranthes aspera</i> Linn.	Small herbs, erect to semi-prostrate. Stem 4-angled. Leaves oblong-elliptical or oval acute. Flower in terminal spikes, white to pale green or red or purple. Fruit capsule. Vern. Path Kanda.
<i>Amaranthaceae</i> Juss.	<i>Aerva javanica</i> (Burm f.) Jess Ex-Schult.	White woody, deselytomentose herb. Stem much branched, leaves alternate, linear to linear lanceolate. Inflorescence of sessile spikes. Flower dioecious, male flowers smaller, perianth colorless. Fruit capsules. Seed round, brown-black, glossy. Vern. Booh.
	<i>Amaranthus viridis</i> Linn	Small green herbs, found near water sources. Leaves glabulour, ovate-deploid to rhomboid. Inflorescence panicle. Flowers small, male and female intermixed, perianth pale-green. Fruit capsule of irregular shape, seed brown-black. Vern. chilgah.
	<i>Celosia orgentea</i> Linn.	An erect much branched herb. Leaves linear, oblanceolate, acute, entire, leaf axils often with small branches. Inflorescence spike. Flower small, pale green. Fruit capsule, globular. Seed black, glossy. Vern Lular.
<i>Apocynaceae</i> Juss.	<i>Rhazia stricta</i> Decne.	Dominant and common on all places, small evergreen shrub, leaves linear-lanceolate or elliptical to oblanceolate, becoming yellowish after maturation, sessile, entire, tapering on both ends. Flowers white, with little fragrant. Fruit follicles. Seeds brown small with short wings. Vern sainwar, sahaer, shanbor.

## Continued

	<i>Calotropis procera</i> (Ait) Ait. f.	A small to a big shrub, much branched, have milky latex. Leaves thick lathery, broadly ovate or ovate oblong, entire, base cordate, acute. Inflorescence, umbelloid cyme. Flowers pinkish to purplish whitish outside, purplish inside, pedicelate, corolla thick, fleshy. Fruit recurved. Seeds flat, comose. Vern. Ak.
	<i>Leptadenia pyrotechnica</i> (Forssk) Dene.	Erect much branched shrub, branches slender green. Leaves mostly not present when present on young stem are linear or linear, lanceolate. Flower yellow star like, corolla funnel-shaped. Inflorescence, small umbellate ±, Fruit long follicles, terete. Vern. Mandi Khip.
<b>Asclepiadaceae R. Br.</b>	<i>Oystelma esculentum</i> (Linn.f) R. Br.	A climber or twining herb with milky latex. Leaves opposite linear or linear lanceolate, acute. Inflorescence. Flowers white or pale rose or attractive lilac, usually in cluster. Fruit follicles. Vern. Naro.
	<i>Pergularia daemia</i> (forssk.) Chiov.	A tomentose twining herb with milky latex. leaves heart shaped or ovate leafbase, cordate acute. Inflorescence cyme. Flowers yellowish-green or dull white, fruit prickly borne in pairs, lanceolate beaked.
