

Class II MONOCOTYLEDONS

1. Inflorescence a true spadix:
  2. Foliage of palm type, i.e. large stiff, palmate or pinnate; plants woody. . . . . Palmae
  2. Foliage not palm like, broad; plants herbaceous. . . . . Araceae
1. Inflorescence various, but not a true spadix:
  3. Truly submerged aquatics. . . . Potamogetonaceae
  3. Plants not submerged or aquatics:
    4. Flowers much reduced, in the axil of dry, chaffy scales (glumes) arranged in spikelets:
      5. Stem triquetrous; sheath of leaf usually entire; flowers subtended by a single glume. . . . . Cyperaceae
      5. Stem terete; sheath of leaf usually split; flowers subtended by several glumes. .Gramineae
    4. Flowers not in the axil of dry, chaffy scale, often showy:
      6. Ovary inferior or nearly so:
        7. Flowers regular or slightly irregular:



- 8. Flowers unisexual;  
ovary inferior or  
nearly so. . . . . Dioscoreaceae
- 8. Flowers bisexual:
  - 9. Leaves 3 partite, circular  
in outline. . . . . Taccaceae
  - 9. Leaves not as above:
    - 10. Root-stock tuberous;  
leaves plicate...Hypoxydaceae
    - 10. Root-stock tunicated;  
leaves not  
plicate. . . . . Amaryllidaceae
- 7. Flowers very irregular:
  - 11. Gynostemium present... Orchidaceae
  - 11. Gynostemium absent:
    - 12. Fertile stamens 1-2,  
the rest stami-  
nodes. . . . . Zingiberaceae
    - 12. Fertile stamens 5..Musaceae
- 6. Ovary superior:
  - 13. Flowers subtended by  
boat-shaped spathes. . . Commelinaceae
  - 13. Flowers not in boat-shaped spathes:
    - 14. Flowers gathered in solitary  
terminal head, not showy;  
marsh loving herbs. . Eriocaulaceae
    - 14. Flowers not in heads, racemose or  
umbellate & showy. . . Liliaceae



ORCHIDACEAE

Plants epiphytic on the branches of various trees:

Lip not spurred, though base sometimes saccate; Rhizome short, stemless with a single pseudobulb. . . . Dendrobium

Lip spurred, spur conical/<sup>on</sup>saccate:

Foot of the column distinct, usually long. . . . . Aerides

Foot of the column 0 or indistinct; spur at the base of the lip, mouth of the spur open, sepals and petals distinctly narrow at the base. . . . Vanda

Terrestrial plants:

Raceme or spike terminal:

Sepals subequal and more or less connivent. . . . . Peristylus



Sepals unequal, the lateral spreading  
or reflexed. . . . . Habenaria

Scape lateral. . . . . Eulophia

Dendrobium Sw.

Dendrobium barbatulum Lindl. Gen. Sp. Orch. 84, 1830;  
D. & G. 261; Hook. f. FBI. 5:719; C. 3:184;  
Fischer. 990; Santapau and Kapadia, JENHS.  
57(3):502-504, t.12, 1960.

An epiphytic orchid, pseudobulbs 1-20 cm. long.  
Leafless at the time of flowering, one to many noded,  
purplish brown. Leaves thick, alternate, distichous,  
sheathing at the base. Inflorescence terminal or lateral  
1 to many flowered. Flowers pink or rose pink. Disc  
on the lip obtuse, with yellow hairs at the base and apex.

Leaves: July to December.

Flowers: January to March.

Fruits: March on wards.

Hedi 1068-1071 (Handva hill, Morai) and  
(19.2.62 Ratanmahal).



Common on plateau and on hilly forest slopes at higher altitudes, at 500 to 600 M.S.L. Often noted as an epiphyte on Bambusa, Dendrocalamus and various other forest trees, out of which Terminalia sps. Zizyphus rugosa, Madhuca indica are the most common.

Gujarat: Dangs, Khandesh, W. Ghats, Deccan, Koina valley, Kanara, Konkan, Travancore, South India.

Aerides Lour.

Aerides crispum Lindl. (in Wall. Cat. 7319, 1832, nom. nud.) Gen. Sp. Orch. 239, 1833, Cum descr. Bot. Reg. t.55, 1841; D. & G. 265; FBI. 6:45; G. 3:203; Fischer, 1008; Blatt. & McC. l. c.490; Sant. 238; Santapau & Kapadia, l.c. 65-67.

A. lindleyana Wight, Ic. t.1677, 1851; Lindl. in Journ. Linn. Soc. 3:41, 1858; D. & G. 265.

An epiphytic orchid. Leaves pale green with purplish tinge at the base, with two unequal rounded lobes at the apex. Inflorescence 10-25 cm., long. Flowers sweet scented rose pink.

Flowers: May to July.

Fruits: July onwards.

Bedi 20...23, 3797.



Common on Ratannahal & pepar gota plateau during summer & pre-monsoon. Often noted epiphytic on Mangifera indica, Terminalia sps; Bambusa, Dendrocalamus and on various other tree in Morai & Banvaro.

W. Ghats, Deccan, N. Kanara, Nilgiri and Pulney hills at about 800-1200 m. and some other hilly parts of India.

Vanda R. Br.

Vanda tessellata Hook. Fl. Brit. Ind. 6:52; Fischer, 1010.

V. roxburghii R. Br. in Bot. Reg. V. 6, t. 506, 1820.

FBI. 6:52; C. 3:208; Gr. 204; Wt. Ic. t. 916.

An epiphytic orchid. Leaves thickly coriaceous 12-20 cm., long. Flowers in 5-10 flowered racemes, attractive; Sepals and petals tesselled yellow with brown lines and white margins. Lip dotted with purple.

Local name: Vando.

Flowers: June to July.

Fruits: July to August.

Bedi 5, 1545, 1835, 3793.

(Plate No: 36)

Not common, noted as an epiphyte on various trees in the forest areas near Bendol, Patan Mata, Kanjeta, Chari etc.



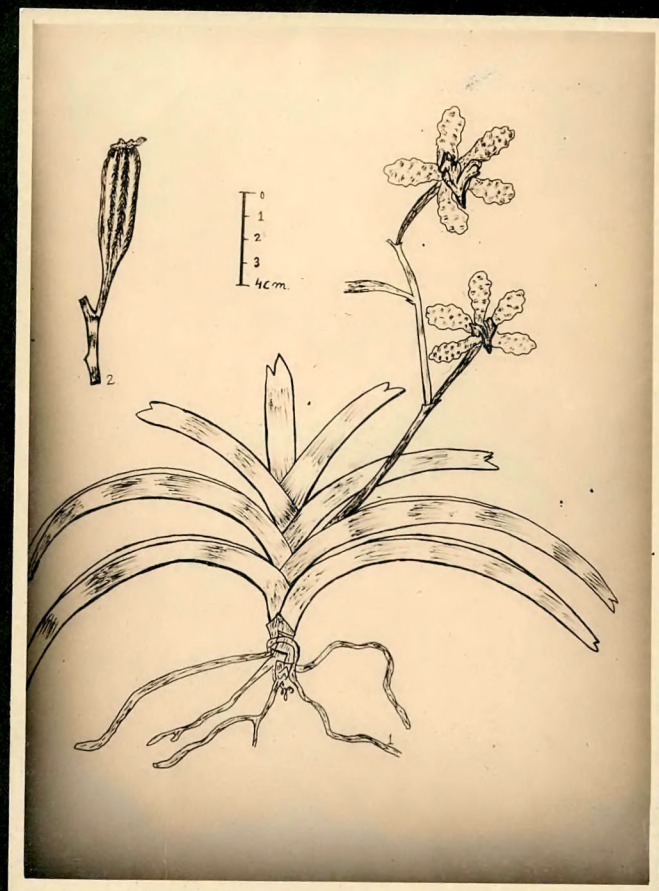


PLATE NO. 36

Vanda tessellata hook.



Gujarat, W. Peninsula, Konkan, Kanara; Bengal,  
 Bihar.  
 Ceylon.

Peristylus Bl.

Leaves clustered about middle of stem:

Petals yellow or yellowish green; lip about as  
 long as sepals, distinctly trifid.

Spikes dense; lateral sepals mucronate at the  
 back a little below apex. . . . . goodyeroides

Spikes lax; lateral sepals not mucronate..... lawii

Peristylus goodyeroides Lindl. Gen. Sp. Orch. 299, 1835;  
 D. & G. 300; Fischer, 1030; Blatt. & McC. l.c.  
 735; Santapau & Kapadia, JBNHS. 57(1)133, 1960.

Habenaria goodyeroides D. Don. Prodr. Fl. Nep. 25,  
 1825; Gr. 201.

Peristylus goodyeroides var. affinis Lindl. l.c.300;  
 C. 3:216.

A terrestrial orchid. Herbs 20-50 cm., tall. Leaves  
 thin membranous, clustered about the lower third of the  
 stem. Flowers greenish yellow, on very lax erect spikes;  
 lateral sepal mucronate at the back.



Flowers: August to November.

Bedi 1947 (29.11.61 Pepargota), 3156, 3407  
(8.10.62 Patan Mata Hill).

Fairly common as an undergrowth of forest in the hilly regions especially South of Panam river. Very rare or almost absent near Dhenpur and plains N.E. to it.

Konkan, N. Kanara, W. Ghats of Bombay, and South wards. Sikkim, Khasia and Naga hills.

India, Nepal, Ceylon, China, South wards to Malaysia.

Following Santapau & Kapadia l.c. I am inclined to merge the var. affinis mentioned by Cooke, l.c. with the typical species, as the intermediate forms are very common.

Peristylus lawii Wight, Icon. 5:12, t.1695, 1851; C.3:216; D. & G. 270; Blatt. & McC. 735; Santapau and Kapadia, loc.cit. 134, t.10, C & 10.

Habenaria lawii Hook. f. Fl. Brit. India 6:162, 1890; Prain, Beng. Pl. 776; Heines Bot. Bihar 1160.

An erect, herb 10-40 cm., high. Stem brownish white, sheathed. Leaves 3-6 clustered about the middle of the stem. Flowers sessile, greenish yellow in slender spikes 5-15 cm., long.



Flowers & Fruits: July to August.

Bedi 1437, 2582, 2721.

Fairly common on higher attitudes, as an under growth of forest, near Pepargota, Bendol, Mendhri, Patan Mata hill.

Gujarat: Dangs, Madhya Pradesh, W. Ghats, N. Kanara, Konkan, Mysore.

Apparently endemic in India.

Habenaria Willd.

Petals entire. . . . . marginata

Petals 2-partite. . . . . digitata

Habenaria marginata Coleb. in Hook. Exot. Fl. t.136, 1825; Gr. 201; FBI. 6:150; C. 3:226; Fischer, 1028; (excl. Syn. H. fusifera Hook. f.); Blatt. & McC. 23 (excl. Syn. H. fusifer Hook. f.); Sant. 243; Santapau & Kapadia, JBHMS. 56(2):199 t.v.f.17, 1959.

A terrestrial herb. Leaves membranous, margins whitish or yellowish. Flowers yellow in a spike 10-20 cm., long.



Flowers: September to October.

Bedi 216, 3211, 3408.

Common as an under growth of forest and hilly regions near Banvaro, Handva hill, Raiengena, Patan Mata hill, also noted in open grassy places.

Gujarat: Dangs, W. Ghats, Deccan, Konkan, N. Kanara.

Habenaria digitata Lindl. Gen. Sp. Orch. 307, 1835;

FBI. 6:134, pro parte; C. 3:220, pro parte

Sant. 240; Santapau & Kapadia l.c. 193, t.3, f.7-8.

H. trinerva Wight, Icon. t.1701, 1851.

An erect glabrous herb. Leaves smaller at the base, all with sheathing bases. Flower green fading to yellowish-green, emitting a pungent foul smell after sun set; Segments of petals unequal.

Flowers: July to August.

Bedi 2526, 2660...2663, 2678.

This is the most common Orchid of this region, found on plains as well as in the hilly areas, as an under growth of forest.

W. Ghats; Natheran, Khandala, Purandhar, Panchagani, Mahableshwar etc., North Kanara.



Eulophia R. Br.

Eulophia nuda Lindl. (in Wall. Cat. 7371, 1832, nom.nud.et)

Gen.Sp. Orch. 180, 1833; Hook. f.5, et. in Ann.

R. Bot. Gard. Calcutta 5:32, tt. 47-50, 1895;

C. 3:197; Blatt. & McC. JBNHS. 35:487, 1932;

Fischer. 1003; Santapau & Kapadia, 58(1):60-61, 1961.

E. bicolor Dalz. in Kew Journ. Bot. 3:343, 1851;

D. & G. 264.

Cryptopora fusca Wight, Icon. 5(1):11, t.1690, 1891.

Tubers spherical, brownish green, 5 cm., or more in diameter. Leaves plicate, many nerved, oblong lanceolate. Inflorescence 30-50 cm., long. Flower whitish or rose purple? Fruit about 5 cms., long angled, broader in the middle.

The identity of this species could not be confirmed<sup>m</sup> due to the paucity of material. Only once fruiting specimens were collected from Bendol. Tubers brought from the above said locality have been cultivated in Baroda University Botanical garden, though they are growing well they have not produced flowers so far. In all other essential characters our specimens resemble with Eulophia nuda Lindl. So this species at present is provisionally included.



Fruits: 12.10.1962.

Bedi 3503, 3504, 3505 ( 12.10.62 )

Naldana pani, Bendol in rocky places in dense

Carvia callosa clumps

Plant is very rare, inspite of repeated efforts  
flowering specimens could not be collected from the  
region.

Deccan, Konkan, N. Kanara. Tropical Himalaya,  
Sikkim, W. Ghats; Nipal, Ceylon, Philippines & China.

#### ZINGIBERACEAE

Stemless herb; less than 75 cms., tall;  
leaves few 3-5; spikes produced directly  
from the root stock. . . . . Curcuma

Herbs with long leafy stems; more than  
100 cms., tall; leaves many; spikes  
produced at the top of the leafy stem. . . . . Costus

#### Curcuma Linn.

Curcuma inodora Blatter in Journ. Asiatic Soc. Beng.  
26(1):357-358; Santapau in JBNHS. 51:135-139,  
t.1; Phatak & Oza in JBNHS. 56:368-369.



A monsoon herb about 60 cm., high. The number of leaves per plant are 3-5. Spike 10-20 cms. long; bracts rosy pink to purple, darker at the apex. Corolla pink to purple with a yellow streak at the lip.

Local name: Kapuria.

Flowers: July to September.

Bedi 24, 251, 2970.

Fairly common in the hilly forest regions, especially at higher altitudes. Often noted under the shade of the trees, sub-gregarious in habit. Also observed in open places on different plateaus.

Gujarat, Deccan, W. Ghats.

Costus Linn.

Costus speciosus (Koenig) Smith in TLS. 1:249, 1800;  
FBI. 6:249; C. 3:243; Gr. 208; Wight, Icon.  
t.2014; D. & G. 274; Sant. 247.

Banksia speciosa Keening in Retz. Obs. 3:75, 1783.

A soft herb with large leafy stem, 1-2.5 m., tall. Leaves spirally arranged, leafy bases pink red. Flowers white, yellowish in the center; bracts bright red to purple.



Flowers & Fruits: July to October.

Bedi 50, 140, 645, 1640.

Not common. Only noted along the banks of a stream at Kanjeta and at Bhanvaro plateau.

Konkan, Salsette; Khandala; S.M. country.

More or less throughout India; Ceylon; Malay Islands.

Often cultivated in gardens.

This species has not been reported as wild in forest areas, from this part of the country, hence worth recording.

#### MUSACEAE

#### Musa Linn.

Musa rosacea Jacq. Hort. Schoenb. 4:22, t.445, 1804;  
FBI. 6:263; C. 3:247; Fischer, 1046.

M. ornata Roxb. Hort. Beng. 19, 1814 nom.nud & Pl.  
Ind. 1:667; D. & G. 272.

A stoloniferous herb 80 to 180 cm., high. Flowers in drooping spikes; bracts few flowered. Fruit about 6 cm., long. Seeds many, black.

Local name: Dungar Kel.



Local uses: Natives use the seeds in local medicine. Fruits eaten by the native, even I have tasted, but not very pleasant due to plenty of seeds. Cooke, l.c. Fruits not edible.

Flowers & Fruits: November to January.

Bedi, Specimens preserved in Baroda University Botanical Museum!

Rare, noted near Patan Mata and Naldá in: D'hara (a beautiful water fall) near Bendol. Grows in almost inaccessible regions on steep rocky slope.

W. Peninsula, Konkan; E. Himalaya, Chota Nagpur, Chittagong. Java.

This species appears to be rare in India, especially Bombay Presidency, has not been reported from this part of the country, hence being recorded here for the first time.

Musa paradisica Linn. Sp.Pl. 1043, 1753; Moore in Bailey 5:185, 1957; C. 3:249; J.K. Maheshwari Fl. Dli. 332.

M. sapientum Linn. Syst. 1303, 1759; FBI. 6:262.

A large tree-like, stoloniferous herb. Fruits oblong, yellowish-green when ripe, sweet and edible. Flowers used as a vegetable. Often cultivated near



Dhenpur and at few other places, rarely in the hilly villages.

Cultivated, throughout the tropics.

#### HYPOXYDACEAE

##### Curculigo Gaertn.

Curculigo orchioides Gaertn. Fruct. 1:63, t.13, 1788;  
FBI. 6:279; C. 3:255; Gr. 215; Fischer, 1050;  
Sant. 248.

C. malabarica Wight, Icon. t.2043, f.1, 1853;  
D. & G. 276.

C. brevifolia Dryand.: Gr. 215; Wight, Icon. t.2043,  
f.2; D. & G. 276.

Herbs with blackish cylindric root stock 10-30 cms., long. Leaves linear-lanceolate, plicate. Scape very short, bracts and ovary hidden among the leaf sheaths. Flowers yellow; lowest in the raceme 2-sexual, the upper male. Capsules 1 cm., long, hypogeous 1-4 seeded.

Local name: Kali musli.

Local uses: Rhizome is used by the natives in case of obstructed delivery or to easen the delivery.



Flowers: July to September.

Fruits: August to September.

Bedi 14, 188, 2634, 2945.

Very common during monsoons, usually observed growing under the shade of the trees in the forest areas. Often noted in open moist places and in humus rich soil.

Konkan; Kanara; Maharashtra; Mahableshwar, Bengal, Assam, W. Peninsula; Java.

#### TACCACEAE

##### Tacca Forst.

Tacca leontopetaloides (Linn.) O. Kuntze, Rev. Gen.

Pl. 3:311, 1893; Carter in Fl. Trop. East Afr. 1, t.1, 1962; Raizada<sup>2</sup> in Ind. For. 92(5):324, 1966.

Leontice leontopetaloides Linn. Sp.Pl.313, 1753.

Tacca pinnatifida Forst. Char. Gen. 70, t.35, 1776; FBI. 6:287; C. 3:262; D. & G. 276.

Perennial herbs with globose root stock, 15-30 cm. in diameter. Leaves large 30-120 cms., in diameter, 3 partite, the segments variously pinnatifid; petiole 30-100 cms. long. Scape longer than the petiole, variegated with pale & dark green stripes, 15-35 flowered. Flower greenish-yellow with purple tinge; bracts large leafy.



Local name: Badhva.

Local uses: Root stock eaten by the local tribe and is also used as a source of starch.

Flowers: July to September.

Fruits: August to September.

Bedl 37, 280, 2637.

Commonly found growing along the banks of small streams and other moist spots in the hilly forest regions near Bendol, Panam and Alindra.

*Peninsular India, Eastern India, Pacific Islands. Australia*

#### AMARYLLIDACEAE

#### Crinum Linn.

Crinum latifolium Linn. Sp.Pl. 291, 1753; FBI. 6:283; C. 3:253; Fischer, 1051; Sant. 249; Et. Ic. t. 2019-20.

Herbs with sub-globose tunicated bulbs 10-15 cms. in diameter. Leaves numerous 30-45 X 8-12 cms. Flower large 8-15 cms., fragrant, showy, white with pinkish or purplish tinge down the middle in 6 to 15 flowered umbels.

Local name: Nag Dhaman.

Flowers: July to August.

Fruits: August.

Bedl 1433, 3795, 3799.



Common near moist shady places on Ratansahal plateau, near temple. Often noted on the hilly slopes near Banvaro and on Handva hill. Few bulbs from Ratansahal have been introduced in Baroda Botanical garden and are growing very well, producing flowers and fruits;

Konkan; Deccan; Lanolia; Panchagani, Kanara.  
Burma and Ceylon, wild or cultivated.

#### AGAVACEAE

#### Agave Linn.

#### Agave Sp.

Few plants were observed near Kanjeta village, believed to be planted by Forest department. I have never seen these plants flowering and fruiting, hence correct identity could not be ascertained.

On request from Central National Herbarium and Museum vegetative specimens were sent to them for display in the museum. (As per Dr. R.H.N. Chaudhari's letter dated 21st February 1964).



## DIOSCOREACEAE

Dioscorea Linn.

Most of my specimens of the genus Dioscorea have been checked at F.R.I., Herbarium, Dehra Dun, Blatter's herbarium Bombay, Central National herbarium, Calcutta and Kew herbarium, England. I am grateful to the authorities for their help.

Key to the Dioscoreas of Ratanmahal

(After Prain & Burkill & Santapau, l.c.)

Stems climbing by twining to the left:

Leaves simple, with a large gland at the tip, 5 nerved from the base, orbicular or nearly so normally alternate.....bulbifera

Leaves compound:

Stamens 6; Leaves 3-foliate, glabrous or nearly so when old..... hispida

Stamens 3, staminodes 3; Leaves 3 and 5-foliate, rarely 7 or mixed... pentaphylla

Stems climbing by twining to the right:

Male spikes produced among the leaves, not on special leafless branches, leaves alternate or opposite or mixed, simple, usually much longer than broad. . . . . oppositifolia



Male spikes on special flowering and  
leafless branches:

Special flowering branches short,  
sometimes much shorter than the  
spikes themselves; Capsule wings  
broader than long, leaves 7-  
nerved from the base. . . . . wallichii

Special flowering branches longer  
than the leaves and much longer  
than the spikes:

Leaves much longer than broad,  
base cordate with very straight  
sinus. . . . . belophylla

Leaves usually as broad as  
long, cordate with hyaline  
margin, 5-7 nerved, lower  
surface permanently pubescent.... puber

Dioscorea bulbifera Linn. Sp.Pl. 1033, 1753; Wt. Ic.  
t. 878; C. 3:265; Gr. 219; Fischer, 1055;  
Prain & Burkill, Ann. RBC., 111-132, tt.49-51;  
Sant. 250; Santapau, in JBNHS. 49:628, 1949;  
Burkill, in Fl. Males. 1, 4(3): 311, 1951.

D. sativa Thunb., Fl. Jap. 151, 1784; FBI. 6:295  
(excl. D. cliffortiana) (non. Linn.).

A common twiner. Leaves large, glabrous. Bulbils  
in the axil of the leaves, variable in size and shape.  
Flowers white or greenish white. Capsule reflexed, the  
wings rounded at both ends.



Local name: Kanda Vel.

Local uses: Bulbils are eaten by the natives after thoroughly boiling.

Flowers & Fruits: July to September.

Bedi 470, 523, 1474, 1793.

This is the most common specie of the Dioscoreas of Ratanmahal; often noted at Dumka, Vakesia, Khalta, Malwani, Alindra and at various other places.

Gujarat, Konkan, Deccan, S.M. country, Bengal; throughout India. Ceylon.

This plant is often cultivated by the native Bhils for its tubers and bulbils which are much larger than the bulbils found in the wild plants. I have often eaten the vegetable of these bulbils prepared by the tribal people.

Dioscorea hispida Dennst., Schluss Hort. Malab. 15, 1818; Fischer, 1055; Prain & Burkill, l.c., 188, Fl. 77-78, 14(1936); Santapau, in JBNHS. 49:629.

D. daemona Roxb., Hort. Beng. 72, 1814 & Fl. Ind. 3:805; At. Ic. t.811; FBI. 6:289; C. 3:264.

D. triphylla Linn., in Stickmann, Herb. Amb. 23, 1854 & Amoen. Acad. 4:131, 1759 (non Linn., S.Pl. 1753, Gr. 218, Nairne 344.



A large twiner, minutely prickly. Leaves usually 3-foliate, sometimes 5-lobed rarely basal upto 7-lobed; rachis somewhat prickly. Male flower with sweet smell and are in dense paniculate spikes. Female in elongated solitary spikes.

Local name: Vaz.

Flowers: July to August.

Fruits: August to October.

Bedl 2616, 2745, 2801, 3411.

Fairly common in dense, moist places in the hilly forest areas near Patan Mata, Panam, Pepargota, Alindra etc. Rare on plains.

Cooke, l.c., Not common in the Bombay presidency. Dalzell & Gibson. Rare in the hills in Konkan. Gujarat, Khendesh, Deccan, N. Kanara.

Trop. of India to Formosa, the Philippine Islands, Malaya, Tonkin.

Dioscorea pentaphylla Linn., Sp.Pl. 1032, 1753; FBI.6:289; C. 3:264; Wt.Ic. t.814; D. & G. 247; Burkill & Prain, Ann. 160-170, tt. 57 & 67 & Burkill, l.c. 315; Santapau, JBNHS. 49:631; Sant. 250.

D. jacquemontii Hook. f., FBI. 6:290, 1892.

D. triphylla Linn., Sp.Pl. 1032, 1753; Blume. En. Pl. Jav. 1:20, 1827.



A twiner with prickly stem, slightly hairy when young. Bulbils many, globose or sub-cylindric. Leaves with 3-5 leaflets rarely more; lower sometimes lobed. Female flowers in pendulous spikes. Male in racemes towards the end of the branches.

Local name: Suri

Local uses: Tubers and bulbils after careful and repeated washing and boiling are used as a vegetable. I had an opportunity to taste this vegetable. Flowers are also eaten.

Flowers & Fruits: August to October.

Bedi 170, 232, 408, 693, 3358 (Sima maal).

Though, widely distributed but not as common as the preceeding two species. Often noted twining on shrubs near Khalta, Morai, Banvaro, Pēpargota, Patan Mata, Kanjeta.

Gujarat Surat district, Burkill; Deccan, Konkan, Kanara. Throughout India.

Ceylon, Malay hills, Tropical Africa, Asia, and eastwards to the farthest isles of the Pacific.

Dioscorea oppositifolia Linn. Sp.Pl.1033, 1753; FRI.6:292; C.3:266; Gr.219; D. & G. 274, Wt.Ic.t.813; Prain & Burkill in Proc.30, & in Ann. 392, t.139; Fischer, 1056; Santapau in JBNHS. 1.c. 632; Sant. 251.



A glabrous twiner on shrubs and small trees. Stem and petiole reddish or purple sometimes greenish. Leaves opposite or sub-opposite, 3-5 nerved, shining glabrous. Male flowers in spikes which are grouped in the axil of the leaves. Female flowers in single, decurved spikes. Sings of the capsule broader than long.

Flowers and Fruits: August to October.

Bedi 2603, 2817, 2997.

Restricted to only hilly forest region of Ratannahal, often noted at Pepargota, Banvaro, Kanjeta, Ratannal near temple.

N. Ghats, Deccan, Kanara, E. & W. Coasts of India, Assam, Ceylon.

Dioscorea wallichii Hook. f. FBl. 6:295, 1892; Prain & Burkill in Prodr. 31 & in Ann. 281, t.115; Fischer, 1056; Santapau, l.c, 633; Sant. 251; Chavan, Bedi & Sabnis, Curr. Sc. 30; 191-192, 1961.

A large twiner on shrubs and trees. Tubers about 60 cm., or more long. Leaves large, thick, glabrous with shining surface, 7-9 nerved. Flowers white or pink. Capsule large, 3-winged broader than long. Seeds winged.



Local name: Ambonia.

Flowers and Fruits: August to October.

Bedi 994, 1042, 1470, 2196, 3412.

Fairly common in the hilly forest region, near dense shady places, often noted at Bendol, Banvaro Khari hill, Kanjeta, Patan Mata.

W. Ghats, Khândesh, Deccan, Konkan, N. Kanara, Madras.

India to Sahn Plateau and Tennasserim, in moist hilly forest, from sea level to 900 m. alt.

My specimen resemble more with var. vera mentioned by Prain & Burkill. l.c.

Aeginetia indica was reported as a total root parasite on the root of this plant. Chavan, Bedi, Sabnis. l.c.

Dioscorea belophylla Voigt. Hort. Sub. Calc. 653, 1845;  
Prain & Burkill, in Proc. 36, & in Ann. 343,  
t. 127; Fischer, 1056; Santapau, l.c., 634;  
Sant. 251.

A large twiner. Leaves sagittate ovate, upper cordate ovate, 5-nerved, lower alternate, upper usually opposite. Male flowers in spike on special leafless branches. Capsule covered with small hairs.



Flowers & Fruits: August to September.

Bedi 2820, 2821 (6.8.62 Ratan Mal).

Rare, not common, only noted on the way to Ratneshwar temple from Banvaro.

W. Ghats, W. Himalayas, Kashmir, Khasia hills, Khandala, Nilgiris.

This species has not been reported from Gujarat, so it is a new record for Gujarat state.

Dioscorea puber Blume, En. Pl. Jav. 1:21, 1827; Prain & Burkill in Ann. Royal. Bot. Gard. Calcutta. 14:402, t.143, 1938; Burk. Fl. Males. 1, 4(3):333, 1951; Chavan & Bedi. JENHS. 63(3):1966.

D. angina Roxb. Fl. Ind. 3:803, 1832 excl. ref. Rump.; FBI. 6:293.

Tubers cylindric. Stem twining, round, without prickles. Leaves more often alternate than opposite, cordate, entire with hyaline margin, 5-7 nerved, with many transverse veins in between, lower surface permanently pubescent, upper sub-glabrous. Larger leaves upto 40X50 cm. It has the largest leaves of all the Dioscoreas of this region. Flowering axis densely pubescent. Male spikes 2-5 cm. crowded on long peduncles.





PLATE NO. 37

*Dioscorea puber* Blume.



Flowers & Fruits: September to November.

Bedi 3202, 3203, 3204, 3205 (1.10.62).  
(Plate No: 37)

A few plants noted twining over shrubs and small trees on the slopes of a hill along the banks of a stream at Nalwani near Kanjeta. Restricted in distribution not common.

Chota Nagpur, W.E. Bengal, S.E. Asia, Malaysia, Sumatra (West Coast), Java.

The tubers are edible and are boiled several times before use. On number of occasions, I had the opportunity of enjoying a dish prepared from the tubers by the local Shils.

This species has not been reported earlier from this part of the country and has been published by the author. New plant records from Eastwhile Bombay state, pt.111 in JBNHS. 1.c.

It is really interesting to note the occurrence of a large number of Dioscoreas in a small region. Cooke, 1.c. has only four widely occurring species and two cultivated, in the presidency.



LILIACEAE

Shrubs with aerial perennial stem; leaves minute, needle like, cladodes present. . . . Asparagus

Herbs with annual stems or scape rising from underground perennial root stocks, corms or bulbs:

Underground perennial stem larger than roots:

Aerial annual stem climbing, leafy with tendril like apex; root stock tuber like. . . . . Gloriosa

Aerial annual stems or scapes erect; leaves narrow:

Perennial, stem a corm with brown sheaths; aerial stem leafy; flowers solitary or corymbose. . . . . Iphigenia

Perennial, stem a tunicated bulb; leaves radical; scape naked, flowers racemose; perianth campanulate, 6 partite. . . . . Urginea

Underground perennial stem small or (Asphodelus) none, roots fibrous or tuberous; leaves radical:

Leaves semiterete; capsule 3-quetrous. . . . . Asphodelus

Leaves flat; capsule deeply 3-winged. . . . . Chlorophytum



Asparagus Linn.

Asparagus racemosus Willd. var. javanica Baker in  
JLS. 14:624, 1874; FBI. 6:316; C. 3:270; Sant.251.

A. sarmentosus Gr.221, 1839 (non Linn.)

A. jacquemontii Baker, loc.cit. 615, 1874.

Asparagopsis sarmentosa D. & G. 246, 1861 (non Kunth.)

A scandent, spiny, much branched, under shrub. Root stock tuberous; branches angular. Leaves linear subulate, with slightly curved spinous spur. Cladodes slender 1-2.5 cms. long. Flowers in axillary clusters which afterwards appears as racemose, white, sweet smelling.

Local name: Saslo nu Ghas; Satavari.

Local uses: Tubers sometimes eaten by the natives.

Flowers: July to October.

Fruits: September to February.

Bedi 301, 3303, 3665.

Fairly common in almost all the localities.

Gujarat, Deccan, Konkan, Kanara, Western peninsula, Java.



Gloriosa Linn.

Gloriosa superba Linn. Sp.Pl. 305, 1753; FBI.6:358;  
G. 3:274; Gr. 221; Fischer, 1061; Wight, Icon.  
t. 2047; Sant. 252.

Methonia superba Dalzell & Gibson, Bomb. Fl.205,  
1861.

A tall herbaceous climber 1.5 to 3 m. tall. Leaves ovate lanceolate, sessile, apex tapering into a tendril like coiled structure. Flowers large beautifully coloured; flower colour change with age to yellow, orange and scarlet red. Perianth segment with crisply wavy margin.

Plate No: 38

Local name: Vach Nag, Vadhavadiyo.

Local uses: Tubers used in snake bite.

Flowers & Fruits: July to September.

Bedi 250, 500, 1429.

Not common, noted at pepargota, Kanjeta and Chari.

Gujarat, Deccan, Konkan. Throughout tropical India; Ceylon, tropical Africa, Malacca, Cochin-China.





Gloriosa superba Linn.

PLATE NO. 38

Gloriosa superba Linn.



Iphigenia Kunth.

Iphigenia indica (Linn.) A. Gray in Kunth, Enum. 4:213,  
1843; FBL. 6:357; C. 3:275; Fischer 1067;  
Sant. 252.

Melanthium indicum Linn. Mant. 226.

Anguillaria indica R. Br.:Gr. 222.

A small herb with sub-globose corm, 1-2 cms. in diam.,  
tunicate with pale brown sheath. Stem 8-20 cms. high.  
Leaves grass like, alternate with sheathing leaf bases.  
flowers purple in a few flower<sup>ed</sup> terminal erect raceme.

Local name: Jungli lasan.

Flowers: July to August.

Fruits: August to September.

Bedi 16, 3071, 3103.

Usually seen growing among grasses, along the  
forest paths. In vegetative condition one has to  
put special efforts to differentiate from grasses.  
Not common only noted at Kanjeta and near Rai angana.

Deccan, Konkan. Throughout India; Ceylon,  
Australia, Philippines.

This species has not been reported from Gujarat  
so far, hence, a new record for Gujarat state.



Urginea Steinh.

Urginea indica (Roxb.) Kunth, Enum. 4:333, 1843; FBI.6:347;  
C. 3:277; D. & G. 250; Fischer 1066; Sant. 252.

Scilla indica Roxb. Fl. Ind. 2:147, 1832; Gr. 220  
(non. Baker).

Herbs with tunicated bulb. Leaves appearing after  
the flowers. Scape 30-50 cms., long. Flowers light  
brown, or dirty white, in a slender laxly flowered raceme.  
Capsule ellipsoid, 1-2 cms., long.

Local name: Panjania; Jangli Dungri.

Flowers & Fruits: March to May.

Leaves: June to October.

Bedi 2325, 2374.

Most common herb, often noted as an undergrowth  
of for<sup>e</sup>st during summer season. Less frequent at  
higher attitudes, especially in Kunvara Dugar and  
Ratan Mal plateau.

Bombay, Konkan, W. Peninsula, western Himalaya,  
Behar, Madras, Chota Nagpur; Burma; Tropical Africa.

This species has not been recorded from this  
part of the country, hence a new record.



Asphodelus Linn.

Asphodelus tenuifolius Cav. in Ann. Cienc. Nat. 3:46,  
t.27, f.2, 1801; FBI. 6:332; C.3:279;  
J.K. Maheshwari, Fl. Delhi. 337.

Asphodelus clavatus Roxb. Fl.Ind. 2:148, 1832;  
Gr. 219.

Asphodelus pauciflorus Wight, Icon. 6:27, 1853.

An annual, erect, glabrous herb, about 30 cms. tall.  
Leaves fistulous, sheathing at the base. Flowers white,  
laxly racemose. Capsule globose.

Local name: Dungro.

Flowers & Fruits: November to January.

Bedi 1009, 2066.

Found as a weed in moist cultivated fields  
near Vedbode and Tarambkach. Rare, almost absent  
in the hilly regions of Ratansahal hills.

Gujarat, Deccan. Throughout India as a weed  
in fields; Westward to the Canary Islands.

Chlorophytum Ker.

Chlorophytum tuberosum (Roxb.) Baker in JLS. 15:322,  
1875; FBI. 6:334; C. 3:281; Sant. 252; Chavan &  
Oza, 225.





PLATE NO. 39

*Chlorophytum tuberosum* (Roxb.) Baker.



Anthericum tuberosum Roxb. Fl. Ind. 1:149, 1832;  
Gr. 219.

Chlorophytum anthericoideum Dalz. in Kew. Journ.  
Bot. 2:141, 1850; D. & G. 251.

Herb with hard, short root stock, giving out thick  
fleshy fasciculated tuberous roots. Leaves radical,  
2-4 cms. broad. Scape as long or longer than the leaves.  
Flowers faint pink or white.

Local name: Janjaria.

Local uses: Roots eaten by the natives.

Flowers & Fruits: July to August.

Bedi 18, 36, 2755.

(Plate No. 39)

Common in open rocky places at higher attitudes.

Often noted as an undergrowth of forest on the hilly  
slopes during early monsoon. Rare on the plains and  
N.W. & N.E. to Panam river.

Gujarat, Deccan, Konkan, Western Peninsula.

Behar, West Bengal; Burma, Abyssinia.



## COMMELINACEAE

Fertile stamens 3, 1-3 staminodes:

Cymes arising from a spathaceous  
bract. . . . . Commelina

Cymes panicled, not arising from  
a spathaceous bract. . . . . Murdannia

Fertile stamens 6, staminodes 0. . . . . Cyanotis

Commelina Linn.

Capsule 3-celled; Cymes 1-3 flowered;  
spathes broad, hooded or funnel shaped,  
leaves ovate-lanceolate. . . . . benghalensis

Capsule 1-2 celled, spathes narrowly  
ovate-lanceolate, acute or caudate-  
attenuate; Leaves linear lanceolate. . . . . attenuata

Capsule 2 celled; Cymes 5-8 flowered;  
Spathes not attenuate. . . . . suffruticosa

Commelina benghalensis Linn. Sp.Pl.41, 1753 (non Linn.

Mant. 2:177); FBI. 6:370; C.3:291; Gr.223;

D. & G. 253; Fischer, 3:1075; Wight, Icon. t.2065;

Sant.253; J.K. Maheshwari, Fl. Delhi. 340.

Prostrate or sub-erect herb. Leafsheath with ciliate  
margin. Flowers in ovate-lanceolate spathes. Flowers  
blue.



Flowers & Fruits: July to November.

Bedi 1791, 3484.

Common as a weed in cultivated fields, among grasses and other moist localities during monsoon.

Gujarat, Bombay, Deccan hills, Poona, Belgaum, Konkan, throughout Inda. Ceylon, China, Tropical Asia and Africa.

Commelina attenuata Koen. ex Vahl. Enum. 2:168;

FBI. 6:372; C.3:293; Trim. Fl. Ceyl. 4:303;

Prain. Beng. Fl. 1082.

Commelina rajmahalensis Clarke in JLS. 11:444, 1870.

A small, diffuse herb with fibrous roots. Entire plant light pink. Leaves linear or linear lanceolate, 2-8 X 36-1.5 cms. Spathes narrowly ovate lanceolate, acute or caudate acuminate, 1.5-7 cms. long. Flowers small, blue.

Flowers & Fruits: September to November.

Bedi 1686, 3512.

Noted amongst grasses near moist spots and rarely as a weed in cultivated fields near Kanjeta and Tokerwa.

Central India, Deccan Peninsula, Bihar, Bengal. Ceylon.



Any critical note on the identity or <sup>on</sup> ~~an~~ <sup>Nom -</sup> ~~Nam~~ enclosure:

Cooke, loc.cit. is doubtfull about the occurence of this plant in the Bombay Presidency. The identity of my specimen have been confirmed by the Kew Herbarium England. So new record for Bombay state.

Commelina suffruticosa Blume, Enum. Fl. Jav. 1:3, 1828;  
FBI. 6:374, 1894; Chavan & Bedi, New plant  
records pt. III, JBNHS. 63(3):780, 1966.

Erect or sub-erect herb reaching upto 100 cms. high.  
Leaves 10-20 X 2-5 cms., biggest amongst the commelinas  
of Ratannahal. Flower faint blue. Capsule 2-celled.

Local name: Jangli Bukhla.

Flowers & Fruits: July to September.

Bedi 1601 (17.8.60), 2760, 2788, 2963.

Found as an undergrowth of forest near Jharies.

Fairly common in the hilly region.

Tropical India from Nepal, Sikkim and Bengal  
to Central India and the Malay Peninsula.

The identity has been confirmed at Royal  
Botanic gardens, Kew, England. This species has  
been reported as a new record for erstwhile Bombay  
state, loc.cit.



Murdannia Royle.

Flowers in subglobose or subcorymbose cymes at the end of the branches of the panicle; cells of the ovary 2 ovuled; capsule 3-celled with 2 seeds in each cell. . . . . malabaricum

Flowers few, in branched panicles; cells of the ovary 3-many ovuled; capsule 3-gonous, the cells 3-7 seeds in each cell.....spiratum

M. ~~nudiflora~~ (Linn.) <sup>Royle</sup>  
Murdannia malabaricum (Linn.) Santapau in JBNHS 52:658, 1955; Sant. 254.

Tradescantia malabarica Linn. Sp.Pl. (ed.2) 412, 1762.

Commelina nudiflora Linn. Mant. 177, 1767 (non Linn. 1753).

Aneilema nudiflorum R. Br. Prod. 271, 1870; FBI.6:378; C.3:298; D. & G. 253; Fischer 1, 1078.

Murdannia nudiflorum Santapau in R. Br. 51, 16(1):325, 1953.

A prostrate or sub-erect hairy herb with fibrous roots. Leaves linear or linear-lanceolate, margins strongly ciliate. Flowers in subglobose or subcorymbose cymes at the end of the branches of the panicles. Cells of the ovary 2 (rarely 3) ovuled; of the capsule 2 (rarely 3) seeded.

Flowers & Fruits: September to October.

Bedi 520, 597.



Common at moist spots among grasses and as a weed in cultivated fields near Kanjeta.

Gujarat; Surat; Godra; throughout Maharashtra, Khandala. Throughout India; Ceylon, China, Malay Islands.

Murdannia spirata (Linn.) Brueckner in Pfam. (ed.2)  
15A:173, 1930; Sant. 254.

Commelina spirata Linn. Mant. 176, 1767.

Aneilema spiratum R.Br. Prodr. 271  
1810; FMI. 6:377; C.3:296; Fischer, 1078.

A small, delicate, annual herb. Leaves lower narrowly lanceolate, acute, base cordate and asplexicaul, ribbed when dry. Flowers few in branched panicles. Petals blue.

Flowers & Fruits: 28, 29, October, 1960.

Bedi 585, 595.

Common along the banks of streams near Banvaro and Popat ka kunva. Often noted among grasses at moist spot.

Deccan: Mahableshwar; Konkan: Ratnagiri.  
Throughout India; Ceylon, Malay Islands, China.



Cyanotis Don.

Cyanotis cristata (Linn.) Schult. f. Syst. 7:1150, 1830;  
FBI. 6:385; C. 3:304; D. & G. 256; Wight, Icon.  
t. 2082; Sant. 256.

Commelina cristata Linn. Sp.Pl. 42, 1753.

Tradescantia cristata Jacq.:Gr. 223.

A glabrous herb with slender, fibrous roots. Leaves  
ovate-oblong, glabrous or with spreading hairs, ciliato.  
Capsule nearly glabrous seed black.

Flowers & Fruits: August to November.

Bedl 1781, 12.8.62 (Kanjeta).

Not common, noted near moist sandy places at  
Kanjeta and Alindra stream.

Parel (Bombay): Deccan: Mahableshwar; Konkan.  
Throughout Tropical India; Ceylon, Malay Islands,  
Mauritius, Tropical Africa.

PALMAE

Leaves simple, palmate, fan-like; fruit  
large dark brown. . . . . Borassus  
  
Leaves pinnate; fruit small orange-  
yellow. . . . . Phoenix



Borassus Linn.

Borassus flabellifer Linn. Sp.Pl. 1187, 1753; FRI.6:482  
(excl. B.aethiopum); C.3:321; Blatter. Palms.  
Brit. Ind. 174-213, tt.38-39; Sant. 257.

B. Flabelliformis Murr. Syst. (ed.13) 827, 1774  
(ex Cooke); Gr. 226; D. & G. 278.

Local name: Tad.

Local uses: The leaf stalks or peduncles are  
tapped for a refreshing drink known as Neeru, which  
after fermentation forms "Tadi" an intoxicant  
drink. Gur is also prepared out of this. The  
fruits are eaten. Leaves used for thatching, mats.

Flowers & Fruits: January to May.

Bedi, fairly common and abundant in the plains  
near Ratanmahal hills.

(Plate No. 40)

Commonly observed near human inhabitation,  
along roadsides, near cultivated fields, rare in  
forest interiors.

Cultivated throughout India.

Phoenix Linn.

Phoenix sylvestris (Linn.) Roxb. Hort. Beng. 73, 1814  
nom. nud. & Fl. Ind. 3:787, 1832; FRI.6:425;  
C. 3:311; D. & G. 278; Fischer<sup>1098</sup>; Blatter Palms  
3 & tt. 2-3; Sant. 257.





PLATE NO. 40

Borassus flabellifer Linn.

Various plants grow in the pockets formed by the large leaf bases. Common are: Euphorbia nerifolia L.; Celastrus paniculata Wall.; Azadiracata indica A. Juss. etc.



Elate sylvestris Linn. Sp.Pl. 1189, pro parte.

A tall, unbranched, erect palm. Leaves pinnate 2-4 m., long. Male inflorescence white, scented. Fruit 2-4 cms. long, ellipsoid, orange yellow.

Local name: Khajuri.

Local uses: Tree is tapped for its sugary juice which is fermented into a country liquor. Leaves are used for thatching the roofs, for mats and baskets.

Flowers: March to April.

Fruits: May to September.

Bedi, fairly common near villages and along the banks of the Panam river.

Common along the banks of the Panam river and other streams.

Common throughout India.

Cocos nucifera Linn. Sp.Pl. 1189, 1753; FBI. 6:482;

G. 3:322; Bailey Man. Cult. Pl. 175.

Only one small plant has been observed by the author, which is cultivated by a native Bheel near his hut at Pipargota.



## ARACEAE

Floating stemless herbs; leaves sessile  
in a rosette like tuft. . . . . Pistia

Terrestrial tuberous herbs:

Leaves simple, ovate with a broad  
triangular basal sinus. . . . . Calocasia

Leaves compound or deeply divided,  
appearing after the flowers:

Leaves 3 sect . about 60 cms.  
in expansion; each primary  
division 2-sect . . . . . Amorphophallus

Leaves deeply divided into  
5-10 ovate-lanceolate, acuminate  
segments. . . . . Arisaema

Pistia Linn.

Pistia stratiotes Linn. Sp.Pl. 963, 1753; FRI.6:497;  
Gr.200; D. & G. 281.

A small, aquatic, free floating, stemless herb.  
Leaves sessile in a rosette like tuft, densely pubescent  
on both surfaces.

Flowers: August to September.

Bedi 3046, 3047.



Rare, only noted near the margins of  
Dhenpur tank.

Common in tanks throughout Gujarat and Maharashtra  
state. India and other Tropical regions.

Colocasia Schott.

Colocasia esculenta (Linn.) Schott. Melet. 1:18, 1832;  
Sant. 261.

Arum esculentum Linn. Sp.Pl. 965, 1753.

Arum colocasia Linn. Sp.Pl. 965, 1753, Gr.228.

Colocasia antiquorum Schott, Melet. 1:18, 1832;  
PBI. 6:523; Engler in Pfreich. 71:65; C.340.

A glabrous herb with tuberous root stock. Leaves  
ovate with a broad triangular basal sinus. Spathe  
long, caudate acuminate, pale yellow.

Local name: Jungli Arvi.

Local uses: Starchy root stock eaten by  
the natives.

Flowers: August to November.

Bedi 214, 1795, 3507.

Often cultivated by the natives for its tuberous  
root stock which is eaten by the natives. Often noted  
in large patches near Pp̄par̄gota. May be an escape!  
Root stock in the later is generally thinner.



Amorphophallus Blume. ex Decne. (nom.cons.)

Amorphophallus commutatus (Schott.) Engler in DC. Mon.

Phan. 2:319, 1879 & in Pfeich. 48:95; G.3:537;  
Blatt. & McC. 27; Sant. 260.

Conophallus commutatus (Schott.) in Bonpl. 7:28,  
1859.

Dracontium polyphyllum Gr. 229, 1839 (non Denst.)

Amorphophallus sylvaticus D. & G. 259, 1861 (non Kunth.)

An annual with spherical, depressed, small corm.

Leaf solitary, very large, 3 section, each primary  
division 2 section. Flowers on a long peduncle. Spathe  
brown-purple outside, pinkish purple inside with offensive  
odour.

Local name: Jungli suran.

Flowers: May to June.

Leaves: July to August.

Bedi 2633, 3770.

Often noted under the shade of trees in forest  
areas, also recorded as a weed in cultivated field.

Konkan; Maharashtra, Gujarat. Western Peninsula.



Arisaema Mart.

Arisaema murrayi (Graham) Hook. in Bot. Mag. t. 4388,  
1848, FBI. 6:507; C. 3:332; D. & G. 258;  
Blatter. and McC. 18. Fischer 3:1106.

Arum murrayi Graham. Cat. 229, 1839.

A small herb with tuberous roots. Leaf solitary,  
coming up after the flowers, peltate, deeply divided into  
3-10 ovate-lanceolate, acuminate segments. Spadix broad  
below, narrow upward. Male inflorescence scattered with  
a few neutral above them. Female inflorescence ovaries  
many, crowded, bright red when ripe. Berrys red.

Local name: Vagari.

Local uses: Berries are used as a vegetable.

Flowers: May to June.

Leaves: July to September.

Bedi, Specimens preserved in the Museum!

Not common, noted near the out skirts of forest  
near Kanjeta.

Konkan, Matheran, Khandala.



## POTAMOGETONACEAE

Potamogeton Linn.

Potamogeton nodosus Poir. in Encycl. Menth. Bot. Suppl.  
4:535, 1816; Dandy in JLS. 50:531, 1937;  
Subramanyam. 95.

P. indicus Roxb. Fl. Ind. 1:452, 1820; *ibid* 4:452,  
1832; FBL. 6:565; C. 3:349; Gr.200; D. & G. 248;  
Sant. 261.

An aquatic herb. Stem smooth, branch terete. Leaves  
petiolate, upper smaller, floating, lower submerged,  
much larger membranous. Peduncles axillary or leaf-  
opposed 2-5 cms., long, densely flowered; flowers pink.

Flowers & Fruits: November.

Bedi 2867, (11.8.62).

Rare, only noted near the margins of Dhenpur  
tank. Not observed from any other locality in the  
Ratanmahal.

Western Deccan. Throughout the plains of  
India; Ceylon, Malay.



## ERIOCAULACEAE

Eriocaulon Linn.

Eriocaulon quinquangulare Linn. Sp.Pl. 87, 1753; Fl. G: 582;  
C. 3: 361; Gr. 230; D. & G. 280. Trimen. 5: 9.

A small, erect herb with flat, glabrous, membranous leaves. Peduncles 5-10 cms., tall. Heads globose ovoid.

Flowers & Fruits: August to October.

Bedl 644, 1547, 3054.

Common weed in rice fields, during the middle and after monsoon. Rare, in the hilly forest region.

Konkan. Throughout India; Ceylon.



Key to the genera of Cyperaceae

1. Glumes all distinctly arranged (see also Fimbristylis); hypogynous bristles 0..... Cyperus
2. Glumes spirally arranged (basal ones sometimes distinct in Fimbristylis); hypogynous bristles or scales sometimes present:
  2. Style-base dilated and constricted or articulated about the nut:
    3. Hypogynous bristles present; style usually persistent; leaves 0..... Eleocharis
    3. Hypogynous bristles 0; leaves usually developed:
      4. Style-base persistent, if falling, not leaving a tumour on the nut..... Fimbristylis
      4. Style deciduous, leaving a tumour on the nut. . . . . Bulbostylis
  2. Style-base not dilated, continuous with the nut:
    5. Leaves ligulate; scales petal like. . . . . Fuirena
    5. Leaves eligulate; hypogynous bristles present (absent in some Scirpus). . . . . Scirpus



# Key to the identification of Cyperaceae

This artificial key which directly leads to the identification of the plants, is included here with the hope that the identification of the members of this difficult family becomes easier. For routine keys to the species of the various genera, refer to Cook's Flora of the Presidency of Bombay, Vol.III (Reprinted edition) or Flora of the Presidency of Madras, Vol.III (Reprinted edition) by C.E.C. Fischer. (Key adapted from Sabnis in Bull. Bot. Surv.Ind. 4(1-4) 199-201, 1962).

1. Inflorescence terminal;

2. Spikelet solitary:

3. Hypogynous bristles present:

4. Plants robust, stem ter<sup>a</sup>ta, . . . . . Eleocharis dulcis  
 septate when dry. . . . .

4. Plants small, slender, . . . . . Eleocharis  
 bristles white. . . . . atropurpurea

3. Hypogynous bristles absent; lower  
 glumes of the spikelets

distichous or nearly so. . . . . Finbristylis ovata



2. Spikelets in sessile heads or clusters:

5. Glumes of the spikelets spirally arranged:

6. Styles bifid. . . . . Pimbristylis  
argentea

6. Styles trifid. . . . . Bulbostylis  
barbata

5. Glumes of the spikelets distichously arranged:

7. Heads usually greenish:

8. Glumes winged in the lower half. . . . . Cyperus  
brevifolius

8. Glumes not winged. . . . . Cyperus  
michelianus  
Sub sp. pigeaus

7. Heads white, spikelets in angular or lobed heads. . . . Cyperus triceps

2. Spikelets in umbels:

9. Umbels usually simple:

10. Glumes of the spikelet spirally arranged:

11. Style bifid; nut pale, trabeculate and ribbed....Pimbristylis  
dichotoma var. diphylla

11. Style trifid; nut rounded, trigonus, irregularly tuberculate. . . . . Pimbristylis  
tenera



10. Glumes of the spikelets distichously arranged:
12. Spikelets 1 flowered. . . . . Cyperus cyperoides
12. Spikelets many flowered:
13. Spikelets bifid. . . . . Cyperus pumilus  
(spikelets sometimes in heads)
13. Spikelets trifid:
14. Spikelets in globose heads  
on the rays of an umbel;  
glumes obtuse. . . . . Cyperus difformis
14. Spikelets spicate on the  
umbel rays:
15. Annual, small or  
medium:
16. Spikelets golden  
yellow; glumes with  
squarrosely recurved  
arista. . . . . Cyperus squarrosus
16. Spikelets green,  
compressed, but with  
a median ridge on  
each side. . . . . Cyperus compressus
15. Perennials; stolon long,  
slender; glumes plicate  
striate. . . . . Cyperus esculentus
9. Umbels usually compound:
17. Stigmas 2; plants short. . . . . Fimbristylis  
dichotoma



## 17. Stigmas 3, plants not robust:

18. Spikelets yellowish brown in  
globose heads; glumes with  
continuous glistering wings  
at the back. . . . . Cyperus  
pseudohyllingoides
18. Spikelets greenish yellow, not  
in heads; glumes without a  
wings. . . . . Cyperus tenuispica

## 17. Stigmas 3, plants robust:

19. Stems not septate or articulate  
when dry; spikes cylindric many  
flowered. . . . . Cyperus  
eleusinoides
19. Stem septate or articulate  
when dry; spikelets reddish  
nut trigonous. . . . . Cyperus pangorei

## 9. Umbels usually decompound:

20. Glumes distichous, obtuse, golden  
yellow. . . . . Cyperus iria
20. Glumes spirally arranged; stem  
triquetrous above; spikelets  
subglobose. . . . . Fimbristylis  
littoralis

## 1. Inflorescence lateral:

21. Large middle sized herbs; stem 20-200 cm., tall:
22. Nut marked with transverse  
wavy lines, hypogynous  
bristles 0. . . . . Scirpus roylei



22. Nut not marked with transverse  
wavy lines; hypogynous bristles  
present, plumose. . . . . Scirpus littoralis  
var. subulatus
21. Small tufted, slender annual  
herbs; less than 20 cm. tall..... Scirpus  
squarrosus
1. Inflorescence terminal and/or axillary;  
plants leafy throughout their length;  
ligules present; spikelets many  
flowered in dense clusters. . . . . Fuirena ciliaris

CYPERUS Linn

Cyperus brevifolius (Rottb.) Hassk. Cat. Hort. Bogor.  
24, 1844; Kuekenh. 600; Sant. 265; Sabnis  
BBSI. 4:194, 1962.

Kyllinga brevifolia Rottb. Descr. et Icon. 13, t.4  
f.3, 1773; Clarker in FBI. 6:688 & illustr. Cyp.  
t.1, f.1-4, 1909; Blatt & McC. in JBHMS. 37-25.

An erect rhizomatous sedge. Spikelets in light  
green heads.

This species is more common than C. triceps and is  
usually found in almost all the hilly forest regions of  
Ratanmahal. This species is not mentioned in Cooke's  
flora of the Bombay Presidency.

Flowers & Fruits: July to November.

Bedi 58, 2018, 2638.



Fairly common in all hilly forest regions.

Throughout the country.

Ceylon, Malacca; all warm countries except the mediterranean.

Cyperus michelianus (Linn.) Link. Sub. Sp. pygmaeus  
(Rottb.) Aschers et Graebner, synopsis 2:273, 1903;  
Kuckenth. 312, f. 35; F.-G; Sant. 267.

Scirpus michelianus Linn. Sp. Pl. 52, 1753; C. 3:410.

Cyperus pygmaeus Rottb. Descr. et Icon. 20, 1773;  
C. 3:372.

Juncellus pygmaeus C.B. Clarke in FBI. 6:596;  
Fischer, 3:1133.

J. michelianus (Linn.) Blatt. & McC. in JHNS. 37:33,  
1934.

A small annual prostrate or suberect herb. Spikelets many compact in terminal heads; heads greenish, becoming brown or yellow on drying. Glumes of the spikelets distichously arranged.

Common on moist sandy banks of streams and Panam river. Often noted around the margins of Dhenpur tank and near ditches on sandy soil.

Flowers & Fruits: July to January.

Redl 2875, 2876.

More common on plains, Vakasia, Dhenpur, Vedhbedh etc.

More or less throughout India.



Cyperus Linn.

Cyperus triceps (Rottb.) Endl. Cat. Hort. Vindob. 1:94, 1842; Kuekenh. 578; Sant. 268.

Kyllinga triceps Rottb. Descr. et Ic. 14, t.4, f.6, 1763; FBL. 6:587; C. 3:391.

A small tufted herb 5-20 cm. tall. Spikelets white in angular heads.

Common in open grassy places during monsoon. Often noted on moist places and as a weed in cultivated fields. Sometimes seen growing as an undergrowth of the forest in association with C. brevifolius (Rottb.) Hassk.

Flowers & Fruits: July to November.

Bedi 56, 2014, 2717.

Fairly common near Bendol, Chari, Kanjeta, Pepargota and in various other forest areas.

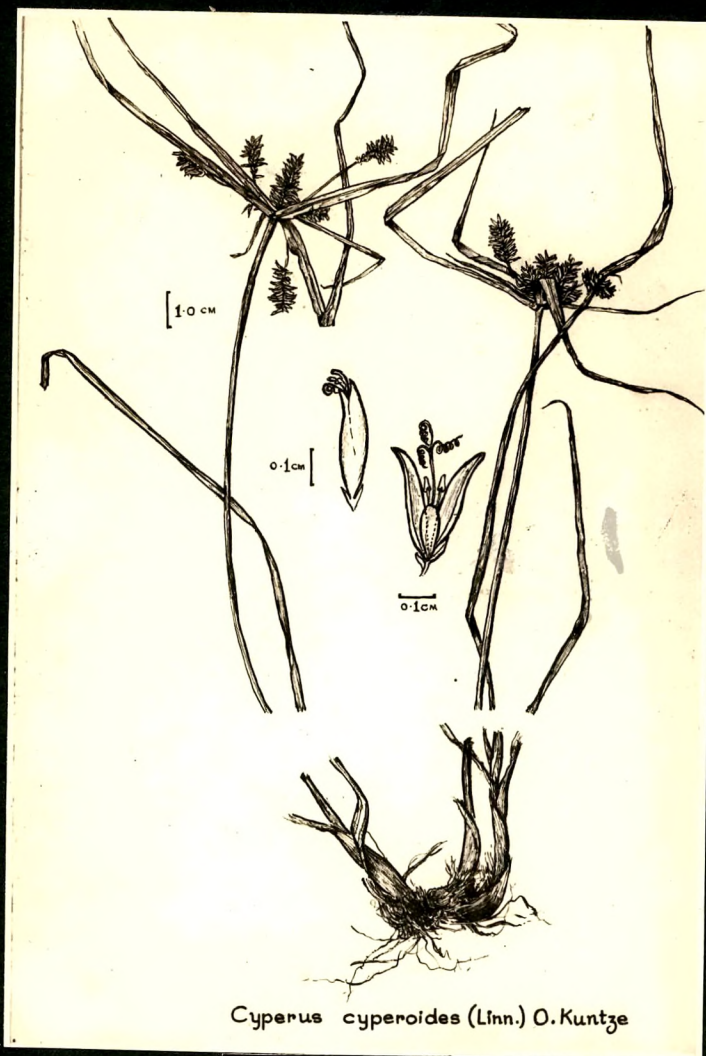
Cyperus cyperoides (Linn.) O. Kuntze, Rev. Geogr. 2:333, 1898; Kuekenh. 514; Sant. 265.

Scirpus cyperoides Linn. Mant. 2:181, 1771.

Mariscus sieberianus Nees in Linnaea 9:289, 1835; FBL. 6:622; Clarke, Illustr. Cyp. t.23, f.5-6, 1909.

M. panicus Vahl. Enum. 2:337; FBL. 6:620; Clarke. Illustr. Cyp. t.22, f.1-2, 1909; Blatter. & McC. in JBNHS. 37:533.





*Cyperus cyperoides* (Linn.) O. Kuntze

PLATE NO. 41

*Cyperus cyperoides* (Linn.) O. Kuntze.



At all slender, stolon bearing perennial sedge,  
20-60 cm. tall. Spikelets usually 1-flowered, divaricately  
arranged in simple umbels.

Commonly seen growing under the shade of the trees,  
especially under Madhuca indica often associated with  
Curcuma inodora and Curculigo orchoides.

Cooke has not reported this species from Gujarat state.

Flowers and Fruits: July to November.

Bedi 33, 61m 1560.  
(Plate No: 41)  
Pepargota, Kanjeta, Morai and at various other  
places in the hilly forest regions.

Cyperus pumilus Linn. Cent. Pl. 2:6, 1756 & Sp.Pl. ed.2:69,  
1762; C. 2:370; Kuekenh. 375, f.44, A-E.

Pycnus pumilus Domin. in Bibl. Bot.85:417, 1915;  
F. 3:1132.

P. nitens Nees in Nova Acta Nat. Cur. 19 (Suppl.1):53,  
1843, FBI. 6:591.

A small annual herb 2-20 cm tall. Stem slender  
tufted. Spikelets straw coloured in umbels, sometimes in  
many flowered and parallel sided heads.

Common in marshy places, along the banks of streams  
and Panam river. Often noted among grasses and as a weed  
in cultivated fields.



Flowers & Fruits: August to December.

Bedi 84, 1034, 1467, 1737, 3488.

More common in open places on the plains than in the hilly forest regions.

Throughout India.

Ceylon, Malaya, China, Trop. Africa and Australia.

Cyperus difformis Linn. Cent. Pl. 2:6, 1756; FBI. 6:599; C. 3:376; F. 3:1139; Kuekenth. 237, f.27 F-H.

A very variable plant 10-50 cm. tall. Spikelets in globose heads on the rays of umbels, golden yellow or greenish in young condition.

Flowers & Fruits: August to March.

Bedi 88, 1041, 2017, 3590.

Common weed in cultivated fields; often noted along the banks of streams and Panam river.

Common throughout.

All most all over India and the Old world.

Cyperus squarrosus Linn. (non. C.B. Clarke) Cent.

Pl. 2:6, 1756; Mirashi & Donde in Bull. Bot. Soc. Nag. 3(2):48, 1962.

Cyperus aristatus Rottb. Descr. et. Icon. 23, t.6, f.1, 1773; FBI. 6:606; C. 3:380; Blatter. & McC. 263.



A small tufted annual glabrous herb. Spikelets golden yellow, green or brown, spicately arranged on the rays of an umbel. Glumes provided with squarrosely, recurved arista.

Flowers & Fruits: August to November.

Bedi 124, 138, 1603, 3487.

Noted as a weed in cultivated fields and on loose gravelly soils.

More or less throughout India.

Ceylon, Tropical Africa, Australia, the whole of America.

Cyperus compressus Linn. Sp.Pl.1:46, 1753; FRI. 6:605; C. 3:379; F. 3:1140; Kuekenh. 156, f.4, A-D.

A small marshy tufted sedge. Spikelets compressed green when young then turns dark brown.

Flowers & Fruits: July to February.

Bedi 1, 522, 1621, 2924.

Fairly common on moist spots, among grasses, along the banks of streams, Panam river. Very frequently seen as a weed in cultivated fields during monsoon.

Throughout India.

In nearly all tropical and sub-tropical countries.



Cyperus esculentus Linn. Sp.Pl. 1:45, 1753 & 2:67, 1762;  
FBI. 6:616; Sed<sup>9</sup>ick in JBNHS. 25:696; P.3:1138.

A tall erect perennial sedge with long slender  
stolons. Spikelets plicate striate.

Flowers & Fruits: July to December.

Bedi 254, 1590, 2585, 2641.

Common almost everywhere. Usually noted along  
the banks of streams, Panam river and very frequently  
noted as a weed in cultivated fields.

Upper Gangetic plains, from the Ganges plain  
to Nilgiris and Anamalias.

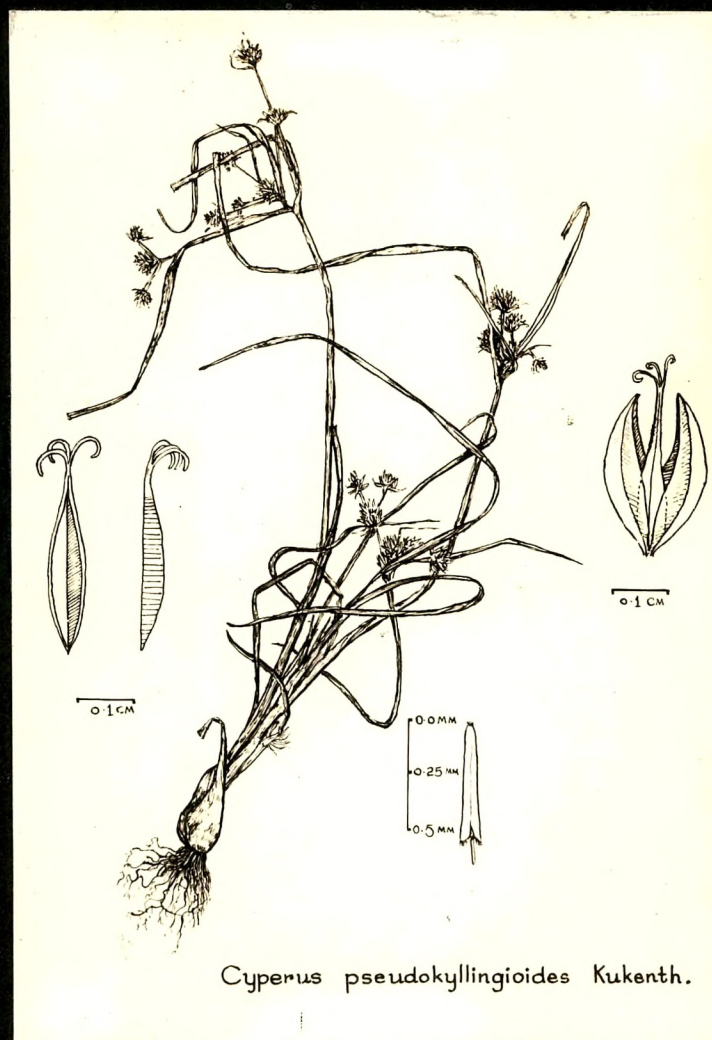
In nearly all the warm countries, especially  
America, S. Europe and Africa.

Cyperus pseudokyllingoides Kuekenthal in Engl. Pflazen  
reich. 101 & 501, 1936.

Courtosia cyperoides Nees in Wight, Contrb. Bot.  
Ind. 92, 1834; FBI. 6:625; C. 3:391.

An erect, annual glabrous herb 15-50 cm. high.  
Spikelets yellowish brown to golden yellow in dense  
globose heads on the rays of an umbel. Glumes with  
continuous glistening wings.





*Cyperus pseudokyllingioides* Kuekenh.

PLATE NO. 42

*Cyperus pseudokyllingioides* Kuekenh



Flowers & Fruits: August to November.

Bedi 391, 1588, 1951.

(Plate No: 42)

Rare, restricted in distribution. Often collected from a semidried ditch near Ratneshwar Maharaj temple on Ratanmahal plateau, at an altitude of 620<sup>m</sup>/M.S.L.

S.E. & N.E. India.

Tropical Africa, Malaya, Madagaskar.

Cyperus tenuispica Steud. Syn. Cyper. 11, 1855;

Kukenth. 245.

C. flavidus C.B. Clarke in FBI. 6:600; C. 3:375;

Sed<sup>g</sup>wick in JBNHS. 25:691.

A slender, tufted annual herb. Stem triquetrous. Inflorescence in compound umbels. Achenes globose, obovoid, trigonous.

Flowers & Fruits: August to November.

Bedi 1902, 1945.

Inhabits near moist sany<sup>d</sup> places along the bank of streams.

More or less throughout India.

Ceylon and warm regions of the old world.



Cyperus eleusinoides Kunth, Enum. 2:39, 1837. FBL. 6:608;  
Woodrow in JBNHS. 13:430; Blatter. & McC. 37:267;  
F. 3:1136.

A large stout sedge with woody rootstock, 30-130 cm.  
high. Inflorescence a compound umbel. Spikelets many  
flowered; glumes densely imbricate.

Flowers & Fruits: During & after monsoon.

Bedi 1585, 5584.

Commonly seen growing along the banks of streams  
and other marshy places.

Gujarat, Sind, Punjab, Upper Gangetic plains,  
Naga hills, Khandesh, Deccan, Konkan, S.M. Country,  
Madras.

Ceylon, Tropical and warmer parts of Asia, Africa  
and Australia.

Cyperus pangorei Rottb. Descr. et Icon. 31, t.7, f.3,  
1773; Mirashi & Donde in Bull. Rott Soc. Nagpur  
3(2):49, 1962.

C. corymbosus Rottb. Descr. et Icon. 42, t.7, f.4,  
1773; FBL. 6:612; C. 3:383.

A robust. Perennial, stoloniferous sedge. Stems  
75-150 cm. high. Spikelets reddish in compound umbels;  
glumes close to the rachilla.



Flowers & Fruits: July to January.

Bedi & Sabnis 339a.

Throughout India.

Ceylon, China, Japan, Tropical Asia, Africa,  
America and Madagascar.

Cyperus iria Linn. Sp.Pl. 1:45, 1753; FRI. 6:606; C.3:300;  
Trim. 5:18; Blatter & McC. 37:264.

An annual erect tufted sedge. Stem triquetrous.  
Umbels decompound. Spikelets few flowered, greenish  
brown to yellow; glumes loosely imbricate.

Flowers & Fruits: July to January.

Bedi 186, 1076, 1625, 2761.

Fairly common in almost all the areas. Very  
common weed in cultivated field. This is the most  
common species of the genus Cyperus of Ratanmahal.

Throughout India.

Ceylon, China, Japan, Malaya, Australia, Persia,  
Afghanistan, Tropical Africa.

#### Eleocharis R. Br.

Eleocharis atropurpurea (Retz.) Kunth, Enum. 2:151, 1837;  
FBI. 6:627; C. 3:403; Blatt. & McC. in JBNHS.  
37:537.



An annual, erect, slender herb. Spikelet dark brown, solitary, terminal, bristles white.

Common at moist spots and in rice fields during monsoon, often associated with Eriocaulon.

Flowers & Fruits: July to November.

Bedi 63, 64, 65. Bedi & Sabnis 380.

Common at various places in Gujarat.

W. Himalaya, Assam, Sind, Rajputana, Konkan,  
W. Ghats, S. & N. Kanara.

Ceylon, Tropics generally.

Eleocharis dulcis (Burm. f.) Trin. ex Henschel, *vita*  
Rumph. 186, 1833; Blake in JAA 28:227, 1947.

Andropogon dulce Burm. f. Fl. Ind. 219, 1768.

Eleocharis plataginea (Retz.) R. et S. Syst. 2:150,  
1817; F&B. 6:625; C. 3:402.

† dark green, stoloniferous sedge. Stems terete, densely tufted, appearing transversely septate when dry. Spikelet terminal, solitary, straw-coloured, narrower than the stem, glumes closely imbricate.

Common near the margins of Dhenpur tank and along the banks of Valva river. This species is very rare in the hilly forest regions of Ratanbahal.



Flowers & Fruits: July to October.

Bedl 2871.

Gujarat, Sind, N.W. India, Assam, Konkan, S.M.  
country, N. Kanara, Mysore, Travancore.

Ceylon, Malay Peninsula, Tropics of the old world.

Fimbristylis Vahl (nom. cons.)

Fimbristylis ovata (Burm. f.) Kern, Blumea 15:126, 1967.

<sup>π</sup>  
Carex ovata Burm. f. Fl. Ind. 194, 1768.

Fimbristylis monostachyos (Linn.) Hassk. Pl. Jav.  
Bar. 61, 1848; FRI. 6:649; C. 3:399.

Cyperus monostachyus Linn. Mant. 2:180, 1771.

Densely tufted, slender erect sedge. Spikelets  
solitary or rarely two; rachilla with persistent wings.  
Achenes trigonus tuberculate.

Flowers & Fruits: August to November.

Bedl, Fairly common in open grassy places.

Various places in Gujarat.

Throughout warmer parts of India.

In all hot countries.



Fimbristylis argentea Vahl, Enum. 2:294, 1806; FBI.6:640;  
F. 3:1151.

A glabrous, annual, tufted herb. Spikelets cylindric in apparent heads, clusters or slightly stalked umbels. Glumes closely and spirally arranged.

Not common, noted growing near the margins of Dhenpur tank. Rare in the hilly forest regions of Ratanmahal.

Flowers & Fruits: Dhenpur (11.8.67).

Bedi 2882, 2885.

Gujarat, Central India, N. Kanara, Mysore, Nilgiris, Malabar, Travancore, Bengal.

Ceylon, Malaya, Mauritius.

Fimbristylis dichotoma (Linn.) Vahl. var. diphylla (Retz.) T. Koyama in Quart. Journ. Taiwan Museum 13:229, 1960.

Scirpus diphyllus Retz. Obs. 5:15, 1789.

Fimbristylis annua Roem et Schult. var. diphylla (Retz.) Kukenth. in Act. Hort. Gotob. 5:109, 1929.

F. dichotoma vahl. Forma diphylla (Retz.) Ohwi in Journ. Jap. Bot. 14:577, 1933.



A densely tufted perennial sedge. Stems upto 60 cm. long, slender, angled, striate. Inflorescence a simple umbel often varying. Glumes loosely arranged, mucronate, glabrous. Achenes pale, frabeculate and ribbed.

Common near moist spots, on Panam river / also noted as a weed in cultivated fields once collected along the banks of a stream near Bendo during April 1962.

Flowers: July to November.

Fruits: December to April.

Various parts of Gujarat. Throughout India.

Ceylon and all warm regions.

Fimbristylis tenera Roem. & Schult. Syst. Mant. 2:57, 1824; FBL. 6:642; Blatt. & McC. in JBNHS 37:546; Sant. 269.

F. monticola Hochst. ex Steud. Syn. Pl. Cyp. Ill. 1855; Prisen 5:60; C. 3:399.

A small much tufted slender herb 5-20 cms. high. Inflorescence usually a simple umbel. Spikelets brown. Achene round, trigonous, irregularly tuberculate.

Commonly seen growing near Jharis & as a weed in cultivated fields and other grassy places.



Flowers & Fruits: July to December.

Bedi 1606, 1626.

Throughout Gujarat, Maharashtra, S. Kanara,  
Mysore, Nilgiris, Travancore.

Fimbristylis littoralis Gaudich, in Freyc. Voy. Bot.  
413, 1826.

F. miliacea Sensus Clarke in FBI. 6:644, 1893 non.  
Scirpus miliaceus Linn.

An erect marshy herb. Umbels decompound, spikelets  
small globose. Achene white or yellow, tuberculate.

Fairly common in marshy places, in roadside ditches  
and grassy places during monsoon.

Flowers & Fruits: Tokera ( 6.9.1960)

Bedi 82, 83.

Common <sup>on</sup> at plains & in forest areas in Gujarat.

Throughout India, upto 2000 meters.

All warm regions.

Bulbostylis Kunth.

Bulbostylis barbata (Rottb.) Clarke in FBI. 6:651, 1893;  
F. 3:1153; Blatt. & McC. in JENHS 37:764.



Scirpus barbatus Rottb. Descr. et Icon. 52, t.17,  
f. 4, 1773.

Stenophyllus barbatus (Rottb.) Th. Cooke in Fl. Pres.  
Bomb. 3:401; Sedgwick in JBNHS. 26:197.

A small, slender sedge with tufted stem. Spikelets small, brown in colour; often in terminal clusters or heads. Achenes trigonous; style leaving a tumor on the achene.

Common during monsoons in open grassy places and as a weed in cultivated fields.

Flowers & Fruits: July to December.

Badi 2587, 2649.

Throughout India.

#### Scirpus Linn.

Scirpus littoralis Schrad var. subulatus (Vahl) Chiov.,  
Pl. Nov. etc. ex Aethiopia 16, 1925; Koyama in  
Canad. J. Bot. 41(7):1126, 1963.

S. subulatus Vahl. Enum. 2:266, 1806.

S. pectinatus Roxb. Mort. Beng. 81, 1814, nom.nud. &  
Fl. Ind. 1:220, 1820.



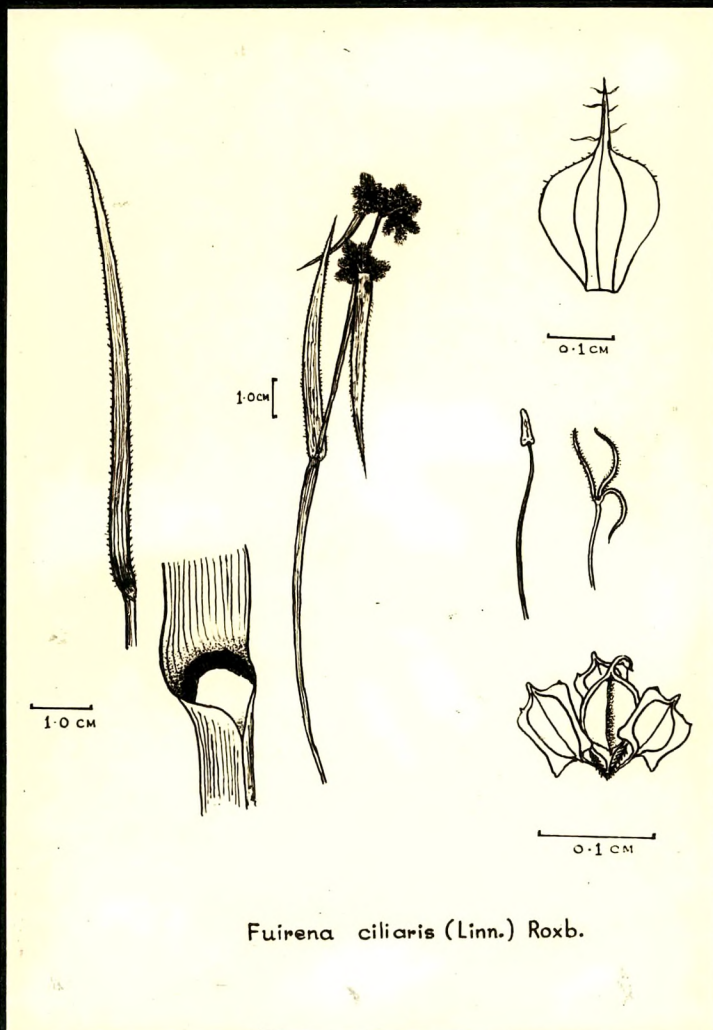


PLATE NO, 43

*Fuirena ciliaris* (Linn.) Roxb.



S. littoralis Sensus Clarke in FBL. 6:659, 1893  
non. Schrad.

A tall (1-2 m. high) sturdy sedge. Inflorescence a lateral umbel with drooping rays near the top of the stem. Glumes membranous. Hypogynous bristles plumose with moniliform hairs.

Rare, in the hilly forest regions of Ratnashahar.  
Often noted on plains, near Dumka.

Flowers & Fruits: During and after monsoon.

Bedi 3029.

Gujarat, Central India, Rajputana desert, Sind,  
Punjab, Travancore.

Ceylon, Persia, Central Asia, Africa,  
Mediterranean region.

Scirpus roylei (Nees) Parker in Fl. Upp. Gang. Plains  
3:361, 1929.

Isolepis roylei Nees in Wight, Contb. 107, 1834.

Scirpus quinqueferus Buch.-Ham. ex Boeck in Linnaea  
36:701, 1870; FBL. 6:657; C. 3:407; Blatt. & McC.  
in JENNS. 37:763.

An erect, marshy, slender herb. Spikelets golden yellow. Inflorescence borne above the middle of the stem. Achene with transverse wavy lines.



Not common, noted growing along the banks of <sup>a</sup>Válva river and in some rice field on the plains. Very rare in the hilly regions.

Flowers & Fruits: August to November.

Hedl 1927, 1928.

Gujarat, Sind, N.W. India, Central India, West Bengal, Doocan.

Afghanistan, Baluchistan, Africa.

Scirpus squarrosus Linn. Mant. 181, 1771; PBI. 6:663;  
C. 3:410; Sedgwick in JBNHS. 26:202; F. 3:1156.

A small tufted herb 5-20 cms. high. Spikelets solitary or 2-4 in a cluster. Hypogynous bristles 0. Achene trigonous.

Commonly seen growing as a weed in cultivated fields and in open grassy places, both on plains & Hilly regions.

Flowers & Fruits: During and after monsoon.

Hedl 1472, 1786, 2954.

Central Gujarat, more or less throughout India.

Ceylon, Java, China, Trop. Africa.



Fuirena Rottb.

Fuirena ciliaris (Linn.) Roxb. Hort. Beng. 81, 1814;  
Blatt. & McC. in JBNHS. 37:772.

Scirpus ciliaris Linn. Mant. 2:182, 1771.

Fuirena glomerata Lam. Ill. 1:150, 1791; FDI. 6:666;  
C. 3:412; F. 3:1158.

A small annual erect herb. Resembles with grass in vegetative condition. Leaves with ligules at the mouth of the sheath. Spikelets ovoid, in axillary clusters. Glumes with a keel having a long awn.

Not common, noted along the banks of stream near Alindra, also noted as a weed in cultivated field.

Flowers & Fruits: December.

Bedi, Sabnis 377, 378; Bedi 777.

(Plate No. 43)

Throughout the warmer parts of India.

Ceylon, Tropical Africa, S.E. Asia, Australia.



GRAMINEAE (POACEAE)

Keys to the groups tribes, genera and species of Gramineae adopted from N.L. Bor's 'grasses of Burma, Ceylon, India and Pakistan' - 1960.

Key to the groups of Gramineae

- 1. Spikelets 2-flowered, falling entire at the maturity, usually with the upper florets hermaphrodite and the lower male or barren and if the latter, often reduced to the lemma or rarely the lemma entirely absent, all alike or more often differing in size, shape and structure, frequently dorsally compressed. . . . . Panicoidae
  
- 1. Spikelets 1 to many flowered, breaking up at maturity above the more or less persistent glumes, or if falling entire, then not 2-flowered with the lower florets male or barren and the upper hermaphrodite, usually more or less laterally compressed or terete or if two flowered and falling entire, the glumes and lemmas all membranous and with a globose wrinkled seed which splits the paloa when matured. . . . . Pooideae



## Group 1 - PANICOIDEAE

Key to the tribes of Panicoideae

1. Male and female spikelets in separate inflorescences or in different parts of the same inflorescences, and of different appearance; lemmas hyaline or membranous and thinner than the Glume. . . . . Maydene
12. Spikelets all hermaphrodite, or with male or barren and hermaphrodite, spikelets mixed in the same inflorescence and or so arranged that a male or barren spikelet is near a hermaphrodite spikelet, or if unisexual then the lemma of the fertile floret indurated:
  2. Spikelets often paired, with one sessile and the other pedicelled, those of each pair similar or more often dissimilar, rarely solitary and all alike; glumes as long as the spikelet and enclosing the florets, more or less rigid and firmer than the lemmas which are both hyaline and membranous; upper lemmas usually awned... Andropogoneae
  2. Spikelets solitary or paired, more or less similar; glumes usually membranous, the lower usually smaller or sometimes suppressed; lower lemmas mostly resembling



the upper glumes in texture; upper  
lemmas papery to very tough and rigid,  
usually awnless. . . . . Panicaceae

Key to the genera of Maydeae

Female spikelets enclosed in a stony, nut like,  
polished bract. . . . . Coix

Female spikelets not enclosed in a stony,  
nut-like polished bract; female spikelets in  
clustered longitudinal rows on a very thin  
axis. . . . . Zea

Coix Linn.

Coix lacryma-jobi Linn. Sp.Pl. ed.1:972, 1753. var.  
lacryma-jobi var 264; FBI. 7:100; C. 3:517,

C. lacryma Linn. Syst. Nat. ed.10:1261, 1759; Gr.240.

A tall, glabrous herb. Florets unisexual in a raceme,  
female florets at the base of the raceme, enveloped by  
hard, polished bracts, which are bluish-gray in colour.  
The male florets are at the top of the female, drooping,  
each subtended by a bract.

A marshy herb, common along the banks of a stream on  
Kherkhali hill and at Kanjeta.



Flowers & Fruits: September to December.

Bedi 957, 1725, 1950.

Gujarat, Deccan, Through<sup>out</sup> the hotter and damper parts of India, wild or cultivated.

Ceylon, Tropical Asia, cultivated in Africa and America.

Zea Linn.

Zea mays Linn. Sp.Pl. ed.1:971, 1753; FBL. 7:102; C.3:574; Gr. 240; Bor 270, 1960.

A tall stout annual monoecious grass. Commonly cultivated crop throughout Ratansahal and surrounding hills.

Flowers & Fruits: July to October.

Bedi: Common cultivated crop.

Abnormalities observed; very rarely female axis is produced and bears male spikelets. Tribals use such fruits to cure certain diseases.

Panchasahal in Gujarat state; almost throughout India. Native of America now cultivated in many countries.



Andropogoneae

Key to the genera of Andropogoneae

1. Spikelets in pairs; spikelets of each pair similar, the sessile and the pedicelled hermaphrodite; joints of the panicle thin, linear or somewhat expanded at the top:
  2. Rachis not fragile; spikelets in cylindrical silvery thyrsus. . . . . Imperata
  2. Rachis fragile:
    3. Spikelets unawned. . . . . Saccharum
    3. Spikelets awned. . . . . Spodiopogon
1. Spikelets in each pair dissimilar, the sessile hermaphrodite, the pedicelled male or sterile, or completely absent, or if more or less similar, then the joints of the raceme and the pedicel thick and swollen:
  4. Joints of the rachis and pedicel of the pedicelled spikelet (if not much reduced) swollen, 3-angled rounded or flattened:
    5. Sessile spikelet with a male and a hermaphrodite floret; upper lemma awned:
    6. Raceme many-noded, not contained in a spathe like sheath. . . . . Ischaemum



6. Raceme 1-noded, reduced to three  
hermaphrodite spikelets, enclosed  
in a boat-shaped spathe. . . . . Apluda
5. Sessile spikelet with a hermaphrodite  
florets only or occasionally with  
a male floret below:
7. Spikelets sessile, spher<sup>h</sup>ical. . . . Hackelochloa
7. Spikelets paired, one sessile,  
the other pedicelled. . . . . Rottboellia
4. Joints of the rachis and the pedicel  
narrow, seldom thickened upwards,  
occasionally with a translucent  
longitudinal groove; sessile spikelet  
usually awned:
8. Spikelets in racemes which are not  
interrupted by spathes or solitary  
at the end of the branches; the  
racemes collect<sup>e</sup>d into whorled panicles;  
joints and pedicels not furrowed;  
spikelets dors<sup>a</sup>ally compressed. . . . . Sorghum
8. Spikelets in panicle racemes which  
are interrupted by spathes or the  
apathate racemes, digitate or in  
pairs or solitary and terminal,  
sometimes the joints and/or pedicels  
with a translucent median furrow:
9. Margins of the lower glume of the  
sessile spikelets sharply infolded,  
2-keeled; awn glabrous:



- 10. Upper lemma of the sessile, spikelet not cleft, often stipitate and passing into the awn:
  - 11. Spikelets arranged in false racemes terminating the branches of true panicle; pedicels with median translucent furrow.....Capillipedium
  - 11. Spikelets arranged in false racemes which are either solitary and terminal or sub-sessile, arranged along a central axis, but not at the tip of the capillary branches. . . . . Dicanthium
- 10. Upper lemma of the sessile spikelet 2-lobed or 3-cleft, awned in a sinus; aromatic grasses. . . . . Cymbopogon
- 9. Margins of the lower glumes inturned and rounded at the sides, at the most keeled upwards, callus mostly sharp and long; awn usually hairy:
  - 12. Racemes surrounded at the base by an involucre of homogamous spikelets. . . . . Themeda
  - 12. Racemes without an involucre. . . . Heteropogon



Andropogoneae

Imperata Cyrill.

Imperata cylindrica (Linn.) P. Beauv., Ess.agrost. 165,  
1812; Bor. 1:169, 1960.

Lagurus cylindricus Linn. Syst. Nat. ed. 10 : 878,  
1759.

Imperata arundinacea Cyr. FBl. 7:106 in part;  
C. 3:414.

An erect perennial grass with stoloniferous root  
stock. Panicle 6-16 cms. long, spikelike, sub-cylindric,  
silvery white.

This species makes first appearance, after the  
burning of undergrowth of trees and shrubs in the forest  
areas.

Flowers & Fruits: March to December.

Bedi 1294, 1297 (29.3.61, Morai).

Gujarat, Sind, Konkan and throughout the hotter  
parts of India. Ceylon, most warm countries.

Spodiopogon Trin.

Spodiopogon rhizophorus (Steud.) Pilger in Engler &  
Prantl. Naturl. Pflanzen. f. Aufl. 2:146, 119,  
1940; Sant. 293; Bor. 1:246:1960.



Andropogon rhizophorus Steud. Syn. Pl. Glum. 1, 381,  
1857.

Spodiopogon albidus (Vahl) Benth. in JLS. 19:66,  
1881; FBI. 7:108; C. 3:464. Blatt. McC. 51, t. 34.

A tufted slender leafy annual grass. Leaves suddenly narrowed into slender petiole 20<sup>8</sup> cms. long. Spikelets silky villous.

Usually grows in dense clump<sup>P</sup>s on moist spots, along the banks of streams and as an under growth of the deciduous forest. Fairly common at higher altitudes near Banvaro.

Flowers & Fruits: August to December.

Hedl 935, 3387.

Konkan, W. Ghats, Deccan, Kanara, Central Provinces, Rajputana, W. Peninsula, Madras.

### Saccharum Linn.

Saccharum spontaneum Linn., Mant. Alt. 183, 1771;  
FBI. 7:113; C. 3:465; D. & G. 304; Blatt. &  
McC. Bomb. Grasses; 45. Bor. 1:214, 1960.

A perennial grass, about 5 m. tall. Panicles silvery white 10-50 cms. long, shining, silvery white, quite elegant.



Common along the banks of streams, at Kharari, Mehendri  
and near ~~at~~ water fall <sup>at</sup> near Bendol & Ratannahal temple.

Flowers & Fruits: August to December.

Bedi 955, 1872, 1870.

Gujarat, Sind, Konkan, Deccan. Throughout India;  
Ceylon, S. Europe and warm regions of the old world,  
East Australia.

Ischaemum Linn.

Margins of lower invol.-glume of sessile  
spikelets narrowly inflexed or incurved from  
base to the apex. . . . . I. rugosum

Margins of lower invol.-glume of sessile  
spikelet broadly incurved below the middle... I. indicum

Ischaemum rugosum Salisb., Icon. Strip. Rar.1, t.1,  
1791; F.B.I. 7:127; O. 3:477; Blatt. & McC. 12,  
t.7; Bor. 184.

An annual erect herb. Leaves rounded at the base.  
lower invol.-glume of sessile spikelets closely  
transversely ribbed.



Common near moist spots in the hilly forest regions,  
often associated with other grasses.

Flowers & Fruits: September 1960 near Bendol.

Bedi 256, 297.

Deccan. All over the plains and the low hills  
of India. Burma, Malaya, Siam to China.

Ischaemum indicum (H<sup>o</sup>utt.) Merrill in J. Arn. Arbor. 19,  
320, 1938; Ser 180.

Phleum indicum Houtt. Nat. Hist. II, 13:198, t.90,  
f.2, 1782; Auctt. non.

Ischaemum aristatum Linn. Sp.Pl. 1049, 1753;  
FBI. 7:126; C. 3:476; Blatter. & McC.11, t.6.

I. ciliare Retz. Obs. 6<sup>h</sup>36, 1791.

A common <sup>2</sup>grass in open places and as a weed in  
cultivated fields. 25-100 cms. tall. Entire plant  
covered with thin white spreading hairs.

Flowers & Fruits: August to February.

Bedi 343 (Kanjeta), 2254 (Tokerwa), 2651 (Panam),  
3490 (Kundawala).

Konkan, S.M. country, Peninsular India. Ceylon,  
China, Malaya, S.E. Asia.



Apluda Linn.

Apluda mutica Linn. Sp. Pl. 82, 1753; Bor. 93.

A. aristata Linn., Amoen. Acad. 4, 303, 1756;

D. & G. 303; Sant. 270.

A. varia Hack var. aristata Hack in DC.Mon.Phan.6:196,

1889; FBI. 7:150; C.3:474. Blatt. & McC.29,t.20.

A slender herb, variable in size reaching 1.5 m. often seen growing on dry rocky places and in open places in the forest.

Flowers & Fruits: October to December.

Bedi 971 (Sanvaro), 3214 (Mandva Hill),  
3467 (Chari).

Gujarat, Konkan, Deccan, S.M. Country. Throughout India, Ceylon, S.E. Tropical Asia; and as far as Australia.

Hackelochloa O. Kuntze.

Hackelochloa granularis (Linn.) O. Ktze. Rev. Gen.

Pl. 776, 1891; Bor 159, 1960; Fischer, 1218;  
Sant. 278.

Manisuris granularis Linn. f. Nov. Gram. Gen. 40,  
1779; FBI. 7:159; C. 3:473.



An erect slender <sup>n</sup>grass, found growing as an under growth of forest trees. Noted in Bendol, not common in other areas.

Flowers & Fruits: September to November.

Bedi 3114 (Bendol 9.9.62).

Deccan, S.M. country, Maharashtra. Throughout the hotter parts of India, Ceylon and most tropical countries.

Rottboellia Linn.

Rottboellia exaltata Linn. f. Nov. Gram. Gen. 40, t.1, 1779 et in Suppl Pl. 114, 1781; F&B.7:156; G.3:472; Bor 206; Fig.13, 1960.

An erect leafy grass, <sup>u</sup>claws solid 1-2 m. tall. Recorded from the banks of a stream at Bendol & in cultivated fields.

Not common on plains North to the Panam river.

Flowers & Fruits: October 1962, Bendol.

Bedi 3508 (Bendol).

Konkan, Deccan. Plains and lower hills of India; Ceylon, China, Africa, Malaysia, Australia.



Sorghum Stapf emend. Snowden

Sorghum halepense (Linn.) Pers. Syn. Pl. 1, 101, 1805;  
 Bor. 222, Blatt. & McC. 55, t.37; Sant. 283.

Holcus halepenses Linn. Sp.Pl. 1047, 1753.

Andropogon halepenses Brol. Fl. Lus. 1:89, 1804;  
 FBI. 7:182; C. 3:502.

A tall erect grass, often reaching upto 3 m. Seen  
 growing near stream banks. Not common in other localities.

Flowers & Fruits: October 1962.

Bedi 3510 (Bendol).

Gujarat, Konkan, Deccan. Throughout India;  
 Ceylon, Wara countries.

Capillipedium Stapf.

Capillipedium huegelii (Hack.) Camus in Rev.Bot. Appl.  
 1(4): 306p:1921; Blatt. & McC. 86, t.52;  
 Fischer, 1199; Sant. 273.

Andropogon huegelii Hack. Mon. 6:492, 1889; FBI.7:180;  
 C.3:501.

An erect grass 40-100 cm. tall, often rooting at  
 first few nodes. Panicles 5-10 cm. long.



Common near moist spots at Bendol and near  
Katannahal temple.

Flowers & Fruits: September to December.

Bedi 945, 1845, 3105.

Deccan, S.W. country, Madras.

Central to Western India, endemic.

Dichanthium Willemet.

Dichanthium annulatum (Forssk.) Stap. f. in Prain,  
Fl. Trop. Afr. 9:178, 1917; Blatt. & McC. 34,  
t.62; Bor, Oup. 116, t.25 & Bor, 133.

Andropogon annulatus Forssk., Fl. Aegypt.-Arab. 173,  
1775; FBl. 7:196; C. 3:508.

A densely tufted erect or sub-erect grass about  
100 cm. tall.

Usually noted as a weed in cultivated fields and in  
open grassy places. Fairly common.

Flowers & Fruits: September to December.

Bedi 132, 180, 1867.

Konkan, Deccan, Sind, Manipur, Himalaya.

Wide spread in India and Burma, Tropical and  
North Africa, China, Australia.



Cymbopogon Spreng.

Cymbopogon martinii (Roxb.) Wats in Atkins., Gazet.

N.W. Prov. Ind. 392, 1882; Blatt. & McC. 104;  
Bor. 104, t.21 & Bor. 129.

Andropogon martinii Roxb., Fl. Ind. 1:280, 1820.

A. schoenanthus var. martinii Hook. f., Fl. 7:204,  
1896.

A tall, erect, sweet smelling perennial grass.

Spikelets first greenish then reddish brown.

Fairly common on Ratunmahal and other <sup>caus</sup> ~~plates~~ and  
various other open places in the forest areas and  
around them.

It yields superior quality of oil known as Rusa oil,  
used for rheumatic pains, but is not being exploited  
commercially for the purpose.

Local name: Rusa.

Flowers & Fruits: September to May.

Bedi 884, 2297.

U.P., Madras, Bombay and in various other parts  
of India.

Very common in South-east Asia.



Themeda Forssk.

Themeda quadrivalvis (Linn.) O. Ktze., Rev. Gen. Pl. 2:794,  
1891, var. quadrivalvis., Bor, 252.

Andropogon quadrivalvis Linn. in Murr, Syst. Veg.  
ed. 13, 758, 1774.

Anthistiria citiata Linn. f., Suppl. 113, 1781,  
FBI. 7:213.

Themeda citiata (Linn. f.) Hack. in DC., Monogr.  
Phen. 6:664, 1839; C. 3:514.

A tall, erect, grass. Leaves hairy with <sup>c</sup>ciliate  
margins panicles elongate reaching 10 cm. awn 2-5 cm.  
long, twisted and are troublesome, often <sup>is</sup>nuisance for  
a botanist in the field.

Fairly common on <sup>equ</sup>plateaus and in open places. It is  
a very good fodder and is exported in large quantities  
from Ratanmahal hills.

Flowers & Fruits: October to May.

Bedi 229, 231.

Deccan, Konkan, Madhya Pradesh, Western Peninsula,  
Bengal, Bihar, Naga Hills.

Wide spread in India, Africa.



Heteropogon Pers.

Heteropogon contortus (Linn.) Beauv. ex Roem. & Schult.,  
 Syst. Veg. 2:336, 1817; Blatt. & McC. 109,  
 t.71; Bor. 163. fig. 6.

Andropogon contortus Linn. Sp.Pl. 1045, 1793; PBI. 7:199;  
 C. 3:510.

A tall erect, tufted grass. Awns in fruit twisted.

A very trouble-some grass because of the twisted  
 awns, which often sticks to clothes and creates irritation.  
 It is a great annoyance to the <sup>el</sup> field botanists. Most  
 common grass on Katanzahal and in many<sup>o</sup>ther places.

Flowers & Fruits: September to April.

Sedl 226, 949, 3117.

Common throughout the presidency. Madhya Pradesh,  
 Madras, Manipur.

Widely distributed in the tropics, ascending in  
 the Himalaya<sup>up</sup> to 2000 m.



Key to the genera to Panicaceae

1. Spikelets falling singly, not subtended by bristles, or if so, then the bristles persisting after the spikelets have fallen:
2. Spikelets arranged in more or less open panicles or with the panicles contracted and spike-like:
3. Spikelets not subtended by bristle-like branches. . . . . Panicum
3. Spikelets subtended or replaced by one to many bristle-like branchlets, which persist. . . . . Setaria
2. Spikelets arranged in one-sided spikes or spike like racemes; spikes or racemes digitate or scattered, rarely solitary:
4. Lemma of the upper florets more or less crustaceous or coriaceous, usually with narrow inrolled margins exposing much of the palea:
5. Spikelets abaxial:
6. Lower glume developed, although sometimes small:
7. Glumes acuminate or awned, rarely only acute; upper lemma not mucronate:



8. Leaf blades linear; racemes  
dense; ligules absent..... Echinochloa
8. Leaf blades lanceolate to  
ovate; racemes close to  
moderately dense; ligule  
present. . . . . Oplismenus
7. Glumes awnless, if acuminate,  
then with the upper lemma;  
upper lemma acute, not  
mucronate. . . . . Paspalidium
6. Lower glumes usually absent;  
spikelets plano-convex. . . . . Paspalum
5. Spikelets adaxial. . . . . Brachiaria
4. Lemma of the upper floret thinly  
cartilaginous, usually with flat,  
hyaline margins:
9. Spikelets awned. . . . . Alloteropsis
9. Spikelets awnless. . . . . Digitaria
1. Spikelets with an involucre of bristles or  
subtended by a solitary bristle and falling  
with or without the bristles at maturity,  
solitary or in clusters:
10. Upper lemma smooth; bristles caducous:
11. Involucre of free, naked or  
plumose bristles. . . . . Pennisetum
11. Involucre of spines rigid  
bristles united at the base  
into a hard cup.. . . . Cenchrus
10. Upper lemma transversely rugose;  
bristles persistent. . . . . Setaria



Panicum Linn.

Lower glumes cuspidate acuminate; spikelets  
gaping widely at anthesis. . . . . trypheron

Lower glumes not cuspidate acuminate;  
spikelets not gaping:

Annuals; culms erect or geniculate;  
panicles contracted. . . . . sumatrense

Perennials; root stock villous hairy,  
stout, creeping, sending out hairy  
extravaginal stolon in all directions;  
spikelets often suffused with purple;  
spikelets crowded rarely spaced. . . . . antidotale

Panicum trypheron Schult., Syst. Veg. 2:244, 1824;  
Bor. 331.

A tufted grass about 1 m. tall. Common near stream  
banks and borders of cultivated fields. Used as a  
fodder grass.

Flowers & Fruits: August to December

Hedl 1855, 2006 2800 (Pepargota 6.8.62).

Madhya Pradesh.

In plains and hills of India upto 1700 m.,  
extending into South-East Asia.

Panicum sumatrense Roth. ex Koen. & Schult., Syst.  
Veg. 2:434, 1817; Bor. 701.



P. miliare Lamk., Tab. Encycl. Meth. Bot. 1:173,  
1791; FBI. 7:46; C. 3:456; Bor. 329.

An annual grass. Panicles very compound, contracted,  
erect or nodding spikelets solitary or in pairs.

Often cultivated, also wild and naturalized, not  
common, used as fodder grass.

Flowers & Fruits: September to March.

Bedi 349 (11.9.60 Malwan1).

Konkan, Madhya Pradesh, Bengal.

South-east Asia, Nepal and Malaysia.

Panicum antidotale Retz., Obs. Bot. 4:17, 1786; FBI.7:52;  
C. 3:453; Bor. 322.

A tall, perennial grass. Panicles compound pyramidal.  
Spikelets lax, though crowded on the branch-lets.

Fairly common near streams and other moist places,  
rarely noted as a weed in cultivated fields.

Flowers & Fruits: August to March.

Bedi 134, 2025, 2929, 3155.

Gujarat Kathiawar, Madras, Sind, North-west  
India, U.P., S. Peninsula.

Ceylon, Afghanistan, Trop. Africa and Australia.



Setaria P. Beauv. (nom. cons.)

Inflorescence a cylindric false spike; spikelets  
3 mm. long. . . . . glauc

Inflorescence a narrow panicle, sometimes  
loosely lobed below and tapering upwards;  
spikelets upto 2 mm. . . . . tomentosa

Setaria glauca (Linn.) Beauv., Ess. Agrost. 51, 1812;  
FBI. 7:78; C. 3:435; Blatt. & McC. 172; Bor.  
GUP. 198, t. 59 & Bor. 360.

Panicum glaucum Linn. Sp. Pl. 56, 1753.

A tall erect or ascending grass. Leaves linear flat.  
Inflorescence a cylindric spike-like raceme.

Fairly common during and after monsoon in the open  
places and on Katannahal and other plateaus.

Flowers & Fruits: September to December.

Bedi 228, 1837, 1994.

Gujarat: Baroda, Deccan, Konkan.

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

Setaria tomentosa (Roxb.) Kunth, Rev. Gram. 1:47, 1829;  
Raizada in Ind. Forester 80:40, 1954; Bor. 365.



Panicum tomentosum Roxb. Fl. Ind. 1:303, 1820.

Setaria intermedia Nees. & Schult. Syst. 2:489, 1817;  
 PBI. 7:79; C. 3:436; Blatt. & McC. 174.

An erect, slender grass 25-75 cm. tall. Leaves flat.  
 Inflorescence a narrowly pyramidal panicle.

Rare, noted in association with other grass in open  
 places near Chari.

Flowers & Fruits: October to November.

Bedi 3351 (Chari 3.10.62).

Tolerably common throughout the Presidency.  
 Deccan, Konkan, S.M. country.

Plains and hills of India, Burma and Ceylon,  
 extending to Malaysia and Polynesia.

#### Echinochloa Beauv.

Echinochloa colonum (Linn.) Link. Hort. Berol. 2:209,  
 1833; Blatt. & McC. 148, t.94; Bor. GUP. 122,  
 t.26; Bor. 308, fig. 34; Maheshwari, 393.

Panicum colonum Linn. Syst. (ed.10) 870, 1759;  
 PBI. 7:32; C. 3:447.



A slender, decumbent annual, 20-70 cm. tall. Spikes 5-15 distinct. Rachis stout angular. Spikelets about 2 mm. long.

Fairly common in forest areas near streams and ditches during and after monsoon.

Flowers & Fruits: August to March.

Hedl 270, 1128, 3033.

Gujarat Morvi, Konkan, S.M. country, Sind, Madras, Assam.

Widely spread in the tropics of Asia and Africa.

### Oplismenus Beauv.

Oplismenus Burmannii (Retz.) Beauv. Agrost. 54, 1812;

FBI. 7:68; C. 3:443; Blatter. & McC. 154, t.97;

Bor. GUP. 158 & Fl. As. 263; Bor. 317.

Panicum burmannii Retz., Obs. Bot. 3:10, 1783.

An erect or prostrate, slender annual. Spikes secund, close, in short panicles.

Commonly seen growing in dry rocky places in crevices and on sandy soil. Sub-gregarious in habit.



Flowers & Fruits: November to April.

Bedi 1859, 2353 (near Kanjeta Jhari 22.4.62).

Gujarat: Domas (near Surat), Deccan, Konkan,  
Bengal, Sikkim.

Wide spread in the tropics of both hemispheres.

Paspalidium Stapf.

Paspalidium flavidum (Retz.) A. Camus in Lecomete, Fl.

Gen. del' Indo-Chine 7:419, 1922; Sant. 281;

Bor. 333.

Panicum flavidum Retz., Obs. Bot. 4:15, 1786;

FBI. 7:28; C. 3:445.

A tall, erect, tufted annual. Spikes closely appressed  
to the axis, arranged in a panicle.

Common near moist sandy places, sometimes along the  
bunds around cultivated fields.

Flowers & Fruits: August to December.

Bedi 1853, 2020, 2763.

Gujarat: Surat, Kathiawar; Deccan, Konkan, Madras.

Tropical Asia.

Paspalum Linn.

Paspalum scrobiculatum Linn., