PART III

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HYDROCHARITACEAE __________________________ POACEAE

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HYDROCHARITACEAE

Key to the genera
Leaves in whorls; less than 1 cm long........ Hydrilla
Leaves not in whorls; more than 2 cm long:
  Leaves long petiolate; 2.5-7.5 cm broad... Ottelia
  Leaves sessile or subsessile; less than
  1.5 cm broad:
    Leaves 10-30 cm long; female flowers
    with long spiral pedicel.............. Vallisneria
  Leaves 7-10 cm long; female flowers
    not with long spiral pedicel............ Nechamandra

HYDRILLA Rich.


An aquatic, submerged herb, stem much branched, often rooting at nodes. Leaves 0.50-0.75 cm long, in whorls of 4-8, sessile, linear. Flowers minute, unisexual, white. Fruits subulate, glabrous or muricate.

Common in Pardi, Haria, Udwada, tanks and in Vanki and Par river forming large entangled masses in water.

Flowers: December-January
Local name: BAM
Herbarium specimens examined: PGM 463, 2164, 2165.
World distribution: India, Central Europe, Mauritius, Madagascar, Tropical Asia and Australia.

ECHAMANDRA Pland.

ECHAMANDRA alternifolia (Roxb.) Thw. Enum. 332, 1864.

Valliseria alternifolia Roxb. Pl. Cor. 2, t.165, 1802.


A submerged, aquatic herb, stem 10-50 cm long, filiform.

Leaves 7-10X0.75 cm, subverticillate, or alternate, sessile, oblong-lanceolate, membranous, brown, acute at both ends.

Flowers minute, yellow or white, unisexual, male flowers pedicellate, enclosed in spathe, female ones tubular.

Found in ponds at Pardi, Udwada and Paria.

Flowers: August-February

Herbarium specimens examined: PGM 74, 1129, 1136.

World distribution: India, Ceylon and Tropical Asia.

OTTelia Pers.

OTTelia alismoides Pers. Syn. Fl. 1:400, 1805; FBI 5:662;

Tr. Fl. Ceyl. 4:125; Woodr. in JBNHS 12:518, 1899. Ottelia

indica Planch. Ms. ex D. & G. 278, 1861. Damasonium indicum


An aquatic, submerged herb. Leaves 5-15X2.5-7.5 cm,

radical, heterophyllic, oblong, cordate, venation reticulate.
Flowers white, solitary; spathe 2.5-5 cm, winged. Berry 2.5-5 cm long, ellipsoid, winged. Seeds many, oblong.

Common aquatic plant in ditches along railway tracks, in tanks at Pardi, Udwada and Anjar.

Flowers and Fruits: December-April

Herbarium specimens examined: PGM 462, 2146, 2185, 2268.

World distribution: India, Tropical and Subtropical countries of the world.

VALLISNERIA Linn.

Vallisneria spiralis Linn. Sp. Pl. 1015, 1753; FBI 5:660;
C 3:171. Vallisneria spiraloïdes Roxb; Gr. 200.

A fresh, water, aquatic, submerged herb; stem stoloniferous. Leaves 10-30 cm long, variable in length, radical, linear, ribbonlike, green but turns brownish. Flowers minute, male flowers many and minute and detaches from the plant and float on the surface of the water, female ones with spirally coiled, peduncle. Berry linear, enclosed in spathe. Seeds many, oblong.

Found in Chanvai, Anjar, Pardi, Paria tanks and in Vanki and Par river.

Flowers and Fruits: February-May

Local name: JALSARPOLIA

Herbarium specimens examined: PGM 578, 2431, 2432, 2433.

World distribution: India, warmer regions of the old and new world.

Local uses: Used as an aquarium plant.
Key to the genera

Extensive root climbers; leaves ovate......... Vanilla

Plants epiphytic:

Flowers purple, many in long pendent racemes........................ Aerides
Flowers yellow, few in racemes............. Vanda

Plants terrestrial:

Leaves plicate.......................... Anthogonium
Leaves not plicate:

Miniature herbs; flowers pale white, not spurred in 1.25-2.5 cm long racemes.. Zeuxine
Erect herbs; flowers yellow, spurred, in 3-10 cm long racemes.................. Habenaria

AERIDES Lour.

Aerides masculosum Lindl. in Bot. Reg. t. 58, 1845; FBI 6:45; D. & G. 2066, C. 2:203; Fischer 144. Saccobolium speciosum Wt. Ic. t.1674-75, 1851.

An epiphytic herb; stem slender, 3-8 cm long. Leaves 15-25 cm long, succulent, grooved on upper side, 2-3 teeth at apex. Flowers purple or violet, showy, many, in 10-20 cm long racemes. Diplotegia 1.5-2.5 cm long.

Found epiphytic on Thespasia populina (Linn.) Soland, common and abundant at Dhagadmal.

Flowers and Fruits: April-August
Herbarium specimens examined: PGM 214, 3020.
World distribution: India (Western Peninsula and Chhota Nagar).

**ANTHOGONIUM** Lindl.


A terrestrial, palm-like herb; pseudobulb underground, conical, 0.5-1 m high. Leaves many, 30-90X0.5-2.5 cm, linear-lanceolate, glabrous, plicate, petiolate. Scapes long, stout. Flowers 2.5 cm across, pink or purple, showy, many, in 20-30 cm long racemes, labellum not spurred, Capsules 2-2.5 cm long, fusiform.

Cultivated in private gardens, Bharatiya Mudranalaya, Pardi.

Flowers: December-February

Herbarium specimen examined: PGM 879.
World distribution: India, Nepal and Sikkim.

**HABENARIA** Willd.

*Habenaria marginata* Coleb. in HK. Exot. Bot. t.136, 1825; FBI 6:150; Gr. 201; D. & G. 268; Duthie in ABGC 9: 184, t.136; C.3:226; Sant. 272; Fischer 1471; Sant. & Kapadia. Orch. Bomb. 33, t.5, f. 17.
A terrestrial, glabrous herb, 20-30 cm high. Leaves 7-12x1-2.5 cm, subsessile, oblong, margin white or yellow. Flowers yellow, 1.5 cm across, many, in 5-10 cm long spikes, bracts 1.5-2 cm, ovate-lanceolate. Capsules 1-1.5 cm long, fusiform, beaked.

Found in open grassland throughout the area.

Flowers: August-September

Fruits: October

Herbarium specimens examined: PGM 114, 1157, 1166, 1176.

World distribution: India, (Western Himalaya, Bihar, Bengal, Western Peninsual), and Burma.

VANDA R.Br.


An epiphytic herb, stem stout, concealed with leaf
sheaths. Leaves 10-20x0.5-1 cm, linear-oblong, coriaceous, succulent, grooved, bi- or trilobed at apex. Flowers yellow, 2-5 cm across, in terminal 5-10 cm long racemes; pedicels 1-1.5 cm long. Diplopterys 3-5 cm long, oblong-elliptic.

Found epiphytic on Mangifera indica Linn, Theophras populina (Linn.) Soland, Ficus benghalensis Linn.

Flowers: May-June
Fruits: July-October
Herbarium specimens examined: PGM 751, 2926, 2927.
World distribution: India, Nepal, Burma and Ceylon.

**VANILLA** Juss.


*Vanilla planifolia* And.

A large, root climber, reaching 3-7 meter length. Leaves 6-9x3-4 cm, oblong, ovate, succulent; acute at apex, obtuse at base. Flowers greenish yellow, many. Capsules 3 angled, oblong.

Grown under a mango tree at Patel Farm, Udwada.

Flowers: January-February
Local name: VANILLANI VEL
Herbarium specimens examined: PGM 2556.
World distribution: Ceylon, Java and Oceania. Grown in India.

Critical note: Easily propagated by stem cuttings during monsoon.


A miniature terrestrial herb, 5-10 cm high. Leaves 2.5-5X0.5 cm, sessile, linear, lanceolate, succulent. Flowers pale white, minute, in 2-5 cm long terminal racemes.

Found near moist places at Pardi and Rabda.

Flowers: January-February

Herbarium specimens examined: PGM 480, 2418, 2419, 2420, 2421.

World distribution: Throughout India, Ceylon, China, Japan, Java, Afghanistan and Philippines.

CANNAE


An erect, unbranched, glabrous herb, 1-1.5 m high; rhizome perennial, fleshy. Leaves 15-30X8-15 cm, distichous, elliptic-lanceolate, glabrous, acuminate at apex, sheathing at base. Flowers red or yellow, large, showy, irregular, few, in terminal spikes; bracts green, bracteoles petaloid. Diplotegia 2-3 cm across, globose, 3-lobed, with warty
projections. Seeds many, black, shining.

Grown in many gardens as an ornamental. Easily propagated by cutting rhizomes during monsoon.

**Flowers and Fruits:** Throughout the year.

**Local name:** BAJARBATTU, KANO

**Herbarium specimens examined:** PGX 311, 3041, 3042.

**World distribution:** India, West Indies, America and Ceylon.

ZINGIBERACEAE

Key to the genera

Inflorescence on terminal aerial stem:

- Inflorescence penicille
  - Inflorescence not penicille:
    - Lateral staminodes absent; flowers not fragrant
      - Costus
    - Lateral staminodes broad, flowers very much fragrant
      - HedycNium

Inflorescence from underground rhizomatous stem:

- Leaves distichous; spikes fusiform
  - Zingiber
- Leaves tufted; spikes cylindrical
  - Curcuma

**COSTUS** Linn.

*COSTUS SPECIOSUS* (Koenig) Smith, in Trans. Linn. Soc. 1:249, 1800; FBI 6:249; Gr. 208; D. & G. 274; Wt. Ic. t.2014;

An erect, perennial herb, 2-3 m high; stem unbranched, glabrous. *Leaves* 20-50x5-8 cm, subsessile or spirally arranged, oblong or oblong, glabrous above, hairy beneath, acute at apex, sheathing at base. *Flowers* white, 5-7 cm across, large, showy, in 5-12 cm long terminal spikes; bracts ovate, scarlet, persistent. *Diplotesia* globose, trilobed, scarlet.

Common and abundant forming distinct patches near cultivated fields throughout the area.

*Flowers and Fruits*: August-October

*Herbarium specimens examined*: PSM 115, 1138, 1160, 1175.

*World distribution*: India, Ceylon and Malay Islands.

*Critical note*: This plant in vegetable condition looks like *Canna* at first sight.

**CURCUMA** Linn.

Key to the species

Cultigen plants; rhizome much branched;
flowers pink.............................................. *aromatica*

Wild plants; rhizome not much branched;
flowers pale yellow.................................... *indora*

An erect herb, 1 m high; rhizome cylindrical, fleshy, much branched, aromatic. Leaves 30-50×12-20 cm, obovate-lanceolate or elliptic, glabrous above, hairy beneath, acuminate at apex, obtuse at base; petioles 30-60 cm long. Flowers pink, large, showy, many, in 20-30 cm long spikes.

Cultivated for rhizomes.

**Flowers:** April-May

**Local name:** AMBAHALDAR

**Herbarium specimens examined:** PGM 762, 2923.

**World distribution:** India, (Bengal and Western Peninsula).

**Local uses:** Rhizomes are used as condiments and for salad.

*Curtuma indica* Blatt. in JASB (N.S.) 26(1):357-358, 1930; Sant. in JENHS 51:135-139, t.1; Ch. & O. 221.

An erect herb, 25-30 cm high; rhizome elliptic or oblong, not much branched. Leaves 3-4 in number, obovate-lanceolate, glabrous, acute at apex, obtuse at base; petioles grooved, glabrous. Flowers purple, lip yellow streaked, bracts pink. Diplotegia trilobed.

Found beneath shady tree, Parnera, Udwada and Chiol.

**Flowers:** July-August

**Local name:** KAUNCH

**Herbarium specimens examined:** PGM 75, 1130, 1131.

**World distribution:** Endemic to India only.
ELETTARIA Marton.


An erect herb, 1–2 m high. Leaves 0.5 m long, oblong, lanceolate, glabrous above, hairy beneath. Flowers white, many, in panicles; bracts linear-oblong, persistent; corolla white with blue streaks. Capsules oblong, 1.5 cm long, ribbed. Rare. Cultivated in a private garden, Udwada.

Flowers: December–January

Local name: ELAICHI, ALCHI

Herbarium specimen examined: PGM 2148.

World distribution: Native of India, cultivated in Kerala, Mysore, Maharashtra, Assam, Madras and Ceylon.

Local uses: Fruits are used as spices and condiments.

HEDYCHIUM Koenig

**Hedychium coronarium** Koenig in Retz. Obs. Fas. 3:73, 1783, FBI 6:225; Gr. 205; D. & G. 86; Wt. Ilc. t.2010; Woodr. in JBNHS 12:520, 1899; 0.3:234.

An erect herb, 1-1.5 m high; rhizome cylindrical, fleshy, jointed. Leaves 23-30X3-6 cm, sessile, lanceolate, glabrous. Flowers 6-8 cm long, white, fragrant, in 3-4 flowered terminal spikes. Capsules globose, 3 valved. Seeds many, arillate.
Cultivated in Bhiladwala Nursery, Pardi and in private gardens, Atul for its fragrant flowers.

*Flowers*: August–October

*Local name*: SONTAKA

*Herbarium specimens examined*: PGM 76, 1095.

*World distribution*: Ceylon, Malay Islands and India.

**ZINGIBER** Roxb.


An erect shrub, 1.5–2 m high; rhizome cylindrical, yellow in colour, tuberous, aerial stem unbranched, glabrous. *Leaves* 20–30X2–3.5 cm, sessile, oblong-lanceolate, glabrous above, hairy beneath, acute at apex, sheathing at base. *Flowers* light-yellow, many, in condensed conical 10–15 cm long spikes; peduncles 15–20 cm long, cylindrical, glabrous, bracts brown, 2.5–3 cm, ovate, hairy.

Cultivated by native people at Umarsadi.

*Flowers*: July–August

*Local name*: MANO-ADU

*Herbarium specimens examined*: PGM 116, 1139, 1152, 1167.

*World distribution*: Throughout India, Ceylon, Malay Peninsula, widely cultivated in Tropical Asia.

*Local uses*: Rhizomes are used as condiment.

*Critical note*: Spike looks like female cone of a Pinus from a distance.
An erect, small, tree, 3-5 m tall; stem like part cylindrical, glabrous, made up of concentric, overlapping leaf bases. Leaves 2.5x0.5 m oblong, split from edges to the centre, glabrous, cirrhose at apex, obtuse at base; petioles 0.5-1 m long, grooved, glabrous. Flowers yellowish-white, unisexual, male flowers at the tip of spadix, female ones at base; involucral bracts large, ovate, red or purple. Berry fusiform, 15-20 cm long, glabrous.

Cultivated throughout the area for its edible fruits.

Flowers and Fruits: Throughout the year.

Local name: KELA

Herbarium specimens examined: PGM 312, 2939.

World distribution: Throughout the tropical countries.

Local uses: Ripe fruits are edible, unripe fruits and inflorescence are used as vegetable. Young stem and leaves are used in auspicious festivals. Fibers from dried leaf is used in grafting.
SIRELITZIACEAE

RAVENELA Adans.


An erect, fan-like, small tree, 2-3 m tall, trunk cylindrical, unbranched, marked with leaf-scars. Leaves 1-2 m long, distichous, oblong, spreading like a huge fan. Flowers many, large, white, in axil of upper leaves; Spathe large, boat shaped.

Grown in private gardens at Atul and Pardi.

*Flowers*: September to November

*Local name*: MUSAFARI KEL

*Herbarium specimens examined*: PGM 1538.

*World distribution*: Native of Madagascar, planted in warm countries as an ornamental.

*Critical note*: If base of the leaf is pierced large quantity of water oozes from it.

MARANTACEAE

MAZAMBA Linn.


Small, ornamental herb, 30-40 cm high. Leaves 15-20X 5-8 cm, oblong, elliptic, greenish with brown spots above.
purple beneath, obtuse or shortly pointed at apex, rounded at base. Flowers not seen.


Herbarium specimens examined: PGM 2972, 2973.

World distribution: India, Brazil and Guiana.

**AMARYLLIDACEAE**

Key to the genera

Flowers solitary........................................... Zephyraetha

Flowers not solitary:

Flowers from globose umbel......................... Haemanthus

Flowers do not form globose umbel:

Filaments connate near base....................... Pancratium

Filaments free at base......................... Crinum

**CRINUM** Linn.

Key to the species

Perianth lobes erect; umbel 15-20 flowered..... asiaticum

Perianth lobes decline; umbels 6-12 flowered... pratense


A perennial herb, 0.5-1.5 m high, stem unbranched, bulbs 5-10 cm across. Leaves 20-30 in number, 0.5-1.25X0.15 m, linear-lanceolate, glabrous, succulent, leaf base sheathing.
Flowers 10-15 cm across, purple, very fragrant, 15-20 on a long stout flat 0.5-1 m long scape. Capsules globose, 5 cm across.

Cultivated in private gardens at Atul, Pardi and Udwada.

Flowers: August-November and January-February

Local name: NAGDAMAN

Herbarium specimens examined: PGM 5, 886, 887, 888.

World distribution: Cultivated in India, China, Rangoon and Tropical countries of the world.

Local uses: Castor oil is applied on leaves, then leaves are heated and applied to cure swellings and boils.


A perennial, suberect herb, 0.5 m high; bulb 8-10 cm across, aerial stem unbranched. Leaves 6-8 in number, 30-50 x 1-3 cm, linear-lanceolate, succulent, rosette. Flowers 5-7 cm across, white, 8-12 on 25-30 cm long scape, peduncle flat, fleshy. Capsule ovoid, glabrous.

Found near river Par and streams at Chival.

Flowers: September-October

Local name: GAIDAVAN

Herbarium specimens examined: PGM 142, 1317, 1318, 1352.

World distribution: India and Burma.

HAEMANTHUS Linn.

A glabrous herb, bulb globose, 6-8 cm across, Leaves 20-30X15-20 cm, oblong-elliptic, glabrous, succulent. Flowers red, 2.5 cm long, many, forming globose umbel, 15-20 cm across; peduncle cylindrical, globose, mottled, 10-15 cm long. Berry globose, 3 lobed. Seeds round.

Grown in local gardens at Atul, when it blooms leaves are not formed and at that time inflorescence looks like a red ball.

**Flowers:** January-July

**Local name:** RAKTAKANDA

**Herbarium specimens examined:** PGM 2998, 2999.

**World distribution:** Native of Africa, cultivated in India.

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**PANCRAIUM** Linn.