	<i>Periploca aphylla</i> Dcne.	Erect leafless shrub, similar to <i>leptadeniapyrotrachnia</i> but branches are shorter, young leaves, ovate oblong. Inflorescence cyme. Flowers purplish-white, white or greenish white with purple center. Fruit follicles. Seed compressed, oblong, comose.
<b>Bignoniaceae Juss.</b>	<i>Tecomella undulata</i> (Roxb) Seeman.	A small tree with very beautiful yellow orange flowers, very attractive tree. Leaves opposite, entire, oblong-elliptical to linear-oblong, margin undulate. Inflorescence, raceme having 2 - 7 flowers. Flowers large, orange red. Fruit capsule, linear. Seed slightly curved, winged. Vern. Lohiro.
	<i>Cardiagrah</i> (Forssk) Ehrenex. Asch.	Woody shrubs or tree. Leaves oblong-elliptical, oblanceolate, entire. Flowers white. Fruit drup, bright orange, edible. Vern. Liar, Lyar.
	<i>Heliotropium calcareum</i> Stocks.	A hairy herb, leaves oblong-ovate, densely hairy, inflorescence spreading with uniserial fruit nutlets, flowers white, borne on elongate spikes. Vern. Khorsum.
<b>Boraginaceae Juss.</b>	<i>Heliotropium crispum</i> Desf.	Small herb to shrub, leaves linear-lanceolate, undulate. Inflorescence terminal with uniserial. Flowers white. Fruit sub-globose, 4-lobed nutlets. There is great variation in the size of plant and degree of pubescence. Vern. Kharsun.
	<i>Heliotropium europium</i> L.	Erect hairy herb. Branches green or greyish-green, leaves elliptical-ovate. Inflorescence terminal with closely arranged on coiled cymes. Flowers white. Fruit nutlets. Vern. Khursum.
	<i>Heliotropium ophioglossum</i> Stocks ex Boiss.	Herbs to small shrubs, hairy, leaves elliptical to elliptic-lanceolate. Flowers white uniserial on branched coil stalks. Fruit brown, lobed nutlets. Vern. Kharsuno.
<b>Bursaraceae Kunth.</b>	<i>Commiphora stocksiana</i> (Engl.) Engl.	Tall shrubs to small tree. Stem woody, branches covered with papery bark. Leaves alternate, compound, leaflet oblong-orbicular or obovate, entire. Flowers small, pale pink petal 4. Fruit marked with lines, semiglobose. Vern. Bhayi.
	<i>Commiphora wightii</i> (Arn) Bhandari.	Small shrubs; branches aromatic with papery shiny bark. Leaves alternate usually 1-3 foliate, leaflet obovate, serrate. Flowers usually red or pinkish red. Fruit red rarely orange-yellow with 4-large longitudinal lines. Vern. Gugar.
	<i>Cassia holosericea</i> Fresen.	Very common, small erect herbs. Leaves compound, with 5 - 8 leaflets. Leaflets linear-lanceolate. Flowers yellowish-white arranged in axillary racemes. Fruit pod flat, thin, papery recurved, rounded at the end. Seed flattened, yellow, vern. Janglisana., Ghora Val.
<b>Caesalpiniaceae R. Br.</b>	<i>Cassia italica</i> (Mill.) F.W. Andr.	Frequently distributed, small herb, pale green. Leaves compound with 3 - 7 pairs of leaflets. Inflorescences axillary raceme. Flowers yellow. Fruit pod, thin, papery rounded on both ends. Seed dark brown. Vern. Senna, Dadhwal.

## Continued

	<i>Cadaba farinosa</i> Forssk.	Big shrub to small tree, much branched woody, leaves oblong, ovate or oblong elliptical, farinaceous. Flowers axillary, solitary, yellowish-white with prominent gynophore. Fruit, narrow, cylindrical orange, fleshy. Vern. Korar.
	<i>Capparis cartilaginea</i> Decne	A common, spring shrub, prostrate to erect. Leaves cartilaginous, fleshy, broadly elliptical or orbicular. Flowers axillary, solitary, white, gynophore long. Fruit ovoid, often red, ribbed, pulpy. Seed many. Vern. Konhri. Pahi-ro.
	<i>Capparis decidua</i> (Fossk) Edgew.	A leafless shrub to small tree, look beautiful when flowering, very common, branches woody with small spine. Flowers bright, red with nectar in pouch, gynophore present. Fruit globose, edible deep red and also used in pickles when young. Seeds reniform, many. Vern. Kirar, Kirrur.
<b>Capparidaceae Juss.</b>	<i>Cleome brachycarpa</i> Vahl ex DC.	A small common annual herb. Leaves compound, 3-5 foliate, leaflet thick, oblong, obovate or linear lanceolate. Flowers yellow, gynophors, inconspicuous. Fruit capsule, small, seeds many, maroon-brown, fine. Vern. Dhanar Khatori.
	<i>Cleome scaposa</i> DC	Small erect herb with glandular hairs, leaves simple, ovate, sub-orbicular ovate-elliptical. Flowers yellow to pale white. Fruit capsule, liners. Seed, minute brown black. Vern. Waho.
	<i>Gynandropsis gynandra</i> (L.) Briq	Big herb with glandular hairs. Leaves compound 3 - 7 foliate, leafletobovate to elliptical. Flowers yellow white or pinkish. Androphore and gynophore present, Fruit capsule. Seed small, dark brown. Vern. hurhuria, karalia.
	<i>Maecrua arenaria</i> (DC.) Hook f. & Thoms	A woody shrub with weak stem, usually associated with other plants for support. Leaves simple, oblong-ovate. Flowers arranged in dense corymbose racemes, white to greenish white. Fruit cylindrical, brown. Seeds, small tuberculate.
	<i>Salsola imbricata</i> Forssk.	Densely branched shrub with red branches, densely hairy. Leaves-scale like succulent with flat to convex surface, linear to narrow triangular in lower part, in upper part scale like fls, greenish, peniath, present, tepals ovate to lingulate. Fruit $\pm$ winged.
<b>Chenopodiaceae Vent.</b>	<i>Suaeda fruticosa</i> Forrissk ex. J.F. Gmelin.	Densely branched spreading shrub. $\pm$ forming semi-globular bushed, Variable in colour, purplish to dark blackish green. Leaves succulent, linear, terete or semi-terrete. Inflorescence Spikes. Flowers greenish. Fruiting perianth. Fairly enlarged. Seed black. Shining. Vernacular: Lanee.
	<i>Conyza canadensis</i> (L.) Cronquist	Small erect herb. Leaf-narrow lanceolate to linear. Flowers in head arranged in terminal clusters.
	<i>Echinops echinatus</i> Roxb.	Erect-spiny herb. Leaf-whitish, margin spiny. Flowers in dense spiny-heads. Vern. Bhattar. Luth, Tik.
<b>Asteraceae Dum.</b>	<i>Eclipta alba</i> (L.) Hassk.	Small erect to decumbent herb. Found along water streams or irrigation channels. Flowers white in small heads. Vern. Bhangra, Tik.
	<i>Launaea procumbens</i> (Roxb) Ramayya & Rajgopal.	A prostrate herb. Leaf basal. Flower yellow.
	<i>Vernonia cinerascens</i> Sch. Bip.	A small much branched shrub. Branches tomentose whitish. Flowers deep purple in terminal cluster. Vern. Lanski.
	<i>Convolvulus arvensis</i> L.	A small twining and prostrate herb. Usually branched at the base. Leaf ovate-oblong, linear-oblong, Sagittate to hastate, acute. Flowers pale pink to bluish to pink. Pale pink to lilac with dark purple bands. Fruit capsule globose. Seed 4 per capsule, dark brown, tuberculate.
<b>Convolvulaceae Juss.</b>	<i>Convolvulus glomeratus</i> Choisy.	A perennial twining herb with delicate weak stem. Densely tomentose with appressed hairs. Densely interlaced. Leaves ovate or oblong-lanceolate, acute. Flowers pink-white or purple 4 - 10 in axillary heads. Fruit capsule with 2 - 4 seeds. Seeds brown.
	<i>Convolvulus prostrates</i> Forssk.	Very common prostrate herb. Profusely branched, densely tomentose. Leaves sessile, linear-oblong or oblanceolate, acute obtuse, fruit capsule with 2 - 4 seeds. Seeds blackish-brown hairy.
	<i>Cressa cretica</i> L.	Common on saline soil. A small erect herb, woody at the base, tomentose. Leaves sessile, ovate-lanceolate to ovate. Flowers white, small. Fruit ovoid with 1 seed. Seed glossy, brownish black.

## Continued

<b>Cucurbitaceae Juss.</b>	<i>Cucumis prophetarum</i> L.	A common small trailing or prostrate herb. Leaves ovate-orbicular Cordate-truncate at the base. Tendril, simple, short. Flower yellow-white, male flower 2 - 3 together, female flower mostly solitary. Fruit yellow, prickly-ovoid, echinate. Seed ± oblong, ashy-grey. Vern. Kirmit or Khorchvit.
<b>Euphorbiaceae Juss.</b>	<i>Euphorbia hirta</i> L.	Small herb, common in cultivated areas in onion fields. Leaves rhombic ovate. Flowers in axillary clusters, forming cyathia. Fruit trigonous.
<b>Gentianaceae Juss.</b>	<i>Enicostemma hyssopifolium</i> (Wild) verdoon	Small erect to sub-erect herb. Leaves linear or linear-oblong, simple, opposite, sessile, entire. Flowers solitary or 2 - 6 together, white. Fruit capsule, many seeded. Seed minute globose, brown, reticulate.
<b>Mimosaceae R. Br.</b>	<i>Acacia nilotica</i> (Linn.) delile.	A medium sized tree with fissured brownish-black. bark stipule spinescent Linear-oblong. Leaves compound with petioler gland, leaflet 7 - 25 pairs. Inflorescence head. Flowers in spikes, yellowish-white or bright-yellow. Fruit pod, indehiscent, straight or curved. Seed black-brown ± orbicular. Vern. Bhaber, Kaker.
	<i>Prosopis cineraria</i> (L.) Bruce.	A large shrub to tree. Branches with curved prickles. Leaves alternate, compound, bipinnate, leaflets 7 - 12 pairs, oblong, oblique. Flowers creamy white, anther lapped with glands. Fruit pod, slender. Seeds oblong, compressed. Vern. Kandi.
	<i>Alhagi maurorum</i> Medic.	Spiny herb to small shrub. Leaves simple, oblong-elliptical, obovate, entire, Flowers Pinkish-Red. Fruit 1 - 9 Seeded legume. Vern. Kandeero, Janasa.
<b>Fabaceae Lindl.</b>	<i>Indigofera cordifolia</i> Hyne ex Roth.	A small erect to prostrate herb. Leaves simple, thick, broadly-ovate or cordate. Flowers bright red, 4 - 8 in dense cluster. Fruit oblong, densely pubescent 2-seeded. Vern. Mohari.
	<i>Indigofera oblongifolia</i> Forsk.	Small erect shrub with bark purplish. Mostly 3 - 5 foliate leaflet, oblanceolate or elliptical-oblong. Flowers red, Fruit pod, curved, reddish. 6 - 8 seeded. Vernacular: Jhil.
	<i>Melilotus indica</i> (L.) All	Erect herb. Leaves trifoliate leaflet oblong or lanceolate, dentate. Flowers yellow. Fruit 1-seeded with prominent veins. Vern. Sinjhi.
<b>Portulacaceae Juss.</b>	<i>Portulaca oleracea</i> L.	Prostrate to erect. Fleshy or succulent herb. Leavs alternate to sub-opposite. crowded near the flower, spatulate or obovate-oblong. Fruit capsule with many seeds. Seed small reniform. Glossy, black-aligned tuberculate. Vern. Lunk.
<b>Resedaceae S.F. Gray.</b>	<i>Ochradenus baccatus</i> Delile	Slender, small bush, branches green. Leaves linear, acute. Flowers yellowish-white or yellowish green on long receme. Fruit berry, white. Seed brown, reniform.
<b>Rhamnaceae Juss.</b>	<i>Ziziphus nummularia</i> (Brum) W. & Arn.	Very common, small bushy much branched shrub. Branches Divaricoting with spines in unequal pairs. Spine are straight. Other recurved. Leave thick, orbicular or ovate-orbicular. Flowers cream white inconspicuous. Fruit drupe edible, round, brown or redish brown when ripe. 2 celled. Seed 2, brown ± flat. Vern. Beri or Ber.
<b>Salvadoraceae Lindl.</b>	<i>Salvadora oleoides</i> Decne.	A shrub to small tree, branches stiff, leaves linear, linear-lanceolate, acute. Flowers greenish-white, 4 merous. Fruit drupe, globose, pinkish-yellow at maturation. Seed 1, brown, Vern. Khabbar.
	<i>Salvadora persica</i> L.	Big shrub to tree, evergreen, profusely branched. Leaves broad, ovate-elliptical, sub flashy, petiolate. Flowers yellowish-green, 4-mesois. Fruit drup white or purple at maturation. globose. Seed 1-grayish-brown.
	<i>Lycium edgeworthii</i> Dunal	A small spiny shrub. Branches ash-gray, ending in spines. Leaves oblong-elliptical, obtuse to acute. Flowers white. Fruit berry, red globose. Seed brown reniform. Vern. Garathi.
<b>Solanaceae Juss</b>	<i>Solanum surattense</i> Burn.	A prickly-prostrate herb. Prickles yellow. Leave prickly Elliptic-oblong, deeply lobed. Dark green above. Flowers bluish to purple, calyx prickly. Fruit yellow, berry, globose. Seeds many, discoid, smooth to faintly reliculate. Vern. Katari or Dadhi.
	<i>Withania coagulans</i> Dunal.	Common small grayish green herb, tomentose. Leaves obovate, elliptical-lanceolate, thicker or ± lathery. Pale-green. Fruit berry, red. enclosed in inflated calyx. Seed many. brown, reniform. smooth to reticulate. Vern. Paneerband.
	<i>Withania somnifera</i> (L.) Dunal.	Herbaceous shrub, grayish green, tomentose, Leaves broadly ovate or acute entire. Flowers greenish or yellowish. Fruit red berry, globose. Seed many light brown, smooth to reliculate. Sub pyriform to reniform.

## Continued

	<i>Tamarix alii</i> Qaiser	A woody shrub with reddish brown bark. Leaves scale like, vaginate with a short spine. Flowers pink in terminal clusters. Vern. Lai or Lawi.
<b>Tamaricaceae Link.</b>	<i>Tamarix dioica</i> Roxb. ex. Roth.	Tall woody, shrub to small tree with reddish bark, plant dioecious. Leaves vaginate abruptly acuminate. Flowers male and female and borne on separate plants. Flowers purplish in dense spikes. Vern. Lawi or Lai.
	<i>Corchorus depressus</i> (L.) Stocks.	A common small mat forming, much branched, woody herb. Leaves crenate, elliptical to broad elliptical. Flowers yellow. Fruit capsule, oblong, cylindrical, straight or slightly curved. Seeds many grey-black, $\pm$ triangular.
<b>Tiliaceae Juss.</b>		Vern. Mundiari or Mundhiri or Bhophali.
	<i>Corchorus tridens</i> L.	Prostrate to erect herb. Leaf simple, oblong-lanceolate. Linear-lanceolate, sometimes elliptic ovate. Flowers axillary yellow. Fruit capsule. 1 - 3 together, cylindrical, seed black angular, obliquely truncate at ends. Vern. Bhaindri or Kawavatorai.
<b>Verbenaceae Joumest-hil.</b>	<i>Phyla nodiflora</i> (L.) Greene	Prostrate herb forming mat-like structure on the ground, rooting at nodes. Leaves simple, oblanceolate, obovate-spathulate, serrate. Flower tiny pink or pinkish-white in compact spikes. like in cones. Fruit ovate, enclosed in persistent calyx. Seed 1 in pyrenes.

## Monocots

Family	Botanical name	Description
	<i>Cyperus arenarius</i> Retz.	Small erect herb with long underground creeping rhizome. Spike in terminal clusters.
<b>Cyperaceae Juss.</b>	<i>Cyprus rotundus</i> L.	Small erect herb. Leaf at the base of the flowering stalk. Growing near water channels. Vern. Kabah, Motha, Chia, Dela etc.
	<i>Schoenoplectus littoralis</i> (Schrad) Palla	A tall erect rhizomatous herb. Common in shallow running water around the streams. Spikes borne on terminal portion of stiff stalk.
<b>Juncaceae Juss.</b>	<i>Juncus maritimus</i> Lam.	A clump forming species with long stiff branches. Leaves present near the base only, cylindric, sharply tipped. Flowers in cluster in terminal portion. Fruit capsule, ovoid-trigonous. Seed many, oblong-elliptical, $\pm$ brownish. Vern. Chab.
<b>Liliaceae Juss.</b>	<i>Asphodelus tenuifolius</i>	Erect green herb. Common in cultivated onion crops. Leaves few borne at the base, linear. Flowers white in terminal raceme. Fruit capsule. Seed black.
	<i>Aeluropus lagopoids</i> (L.) Trin. ex Thw	Small prostrate to erect rhizomatous perennial herb. Leaf-blade, narrow, stiff, pungent. Flowers in spikelets, densely crowded in compact, globose panicle, spikelets 4 - 8 flowered. Usually forming patches on sandy to saline soils, especially around marshy places. A common species in arid places.
	<i>Aristida species</i>	Very common grass in Ranikot Fort area. It has 4 to 5 species in the field morphologically difficult to identify. Vern. Lumb grass.
	<i>Brachiaria eruciformis</i> (J. E. Smith) Griseb	A common loosely tufted erect herb. Leaf blade, linear to narrow lanceolate. Inflorescence of 3 - 12 racemes. Spikelet arranged in raceme.
	<i>Cenchrus setigerus</i> Vahl	Small erect herb. Leaf blade, linear, spikelets with spines, brown to black. Vern. Dhaman.
<b>Poaceae Barnhart.</b>	<i>Chrysopogon aucheri</i> (Boiss) stapf.	Very common fodder grass. Leaf blade, long upto 25 cm. Clump forming erect tall grass upto 65 cm high. Leaf sheath silky hairy, Spikelets in spreading panicles. A common desert species on rocky slopes.
	<i>Cymbopogon jwarancusa</i> (Jones) Schult.	An erect tall grass with fragrant roots. Leaves flat, spikelets in racemes, densely hairy, slightly lemon scented grass. Vern. Poi.
	<i>Dactyloctenium aristatum</i> Link.	Spreading herb. Prostrate to erect, Spikes compact, usually 6. Vern. Sanwri.
	<i>Digitaria ciliaris</i> (Retz) Koel	Geniculate tall herb, with green leaves. Flowers in racemes, 2 - 12 digitate. Spikelets arranged along entire length. Common on moist shady places.
	<i>Eleusine indica</i> (L.) Gaertn	Tufted annual grass. Leaves folded, spikes slender. A common fodder grass in moist places.

## Continued

	<i>Pennisetum orientale</i> L.C. Rich.	A perennial grass upto 45 cm tall. Spikes surrounded with soft bristles.
<i>Typhaceae</i> Juss.	<i>Typha species</i>	It is very common on wetland, locally used for thatching roofs and making floor mats. A tall stout grass like monoecious herb with thick rhizomes. Leaves alternate, leaf at the base blade-linear, parallel-veined, leaf sheathing present. Flowers arranged in densely compact spike, upper portion of spike which is ± yellow have male flowers; lower, bigger and cylindrical brown portion contains female flowers. Fruit achene, surrounded by hairs. Seeds small. This has 3 - 4 species but difficult to identify.

## Pteridophyta (S.F. Gray) Gandich.

Family	Botanical Name	Description
<i>Pteridaceae</i>	<i>Adiantum capillus veneris</i> L.	Small erect fern. Round lufed 1-3 pinnate. Rachis shiny, redish-black or brown. Found in moist shady place. Common along water channels. Vern. Persaushian.

## 4. Results and Discussion

The field survey reveals the presence of twenty-nine angiospermic families including five monocotyledons and twenty four dicotyledons. Besides these, pteridophytic species of *Adiantum* has also been reported. *Tamerix* and *Salvadora* species are dominant in depressions. *Rizastricta* is very common on both side of the road leading to Ranikot Fort from Sunn.

The great diversity of Ranikot's natural environment includes about 30 km area. The species composition and vegetation cover are profoundly affected by the Ranikot rocks and their derived soil. The plants growing on the top hills have mostly exposed roots.

Some of the species are directly threatened by human activates which includes the construction of roads, bridges overgrazing by animals and had great effect on biota. Majority of the species reported in Mohan-Jo-Daro are present in present study area.

## 5. Conclusion

During this research it has been observed that the vegetation of this important historical fort, which is claimed to be the largest fort of the world, is totally neglected. No research has been done in past. The current condition of the vegetation is critical. During survey it was observed that members of the Poaceae family were found dominating among all plant families throughout the year. Majority of the plants are herbs that belong to Poaceae family. It is also reported, that there are only a few trees present in Ranikot Fort area e.g. *Salvadora oleoides*, *ziz-phusujube*, *Acacia nilotica*. In the beginning when I first visited this area for collection, Acacia tree was dominating species of the area amongst all tree species. Now, it has become endangered as just a few trees are surviving with poor condition. They are being chopped by the local people for different purposes like fuel, shelter; they use Acacia trunk and branches for making house boundary. They remove bark to make raw wine, which results in the disappearance of Acacia from Ranikot Fort area. The other disappearing species is *Commiphora wightii* Vern. Gugur. Only a few trees of Gugur are left, which are in very poor conditions as well, this will lead to total disappearance of the plant from this particular area.

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