**Pancratium Sp.**

A perennial, glabrous herb, 0.5-1 m high; bulb globose, tunicated, 5-10 cm across. Leaves 30-60X2.5 cm, linear-lanceolate, succulent, dark-green. Flowers 10-12 cm across, white, many, on 25-30 cm long scape, staminal corona cup shaped, toothed, membranous. Capsules subglobose.

Grown in local gardens as an ornamental.

**Flowers:** September-November

**Herbarium specimens examined:** PGM 143, 1362, 1363, 1364, 1365.

**World distribution:** India, Asia, Africa, South Europe and North America.
Local uses: Flowers are used to prepare garlands.

ZEPHYRANTHES Lindl.


A delicate herb, 20-30 cm high; stem underground, bulbous, bulb globose, 2 cm across. Leaves 15-25 cm long, radicle, linear, glabrous, fleshy. Flowers pink, 2-3 cm long, solitary on a long cylindrical pedicel, perinath funnel shaped. Capsules subglobose, dehiscent. Seeds many, black, polished.

Grown in local gardens, Atul during monsoon.

Flowers: July-October

Local name: LILY

Herbarium specimens examined: PGM 2984, 2985, 2986.

World distribution: India, Cuba, Jamaica and Mexico.

AGAVACEAE

Key to the genera

Plants herbaceous.......................... Pelianthus

Plants shrubby:

Leaves with spiny margin............... Agave

Leaves without spiny margin........... Yucca

AGAVE Linn.

A large shrub. Leaves 0.5-1.25 m long, rosette, lanceolate, stiff, acuminate at apex, margin spiny. Flowers yellow, 2-3 cm across, many, on 2-4 m long, woody, cylindrical scape.

Grown in hedges of cultivated fields and found at the base of Parnera hill.

Flowers: August-September
Local name: RAMBAN, KETAKI
Herbarium specimens examined: PGM 804, 1371, 1372.
World distribution: Native of Tropical America introduced in India by Portuguese, also grown in Ceylon, Burma and West Indies.

**POLIANTHES** Linn.


A fleshy, glabrous herb, 20-50 cm high; stem bulbous. Leaves 10-15X1-2 cm, radical, linear, succulent, glabrous. Flowers 2-3 cm long, white, fragrant, many, on long stout spikes.

Grown in local gardens at Atul, Pardi and Udwada.

Flowers: August-December
Local name: GULCHHADI
Herbarium specimens examined: PGM 25, 957, 1366.

World distribution: Indigenous to Mexico, grown in gardens in India and Tropical countries.
Local uses: Flowers are used to prepare garland.

Yucca Linn.

Yucca gloriosa Linn. Sp. Pl. 319, 1753; Bailey, Man.
Cult. Pl. 241.

An erect shrub, 0.5-1 m high. Leaves 50-60x1.5-2.5 cm, rosette, linear-lanceolate, stiff, glabrous, succulent, spiny at apex, spine 1 cm long, brown, hard. Flowers not seen.

Planted in private gardens, Atul and as a hedge plant at Chival.

Flowers: Not seen.

Herbarium specimens examined: PGM 626, 3090.

World distribution: Native of U.S.A. and Central America, grown in gardens in India.

Bromeliaceae

Ananas Mill.


An erect herb, 0.5 m high. Leaves rosette, stiff, sword like. Fruits oblong, fleshy, 15-25 cm long.

Cultivated on very large scale at Government Farm, Paria and Pardi.
Flowers: January-March
Local name: ANANAS
Herbarium specimens examined: PGM 494, 2316.
World distribution: A native of Tropical America, cultivated in many parts of India, Malacca, Burma and Philippines.
Local uses: Ripe fruits are edible.

HYPOXIDACEAE

CURCULIGO Gaertn.


A small, palm like herb, 10-30 cm high, root-stock underground, cylindrical. Leaves 20-30x1.5-2.5 cm, linearlanceolate, plicate, glabrous above, slightly hairy beneath, veins prominent, acute at apex, tapers at base; petioles 2-4.5 cm long, glabrous. Flowers yellow, 1 cm across, unisexual, few, in condensed racemes; bracts lanceolate, hairy. Capsules 1.5 cm long. Seeds 4.

Found at Parnera during monsoon under shade of trees.

Flowers: July-September
Local name: KALIMUSALI
Herbarium specimens examined: PGM 47, 906, 935, 945.
World distribution: India, Ceylon, Java, Anglo-Egyptian Sudan and Philippines.

Local uses: Root stocks are used as tonic and to cure genitourinal diseases.

TACCACEAE

TACCA Forst. (Nom. Cons.)


An erect, perennial herb. 0.5-1.5 m high, corm globose, 8-10 cm across. Leaves 50-70 cm long, generally 3-branched, variously lobed; petioles 0.5-1 cm long, striate, spotted, hollow. Flowers 1 cm across, yellow, many, in 1-1.5 m long scape with terminal umbel, 10-15 cm long, brown; bracts ovate, 6-12 in number, green, sterile; pedicels awn shaped, red. Berry 2.5X1.5 cm ovoid, angular, yellow.

Found beneath shady trees at Parnera-Pardi, Rabda and Paria.

Flowers and Fruits: July-September

Local name: HARDATAD

Herbarium specimens examined: PGM 215, 1383, 1384, 1385.

World distribution: Found in India, Africa, Australia, Tropical countries of the world.
Local uses: Tubers are edible and rich in starch, but I have not seen this to be consumed by native people. Fruits are used as purgative.

DIOSCOREACEAE

DIOSCOREA Linn.

Leaves simple; venation multicostate and convergent:

Leaves alternate........................... bulbifera
Leaves opposite............................. alata
Leaves digitate, 3-5 lobed:
Leaves 3-foliate; stamens 3;
Staminodes 3............................... pentaphylla
Leaves 3-5 foliate; stamens 6,
all perfect............................... daemona


An extensive twiner; stem angular, glabrous. Leaves 5-19x3-10 cm, opposite, broadly ovate, glabrous, 7-9 veined, acuminate at apex, cordate at base; petioles 5-10 cm long, glabrous. Flowers minute, unisexual, in axillary panicles. Capsules not seen.
Cultivated for tubers which are edible.

**Flowers:** August-September

**Local Name:** KANKHODI

**Herbarium specimens examined:** PGM 27, 1104.

**World distribution:** India and other tropical countries.

**Local uses:** The tubers are used as vegetable.


An extensive twiner; stem grooved; bulbils axillary, 2.5 cm across, globose, warty. **Leaves** 10-30 cm long, broadly ovate, glabrous, prominently veined, acuminate at apex, cordate at base. **Flowers** minute, fragrant, greenish-white, in axillary, in 5-10 cm long spikes. **Capsules** 2-3 cm long, reflexed, the wings rounded at both the ends.

This is the common twiner of hedges. Found at Atul, Pardi, Uwdada and almost throughout the area.

**Flowers and Fruits:** July-September

**Local name:** DUKKARKAND, KANAK

**Herbarium specimens examined:** PGM 26, 1089, 1110.

**World distribution:** India and Ceylon.

**Critical note:** When in bloom it is very much fragrant.

*Dioscorea dasymon* Roxb. Fl. Ind. 3:805, 1832; FBI 6:289;
A large climber, roots tuberous, stem cylindrical, prickly. Leaves trifoliate, 8-18x6-10 cm, leaflets elliptic, cuneate-obovate, hairy when young, glabrous at length, lateral leaflets oblique at base. Flowers unisexual, male in dense 1 cm long spikes, forming 20-40 cm long panicles, female ones solitary in spikes. Capsules 4-5x2.5 cm, oblong, glabrous.

Found on hedges at Pardi and Chival.

Flowers: October-November

Fruits: November

Herbarium specimens examined: PGM 310, 2156.

World distribution: India, Malaya and Tonkin.


A twiner; stem prickly, hairy in young parts. Leaves alternate, 3-5 foliate, 5-12x3-5 cm, lowers sometimes lobed; petioles 3-6 cm long. Flowers greenish white, male flowers in racemes at the end of branches, female ones in pendulous axillary spikes. Capsules 2-2.5 cm long, oblong, glabrous.
Pew plants were recorded at Chichwada.

**Flowers:** August–October

**Fruits:** September–November

**Herbarium specimens examined:** PGM 123, 1127, 1128.

**World distribution:** India, Ceylon, Malay hills, Tropical Africa, Asia and Pacific Islands.

**Local uses:** Tuberous are edible.

**HAEMODORACEAE**

**SENSEVIERIA** Thunb.


An erect herb, 0.5–1 m high, with short stems. **Leaves** 50–70×2.5–5 cm, lanceolate, broad, succulent, with dark green horizontal bands. **Flowers** greenish, 2 cm long, tubular, many, in 30–40 cm long racemes.

Cultivated in gardens.

**Flowers:** January–February

**Herbarium specimens examined:** PGM 628, 2196, 2197, 2198.

**World distribution:** India, Ceylon, Java, China and Africa.

**LILIACEAE**

Key to the genera

Climbing plants:

Leaf tip tendrillar......................... **Gloriosa**

Leaf tip not tendrillar; leaves scaly;

cladodes acicular.......................... **Asparagus**
Erect shrubs.................................. Dracaena

Herbs:
Leaves rosette, fleshy, margin prickly..... Aloe
Leaves not rosette, margin not prickly:
  Stem bulbous:
    Inflorescence scapigerous............. Allium
    Inflorescence not scapigerous:
      Inflorescence racemose............. Scilla
      Inflorescence corymbose or
      flowers solitary..................... Iphigenia
  Stem not bulbous:
    Cladode leaf like..................... Ruscus
    Cladode absent:
      Roots fibrous; ovules 2 in each
carpel.................................. Asphodelus
      Roots tubrous; ovules 4 or
more in each carpel...................... Cholorophytum

**ALLIUM** Linn.

Key to the species

Bulb consists of fusiform, fleshy buds;
leaves cylindrical....................... *Cepa*

Bulb not consisting of fusiform fleshy
buds; leaves flat........................ *sativus*

*Allium cepa* Linn. Sp. Pl. 300, 1753; D. & G. 92;
An erect, herb, 30-50 cm high; stem bulbous, tunicated, 5-8 cm across. Leaves 20-30 cm long, radical, cylindrical, fistular. Flowers greenish-white, in globular head like umbel, raised on 30-50 cm long scape; bracts scaly, 2-3 cm across. Capsules minute.

Cultivated throughout the area during winter, where there is facility of irrigation.

**Flowers**: December-February

**Local name**: DUNGRI, KANDA

**Herbarium specimens examined**: PGM 2199.

**World distribution**: India, Persia and Egypt.

**Local uses**: Used in vegetable and as condiments.

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An erect, bulbous herb, 20-30 cm high; bulbs small, breaking into many small tunicated cloves. Leaves 20-30 cm long, narrow, flat, keeled. Flowers purple or white, in umbels, raised on 20-30 cm long scape.

Cultivated during winter.

**Flowers**: December-January

**Local name**: LASAN

**Herbarium specimens examined**: PGM 470, 2175.

**World distribution**: India and Europe.
Local uses: Bulbs and leaves are used as condiments and as carminative and gastric stimulant. Dry garlic is boiled with oil, cooled and applied to cure scrabls.

**ALOE** Linn.


An erect herb, with rosette leaves. **Leaves** 15-30X5-7 cm, succulent, ensiform or lanceolate, spreading, gradually narrowed from the base, prickles weak, found near margin. **Flowers** orange coloured, ill smelling, 2.5 cm long, many, on 0.5-1 m long stout, cylindrical scapes. **Capsules** oblong, dehiscing into 3 valves. **Seeds** winged.

Cultivated in gardens also grown as soil binder near Magod-Dungri by Forest Department.

**Flowers:** December-February

**Local name:** KUMARPATHU

**Herbarium specimens examined:** PGM 57, 919, 2843, 2844.

**World distribution:** Native of Mediterranean region, naturalised in India and tropical countries.

**Local uses:** Plants are hanged in houses to repel mosquito. Leaves are boiled and pulp is extracted which is called 'Alio' is extensively used to cure swellings and dislocation of joints.
ASPARAGUS Linn.

Key to the species

Fronds fern-like; tuberous roots not found... plumosus

var. tenuissimus

Fronds not fern-like; tuberous roots are found................................. racemosus

Asparagus plumosus Baker. var. tenuissimus Bailey,

A beautiful, fern-like twiner; tuberous roots are not found; stem terete, glabrous, dark green; cladodes 8-20 cm, in fascicle, horizontally arranged, forming a compound pinnate frond. Flowers white, 1-4 at the apex of twigs.

Cultivated in Bhiladwala Nursery, Pardi and Patel Farm Udwada.

Flowers: December-January

Local name: SATAVARI

Herbarium specimens examined: A native of South America, grown in India as an ornamental plant.


A scandent, spiny, much branched twiner; roots fasciculated tubrous; branches angular. Leaves linear subulate, with spiny curved apex; cladodes 1-2.5 cm long,
slender, green. Flowers white, fragrant, in axillary clusters, forming 5-15 cm long racemes. Berry ovoid, scarlet, glabrous.

Common in hedges along with Euphorbia neriifolia Linn. at Magod, Bhagod and Magod-Dungri.

**Flowers:** July-October

**Fruits:** September-February

**Local name:** SATAVARI, GAJVER

**Herbarium specimens examined:** PGM 216, 1609, 1610.

**World distribution:** India and Java.

**Critical note:** I have digged out roots of this plant and found their length to be 3 m long in one case.

**ASPHODELUS** Linn.

*Asphodelus tenuifolius* Cav. in Ann. Cienc. Nat. 3:46, t.27, f.2, 1801; FBI 61:332; 0.3:279; Sant. Fl. Saur. 37.

Annual, glabrous herb, 20-30 cm high. Leaves 20-25x0.5 cm, radical, cylindrical, fistulous, sheathing at the base.

**Flowers** pinkish-white, many, in lax racemes. **Capsules** 0.5 cm across, globose.

Found as a weed in cultivated fields during cold seasons.

**Flowers:** November-February

**Local name:** JUNGLI DUNGRO

**Herbarium specimens examined:** PGM 495, 1702, 1703.

**World distribution:** India, Canary Islands and Mediterranean countries.
CHLOROPHYTUM Ker.

Fl. Ind. 1:149, 1832; Gr. 219.

A slender herb, with short, hard, cylindrical root stock, giving out thick, succulent, many fasciculated tuberous roots. Leaves 25-30X2-3 cm, radical, linear, glabrous. Scapes 4-20 cm long. Flowers white or pink, bracts lanceolate.
Capsule 1 cm long, sub-globose, keeled.

Found in rocky places, Parnera.

Flowers: July-August
Local name: JANJARIO
Herbarium specimens examined: PGM 780, 2940, 2941.
World distribution: India, Burma and Abyssinia.

DRACAENA Linn.

Dracaena Sp.

An ornamental undershrub, 1-2 m high. Leaves 10-15X1.5-2.5 cm, lanceolate, glabrous, purple with sheathing leaf base. Flowers purple, many in large panicles.

Cultivated as an ornamental plant at Atul, Pardi and Udwada.

Flowers: December-January
Herbarium specimens examined: PGM 496, 2404, 2405.
-624-

World distribution: India, Andaman, Java and Burma.  
Local uses: Leaves are used to prepare garland.

**GLORIOSA** Linn.

**Gloriosa superba** Linn. Sp. Pl. 305, 1753; FBI 6:358;  
Gr. 221; Wt. Ic. t.2047; C.3:274; Sant. 282 & Fl. Saur. 38;  
A very prominent climbing herb; stem soft, green,  
glabrous. *Leaves* 8-14X2-4 cm, ovate, opposite, sessile,  
lanceolate, glabrous, apex tendrillar. *Flowers* large, 5-10 cm  
across, very showy, bicoloured, orange-red; pinkish crispus,  
wavy, deflexed. *Capsule* 3-5 cm long, oblong, glabrous, brown  
or black.  
Common and abundant throughout the hedges during later  
half of monsoon.

*Flowers and Fruits*: July-October  
*Local name*: VACHNAG, NAGKESAR  
*Herbarium specimens examined*: PGM 120, 937, 973.  
*World distribution*: India, Ceylon, Tropical Africa,  
Malacca and Cochinchina.

**ROUSCUS** Linn.

An erect, xerophytic herb, 30-40 cm high. *Leaves* minute,  
scale, cladodes 1.5-4X2-3 cm, ovate-lanceolate, leathery,  
glabrous, apex spiny. *Flowers* 1-2 small, dioecious, pedicel  
short.
Grown in Bhiladwala Nursery, Pardi.

**Flowers:** October

**Local name:** KASAINU ZADU

**Herbarium specimens examined:** PGM 342, 1453.

**World distribution:** South Europe, South United States.

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**SCILLA** Linn.


A small herb; stem bulbous, bulb tunicated, globose, 2.5-4 cm across. Leaves 8-15 x 1.5-2.5 cm, radical, lanceolate, glabrous, fleshy. Flowers purple, minute, many, in racemes, 5-10 cm long. Capsule 0.5 cm across, globose.

Found in open grassland on Parnera and Udwada.

**Flowers:** May-July

**Fruits:** June-July

**Herbarium specimens examined:** PGM 763, 2815, 2816, 2817, 2819

**World distribution:** India, Ceylon and Abyssinia.

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**SMILACACEAE**

**SMILAX** Linn.

Smilax *serpena* Linn. Sp. Fl. 1029, 1753; PBI 6:309; Fischer 1518. *Smilax macrophylla* Roxb. Fl. Ind. 3:793, 1832;
A large, climbing shrub; stem glabrous, green, prickly. Leaves 8-15 x 4-10 cm, broadly ovate or suborbicular, acuminate, glabrous, prominently veined, multicostate, convergent vention, cuspidate at apex, rounded at base; petioles 1-2 cm long, stout; stipules tendrillar. Flowers unisexual, minute, many, in umbels. Berry 0.5 cm across, globose.

Grown in Bhiladwala Nursery, Pardi.

Flowers: August-October

Local name: SARSAPARILĂ

Herbarium specimens examined: PGM 343, 2622.

World distribution: Throughout India, Tropical and Temperate regions of the World.

PONTEDARIACEAE

Key to the genera

Petioles swollen; leaves orbicular........... Eichhornia
Petioles not swollen; leaves ovate........... Monochoria

EICHHORNIA Kunth

Eichhornia crassipes (Mart.) Solms in DC. Mon Phan. 4; 527, 1882; Merrill, Enum. 1:200. Pontederia crassipes Mart.
Nov. gen. Sp. Pl. 1:9, t.4, 1823.

An aquatic, floating herb; stolon cylindrical, soft. Leaves erect, ovate, or orbicular, glabrous; petioles spongy;

Common in ponds of the area.

Flowers: February–July

Local name: JALKUMBI

Herbarium specimens examined: PGM 679, 2435, 2436.

World distribution: Found in Tropical countries.

Monochoria Presl.


A small, suberect herb, 10–20 cm high; root-stock short, spongy. Leaves 5–10X2.5–3.5 cm, variable, linear-ovate, generally ovate, glabrous, acuminate at apex, cordate at base; petioles long, grooved. Flowers blue, few, in subspicate racemes. Capsules ellipsoid, ribbed.

Rare in ponds of the area.

Flowers: August–September

Herbarium specimens examined: PGM 806, 1442, 1443.

World distribution: India, Ceylon, Singapore, Malay Islands, China, Japan and Tropical Africa.

Commelinaceae

Key to the genera

Stamens 6; 3 sterile and 3 fertile:
Seeds retiniculate........................... Murdannia
Seeds not retiniculate........................ Commelina

Stamens 6 and all fertile:
Leaves stripped on upper side.............. Zebrina
Leaves not stripped on upper side:
   Flowers in dense umbel.................... Rhoea
   Flowers in cymes......................... Cyanotis

**Commelina** Linn.

Key to the species

Capsule 3 seeded; seeds puberulous........ paludosa
Capsule 5 seeded:
   Spathe sessile or subsessile; capsules
   emarginate........................................ benghalensis
   Spathe with distinct peduncle;
   capsules apiculate:
   Seeds tuberculatę............................ diffusa
   Seeds glabrous................................. forskalaeli

Commelina benghalensis Linn. Sp. Pl. 41, 1753; FBI 6: 370; D. & G. 253; C. 3: 291; Sant. 284 & Fl. Saur. 38; Ch. & O. 226.

Creeping or suberect herb; stem dichotomously branched, rooting at nodes. Leaves 2.5-7X1.5-3.5 cm, ovate to suborbicular, acute or obtuse, hairy on both sides, leaf sheath 1-2.5 cm long, margin ciliate. Flowers blue, ovate-lanceolate, spathes. Capsules 0.5 cm long, pyriform, glabrous.
Seeds black, pitted.

Fairly common during monsoon on moist ground and near the hedges of cultivated fields.

Flowers and Fruits: July-November

Local name: MOTU SHISMULIU, AKHALOBBOKHALO

Herbarium specimens examined: PGM 6, 971, 992, 3044.

World distribution: India, Ceylon, China, Tropical Asia and Africa.

*Commelina diffusa* Burm. f. Fl. Ind. 18, t. 7, Pl. 2, 1768; Sant. 284. *Commelina nudiflora* auct. Plur. non Linn. FBI 6: 369; C. 3; 290; Ch. & O. 266. *Commelina communis* D. & G. 252, 1861; Sant. in RBSI 16(1): 253, 1960.

A creeping, glabrous herb, rooting at nodes. Leaves 2.7-7.5×1-2 cm, ovate-lanceolate, acute or acuminate, leaf base ciliate. Flowers blue, 1 cm across, in clusters. Capsules oblong, 3 lobed.

Abundant in cultivated fields and in moist places.

Flowers and Fruits: August-September

Herbarium specimens examined: PGM 217, 1369, 3043.

World distribution: India, Ceylon, Singapore, Tropical and Subtropical countries.

*Commelina forskalaei* Vahl Enum. 2: 172, 1806; FBI 6: 371; C. 3; 292; Woodr. in JHNHS 12: 524, 1899.

A diffuse herb, rooting at nodes, nodes swollen. Leaves 2.5-4.5×1-1.5 cm, sessile, ovate-lanceolate, glabrous, subacute at apex, acute at base, sheath 1-1.5 cm long, ciliate.
Spathe 1 cm long, ovate, hairy; peduncle 5-6 cm long. 
Flowers blue. Capsules 0.5 cm long, oblong. 
Found along with grasses. 
Flowers and Fruits: August–October 
Herbarium specimens examined: PGM 218, 1437, 1532, 1533, 1534, 1535.
World distribution: India, (Western Peninsula), Arabia, Africa, Socatra and Mascarenia. 

Commelina paludosa Blume, Enum. Pl. Java. 1:2, 1827. 
Commelina obliqua Buch.-Ham. ex Don. Prodr. 45, 1825; non Vahl 1806; Cha. & 0. 226; FBI 6:372; O. 9:293; Fischer 1539; Clarke, loc. cit. 178; Sant. 285. 
An erect, glabrous herb; 25-50 cm high; stem much branched. Leaves 10-15x2-5-4.5 cm, subsessile, elliptic-lanceolate or lanceolate, glabrous above, hairy beneath, acuminate or acute at apex, sheath 2-5 cm long, ciliate at apex. Spathe crowded at apex. Flowers blue, in racemes. 
Capsules 3 lobed. Seeds 3, ellipsoid, glabrous, puberulous. 
Noted in damp places. 
Flowers and Fruits: July-November 
Herbarium specimens examined: PGM 219, 1536, 1537. 
World distribution: India, Ceylon and Malay Islands. 

CYANOTIS D. Don (Mon. Cons.) 
Key to the species 
Flowers in axillary fascicles; covered by leaf sheaths.......................... axillaris
Flowers in axillary and terminal cymes; filaments covered by hairs of 2 colour........... *fasciculata*

Flowers in scorpionid cymes; filament covered by hairs of one colour.................. *cristata*

*Cyanotis axillaris* (Linn.) Schult.f. Syst. 7:1154, 1830; D. & G. 256; FBI 6:389; C. 3:505; Sant. Fl. Saur. 38.


A suberect or creeping, glabrous herb; stem 20-45 cm long, red or brown, branched, striate, rooting near lower nodes. Leaves 6-10×0.5-1 cm, sessile, linear-lanceolate, glabrous, acute at both ends, sheaths 1 cm long, inflated, ciliate near apex. Flowers violet, axillary, enclosed in inflated sheath. Capsules 0.5 cm long, oblong, smooth, beaked. Seeds oblong, brown, glabrous.

Noted in moist places at Parnera.

Flowers and Fruits: August-September

Herbarium specimens examined: PNM 411, 1681, 1682.

World distribution: India, Central China, Malaya, East Africa and Tropical Australia.

*Cyanotis cristata* (Linn.) Schult.f. Syst. 7:1150, 1830; Clarke 3:247; FBI 6:385; Wt. Io. t.2082; C. 3:304; Sant. 288 & in JGDS 17:55; Shah & Subr. 64:137. *Commelina cristata* Linn. Sp. Pl. 42, 1753; Ch. & O. 227.

A suberect or prostrate herb; stem unbranched or dichotomously branched, purple or brown, striate, rooting at
nodes. Leaves 4-7.5 x 0.5-2.5 cm, ovate or elliptic-lanceolate, glabrous, hairy near margin, apiculate at apex, cordate at base; leaf sheath 1 cm long. Flowers violet, in scorpoid cymes. Spathes 1.5-2.5 cm long, glabrous, imbricate. Capsules trilobed. Seeds with 2 pits.

Found on Parnera hill.

Flowers: August-December
Fruits: October-December

Herbarium specimens examined: PGM 297, 1672.

World distribution: India, Burma, Ceylon, Malay Islands and Tropical Africa.

Cyanotis fasciculata (Heyne ex Roth) Schult. F. Syst. 7:1152, 1830; E. I. 6:387; Wt. Ic. t.2086; D. & G. 255; Sant. 287; Clarke, Mon. 253; C. 3:303; Fischer 1550. Cyanotis rosea, dichrotricha, decumbens, Wt. Ic. t. 2086-2088, 1853.

Tradescantia fasciculata Heyne ex Roth, Nov. Pl. Sp. 189, 1821.

An erect herb, 25-30 cm high; stem glabrous or hairy.
Leaves 2-4.5 x 0.5-1 cm, sessile, linear-lanceolate, deflexed, acute at apex, sheath short. Flowers blue, in terminal cymes. Capsules oblong, hairy.

Found on Parnera hill.

Flowers: August-October
Fruits: September-October

Herbarium specimens examined: PGM 3046, 3047, 3048.

World distribution: India, (Western Peninsula) and Ceylon.
**MURDANNIA** Royle

Key to the species

Leaves linear grass like; flowers in paniculate cymes.............................. *semitera*

Leaves linear or ovate:

   Flowers in dichotomously branched panicles:........................................ *spirata*

   Flowers in cymes 1-3 flowered..................... *nudiflora*


An erect, diffuse or suberect herb, 15-25 cm high; stem unbranched or dichotomously branched, glabrous or slightly hairy, rooting at basal nodes. **Leaves** 4-9.5x0.5-1 cm, linear-oblong or ovate-oblong glabrous, acute at apex, cordate at base; leaf sheath 1 cm long, ciliate at apex. **Flowers** purple, in axillary and terminal subcorymbose cymes. **Capsules** ovoid. **Seeds** 5 in each fruit, brown.

Found as weed in cultivated fields.

**Flowers and Fruits:** August-November

**Herbarium specimens examined:** PGM 222, 1523, 1541, 1542.
World distribution: India, Ceylon, China, Java, Malaya, North Borneo and Philippines.


A small, glabrous herb, 15-20 cm high; stem unbranched, dark purple. Leaves 5-10 cm long, linear, glabrous, acuminate at apex. Flowers blue or violet, in apical paniculate cymes. Capsules minute, glabrous.

Noted on Pamera hill.

Flowers and Fruits: September-October

Herbarium distribution: PGM 221, 1529, 1530.

World distribution: India, China, Ceylon, Java, Malaya and Philippines.


*Aneilema nanum* Kunth. Wt. Ic. t.2077.

A small, glabrous herb, 10-15 cm high; stem much branched, glabrous. Leaves 1.5-3X.5-1.5 cm, lower linear-lanceolate, upper oblong, glabrous, acute at apex, cordate at base, sheath small. Flowers blue, violet, 1 cm across, in many axillary and
terminal scorpionoid cymes. Capsules oblong, glabrous.

Noted near moist places.

Flowers and Fruits: October-November

Herbarium specimens examined: PGM 296, 1543, 1544.

World distribution: India, Ceylon, China and Malay Islands.

Rhoeo discolor Hance


An erect, glabrous herb. Leaves 20-30X3-6 cm, green above, dark purple beneath. Flowers white, small, many, enclosed in a boat shaped spathe.

Cultivated in private gardens at Atul, Pardi and Udwada.

Flowers: November-December

Herbarium specimens examined: PGM 368, 1757, 1758.

World distribution: A native of Central America, cultivated throughout India in gardens.

Critical note: This genus differs from Tradescantia by having only one ovule in each locule.

Zebrina Schnizl.

A prostrate, perennial, succulent herb, stem much branched, rooting at nodes. Leaves 3-5 x 1.5-2 cm, sessile, lanceolate-ovate, stripes are present on upper side, lower side red or purple, sheath 1 cm long, hairy. Flowers 2, pink, bracts boat shaped.

Cultivated in Atul and Pardi gardens.

Flowers: Throughout the year

Herbarium specimens examined: PGM 680, 3045, 3046.

World distribution: Native of Mexico but cultivated in gardens throughout India.

PALMAE

Key to the genera

Stem dichotomously branched...................... Hyphaene

Stem unbranched:

Leaves palmate...................................... Borassus

Leaves pinnate:

Plants climbing by hooks.......................... Calamus

Plants erect:

Leaves 2 pinnatisect; fish tail like... Caryota

Leaves 2 pinnatisect; linear:

Ovary 1-loculed:

Stem not bottle shaped;

drupe more than 3 cm across................. Areca
Stem bottle shaped .............. Roystonea
Ovary 3 loculed:
Rachis spiny .............. Phoenix
Rachis smooth .............. Cocos

**ARECA** Linn.

*Arecaceae*


A graceful, small tree, 3-5 m high; stem green, annulated, showing, marks of fallen leaves. Leaves 1-2 m long, pinnate, pinnae 0.5 m long, linear, glabrous. Flowers unisexual, greenish, many, in large spadix, Spathe compressed, glabrous. Drupes 4-5 cm across, ovoid, red or yellow, fibrous. Cultivated in private gardens at Atul, Pardi, Udwada as an ornamental tree.

Flowers and Fruits: December-February

Local name: SOPARI

Herbarium specimens examined: PGM 468, 2132, 2133.

World distribution: Native of Malaya, cultivated in India, Ceylon and Tropical America.

Local uses: Nuts are used as mastication.
A large tree, 15-20 m tall, trunk unbranched, black, marked with semicircular scars of leaf bases. **Leaves** 1-1.50 m across, forming crown at the tip of trunk, palmate, plicate, bifid at apex; petioles prickly on margins. **Flowers** unisexual, in large spadix. **Spathe** open. **Drupe** 12-18 cm long, glabrous, purple. **Seeds** 3.

Noted in many villages growing wild.

**Flowers and Fruits:** January-April

**Herbarium specimens examined:** PGM 497, 2317.

**Local name:** PANKHA TAD

**World distribution:** Native of Tropical Africa, naturalised in India, Burma and Ceylon.

**Local uses:** (Seeds) are edible. **Leaves** are used for thatching mats, fans, baskets, fibers are used to prepare brushes.

**CALAMUS** Linn.


A stout, scandent, hook **climber**, 1-2 m high; stem green, marked with leaf-scars. **Leaves** not crowned at tip, pinnate, 0.5-1 m long, alternate, pinnae linear, glabrous; rachis armed. **Flowers** minute, many, in long axillary spadix. **Spathe**
tubular, persistent. Drupe ellipsoid, glabrous, covered with shining scales. Seeds ruminate.

Rare. Found in hedges of fields, near Pardi Railway station. Probably cultivated.

Flowers and Fruits: August-October

Local name: NETAR

Herbarium specimens examined: PGM 117, 897, 898.

World distribution: India, (Western Peninsula) and Ceylon.

Local uses: Stems are used to prepare baskets, walking sticks and furniture.

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CARYOTA Linn.

CARYOTA URSUS Linn. Sp. Pl. 1189, 1753; FBI 6:422; Gr. 226; D. & G. 278; C.3:315; Fischer 1560; Blatt, Palms Brit. India 339, t.57, f.48.

A medium sized tree; 5-7 m high, trunk marked with leaf scars. Leaves in terminal crown, twice pinnatisect, 5-6X2-4 m, pinnae few,15-20 cm long, wedge shaped, obliquely plicate, cut near apex, glabrous; rachis long, stout, glabrous. Flowers unisexual, green, 0.5 cm across, arranged in group of 3, middle, female, lateral ones male, on long pendent spadix. Drupe ovoid, glabrous.

Cultivated as an ornamental tree in Atul campus.

Flowers: October-May

Fruits: January-June
Local name: SHIVJATA
Herbarium specimens examined: PGM 307, 1589, 3025, 3049.
World distribution: India, Ceylon, Malaya and Tropical Asia.

Cocos Linn.

A large tree, 12-15 m tall, trunk straight or decline, marked with annular leaf scars, thickened near ground, tapers near apex. Leaves form crown at apex, pinnate, 3-5 m long, conduplicate, ensiform, 0.5-1 m long, glabrous; petioles 1-1.5 m long, strong, glabrous. Flowers unisexual, many, in compound, paniculately branched, 50-60 cm long spadix. Spathe 2, hood-shaped, brown. Drupe 15-20 cm across, ovoid, green, glabrous, endosperm oily and watery.

Grown in orchards for its fruits.

Flowers and Fruits: Throughout the year.

Local name: NARIYELI
Herbarium specimens examined: PGM 308, 2957, 3021.
World distribution: Probably native of Cocos Islands and North Andaman, grown throughout the coastal regions of tropical countries.

Local uses: The fibrous rind of nut is used to prepare coir, which is mainly to prepare ropes. Juice of green fruit is
given to sick people. Black oil obtained by burning hard shell is applied to cure ringworm.

**HYPHAENE** Gaertn.


A large tree, 15 m tall, trunk dichotomously branched. Leaves palmately divided, plicate, multifid. Flowers unisexual, many, in large, much branched spadix, covered by many spathes.

Only one tree noted near Bus stand Pardi.

**Flowers and Fruits:** January-February

**Herbarium specimens examined:** PGM 2269, 2359, 2360.

**World distribution:** A native of Egypt, grown in India, Madagascar and Tropical Africa.

**Local uses:** The seeds are called "zerkanchli" locally and are eaten like Areca nut. Leaves are used for thatching huts and marking baskets.

**PHOENIX** Roxb.


A small tree, 3-5 m tall; trunk unbranched often decline, marked with petiole scars. Leaves form terminal crown, pinnate,
leaflets 30-40 x 2-3 cm, linear, spiny, pointed at apex, sheathing at base; rachis spiny. Flowers unisexual, many, in compound spadix, covered by boat-like brown spathe. Berry 2-4 cm long, ellipsoid, brown, glabrous. Seed 1, oval, ventrally grooved.

Common and abundant on borders of cultivated fields and in open grassland.

Flowers: January-March
Fruits: March-June
Local name: KHAJURI
Herbarium specimens examined: PGM 2557, 2558.
World distribution: Native of India, grown in Andhra Pradesh, Mysore and Madhya Pradesh.

Local uses: Ripe fruits are edible. Leaves are used as thatching. Nira is tapped from leaf stalk or peduncle used as refreshing drink.

Critical note: To destroy this plant people pour kerosene over the apex after injuring it.

ROystonea O.F. Cook


An erect, graceful tree; 12-15 m high; trunk unbranched, bottle shaped, bark pale grey. Leaves pinnate, 2-3 m long, leaf segments 1 m long, 2-5 cm broad, linear. Flowers unisexual,
many, in much branched spadix, at the base of green neck like stem portion at the apex. Drupe ovoid, 1 cm across.

Cultivated as roadside tree in Atul.

**Flowers and Fruits:** January-February

**Local name:** BOTTLE PALM

**Herbarium specimens examined:** PGM 499, 2286, 2324.

**World distribution:** India, Cuba, Antigua and West Indies.

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**PANDANACEAE**

**Pandanus** Linn.f. (Nom. Cons.)


A large, much branched shrub, 2-4 m high, aerial prop roots stout, cylindrical, prickly with prominent root cap. Leaves 1-2 m long, linear, acuminate, white spines present on mid-rib and margins. Flowers yellow, unisexual, male flowers in many cylindrical spikes, enclosed by fragrant, yellow bracts, female flowers solitary.

Cultivated at Atul and Udwada in private gardens and often runs wild.

**Flowers:** July-September

**Local name:** KEVADO
Herbarium specimens examined: PGM 779, 2822.

World distribution: India, Burma, Andaman Islands, Australia, Philippines and Java.

Local uses: Leaves and flowers are used in worship, scent is extracted from them.

TYPHACEAE

TYPHA Linn.


A perennial, glabrous herb, 1-2.5 m high; stem rhizomatous, cylindrical, branched. Leaves radical, 1-2.5 m long, 2-2.5 cm broad, lanceolate, spongy, semicylindrical, glabrous, acute at base, sheathing at base; sheath white, glabrous. Flowers unisexual, minute, many, densely crowded at the apex of 20-40 cm long peduncle, male flowers at apex, female ones at the base of spikes. Achenes small, ellipsoid, brown.

Common and abundant forming distinct patches near Par river, Chichwada and many other places.

Flowers: August-April

Local name: GHABAJARIU

Herbarium specimens examined: PGM 11, 899, 2472, 2473.

World distribution: India, North Asia and North America.
Local uses: Catkin is applied to stop bleeding of freshly cut wounds.

**ARACEAE**

Key to the genera

Leaves simple:
- Aquatic herbs; leaves linear............... *Cryptocoryne*

Terrestrial herbs:
- Spathe orange scarlet..................... *Anthurium*
- Spathe not orange scarlet:
  - Leaves variously coloured; free central placentation............. *Caladium*
  - Leaves green, purple..................... *Colocasia*

Climbing shrubs:
- Leaves entire............................. *Pothos*
- Leaves pinnatifid.......................... *Monstera*

Leaves compound, deeply divided:
- Leaves 3-sect, about 60 cm, each primary division or 2-sect............... *Amorphophallus*

Leaves deeply divided into 5-10 ovate lanceolate segments:
- Spathe broad corymbiferous; flowers and leaves at same time......... *Arisaema*
- Spathe narrow oblong; flowers first and then bears leaves............ *Sauromatum*
An ornamental, glabrous herb. **Leaves** 20-30x8-10 m, peltate, entire, ovate, glabrous, acute at apex, cordate at base; petiole long, glabrous. **Spathe** brilliant orange, cordate-ovate, glabrous, spadix 7-9 cm long, yellow. **Flowers** minute, unisexual.

Cultivated in Bhiladwala Nursery, Pardi.

**Flowers**: July-November

**Herbarium specimens examined**: PGM 369, 1991.

**World distribution**: Probably native of Columbia, grown as an ornamental herb in India.

**AMORPHOPHALLUS** Blume

**Key to the species**

Spathe campanulate; appendages

conoid or lobed irregularly................. **campanulatus**

Spathe ovate-lanceolate; appendages
cylindrical not irregularly lobed............ **commutatus**


An erect herb, 1-2 m high; corm 20-25 cm across, brown in colour. **Leaves** 3-partite, 0.50-1 m broad; segments simple
or forked; petioles 1 m long, warty, mottled with brown patches; peduncle short, cylindrical, stout. Spatha 20-25 cm broad, pink or purple, appendages globose, lobed, spongy. Flowers minute, unisexual. Berries obovoid, brown. Seeds 2-3.

Rare, cultivated in the area but only once spadix was obtained.

Flowers: June-July
Fruits: July-September
Local name: SURAH
Herbarium specimen examined: PGM 764.
World distribution: Cultivated in India and Ceylon.
Local uses: Corms are used as vegetable.


An erect herb, 0.5-1 m high; corm 10 cm across, warted, depressed above. Leaves solitary, 3-partite, 0.5 m broad, each lobe divide twice, terminal leaflets largest; petioles 0.5 m long, cylindrical, 2 cm across, mottled with brown and green spots; peduncles 0.5-1 m long, cylindrical, stout, white and red spotted. Spatha foul smelling, brown, 20-25X 6-10 cm, ovate-lanceolate, acute, appendages equal to or longer
than spathe, yellow. Flowers unisexual, minute. Berries obovoid, yellow, or brown, glabrous.

Common throughout the area near hedges of cultivated fields.

Flowers: June-July
Fruits: July-August
Local name: JUNGLI SURAN
Herbarium specimens examined: PGM 776, 2909, 2910.
World distribution: India, (Western Peninsula).

**ARISAEMA** Mart.

**Arisaema tortuosum** (Wall.) Schott, Melet. 1:17, 1832;
PBI 6:502; Engler, Mon. 545 & Pfreich. 190, f.42; C.3:331;
*Arum curvatum* Wt. Ic. t. 788, 1844; D. & G. 258 (non Kunth);
Sant. 290.

A herb; 1 m high; corms spherical, 10-12 cm across. Leaves pinnatisect, segments 5-7 in numbers, 15-22X5-12 cm, sessile,
ovate-lanceolate; petioles 0.5-1 m long; peduncle 0.5-1 m long. Spathe 12-16 cm long. Flowers uni-or bi-sexual,
appendages whip like. Berries 4-5 seeded.

Found near hedges of cultivated fields.

Flowers and Fruits: August-October
Local name: DHODHRO
Herbarium specimens examined: PGM 295, 1673.
World distribution: India, (Western Peninsula, Manipur, Himalaya, Bengal) and Bhutan.

**CALADIUM** Vent.


A glabrous, showy herb. *Leaves* 25-30×10-15 cm, ovate-saggitate, variegated above, glaucous beneath; petiole 10 cm long, green, brown or purple, glabrous. *Flowers* minute, many, in spadix. *Spathe* tubular, green or yellow outside, white, inside, throat purple.

Cultivated in private gardens, Atul, Pardi and Udwada. *Flowers:* October-December

*Herbarium specimens examined:* PGM 309, 1683, 1684.

*World distribution:* Native of South America, India and West Indies.

**COLOCASIA** Schott


A glabrous herb, corm conical, marked with scaly leaves. *Leaves* radical, peltate, 20-33 cm across, ovate, hastate at
base; petioles shorter than spathe. Flowers minute, female flowers at the base, male in the centre and neutral flowers at the apex. Spathe 20-35 cm long, cymbiform, yellow, glabrous.

Common in open land.

Flowers: August-December

Local name: ALVI, ALKHURA


World distribution: India and other tropical countries.

Local uses: Leaves, petioles and corms are used as vegetables.

Critical note: This plant is not eaten by browsing animals.

CRYPTOCRINE Fisch.


An aquatic, glabrous herb. Leaves 10-30X0.5-1.5 cm, radical, subsessile, linear-lanceolate, acute at apex. Spathe subsessile, 10-30 cm long, tubular, green, streaked with purple limb twisted. Flowers minute, many, in spadix.

Noted near rocks in pure association at Par river margins.
-653-

**Flowers:** October-January and February-April  
**Herbarium specimens examined:** PGM 370, 1722, 1723.  
**World distribution:** India and Burma.

**MONSTERA** Adans.


An extensive, root climber, stem strong, terete; roots cord-like. **Leaves** distichous, very large, 0.5 m long, pinnately dissected, perforated; petioles sheathing. **Spadix** smaller than the sheath.

Grown as an ornamental climber in Bhilawada Nursery, Pardi.

**Flowers:** August-September  
**Herbarium specimens examined:** PGM 2584, 2585, 2586.  
**World distribution:** Grown in gardens in India and Tropical America.

**POTHOS** Linn.

**Pothos** sp.

A root climber, rooting at nodes and internodes. **Leaves** 5-10x2-5 cm, obovate, lanceolate, coriaceous, succulent; petiole winged. **Spadix** yellow, 1 cm long.

Cultivated in pots in many houses and in gardens.  
**Flowers:** May-July  
**Local name:** ADUNIVEL
Herbarium specimens examined: PGM 765, 2944, 2974.

World distribution: Throughout India, Ceylon, Malaya and China.

SAUROMATUM Schott


An erect herb, corm globose, glabrous, 10-12 cm across, depressed above. Leaves solitary, pedatipartite, formed after flower formation, segments 7-15 in number, 5-15 X 5 cm, elliptic, green, mottled on midrib; petiole 30-50 cm long, stout, mottled. Peduncle 6-10 cm long, cylindrical, stout, 30-40 cm long, appendages 10-20 cm long. Berries oblong, glabrous.

Found beneath shade of trees on slope of Parnera.

Flowers: February-May

Fruits: May-July

Herbarium specimens examined: PGM 621, 2707.

World distribution: India and Nepal.

LEMNACEAE

Key to the genera

Fronds globose, rootless.......................... Wolffia
Fronds not globose, with distinct roots.......... Lemna
Key to the species

Fronds asymmetrical; serrate at tip;
roots many.......................... *trisulca*

Fronds symmetrical; entire at tip;
root one............................ *paucicostata*

*Lemna paucicostata* Hegelm. Lemnaceae 139, t.8, 1868;
Ind. & Burma 100, 1936; Subr., Aq. Angio., 78, 1962.

A free floating, aquatic herb, fronds 2-3X0.4 mm;
asymmetrical, oblong-ovate, flat. Flowers 3 in number, near
margin in pouches, female flowers in the centre, male ones on
each side; stamen 1. Utricle ovoid, minute.

Noted in Magod pond.

*Flowers:* October

*Herbarium specimens examined:* PGM 1686, 1686.

*World distribution:* Cosmopolitan in Tropical Countries.

*Lemna trisulca* Linn. Sp. Pl. 670, 1753; FBI 6:557; C.3:
343; D. & G. 281; Engler, in Engl. & Prantl, Pflanzenf. 2:160,
(part 3), Fig. 104; Prain, Eng. Pl. 1116.

A free floating, aquatic herb, fronds elliptic-lanceolate,
symmetrical, flat; roots, solitary. Flowers near margin in
clefts, enclosed in spathe.

Noted in Pardi pond.

*Flowers:* October–December

*Herbarium specimens examined:* PGM 1687, 1688.
World distribution: Temperate and Tropical regions.

**WOLFFIA** Horkel


A free floating, minute herb. fronds globose, flat above, subcylindrical below; roots absent. Flowers not seen.

Found in tanks, near Parmara hill.

Flowers: Not seen

Herbarium specimens examined: PGM 1739, 1740.

World distribution: India.

Critical note: This is the smallest known Angiosperm plant.

**ALISMATACEAE**

**LIMNOPHYTON** Miq.


An amphibious, aquatic herb, 0.5-1 m tall, root stalk 2-4.5 cm long. Leaves 10-22X5-14 cm, radical, sagittate, subacute or rounded at apex, sagittate at base; petioles 30-60 cm
long, striate, grooved. **Flowers** white, polygamous, many, in paniculate whorls; sepals 3, persistent. **Scape** 30-60 cm long, grooved. **Achenes** obovoid, compressed, hard, black.

Found near margins of ponds at Pardi and Magod.

**Flowers and Fruits:** September-February

**Herbarium specimens examined:** PGM 413, 2331.

**World distribution:** India, Ceylon, Tropical Africa and Madagascar.

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**BUTOMACEAE**

**TENACOCHARIS** Hochst.


An erect, marshy herb, 20-25 cm high; root-stalk small; roots fibrous. **Leaves** 5-12x2-3.5 cm, radical, elliptic or
lanceolate, acute or mucronate at apex, acute at base; petioles 5-10 cm long. **Flowers** 0.5 cm across, white, in terminal umbel; pedicels 3-5 cm long; bracts ovate, scarious; **scape** 8-12 cm long. **Folicles** 0.5-1 cm long, connate below, beaked. **Seeds** many, minute, brown, gelatinous.

Found near Pardi and Atar ponds.

**Flowers and Fruits:** October-December

**Herbarium specimens examined:** PGM 412, 2332, 2333.

**World distribution:** Tropical Africa to South East Asia, Malaysia to North Australia.

**APONOGETONACEAE**

**APONOGETON** Linn.f.


An aquatic, anchored herb, stem feebly branched. **Leaves** 3.5-6X1-2.5 cm, floating or submerged, linear-oblong, membranous, obtuse at apex, rounded at base; petioles variable in length, 5-10 cm long, glabrous. **Flowers** bisexual, minute, pink or brown, in 2.5 cm long cylindrical terminal spikes. **Folicles** 3, subglobose, beaked. **Seeds** 4-8, minute, oblong, ribbed.
Common in Umardasi, Udwada, Magod ponds.

**Flowers and Fruits:** August-October

**Herbarium specimens examined:** PGM 73, 1009.

**World distribution:** India, Ceylon, Tropical Asia, Australia and indigenous in India and China.

**POTAMOGETONACEAE**

**POTAMOGETON** Linn.


A delicate, submerged, aquatic herb; stem feebly branched, compressed. **Leaves** 3-4.5×1-1.5 cm, ovate-elliptic, membranous, obtuse at apex, amplexicaul at base; stipules minute, deciduous. **Flowers** minute, brown, in terminal spikes. **Druplets** ovoid, compressed, beaked.

Found in Pardi pond.

**Flowers:** November-January

**Fruits:** January

**Herbarium specimens examined:** PGM 341, 1734, 1735.

**World distribution:** India, North temperate regions and Australia.

**NAJADACEAE**

**NAJAS** Linn.

A slender, dark green, aquatic herb; stem 15-40 cm long, dichotomously branched, rooting at nodes, glabrous. Leaves 1.5-2.5 x 0.5 cm, sessile, linear or lanceolate, teeth 6-12, acute at apex, sheathing near base; sheaths truncate. Flowers unisexual, minute, white, solitary, axillary, male flowers enclosed in sheath, female ones marked. Achene oblong. Seeds minute, ellipsoid.

Found in ponds at Paria, Udwada and Pardi.

Flowers and Fruits: September-October

Herbarium specimens examined: PGM 145, 1736, 1737.

World distribution: Europe, Tropical and North Africa, Tropical and Temperate Asia to Japan and Pegu.

ERIOCAULACEAE

ERIOCAULON Linn.

Key to the species

Peduncles less than 5 cm long; involucral
bracts glabrous................................. eleanorae

Peduncles more than 5 cm long; involucral
bracts villous.................................. quinquangulare

Eriocaulon eleanorae Fyson in JIB 2:316; 1921;
Moldenke 126; Sant. 294.

A small herb, 1-5 cm high. Leaves 2-4.5 cm long, acicular, glabrous. Flowers small, unisexual, in 2.5-5.5 cm long. Scape with terminal capitate heads; bracts elliptic,
long, striate, grooved. Flowers white, polygamous, many, in paniculate whorls; sepals 3, persistent. Scape 30-60 cm long, grooved. Achene obovoid, compressed, hard, black.

Found near margins of ponds at Pardi and Magod.

Flowers and Fruits: September-February

Herbarium specimens examined: PGM 413, 2331.

World distribution: India, Ceylon, Tropical Africa and Madagascar.

CYPERACEAE

Key to the genera

Flowers unisexual:

Style bifid; inflorescence globose, dark brown.................. Rhynchospora

Stigma trifid; inflorescence not globose............................ Scleria

Flowers bisexual:

Flowering glumes distichous......... Cyperus

Flowering glumes spirally arranged
(in Fimbristylis lower ones distichous):

Style base deciduous or forms nut without articulation................. Scripus

Style base dilated, articulated above nut:

Leaves absent; hypogynous bristles present........................... Eleocharis
Leaves present; hypogynous bristles absent:
Style glabrous, deciduous, forms tumor on nut................. BULBOSTYLLIS
Style persistent, tumor not formed on nut...................... FIMBRISTYLLIS

BULBOSTYLLIS Kunth (Nom. Cons.)

BULBOSTYLLIS barbata (Rottlb.) Kunth. Enum. 2:208, 1837;
barbata Rottlb. Descrip. et. Icon. 52, t.17, F.4, 1773.
Stenophyllum barbata C, Fl. Pres. Bomb. 3:401, 1908; Sedg. in

An erect, glabrous herb, 15-25 cm high; stems striate.
Leaves 7-12 cm long, narrow, acuminate; sheath membranous,
hairy. Inflorescence terminal, head 8-10 mm across. Spikelets
6-7 mm long, few flowered, brownish; Glumes 1-3 mm long,
obovoid, trigonous, light yellow.

Found in moist places near ditches and Umarsadi.
Flowers and Fruits: July-September
Herbarium specimens examined: PGM 209, 2869.
World distribution: Throughout tropical countries and South America.
Key to the species

Leaves form distinct umbrella-like structure................................................. alternifolius

Leaves not forming distinct umbrella-like structure:

Stigma 3; nut trigonous:

Spikelets digitate, not racemose:

Stamens 3; nut more than 3 mm long.......................................................... pseudokyllingoides
Stamens 1 (sometimes 2); nut as long as glume................................. difformis
Stamens 2-3; nut 1/3 of the glume................................................. haspan

Spikelets spicate; sometimes subracemose:

Rachilla of spike winged:

Rhizome stoloniferous.......................... rotundus
Rhizome not stoloniferous....................... exaltatus

Rachilla of spike not winged:

Rhizome woody, stolon long:

Spikelets spreading, glume truncate.............................. distans
Spikelets erect, glume mucronate.. nutans

Stem tufted:

Stem 5-10 cm high; nut one half the glume............................................. squarrosus
Stem 10-40 cm long, nut as long as glume...... compressus
Stem 35-50 cm long; nut as long as glume...... iria
Stigma 2; nut not trigonous:
Nut dorsally compressed, spike umbellate...... alopecuroides
Nut laterally compressed:
Spikelets in paniculate umbel.............. pumilus
Spikelets 1-2 in compact head:
Rhizome long; head rarely 3-nate........... brevifolius
Rhizome short; head 3-nate............... tricpes
Cyperus alopecuroides Rottlb. Describ. & Icon. 38, t.8, F.2, 1773; C.3:373; Seld. 690; Sact. & Seld. 305. Juncellus
alopecuroides Clarke in FBI 6:595, 1893; Blatt. & McC 33.
A large, glabrous, perennial herb, 0.5-1 m high; stem
rigid, trigonous, coriaceous. Leaves many, long, 0.5-1 cm
broad, coriaceous. Inflorescence large, compound umbel.
Spikelets dense, linear-oblong, rachilla stout. Glume
mucrnatte or mucronate; bractoles 3-4 or absent. Nut
grey, planoconvex.
Found in moist places and river beds.
Flowers and Fruits: August-December
Herbarium specimens examined: PGM 870, 1790, 1791.
World distribution: India, Ceylon, Africa and Tropical
Australia.
Cyperus alternifolius Linn, Bailey. Man. Cult. Pl. 162,
An erect, umbrella like herb, 0.5-1 m high; stem terete,
ribbed, glabrous. Leaves 18-20 in number, radially, spreading, linear, 10-20 cm long. Spikelets ovate-lanceolate, pale brown, turn dark brown later on.

Grown as an ornamental herb in Patel Farm, Udwada.

Flowers: September-December

Herbarium specimens examined: PGM 758, 2559, 2760.

World distribution: India, Madagascar, Africa, West Indies and South America.


A small herb; stem rhizomatous, creeping, 20-50 cm long, glabrous. Leaves long or short, 0.5 cm broad. Head 0.5 cm across, spikes 3-1. Spikelets 0.5 cm. Glumes ovate, submucronate, keel trinerved. Nut ellipsoid, brown, winged.

Found in moist places.

Flowers and Fruits: March-April

Herbarium specimens examined: PGM 2616, 1617.

World distribution: India, Ceylon, Malacca, except Mediterranean all warm countries of the world.

Cyperus compressus Linn. Sp. Pl. 46, 1753; FBI 6:605; C.3:379; Sedg. 695; Blatt. & McC. 262; Kern. 56; Sant. 287.

A small, marshy herb, 10-30 cm high. Stem capitose. Leaves 10-30 cm long, 3-5 mm broad. Inflorescence umbel; spikelets oblong-lanceolate, recurved. Nuts 2-3 mm long,
obovoid, black.

Found in moist places near rivers and streams, along with grasses and in cultivated fields.

Flowers: August-November

Herbarium specimens examined: PGM 85, 885, 1002, 1010.

World distribution: In all tropical and subtropical countries.

_Cyperus difformis_ Linn. Cent. Pl. 2:46, 1756 and Amoen. Acad. 4:302; Blatt. & McC. 259; Kern 58; Sant. 298; Ch. & O. 229.

An erect, weak stemmed herb; stems 20-40 cm long, triquetrous near apex. Leaves smaller than the stem, 3-4 mm broad, linear. Inflorescence spikes many, form a simple, compound or compressed head, 20-30 flowered. Glumes small, imbricate. Nut trigonous, brown.

Found in pools and moist places, common and abundant.

Flowers and Fruits: September-February

Herbarium specimens examined: PGM 877, 2588, 2565.

World distribution: India, Tropical and warm temperate regions of the world, introduced in Central America.

_Cyperus distans_ Linn.f. Sp. 103; FBI 6:607.

A glabrous, stoloniferous herb; 0.5-1 m high; stem stoloniferous, covered by brown scales. Leaves 0.5-1 m long. Umbel large, compound; spikelets 10-20 flowered, linear. Glumes distinct, oblong-elliptic, obtuse, rachilla zigzag
due to scars of fallen glumes. Nut ellipsoid, black. Found in moist places.

Flowers and Fruits: September-November

Herbarium specimens examined: PGM 292, 3023, 3024.

World distribution: Warm countries of the world.

Cyperus exaltatus Retz. Obs. 5:11, 1789; FBI 6:617; C.3:386; Saxt. & Sedg. 306; Sedg. 697; Blatt. & McC. 275; Kern 52; Sant. 298 & Fl. Saur. 39.

A tall, glabrous herb; stem 1-2 m long, trigonous.

Leaves large or short, 0.5-1 cm broad, linear, margin scabrid. Inflorescence compound umbel; spikelets brown or red, distantly arranged, cylindric, brightly coloured; bracts 3-6, leafy; rachilla winged. Glumes ovate-oblong, imbricate, rachilla wings persistent, mucronate. Nut ellipsoid, yellow.

Common and abundant in moist places.

Flowers and Fruits: September-November

Local name: GODACHIO DUNGRO

Herbarium specimens examined: PGM 878, 2957, 2979.

World distribution: Tropics and subtropics of the world.


A slender, glabrous herb, 20-40 cm high; stem trigonous.

Leaves 10-25 cm long, acute; sheath inflated. Spikelets flat, 10-40 flowered. Glumes ovate-oblong. Nuts minute,
obovoid, yellow or brown.

Common in moist places and as a weed in cultivated fields.

**Flowers:** October-December

**Local name:** CHITO

**Herbarium specimens examined:** PGM 371, 1741, 1783.

**World distribution:** India, Ceylon, Malaya, Indochina, Tropical Africa and Australia.

*Cyperus aris* Linn. Sp. Pl. 45, 1753 (excl. tab. Rheed.); PBI 6:606; C.3:380; Seldg. 693; Sait. & Seldg. 306; Blatt. & McC. 264; Kern 54; Sant. 299.

An annual, erect, tufted, glabrous herb; 40-50 cm high; stem triquetrous. **Leaves** 3-5 mm broad, flaccid, multistriate. **Umbel** decompound. **Spikelets** few flowered, brown or yellow. **Glumes** imbricate. **Nut** 2-3 mm long, obovoid, brown or black.

This is one of the most common Cyperaceae in this area. Found as a weed in cultivated fields and associated with grasses.

**Flowers and Fruits:** August-January

**Herbarium specimens examined:** PGM 66, 1009, 1813.

**World distribution:** India, Ceylon, China, Japan, Malaya, Australia, Persia, Afghanistan and Tropical Africa.

A glabrous, stoloniferous herb; stem 0.5-1 m long, stout, trigonous. Leaves shorter than stem, 1 cm broad, rigid, Inflorescence compound umbel. Spikelets oblong, densely apiculate, 8-12 flowered, brown. Glume 0.5x1 cm, oblong, obtuse, minutely spinescent at apex, hyaline near margin. Nut obovate, brown.

Found in ditches and ponds.

Flowers and Fruits: August-October

Herbarium specimens examined: PGM 67, 1053, 1785.

World distribution: Throughout the tropics of the old world.

Critical note: Classification of Haines is followed by me for Nomenclature of this plant.


An erect, annual herb; stem tufted, 10-30 cm long, glabrous, trigonous, leafy at the base only. Leaves 15-40X 0.5 cm, linear, mid rib prominent. Inflorescence compound umbel, yellow or brown in colour. Spikelets many, 0.5 cm long, forming globose head. Glume boat shaped. Nut obovate, trigonous, glabrous, black.

Found in moist places, in ditches and as a weed in fields.

Flowers and Fruits: August-October

Herbarium specimens examined: PGM 826, 1878, 1881.
World distribution: India and Tropical Africa.


A small, annual herb, 4-20 cm tall; stem slender, tufted. Leaves linear. Inflorescence umellate heads. Spikelets straw coloured, compressed, rachilla simple.

Found in marshy places, near ponds, banks of rivers and as a weed in cultivated fields.

Flowers and Fruits: August-November

Herbarium specimens examined: PGM 68, 905, 951, 972.

World distribution: India, Ceylon, Malaya, Tropical Africa and Australia.


An erect, glabrous herb, 10-15 cm high; stem trigonous. Leaves 6-8 cm long, flaccid. Inflorescence head or simple umbel. Spikelets oblong, brownish. Glume oblong, keeled. Nut minute, obovoid, brown.

Noted in damp places.

Flowers and Fruits: August-May
Herbarium specimens examined: POM 681, 1902, 1903, 1904.

World distribution: Throughout the tropics of the world.


A glabrous, small herb, 0.5-20 cm high; rhizome short. Leaves 6-20 cm long, tufted, linear. Inflorescence 1-3 or 4-5, sessile, capitate. Spikelets minute, compressed. Glume brown, 2 lower persistant, other 2 membranous. Nut oblong, black.

Found associated with grasses.

Flowers and Fruits: July-September

Herbarium specimens examined: POM 86, 980, 997.

World distribution: India, Ceylon, Tropical Africa, China and Australia.

Cyperus rotundus Linn. Sp. Fl. 45, 1753; FBI 6:614; C.3:385; Sart. & Sedg. 306; Sedg. 696; Blatt. & McC. 273; Sant. 300 & Fl. Saur. 39; Ch. & O. 229.

A glabrous, slender, stoloniferous herb, 30-50 cm high; stolon 10-20 cm long; tubers ovoid, fragrant. Leaves 5-7 mm, broad, linear. Inflorescence umbel. Spikelets brown, 10-15 flowered, compressed, rachilla winged.

Common in moist places.

Flowers and Fruits: July-October

Local name: NAGARMOTH, CHIYO
Herbarium specimens examined: PGM 87, 939, 1002.

World distribution: Tropical countries.

Local uses: Dried tubers are used to perfume hair oil.

**BLEOCHARIS** R.Br.

Key to the species

Nuts reticulate or tuberculate; stem subtriangular, not septate; hypogynus bristles generally as long as nut............. *fistulosa*

Nuts smooth; stem slender; bristles glistering white..................... **atropurpurea**

**BLEOCHARIS atropurpurea** Kunth, Enum. 2:151, 1837; FBI 6:627; C.3:403; Sart. & Sedg. 308; Blatt. & McC. 537; Sant. 302.

A small, slender herb, 5-10 cm high; stem tufted. Leaves absent, sheath minute. Inflorescence ovoid, spikelets many, ovoid or subcyclic; rachilla pitted. Glume minute, ovate-oblong, concave, imbricate, black; bristles 4-7, glistering. Nut minute, obvoid, compressed, black, glabrous.

Found in marshy places.

Flowers and Fruits: August-October

Herbarium specimens examined: PGM 827, 1812, 1920.

World distribution: Throughout the temperate and tropics of the world.

A glabrous herb; stem subtriquetrous, 25–80 cm high, concave along one side, not jointed. Leaves obsolete or membranous. Spikelets 2–4 cm long, acute green. Glume broadly ovate, coriaceous, imbricate, multistriate outside, brown dotted inside, hypogynous, bristles 6, scabrid longer than the nut. Nut obovoid, striate.

Found in moist places.

Flowers and Fruits: October–February


World distribution: India, (Western Peninsula, Assam), Burma, Nepal and Tropical countries.

*CIMBRISTYLIS* Vahl. (Nom. Cons.)

Key to the species

Style bifid:

Spikelets cone shaped, one at the tip
of stem................................. tetragona

Spikelets many, umbellate or capitate:

Nuts ribbed, 5–13 striate................. dichotoma

Nuts glabrous:

Leaves shorter than the stem;

glumes glabrous...................... cymosa

Leaves longer than the stem;

glumes hairy........................... siberiana

Style trifid:
Spikelets trigonous or compressed, lower
or all glumes distichous:

- **Style hairy........................... falcata**
- **Style glabrous........................... microcarpa**

Spikelets terete or polygonous; glumes not distichous....................... miliacea


A perennial, tufted, rigid herb, 20-40 cm high; stem rhizomatous. Leaves many, tufted, smaller than the stem, recurved, margin scarbid. Inflorescence compound or compound umbel. Spikelets 0.5 cm long, ellipsoid, subcapitate. Glume small, cymbiform, obtuse, notched, margin transparent and incurved. Nut biconvex, compressed, glabrous or tubercled, brown.

Found in moist places, on river banks and near margins of water canals.

**Flowers and Fruits:** January-May

**Herbarium specimens examined:** PGM 682, 1939, 1940.

**World distribution:** India (South India, Bengal, Orissa, Bihar and Upper Gangetic plains), Arabia, Ceylon and Malaya.

**Pimplristyls dichotoma** (Linn.) Vahl Enum. 2:287, 1805; Kern 46. Scirpus dichotomus Linn. Sp. Pl. 50, 1753. Scirpus diphylle Retz. Obs. 5:15, 1789. **Pimplristyls diphylle** (Retz.)
An erect, tufted herb; roots fibrous; rhizome short or absent; stem 25-50 cm long, slender, tufted, trigonous, glabrous, striate. Leaves 20-40 cm long, linear, coriaceous, serrate near tip. Inflorescence simple or compound spike. Spikelets 0.5-1 cm long, ellipsoid. Glume small, ovate, concave, imbricate, keel brown. Nut minute biconvex, striate.

Found in river beds, ditches and other moist places.

Flowers and Fruits: September-November

Herbarium specimens examined: PGM 156, 1814, 1981.

World distribution: Throughout the tropical countries of the world.

**Fimbristylis falcata** (Vahl) Enum. Pl. 2:239, 1837;
Kern 39. **Scirpus falcatus** Vahl, Enum. 2:275, 1806. **Fimbristylis junciformis** Kunth, Enum. Pl. 2:239, 1837; FBI 6:647; 0.3: 400; Saxt. & Sedg. 308; Sedg. 196; Blatt. & McC. 546.

A glabrous herb, rhizome short, somewhat woody and creeping; stem 15-35 cm long, tough, 4:5 angled, compressed at apex. Leaves tufted, shorter than the stem, up to 0.5 cm broad, coriaceous, margin scabrous. Inflorescence compound umbel, compressed. Spikelets 0.5 cm long, brown. Glume small, ovate, mucronate at apex, margin scaberulous, keel hyaline near margin. Nut small, obovoid, trigonous, glabrous, pale yellow or white.
Found along road-sides, among grasses and on margins of ponds and ditches.

Flowers and Fruits: October-December

Herbarium specimens examined: PGM 467, 1828, 1922, 1951.

World distribution: Throughout India, Ceylon, Madagascar, Malaya and Philippines.

Fimbristylis microcarpa F. H. Muller. Fimbristylis complanata Link, Hort. Berol 1:292, 1827; FBI 6:646; C.3:400; Sæxt. & Sedg. 308; Sedg. 197; Blatt. & McC. 547.

A glabrous herb; roots fibrous, wiry; rhizome short, somewhat woody; stem 25-50 cm long, glabrous, grooved, flattened near tip. Leaves tufted, 10-20X0.5 cm, shorter than the stem, coriaceous. Inflorescence decompound and diffuse umbel. Spikelets 0.5 cm long, oblong, brown. Glume small, distichous, keel, mucronate. Nut small, obovoid, yellow or white.

Found in moist places.

Flowers and Fruits: August-November


World distribution: Throughout warmer countries of the world.

An annual, erect, glabrous herb; stem 15-50 cm long, soft, angled, striate. Leaves shorter or longer than the stem, linear, flaccid, margin scaberulous; sheath coriaceous. Inflorescence compound umbel. Spikelets small, globose, or terete, cylindrical; rachilla winged. Glume ovate, subacute at apex, trinerved. Nut minute, obovoid, brown or yellow.

Found as a weed in rice fields, in ponds and pools.

Flowers and Fruits: September-November

Herbarium specimens examined: PGM 157, 944, 1824.

World distribution: India, Ceylon, China, Malaya and Australia.


An erect herb; rhizome almost absent; stem 20-60 cm long, trigonous. Leaves few or absent, very short, narrow, glabrous, sheath membranous. Inflorescence umbel. Spikelets few, 1X0.5 cm, ellipsoid, brown, rachilla angular, pitted.

Glume 0.5 cm long, brown, concave, mucronate at apex. Nut minute, obovoid, glabrous, pale yellow.

Found at many moist places and as weed in rice fields.

Flowers and Fruits: August-September

Herbarium specimens examined: PGM 828, 1908, 1909.

World distribution: India, Ceylon, China, Australia, Japan, Malaya and Polynesia.
Fimbriatylia tetragon a R.Br. Prodr. 226, 1810; FBI 6: 631; C.3:393; Sant. 302.

An erect herb; 20-50 cm long; stem ribbed, quadrangular, glabrous. Leaves absent, sheath lanceolate, mucronate, brown. Spikelets 0.5-1 cm long, solitary, conical. Glume 0.5 cm long, imbricate, oblong, concave, keels truncate. Nut small, subcylindrical, reticulate, pale yellow.

Found in moist places.

Flowers and Fruits: September-November

Herbarium specimens examined: PGM 210, 2996, 2997.

World distribution: India, Ceylon, East Asia and Australia.

RHYNCHOSPORA Vahl


An erect, tufted herb; 10-30 cm long; stem glabrous, trigonous. Leaves aggregated near base, 5-10 cm long, linear, coriaceous, trinerved. Inflorescence capitate. Spikelets many, dark brown, shining. Glume 0.5 cm long, elliptic, membranous, coriaceous, hypogynous, bristles 6, scabrous. Nut oblong, compressed, brown, beaked due to persistant style base.

Found associated with grasses. Looks distinct due to its brown colour.

Flowers and Fruits: August-September
Herbarium specimens examined: POM 829, 2181, 2182, 2183.

World distribution: India (Western Peninsula), Cochinchina.

**SCIRPUS** Linn.

Key to the species

Spikelets near base of the stem: .......... *articulatus*

Spikelets near top of the stem:

- Glumes mucronate, recurved: ............... *roylei*
- Glume not mucronate, not recurved: ........ *lateriflorus*

*Scripus articulatus* Linn. Sp. Pl. 47, 1753; PBI 6:656; C.3:406; Sant. 302; Blatt. & McC. 767; Kern, 34.

A soft herb; 30-35 cm high; stem cylindrical, terete, transversely septate, striate. Leaves absent; sheath membranous, acute at apex. Spikelets near base of the stem, in a dense lateral head; bracts absent. Glume 0.5 cm long, ovate, mucronate at apex, imbricate, concave, slightly keeled. Nut small, obovoid, indistinctly wavy, black.

Found near margins of ponds and ditches.

Flowers and Fruits: October-March


World distribution: India, Ceylon, Africa, Australia and Philippines.

*Scripus lateriflorus* Gmel. Syst. Veg. 1:127, 1791;


Herbarium specimens examined: POM 829, 2181, 2182, 2183.

World distribution: India (Western Peninsula), Cochinchina.

An erect herb; stem 20-40 cm long, trigonous, striate. Leaves absent or short. Spikelets near tip of stem, in lateral head, not spicate; rachilla not winged, simple. Glume membranous, imbricate, keel sharp pointed. Nut obovoid, globose, rugose.

Found in ditches and ponds.

Flowers and Fruits: October-December


World distribution: India, South China, Formosa and Australia.

Scripus roylei (Nees) Parker in FUGP. 3:361, 1929.


A tufted herb, 30-50 cm high; stem slender, terete. Leaves absent; sheath membranous. Spikelets at the tip of the stem, on lateral dense head. Glume 0.5 cm long, membranous, concaved, keeled, inflated in fruit. Nut small, triquetrous, black, rugose.
Found near Magod-Dungri and Umarsadi.

Flowers and Fruits: September-October


World distribution: India, Baluchistan, Afghanistan, Africa and Turkestan.

SCLERIA Berg.


A robust herb, rhizome thick, woody; stem 0.5-1 m long, triquetrous, slightly hairy. Leaves long, flat, trinerved, scabrous near margin; sheath at middle winged. Spikelets 1 or many, in small clusters forming lax panicles. Glumes 3, 1-nerved, ovate. Nut 0.5 cm long, globose, velvety apiculate.

Found associated with grasses.

Flowers and Fruits: August-October

Herbarium specimens examined: PGM 88, 902, 908.

World distribution: India, Ceylon, China, Malaya, Japan, Australia and Polynesia.

POACEAE

(GRAMINEAE)

(I have adopted the key to the genera from Bor. "Grasses of Burma, Ceylon, India and Pakistan, 1960").

ACRACHNE Wight et Arn.


Noted at Pardi. Not Common.

**Flowers and Fruits:** November-December

**Herbarium specimens examined:** PGM 1910, 1911, 1912.

**World distribution:** South East Asia, Australia, Ceylon and Tropical Africa.

**Critical note:** This plant is not mentioned in 'Flora of Bombay Presidency' by Cooke.

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*Aeluropus* Trin.

*Aeluropus lagopoides* (Linn.) ex Thw. Enum. Fl. Zeyl. 374, (*Sphæra lagopoides*); Bor. 380; Sant. & Jana. 52.


Found on saline soil, sometimes in the fields near seashore forming carpet on the ground. Common at Magod, Bhagod, Magod-Dungrí. When in bloom looks very pretty.

**Flowers and Fruits:** October-January

**Local name:** KHARI-DAROI

**Herbarium specimens examined:** PGM 1923, 1924, 1925.
World distribution: In the coastal regions of Arabian sea extending up to Mediterranean region and North East Africa.

**ALLOTEROPSIS** Presl. emend. Hitch.


A large, decumbent or erect herb. *Spike* 4-8, forming racemes at the tip.

Found on Parnera hill.

**Flowers and Fruits:** August-December

**Herbarium specimens examined:** PGM 1921, 1926.

**World distribution:** India, Burma, Ceylon, Australia and Tropical Africa.

**ANDROPOGON** Linn.


An erect, glabrous herb. *Leaves* linear, glabrous; sheaths compressed.

Found with other grasses.

**Flowers and Fruits:** October-December

**Local name:** CHODMUSHI

**Herbarium specimens examined:** PGM 1952, 1953, 1954.
World distribution: India.

Local uses: Used as a fodder grass.

**APLUDA** Linn.

*Apiluda mutica* Linn. Sp. Fl. 82, 1753; Bor. 93; Sant. & Jana. 52. *Apiluda aristata* Linn. Amoen. Acad. 4:303, 1756. 


*Apiluda mutica* var. *aristata* (Linn.) Pilger in Ofam. (ed.2) 14 C. 130, 1940; Sant. Fl. Saur. 40.

An erect, slender herb, variable in size, sometimes up to 1-5 m tall. Spikelets solitary, enclosed in membranous spathe.

Glume lower straight, glabrous, keel depressed.

Common throughout the area.

Flowers and Fruits: August–December

Local name: MUSHI

Herbarium specimens examined: PGM 158, 1941, 1942, 1943.

World distribution: Throughout India, Ceylon, South East and Tropical Asia and Australia.

Local uses: Used as a fodder grass. This is most important fodder grass of this area.

**ARISTIDA** Linn.

*Aristida hystrix* Linn. f. Suppl. 113, 1781; Roxb. Fl. Ind.
A perennial grass. Leaves narrow, glabrous. Found at Chiwal.

Flowers and Fruits: August-December

Local name: LAMFDIUO GHAS


World distribution: India and Ceylon.

**ARTHRAxon** Beauv.


Tent. Fl. Abyss. 2, 448, t.99, 1851. *Arthraxon ciliarus*


An annual herb, stem decumbent, branched from the base.

Spikelets laterally compressed.

Found associated with other grasses.

Flowers and Fruits: October-December

Herbarium specimens examined: POM 1944, 1945, 1946.

World distribution: India, (Western Peninsula).

**ARUNDINELLA** Raddi

Key to the species

Column of the awn twisted.......................... *pumila*

Column of the awn not twisted.................... *holocoides*

An erect herb. Leaves narrow, Spikelets paniculate; lodicules 2, small.

Noted at Pardi.

Flowers and Fruits: October–December

Local name: LOHRUGHAS


World distribution: Tropical Asia and America.


An erect grass. Leaves flaccid, awn of the upper lamina 1, column of awn slightly twisted in upper lemma.

Noted on Parnera hill.

Flowers: September–January

Herbarium specimens examined: PGM 524, 2121, 2122.

World distribution: India, Ceylon, Burma, South Asia, Abyssinia and Nigeria.
BAMUSA Scherb. (nom. Cons.).


Erect, tall, 10-12 m tall; stem glabrous, on stout root stalk. Flowers many, forming large panicles. Found as a hedge plant near cultivated fields in Rabda, Udwada, Pardi and on Parnera.

Flowers: July-February
Local name: VANSH, KALAK
Herbarium specimens examined: PGM 409, 2206, 2207, 2208.
World distribution: India, Ceylon.
Local uses: The young buds are eaten or pickled.
Critical note: On the subject of flowering of this genera please see Blatter in "JBNHS 33:899-921 & 34:135-141, 447-467".

BRACHYARIA Griseb.

Key to the species

1-2 m high herbs........................................ mutica

Small herbs:

Spike trigonous......................................... reptans
Spike not trigonous.................................... ramosa

Brachyaria mutica (Forsk.) Stapf Panicum muticum Forsk. Pi. Egypt.-Arab 20, 1775; FBI 7:34; Tr. Fl. Ceyl. 5:140; C.3:456; Woodr. in JBNHS 13:433, 1901; Prain Beng. Fl. 1175.
A large herb, 1-2 m high, nodes and internodes soft, hairy. Leaves 15-30 X 1-1.5 cm, linear, subcordate at base. Panicles 8-15 cm long. Spikelets densely crowded, rachis flat, anthers purple.

Grown on a very large scale at Paria Farm, Paria.

Flowers: November-December

Local name: PARAGHAS

Herbarium specimens examined: PGM 2216, 2217, 2218.

World distribution: Native of South America, West Africa, cultivated in many parts of India.

Local uses: This is a valuable fodder grass.

Critical notes: This grass propagates easily by stem cuttings. It grows in any type of soil and water. The stem is soft and hence is an excellent fodder grass.

Brachiaria ramosa (Linn.) Stapf in Fl. Trop. Afr. 9:542, 1919; Blatt & McC. 134, t.86; Bor. 284; Sant. & Jana. 52.

Panicum ramosum Linn. Mant. 1:29, 1769; FBI 7:36 (Pro-parte); C.3:449; Saxt. & Sedg. 312.

An annual, decumbent grass. Spikes many, scabrid, spikelets ovate or obovoid, palea narrow, upper lemma rugulose.

Common and abundant in hedges and waste land during rainy season.

Flowers: August-October

Herbarium specimens examined: PGM 69, 1273, 1330.

World distribution: Tropical regions of the world.

Brachiaria reptans (Linn.) Gard. & C.E. Hubb. in Hook.

A perennial, creeping *grass*; sheath ciliate; rachis of *spike* trigonous. *Spikelets* ovoid; pedicels ciliate; lower glume crescent shape.

Found on Parnera hill.

*Flowers*: August-November

*Herbarium specimens examined*: PGM 2228, 2229, 2230.

*World distribution*: Tropical countries, Polynesia to North Australia.

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**CAPILLIPEDUM** Stapf.

*Capillipedium filiculae* (Hook.f.) Stapf in Hook., *Icon.* *Pl. Sub. tab.* 3085, 1922; Blatt. & McC. 82; Fischer 1730; Sant. 348; Raiz. 477; Bor. 111. *Andropogon filiculae* Hook.f. in *FBI* 7:181, 1896; C.3:502.

A slender *herb*, rooting at nodes; *branches* glabrous.

*Panicles* 2.5-5 cm long.

Found on Parnera hill.

*Flowers and Fruits*: November-December

*Herbarium specimens examined*: PGM 1969, 2144, 2161, 3086, 3087.

*World distribution*: India (Western Peninsula)


CENCHRUS Linn.

Key to the species

Pedicel of spikelet long.............................. *biflorus*

Pedicel of spikelet short.............................. *ciliaris*

*Cenchrus biflorus* Roxb. Fl. Ind. 1:238, 1820; Bor 287;
1838:4, 1839; FBI 7:90; C.3:433; Sext. & Sedg. 310; Blatt.
& McC. 186, t.119; Sant. Fl. Saur. 40; Ch. & O. 255.

A tufted, annual, glabrous herb. Inflorescence spike-like
racemes, turning purple to black later on. Spikelets
pedicellate.

Found in open grassland at Pardi.

Flowers: September–December

Local name: DHAMAN OHAS

Herbarium specimens examined: PGM 867, 2211, 2212, 2224,
2225.

World distribution: Found in dry places. Mediterranean
region and Tropical and South Africa.

*Cenchrus ciliaris* Linn. Mant. Alt. 302, 1771; Raiz. in

A tufted herb. Spikelets purple, shortly pedicellate.

Found at Pardi.

Flowers and Fruits: October–December

Herbarium specimens examined: PGM 2334, 2335, 2336, 2337.

World distribution: India, Tropical and South Africa and
Mediterranean region.

**CHIONACEME** R.Br.


A tall grass, 0.5-1.5 m high; stem branched, terete, rooting at nodes. Leaves scabrid. Spikes female spikes at base, compressed; lodicules absent in female flowers.

Noted at Pardi and Parmera.

**Flowers and Fruits**: September-November

**Herbarium specimens examined**: PGM 868, 2603, 2604, 2605.

**World distribution**: India, Ceylon, Burma, except dry North West parts.

**CHLORIS** Sw.

Key to the species

Stem prostrate................................. **virgata**

Stem not prostrate:

Rachis of spike scabrous; spikelets with

3–4 awns.............................................. **barbata**

Rachis of spike glabrous; spikelets with

5 awns.............................................. **quinquessetica**

A perennial herb, 0.5-1 m high. Spikes several, slender, spikelets turns brown later on.

Common and abundant throughout the area.

Flowers and Fruits: July-September

Local name: MINDADIU GHAS

Herbarium specimens examined: PGM 7, 893, 2026.

World distribution: It is considered to be native of Tropical America. Found in tropical South East Asia.

Chloris quinquesetica Bhide in J. Proc. As. Soc. Beng. n.s. 8, 311, 1912; Bor. 466.

An annual grass. Spikelets with 5 awns.

Flowers and Fruits: July-October

Herbarium specimens examined: PGM 159, 1141, 1142.

World distribution: India (Western Peninsula).

Syn. Fl. Glum. 205, 1854.

A tufted herb, stem prostrate, stout.
Common and abundant throughout the area.

**Flowers and Fruits:** October-December

**Herbarium specimens examined:** PGM 2488, 2489, 2470.

**World distribution:** India, Burma, China, Algeria, South Africa and America.

**Coix Linn.**

**Coix lacryma-jobi** Linn. Sp. Pl. 972, (ed.1). 1753; FBI 7:100; C.3:518; Sart. & S. S. Sedg. 317; Blatt. & McC. 304; Wealth of India 2:305, t. 115, 1950; Bor. 264; Sant. & Jana. 54.

**Coix lacryma** Linn. Syst. Nat. (ed.10), 1261, 1759; Sant. Fl. Saur. 41.

An erect, tall, glabrous, annual herb, 1-1.5 m high; stem purple. Caryopsis beadlike, white or grey, 0.75 cm long. Common near ditches and ponds.

**Flowers:** December-January

**Local name:** KASAINUGHAS

**Herbarium specimens examined:** PGM 466, 2339, 2340, 2341, 2342.

**World distribution:** Indigenous to South East Asia, now found in tropical countries.

**Local uses:** Beadlike fruits are used for rosaries and to prepare necklace by native people.

ed.1, 60, 1753. *Heleochloa schoenoides* Linn. Host. Icon.
Gram. Austr. 1, 23, t. 30, 1801.

A miniature grass.

Found at Umarsadi in dry ponds.

**Flowers and Fruits:** November–January

**Herbarium specimens examined:** PGM 2547, 2559.

**World distribution:** India, (North West), Afghanistan westwards to Mediterranean region and East Africa.

**Cynodon** A. Rich. (Nom. Cons.).

*Cynodon dactylon* (Linn.) Pers. Syn. Pl. 1:85, 1805; FBI 7:288; C. 3:554; Blatt. & McC. 250, t. 166; Sant. 307; Bor 469; Patel 331; Ch. & O. 261. *Panicum dactylon* Linn. Sp. Pl. 58, 1753.

A low creeping, perennial herb, rooting at nodes. Flowers in digitate spikes; spikelets compressed, awnless.

Common grass of the area.

**Flowers:** August–October

**Local name:** DURTA, DHARO

**Herbarium specimens examined:** PGM 70, 1067, 2569.

**World distribution:** A native of old world now wide spread throughout tropics and subtropical regions of the world.

**Local uses:** Used as a fodder grass. Grown for preparing lawn.

**Critical note:** This plant is an excellent soil binder.
Key to the species

**Cultigen plant; leaves broad**................ citratus

**Wild plant; leaves narrow**...................... martini

**Andropogon citratus** (DC) Stapf in Kew. Bull. 1906:357,
1906 & Fl. Trop. Afr. 9:282, 1919; Blatt. & McC. 103; Bor

**Andropogon schoenanthus** Linn. Syst. (ed.10): 1304, 1759.

An erect, aromatic **herb**, 1-2 m high. **Leaves** tufted,
linear, lanceolate, hairy. **Spikes** borne in pairs; sheath
inflated.

Grown in private gardens at Atul, Pardi and Udwada.

**Flowers**: September-October

**Local name**: LILICHAH

**Herbarium specimens examined**: PGM 160, 1337, 1339.

**World distribution**: Tropical countries of the world.

**Local uses**: Leaves are used to flavour tea.

**Andropogon martini** (Roxb.) Watts. in Atkins, Gazet.

N.W. Prov. Ind. 392, 1882; Blatt. & McC. 104; Bor 104, t.21
& Bor 129. **Andropogon martini** Roxb. Fl. Ind. 1:280, 1820.

**Andropogon schoenanthus** var. **martini** HK.f., FBI 7:204, 1896.

An erect, sweet smelling, perennial **herb**, 2-3 m tall.

**Spikelets** pedicellate.

Common in open grassland and along rail tracts throughout
the area.
Flowers: September-May
Local name: RUSA
Herbarium specimens examined: PGM 161, 2361, 2362, 2364.
World distribution: South East Asia.
Local uses: It yields Rusa oil, used for rheumatism.

**Dactyloctenium** Willd.

Key to the species

Stem with stolon......................................................... *sindicum*

Stem without stolon:

Grains subglobose................................................... *aristatum*

Grains not subglobose............................................. *aegypticum*


An erect or prostrate herb with variable height.

Found at many places in open grassland.

Flowers and Fruits: September-November

Herbarium specimens examined: PGM 2597, 2607, 2608, 2609.

World distribution: Tropical and Subtropical regions of the world.

*Dactyloctenium aristatum* Link. Hort. Berol. 1, 59, 1827; Bor 489.

Annual grass. Leaves linear, flat; ligule absent.

Found as weed in cultivated fields.
Flowers: August-October

Herbarium specimens examined: PGM 824, 2623, 2624, 2625, 2626.

World distribution: India and North East Africa.

Dactylorhiza sibirica Boiss., Diagn. Sex. 2, 4, 131, 1859; Blatt. & McC. 264; Bor. 489; Sant. & Jana. 54. Eleusine aristata Ehrenb.; FBI 7:296; C 3:561; Saxt. & Sedg. 322.

A perennial grass; stolon distinct, woody. Spikelets arranged at right angle to the rachis.

Noted near Magod-Dungri.

Flowers and Fruits: August-November

Herbarium specimens examined: PGM 374, 2231, 2232, 2233, 2234.

World distribution: India, and Warm parts of Middle East.

DENDROCALAMUS Nees (Nom. Cons.)

Dendrocalamus strictus Nees in Linnaca 9:496, 1834; FBI 7:404; C 3:572; Blatt. & McC. 285; Sant. & Jana. 54.

Tall, erect, tufted, deciduous, arborescent shrub, 6-15 m tall, with much branched rhizomes. Leaves linear, petiulate. Inflorescence globose. Spikelets 2-many flowered.

Gregarious, common along hedges of cultivated fields.

Flowers: July-February

Local name: NAKOR-VANSH

Herbarium specimens examined: PGM 777, 2343, 2344, 2345, 2346.

World distribution: Throughout India, Burma and Java.
Local uses: Stems are used to build huts, to prepare baskets and young shoots are used to prepare pickles.

**DESMOSTACHYA** Sta pf

**DESMOSTACHYA bipinnata** (Linn.) Sta pf in Dyer. Fl. Cap. 7:632, 1900; Blatt. & McC. 244; Bor. 491; Sant. & Jana. 54.


A perennial, rigid herb. Leaves 30-40 cm long, margin prickly. **Panicles** 15-30 cm long.

Common weed of the area. Rhizome are at times 5-8 m deep in the soil. It is very difficult to remove this plant from cultivated fields.

Flowers and Fruits: All the year, but abundant during July-December

Local name: DABHADO

Herbarium specimens examined: PGM 721, 2495, 2496, 2497, 2498, 2499.

World distribution: India, Arabia, Persia, North to Tropical Africa.

Critical note: This is a troublesome weed of the area. Leaf margin is prickly which causes injury if handled carelessly.
DICHANTHIIUM Will.

Key to the species

Stem hairy; ligule membranous.................. annulatum
Stem glabrous; ligule ciliate................... caricosum


An erect or suberect, tufted, perennial herb, 0.5-1 m tall, stem hairy, jointed. Lower basal glume of sessile spikelets oblong or obtuse, keels ciliate at apex, ligule large.

Commonly found as a weed in cultivated fields and in open grassland.

Flowers and Fruits: September-June

Herbarium specimens examined: PGM 24, 1068, 2348, 2349, 3088, 3089.

World distribution: India, Burma, China, Australia, Tropical and North Africa.


An erect or ascending herb, with variable forms.

Noted beneath shady trees at Parnera.

Flowers and Fruits: September-November

Local name: ROHIDI
Herbarium specimens examined: PGM 2371, 2412, 2439.

World distribution: India, Ceylon, China, Burma, Andamans and Mauritius.

**DIGITARIA Rich.**

Key to the species

Tip of the fruit not apiculate............... *adscendens*

Tip of the fruit distinctly apiculate....... *granularis*


A large, erect herb, spikes hairy.

Noted as a weed in gardens and cultivated fields.

**Flowers and Fruits:** July-October

**Herbarium specimens examined:** 1716, 2302, 2369, 2370, 2477.

World distribution: India and Tropical countries of the world.


An erect grass.
Found in moist places.

**Flowers and Fruits:** October

**Herbarium specimens examined:** PGM 2476, 2501, 2502, 2503, 2504.

**World distribution:** Tropical Asia.

**DINEBRA** Jacq.

*Dinebra retroflexa* (Vahl) Panz. in Denskchr. Acad. Wiss. Munchen, 270, t.12, 1814; Blatt. & McC. 264; C.177; Bor 491; Sant. & Jana. 55. *Dinebra arabica* Jacq. Fragm. 77, t.121, f.1. 1807; FBI 7:297; C.2:562; Saxt. & Sedg. 322; Sant. Fl. Saur. 41; Ch. & O. 255.

An erect herb, internodes glabrous. **Leaves** flat, long. **Ligule** membranous.

Noted in open grass land at Parner and other places.

**Flowers:** August-October

**Herbarium specimens examined:** PGM 825, 2474, 2475, 2641, 2643.

**World distribution:** India, (Western Peninsula) and East Africa.

**DIPLACHNE** Beauv.

*Diplachne fusca* (Linn.) P.Beauv. Ess. Agrost. 80, 163, 1812; FBI 7:329; C.3:552; Saxt. & Sedg. 320; Blatt. & McC. 246, t. 163; Bor 492.

An annual **herb,** 0.5-1 m high. **Leaves** narrow, tufted, flat, convolute. **Spikelets** many, in panicles; basal glume 1
nerved; lodicules 2.  
Found in waste places and along road-sides.  
Flowers: August-September

Herbarium specimens examined: PGM 212, 2637, 2644, 2645, 2646.

World distribution: India, North and Tropical Africa, Egypt, South East Asia to Australia.

**ECHINOCHLOA** P. Beauv.

Key to the species

Spikelets 2.5-3 mm long................... *colonum*
Spikelets 3-4 mm long...................... *frumentacea*

**Echinochloa colonum** (Linn.) Link Hort. Berol. 2:209, 1833; Blatt. & McC. 148, t.94; Wealth of India 3:124, t.72, Pl. XIII, 1952; Bor 308, t.34; Sant. & Jana. 55. *Panicum colonum* Linn. Syst. Nat. (ed.10). 2:870, 1759; FBI 7:32; C.3:447; Saxt. & Sedg. 311; Sant. Fl. Saur.41; Ch. & O. 252.

A slender, tufted, decumbent, annual herb, 30-60 cm high. Spikes distinct, 5-15 in number. Spikelets 2.5-3 mm long, lower spikelets always male, rachis stout and angular. 

Abundant near river Par and in moist places, rice fields during later part of monsoon.

Flowers: August-March

Herbarium specimens examined: PGM 8, 1058, 1105, 2358.

World distribution: Throughout tropics of Asia and Africa.

Noted at Pannera and Udwaḍa.

Flowers and Fruits: September-October

Herbarium specimens examined: PGM 2484, 2485, 2486, 2487.

World distribution: Cultivated in hotter regions of Asia and Africa.

Eleusine Gaertn.

Key to the species

Spikes slender; seeds trigonous...................... indica
Spikes stout; seeds globose....................... coracana

Eleusine coracana (Linn.) Gaertn. Fruct. 1:8, t.1, f.11, 1789; FBI 7:294; C. 3:561; Gr. 235; D. & G. 97; Blatt. & McC. 260, t. 173; Sant. 275; Bor 492. Cynosurus coracanus Linn. Syst. Nat. (ed.10) 2:875, 1759.

An annual herb. Spikelets compressed, 3-12 flowered, flowers bisexual.

Cultivated by natives at Chival also found as weed, growing in rice fields and noted as an escape often effected by root parasite like Striga.

Flowers: August-November

Local name: NAGLI
Herbarium specimens examined: PGM 71, 920, 3050, 3051, 3052.

World distribution: This plant was widely cultivated in the tropics of the old world. In India it is cultivated in hilly districts of Bombay Presidency, Madras etc.

Local uses: This is staple food of native people.

Fleugmone indica (Linn.) Gaertn., Fruct. 1:8, 1789; FBI 7:293; Bor. 493; C 3:560; Saxt. & Sedg. 321; Blatt. & McC. 259, t.172; Wealth of India 3:166, t.105, 1952; Sant. & Jana. 55. Cynosurus indicus Linn. Sp. Pl. (ed.1), 72, 1753; Sant. Fl. Saur. 41; Ch. & O. 259.

An annual herb, 30-50 cm high, stem soft, glabrous. Leaves flaccid, narrow. Spikes many, in terminal spikes; lower basal glumes 1-nerved, upper 1-3-nerved; ligule absent.

Noted at many places and as a weed in fields.

Flowers: September-November

Herbarium specimens examined: PGM 869, 3075, 3076, 3077, 3078.

World distribution: Tropical and Subtropical regions of the world.

ELYTROPHORUS Beuv.


**Flowers and Fruits:** October-November

**Herbarium specimens examined:** PGM 4006, 4007, 4008, 4009.

**World distribution:** Throughout Tropical regions of the world.

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**ERAGROSTIS** P. Beauv.

**Key to the species**

Rachilla of spikelet jointed, breaks from top of the base; rachis of panicles hairy:

- Lemma margin ciliate: .................. **ciliata**
- Lemma margin not ciliate:
  - Keels of palae not ciliate:
    - Keels 6 or less; branches of panicles short, divaricate: ............. **japonica**
    - Keels 10-40; branches of panicles in pseudo-whorls: ..................... **diarrhena**
  - Keels of palae ciliate: .............. **tenella**

Rachilla of spikelet tough, breaking from the base to the top:

- Leaves glandular; lemma less than 1.5 mm long: .................. **poaeoides**
Leaves not glandular; lemma more than 1.5 mm long:

- Palae deciduous; spikelets less than 2 mm wide ........................................... tremula
- Palae persistent; spikelets upto 5 mm wide .................................................. unioloides

_Eragrostis ciliata_ (Roxb.) Nees Agrost. Bras. 512, 1829. _Poa ciliata_ Roxb., Fl. Ind. (ed.1), 1:336, 1820; C.3: 544; FBI 7:313; Bor 506.

A much branched, annual, erect herb. Leaves few, small, margins glandular. Spikelets oblong or linear.

Noted near sea shore, Magod-Dungri.

Flowers: September-December

Local name: MARMAR GHAS

Herbarium specimens examined: PGM 2119, 2125, 2157.

World distribution: Widely distributed in the warmer regions of the world.


Noted at many places, associated with other grasses.

**Flowers:** August-November

**Herbarium specimens examined:** PGM 846, 2647, 2648, 2649.

**World distribution:** South East Asia.

*Eragrostis japonica* (Thunb.) Trin. in Mem. Acad. Sci. Petersb., Ser. 6, 1:405, 1831; Bor 509; Sant. & Jana. 55.

*Poa japonica* Thunb. Fl. Jap. 51, 1784. *Eragrostis interrupta*

Sensu Stapf in FBI 7:316, 1896, non Beauv. 1812; C.2:1024;


FBI 7:316, 1896; Sast. & Sedg. 319; Ch. & O. 257.

A delicate herb. Spikelets less than 6 flowered, panicle

long, glabrous lemma obtuse.

Found throughout the area.

**Flowers:** Almost all the year.

**Herbarium specimens examined:** PGM 683, 2507, 2594, 2656.

**World distribution:** Tropical Asia.

*Eragrostis poaeoides* Beauv. Agrost. 162, 1812; Duthie;

Gr. N.W. Ind. 38; Sprague & C.E.Hubb. in Kew. Bull. 17, 1933;

Bor 512; C.3:548; FBI 7:321; Ch. & O. 258; Raiz.485. *Poa*


Gram. Austr. 4:15, 1809 (in nota) & Flor. Austr. 1:135, 1827;

Blatt. & McC. Bomb. Gr. 238, t.158.

A densely tufted herb; stem slender. Spikelets less than

12 flowered, panicle branched, filiform.

Found in moist places.
Flowers: July-October

Herbarium specimens examined: PGM 778, 2754, 2755, 2756.

World distribution: India and Mediterranean region.

_Eragrostis tenella_ (Linn.) P.Beauv. ex Roem. & Schult.

Syst. Veg. 2:576, 1817; FBI 7:315; Bor. 513; Blatt. & McC. 232; Sant. & Jana. 55. _Poa tenella_ Linn. Sp. Pl. 69, 1753.


_Eragrostis tenella_ var. _plumosa_ (Retz.) Stapf in FBI 7:315, 1896; C.3:545; Saxt. & Sedg. 319; Ch. & O. 257.

Loosely tufted, erect or prostrate, annual herb. Leaves narrow. Panicles contracted, narrow, basal glume unequal, turns purplish brown later on, _ligule_ reduced to fine hairs. Found in open places along with other grasses.

Flowers: September-December

Herbarium specimens examined: PGM 872, 2235, 2306, 2307.

World distribution: In the tropics of the old world; introduced into America.

_Eragrostis tremula_ (Lamk.) Hoschst. in Schimper; Pl. Abyss. N.6. in FL. Beibl. 134, 1842; FBI 7:320; C.3:549; Saxt. & Sedg. 320; Blatt. & McC. 239. t.159; Bor. 514; Sant. & Jana. 55. _Poa tremula_ Lamk. Tab. Encycl. Meth. Bot. 1:185, 1791; Sant. Fl. Saur. 42.

A small herb, 15-60 cm high. Pedicels many flowered; stamens 3; _lemma_ longer than the palea.
-707-

Found in moist river beds.
Flowers: September-March
Herbarium specimens examined: PGM 525, 2478, 2505, 2506.
World distribution: India, Burma and Tropical Africa.

Eragrostis unioloides (Retz.) Nees ex Steud., Syn. Pl.
Glum 1:264, 1854; Blatt. & McC. 235, t.156; Bor. 515; Sant.
Bech. Voy. 251, 1830-1841; C.3:546; Saxt. & Sedg. 319(non
Poa ammabilia Linn.); Sant. Pl. Saur. 42; Ch. & O. 258.

Slender, erect or ascending, small herb. Spike 3-5 mm
wide, flat, not much branched, elliptic-ovate or oblong.
Found in moist places near river Par and as a weed in
cultivated fields.

Flowers: September-December
Local name: CHAKLI PAVNHA
Herbarium specimens examined: PGM 871, 2319, 2320.
World distribution: India, Ceylon, Burma and South East
Asia.

ERIOCHLOA Kunth

Eriochloa procera (Retz.) C.E.Hubbard in Kew. Bull. 1930;
256, 1930; Bor 312; Sant. & Jana, 55. Agrostis procera Retz;
Obs. Bot. 4:19, 1786. Milium ramosum Retz.; Obs. Bot. 6:22,
Blatt. & McC. 131, t.84. Eriochloa polystachya auct. non H.B.K.

Found near railway lines and border of fields.

Flowers: September-November

Herbarium specimens examined: PGM 870, 2766, 2767, 2768.

World distribution: India, Burma, Ceylon, South East Asia and Tropical Africa.

**EULALIA** Kunth

*Eulalia trispicata* (Schult.) Henr. in Blumea 3:453, 1940;


A tufted herb. Leaves small, hairy. Spikelets in pairs, racemes or spikes often yellow coloured, keel ciliate.

One of the most common grass in the whole area. When in bloom looks quite distinct from other grass.

Flowers: August-December

Local name: ROHIDO

Herbarium specimens examined: PGM 213, 2325, 2326.

World distribution: India, Burma, Ceylon, Malasia and Australia.

Local uses: This is also an important fodder grass. It is used to prepare hut roof.


**ACKELOCHLOA O.Kuntze**


An erect, much branched, slender, annual herb. Leaves soft. Spikelets 2-nate, out of two one sessile and awnless, other pedicellate awned.

Found beneath trees at Parnera.

Flowers: September-November

Herbarium specimens examined: PGM 2666, 2669, 2670.

World distribution: India, Ceylon and Tropical countries of the world.

**HETEROPOGON Pers.**


An erect, densely tufted, annual herb. Racemes of spikelets solitary, dorsiventral; 1-10 pairs, sessile spikelets awned, awn stout and become twisted in fruit.

Common grass of the area.

Flowers: September-April
Local name: KOYLIKAPLI, DABSULIU
Herbarium specimens examined: PGM 526, 2764, 2773, 2780, 2781.

World distribution: Common in tropical countries.
Critical note: This is very troublesome grass because twisted spiny awns often stick to the clothes of grass cutters and causes irritation and annoyance.

HEGROSYZA Nees

HYGROSYZA ari stata (Retz.) Nees ex Wight. & Arn. In Edinb. New. Phil. J. 15:380, 1833; FBI 7:95, 1897; C.3:563; Bor 597, F. 67. Pharus aristatus Retz. Obs. Bot. 5:23, 1789 (Fig.63); Subr. Aq. Angio. 112; Ch. & O. 262.

A floating, aquatic herb; stem spongy. Leaves broad, short, flat, ligule absent. Spikelets 1-flowered, in loose panicle; stamens 6.

Found in Magod Talao.

Flowers: October-April

Local name: RHEN

Herbarium specimens examined: PGM 291, 2581, 2582.

World distribution: India, Ceylon, Burma and South East Asia.

IMPERATA Cyr.

IMPERATA CYLINDRICA (Linn.) P.Beauv., Ess. Agrost. 165, 1812; Blatt. & McC. 42, t.30; Bor 169; Sant. & Jana. 56.

An erect, perennial herb, 0.5-1 m high with stoloniferous root stock and solid internodes. Panicles 6-15 cm long. Spikelets paired, subcylindrical, silvery white.

Commonly found beneath trees in cultivated fields.

Flowers: March-December

Local name: SARGHAS, DHOLI SARNU GHAS

Herbarium specimens examined: PGM 2911, 2912, 2913, 2914, 2915.

World distribution: India, Ceylon and other warm countries.

Critical note: Silvery white flowers are distinct of this plant.

Isachne R.Br.


An annual herb, stem branched. Leaves linear-ovate. Spikelets globose, small, 2-flowered or in lax panicles, lower and basal glume almost similar.

Found in waste land, orchards and in fields.

Flowers: September-December
Herbarium specimens examined: PGM 875, 2350, 2351, 2352.

World distribution: Throughout South East Asia, extending to Japan and Australia.

**ISCHAEMUM** Linn.

Key to the species

- Lower glume of the sessile spikelet oblong-obtuse, glabrous............... *impressum*
- Lower glume of the sessile spikelet with broad or narrow wings in the upper half............... *indicum*
- Lower glume of the sessile spikelet lanceolate or elliptic-lanceolate; dorsal surface pilose, flat or depressed.......... *pilosum*

*Ischaemum impressum* Hack. in DC. Mon. Phan. 6:210, 1889; FBI 7:132; Blatt. & McC. 17; Bor 180; Sant. 315.

Annual grass. Leaves flat, young leaves convolute. Spikelets 2-nate, one fertile, other sterile, upper lemma with clefts, stamens 2.

Found on Parnera hill.

Flowers: September-November

Herbarium specimens examined: PGM 876, 2841, 2965, 2966.

World distribution: India, (Purandhar, Bombay State).

Ischaemum ciliare Retz. Obs. 6:36, 1791.
A hairy grass.
Found with other grasses.
Flowers and Fruits: September-January
Local name: BAYDI
Herbarium specimens examined: PGM 3099, 4000, 4001.
World distribution: India, China, Ceylon, Malaya and South East Asia.

An erect herb, 30-60 cm high. Stem not woolly at base; upper glume of sessile spikelets acuminate and 5 nerved.
Found as a weed in cultivated fields.
Flowers and fruits: October-March
Herbarium specimens examined: PGM 4002, 4003, 4004, 4005.
World distribution: India (Western Peninsula, Rajputana, and Central Province).

MELANOCENCHRIIS Nees
Melanocenchris jacquemontii Jaub. et Span, Ch. I 11.
Pl. Or. 4:136, 1851; sant. 316 & Fl. Saur. 42; Raiz. 18; Bor 473; Patel 331; Ch. & O. 260. Melanocenchris royleana Nees ex Steud. Syn. Pl. Glum. 218, 1854. Gracilea royleana HK.f. in FEB 7:284, 1876; C. 3:553; Blatt. & McC. 248, t.165.
A slender, densely tufted, annual herb. Leaves linear-
lanceolate; sheath hairy. Spike filiform, arranged on one side of the rachis, purple or white. Glume with long awns.

Found on old walls, stones, rocky crevices etc. at Parnera, Pardi and Udwada.

**Flowers:** August-October

**Herbarium specimens examined:** PGM 847, 2592, 2725, 2980.

**World distribution:** India, (Bengal, Gujarat, Maharashtra and North West India.).

**Critical note:** Cottony, flexuous small spikes makes this plant distinct.

**OPLISMENU P. Beauv.**

*Oplismenus burmannii* (Retz.) P. Beauv. Ess. Agrost. 54, 168 
& 169, 1812; FBI 7:68; C. 3:443; Sart. & Sedg. 311; Blatt. & 
McC. 154, t. 97; Wealth of India 7:99, t.43, 1766; Bor 317;
Sant. & Jana. 56. *Panicum burmannii* Retz. Obs. Bot. 3:10, 
1783; Ch. & O. 252.

An annual herb; stem decumbent, nodes many. *Leaves* linear, 
flat. *Spikelets* small, lower basal glumes ciliate, upper basal 
glumes awned.

Found associated with other grass.

**Flowers:** September-October

**Herbarium specimens examined:** PGM 874, 2671, 2672, 2673.

**World distribution:** Throughout Tropical countries.
Key to the species

Cultivated ligule splitting.................... **sativa**

Wild plants:

- leaf margin spinulose........................ **coarctata**
- leaf margin not spinulose....................... **rufipogon**


Perennial, marshy herb, rhizome creeping, smooth. **Leaves** 15-30X0.75-1 cm, linear, leathery, margin spinulose, ligule fringed. **Spikelets** 1 flowered, arranged on elongated panicles.

Found in muddy salty places at Magod-Dungri.

**Flowers**: August-October

**Local name**: BHENLO

**Herbarium specimens examined**: PGM 2166, 2167, 2227.

**World distribution**: India (W.Peninsula & Suberbans).

**Critical note**: This plant is eaten by buffalo, hence the local name 'BHENLO'.


Found in ponds and ditches at many places.

**Flowers and Fruits**: August-November

**Local name**: NIYAR, JANGLI BHAT

World distribution: Found in East India and Madras.

Oryza sativa Linn. Sp. Pl. 333, 1753; FBI 7:92; C. 3:565; Saxt. & Sedg. 322; Blatt. & McC. 274, t.187; Bor. 605; Wealth of India 7:115, 1966; Sant. & Jana. 56; Sant. Fl. Saur. 42.

A tall, aquatic herb. Leaves long, flat. Spikelets persistent, awned or awnless, panicle 3-flowered, rachies furrowed, fertile lemma granulate, hispid and ciliate.

Main cultivated crop of the area.

Flowers and Fruits: August-November

Local name: DANBAR, BHAT

Herbarium specimens examined: PGM 375, 2988, 2989.

World distribution: Cultivated in India, China, Japan and Ceylon.

Local uses: This is important cereal crop of this area. Dry plants are used as fodder, as packing material in Mango baskets and as raw material in paper industry.

**PANICUM** Linn.

Spikelets narrow lanceolate:

Lower glume cuspidate or cuspidate-acuminate... typheron

Lower glume not cuspidate-acuminate.......... repens

Spikelets oblong, ovate-oblong to elliptic, acute or obtuse, leaf-sheath hairy................. psilopodium

Spikelets acute or acuminate, leaf-sheaths glabrous............................. antidotale

**Panicum antidotale** Retz., Obs. Bot. 4:17, 1786; FBI 7:52; C.3:453; Saxt. & Sedg. 321; Blatt. & McC. 163, t.104;
Annual herb. Spikelets dorsally compressed, lower florets male or sterile, lodicules 2, stamens 3.
Found in river bed at Pardi.

Flowers: September-November

Local name: DHUNSARO

Herbarium specimens examined: PGM 873, 2657, 2658, 2659, 2660.

World distribution: India, Afghanistan, Westwards in Baluchistan, Tropical Africa and Australia.

Paniceum psilopodium Trin. Gram. Panic. 217; 1826; FBI 7:46; C.2:939; Saxt. & Sedg. 312; Blatt. & McC. 158; Bor 329; Ch. & O. 250.

A slender herb, 15 cm high. Leaves linear, glabrous. Spikelets flat, upper basal glume 11 veined.
Found at Parnera, Pardi and Udwada.

Flowers: August-October

Herbarium specimens examined: PGM 89, 917, 2977, 2978.

World distribution: India, Ceylon and Burma.

Paniceum repens Linn. Sp. Pl. (ed.2) 87, 1762; FBI 7:49; Bor 330.

A creeping or erect herb, 0.5-2 m high. Panicles 8-20 cm long.
Found near borders of cultivated fields.

Flowers and Fruits: October-December

Herbarium specimens examined: PGM 3060, 3061, 3062.
World distribution: Throughout India, Ceylon, South Europe, Africa and America.

Panicle typhorum Schult., Syst. Veg. 2:244, 1824; Bor 331.

A tall grass, 0.5-1 m high.
Found in river-beds and on borders of cultivated fields.

Flowers and Fruits: September-December

Herbarium specimens examined: PGM 3082, 3983, 3084, 3085.

World distribution: India and South East Asia.

Paspalum Linn.


An erect, annual herb, 1-5 m high. Spikelets almost as wide as rachis, planoconvex, lower lemma with inflexed auricled margins.

Cultivated in Udwada, Pardi villages for cereals, often escape out of cultivation.

Flowers and Fruits: September-December

Local name: KODARI

Herbarium specimens examined: PGM 162, 3090, 3091, 3092, 3093.

World distribution: Cultivated in plains of India, sometimes escape.
Local uses: Grains are used as staple food by native.

Pennisetum Rich.

Pennisetum typhoides (Burm.) Stapf & C.E. Hubb. in Kew Bull. 1933: 271, 1933; Fischer 1792; Sant. 359; Raiz. 493; Bor. 350. Alopecurus typhoides Burm. Fl. Ind. 27, 1768. Pennisetum typhoides L.C. Rich. in Pers. Syn. 1: 72, 1805, pro-parte; FBI 7: 82; C. 3: 432; Pilger 81.

An annual herb; stem stout. Spikelets for terminal panicle, anther lobes hairy, bristles feathery. Grains dorsally compressed.

Not cultivated, found wild. Found occasionally along railway lines.

Flowers and Fruits: December-February

Local name: BAJRI

Herbarium specimens examined: PGM 620, 2783, 2784, 2785.

World distribution: Cultivated throughout India and Tropical Asia.

Perottis Ait.


Slender herb. Leaves broad, ciliated, cordate at base. Spikelets subsessile, linear-lanceolate, rachilla not produced
above the florets, lemma transparent, 1-nerved, lodicules 2, stamens 3.

Found on sandy soil near Udwada, road-sides and in waste places.

**Flowers:** August-January

**Herbarium specimens examined:** PGM 848, 2456, 3057, 3058, 3059.

**World distribution:** India, Ceylon, Burma, Malaya to South East Asia.

**Phragmites Trin.**


A stout herb, 1-2 m high. **Leaves** long, linear. **Spikelets** 3-10 flowered, in lax panicles, compressed laterally, rachilla silky, jointed, lodicules 2, obovate, stamens 1-3.

Noted in river-bed of Par.

**Flowers:** December-February

**Local name:** NALINU GHAS

**Herbarium specimens examined:** PGM 2956, 2975.

**World distribution:** India, Burma, Ceylon, South East Asia and North Australia.

**Pseudanthisteria** Hook.f.

*Pseudanthisteria heteropilus* (Roxb.) Hook.f. in FBI 7: 219, 1896; Blatt. & McC. 121, t.76; Bor 203. *Athistiria*
heteroclita Roxb. Fl. Ind. 1:249, 1832.

A delicate herb, rooting at nodes. Spikelets in axillary fascicles.
Occasionally found with other grasses.

Flowers and Fruits: October-December

Local name: ZINKU GHAS, FULDU GHAS
Herbarium specimens examined: PGM 3094, 3095, 3096.
World distribution: India and Ceylon.

PSEUDORAPHIS Griff.

A glabrous, aquatic herb. Spikelets on branches of simple panicles.

Found in ponds at Pardi and Udwada.

Flowers and Fruits: August-October

Herbarium specimens examined: PGM 3097, 3098, 3099.
World distribution: India, Ceylon, Burma, China, Borneo,
New Guinea to Australia.

**SACCHARUM** Linn.

*Cultigen plant; peduncle glabrous; lodicule smooth. officinarum*

*Wild plant; peduncle hairy; lodicule ciliate. spontaneum*

*Saccharum officinarum* Linn. Sp. Pl. 54, 1753; FBI 7: 118; Blatt. & McC. Op. Cit. 46; C. 3:466; Bor. 212.

An erect shrub, 2-3 m high; stem solid, contains sweet juice. **Leaves** large, flat, hairy. **Spikelets** paired, lower lemma membranous, empty; **lodicles** glabrous.

Cultivated at many places where there is facility of water.

**Flowers:** December-January

**Local name:** SHERDI

**Herbarium specimens examined:** PGM 465, 2811, 2812, 2813.

**World distribution:** Cultivated in Tropical countries.

**Local uses:** Stems are source of jaggery and sugar.

*Saccharum spontaneum* Linn., Mant. Ait. 2:183, 1771; D. & G. 304; FBI 7:119; C. 3:465; Blatt. & McC. 45, t.31; Bor 214; Sant. & Jana. 57; Ch. & O. 239.

A perennial, polymorphic herb, about 2-3 m tall. **Leaves** with convolute margins. **Panicles** silvery white, shining, elegant, 10-50 cm long, lodicles ciliate.

Common near river banks at Par.

**Local name:** KANS

**Herbarium specimens examined:** PGM 849, 2209, 2353, 2354.
World distribution: India, Ceylon, South Europe, Eastern Australia and warm regions of the world.

**SACCIOLEPIS Nash.**


A stout grass; stem spongy near base. Leaves long, flat, rounded at base. Panicle narrow; Spikelets longer than pedicel.

Found on banks of ponds at Umarsadi.

Flowers: October-January

Herbarium specimens examined: PGM 290, 2677, 2710, 2711.

World distribution: India, Ceylon, Malaya, Tropical and South Africa.

**SETARIA** P.Beauv.

Key to the species

Bristles of spikelets with deflexed teeth...... **verticillata**

Bristles of spikelets with spreading teeth:

Spikelet large, cylindrical raceme.............. **glauc**

Spikelet medium, narrow panicle.............. **tomentosa**


An erect or ascending, annual herb, 30-60 cm tall. Leaves
linear or elliptic-ovate, flat. **Inflorescence** oblong, ovate, spike like bristles 6-8, scabrids.

Common near hedges of cultivated fields and open grassland throughout the area during monsoon.

**Flowers**: August-September

**Local name**: KUTRA GHAS

**Herbarium specimens examined**: PGM 91, 983, 2787, 2788.

**World distribution**: Native of warm temperate zone of the old world, introduced into America, Australia and other countries of the world.

**Local uses**: Native people apply juice of this plant to cure ringworm. It causes irritation of skin but heals ringworm.

**Setaria pallide-fuscum** (Schumach.) Stapf et C.E.Hubb. in Kew Bull. 1930, 259, 1930; Bor 363. **Panicum pallide-fuscum** Schumach. Beskr. Giun. Pl. 58, 1827. **Setaria flava** Merr. in Philipp. J. Sci. 1; Suppl. 28, 365, 1906, non Kunth, 1829.

Found at Pamera and Bagawada.

**Flowers and Fruits**: October-December

**Herbarium specimens examined**: PGM 2992, 3016, 3017.

**World distribution**: Tropics of old world.

**Setaria tomentosa** (Roxb.) Kunth Rev. Gram. 1:47; 1829; Bor 365; Sant. & Jana. 57. **Panicum tomentosum**. Roxb. Pl. Ind. 1:303, 1820. **Panicum intermedium** Roth Nov. Pl. Sp. 47, 1821, non Vahl ex Hornem, 1813. **Setaria intermedia** (Roth) Roem. & Schult., Syst. Veg. 2:489, 1817; FBI 7:74; C.3:436; Saxt. &
Sedg. 310; Blatt. & McC. 174; Ch. & O. 251.

An annual herb. Leaves linear-lanceolate, bristles few, scabrid; pedicels minute, ligule long, ciliate at the end.

Found associated with other grasses.

**Flowers**: August-October

**Local name**: KUTRA GHAS

**Herbarium specimens examined**: PGM 288, 3067, 3068, 3069.

**World distribution**: India, Burma, Ceylon and extending to Malaysia and Polynesia.

*Sesamum verticillatum* (Linn.) P. Beauv. Ess. Agrost. 51, 178, 1812; FBI 7:78; C. 3:436; Sart. & Sedg. 310; Blatt. & McC. 174; Bor 365; Sant. & Jana. 57. *Panicum verticillatum* Linn. Sp. Pl. ed.2, 82, 1762; Ch. & O. 250; Sant. Fl. Saur. 43.

Annual herb, variable in size from few cm to few meters. Leaves linear, flat, ligule truncate, bristles of the spikes few, scabrid with reverted barbs.

Found as a weed in cultivated fields and along river Par.

**Flowers**: August-October

**Herbarium specimens examined**: PGM 803, 3079, 3080, 3081.

**World distribution**: Tropical and Temperate regions of the world, introduced in America.

*Sorghum* Moench.

Key to the species
Lamina 0.5-2 cm wide; panicle less than 25 cm in length.................. halepense  
Lamina 2-4 cm wide; panicle 25-35 cm long..... miliaceum  
Lamina 4-6 cm wide; panicle decumbent, 20-50 cm long......................... vulgare  


Tall, erect, perennial, stout herb, 2-3 m high, main branches of panicle divided, rachis joints possess rounded scar throughout. Male spikelets pedicellate.

Found near hedges of cultivated fields and the bank of river Par.

Flowers: October-December

Local name: BAROQ

Herbarium specimens examined: PGM 289, 2792, 2808, 2809.

World distribution: Throughout India, Ceylon and warmer parts of the world.

Local uses: Pieces of stem are used as buoyant by native people for fishing.


Andropogon miliaceus Roxb., Fl. Ind. 1:276, 1820.

Andropogon miliformis Schult., Syst. Veg. 2, Mant. 448, 1824;
An annual herb; stem glabrous. Leaves large. Spikelet 3-nate, heteromorphic, one sessile, 2 pedicellate.
Noted on Parmera hill.
Flowers: September-December
Herbarium specimens examined: PGM 163, 2365, 2367, 2368.
World distribution: India.

**Sorghum vulgare** Pers. Syn. 1:101, 1805; Blatt. & McC.
58. **Andropogon sorghum** Brot. Fl. Lvs. 1:88, 1804; FBI 7: 183.
183. **Holcus sorghum** Linn. Sp. Pl. 1047, 1753; Sant. Fl. Saur.
43.

An erect, cultivated herb, 1-2 m high. Panicles much divided; rachis of the spike stout; pedicellate spikelets generally neutral.

Cultivated in fields throughout the area, often escape out of cultivation.

Flowers and Fruits: October-February
Local name: JOWAR
Herbarium specimens examined: PGM 2636, 2897.
World distribution: India and China.
Local uses: Grains are used as staple food. This is also an important staple food of the people of this area.

**Spondiopogon** Trin.

*Spondiopogon rhizophorosus* (Steud.) Filger in Engler and Prantl. Naturi. Pflanzen.f. Aufl. 2:14e, 119, 1940; Sant. 283;
A tufted herb, stem glabrous and often brown in colour, rooting at the lower nodes. Leaves petiolate; petioles 3–7 cm long; sheath distinct. Spikes white and drooping on one side. Very common grass at Parnera.
Flowers and Fruits: September–December
Herbarium specimens examined: PGM 3063, 3064, 3065, 3066.
World distribution: India (Western Peninsula, Madras and Central Province).

Critical note: Brown stem and roots at the lower nodes are distinct in this plant.

Sporobolus R. Br.
Sporobolus diander (Retz.) P. Beauv. Ess. Agrost. 26:137, 178, 1812; FBI 7:247; C.3:539; Saxt. & Sedg. 318; Blatt. & McC. 221, t. 148; Bor 629; Sant. & Jana. 58. Agrostis diandra Retz. Obs. Bot. 5:19, 1789; Ch. & O. 263.
A slender, tufted grass, 0.5–1 m high. Basal glumes without veins. Spikelets 1 flowered, lemma obtuse, 1-nerved.
Found as a weed in cultivated fields.
Flowers: August–September
Herbarium specimens examined: PGM 164, 3071, 3072, 3073, 3074.
World distribution: India, Burma, Ceylon, upto Tropical Australia.

**THEMEDA** Forsk.


An erect, annual herb, 1-2 m high. Leaves long, narrow, hairy with ciliate margins. Panicles elongate reaching 10 cm, awn 2-5 cm long, tuberculated and twisted.

Common and abundant in the whole area and one of the most important fodder grass of commerce.

Flowers: October-May

Local name: MUSI

Herbarium specimens examined: PGM 286, 2823, 2846, 2847, World distribution: India and China.

Local uses: Used as fodder for cattles and horses.

**TRITICUM** Linn.

An erect herb, stem solid above. Leaves flat, linear. Spikelets 3-5 flowered, basal glumes equal, lemma muticous or 1-3 awned.

Cultivated as winter crop in many fields where there is facility of irrigation.

Flowers and Fruits: January-March
Local name: GHAVA
Herbarium specimens examined: PGM 523, 2958, 2959, 2960.
World distribution: India and America.
Local uses: Used as a staple food.

UROCHLOA P. Beauv.

Urochloa panicoides P. Beauv. Ess. Agrost. 53, t. 11, f. 1, 1812, var. panicoides Bor 372; Ch. & O. 253.
An annual, decumbent herb. Leaves linear, ligule ciliated. Spikelets ovate or elliptic, lower basal glumes 7 veined. Caryopsis compressed.
Found associated with other grasses.
Flowers and Fruits: August-October
Herbarium specimens examined: PGM 90, 3053, 3054, 3055, 3056.
World distribution: India, Tropical East Africa extending to South Africa.

VETIVERIA

Vetiveria zizanioides (Linn.) Nash in Small. Fl. S.E. U.S. 67, 1903; Blatt. & McC. 65, t. 40; Bor. 258; Sant. & Jana. 58.
Phalaris zizanioides Linn. Mant. 2:183, 1771. Andropogon
squarrosus HK.f. FBI 7:186; C.3:511; Saxt. & Sedg. 316; Ch. & O. 244; Sant. Pl. Saur. 43.

A tough herb; roots fragrant; stem slightly compressed below. Spikelets 2-nate, lodicules glabrous.
Found along road-sides near ditches.

Flowers: August-October

Local name: KHAS, VALO

Herbarium specimens examined: PGM 802, 3038, 3039, 3040.

World distribution: India, Burma, Ceylon, South East Asia to Tropical Africa.

Local uses: Roots are used to give aroma to water. Also used to prepare mats.

ZEA Linn.

Zea mays Linn. Sp. Pl. 1753; FBI 7:102; C.3:574; Blatt. & McC. 2; Bor. 270; Sant. & Jana. 58; Sant. Pl. Saur. 43.

An erect herb, 1-3 m high; stem cylindrical, solid, glabrous.

Leaves flat, linear. Spikelets, male spikelets paired, one sessile while other shortly pedicelled; stamens 3; female spikelets 2 flowered. Caryopsis obovate, flat.

Cultivated at some places during monsoon.

Flowers and Fruits: August-October

Local name: MAKAI

Herbarium specimens examined: PGM 146, 1153, 1154, 1155.

World distribution: Indigenous to America, now cultivated in warm countries of the world.

Local uses: Cobs are roasted and eaten.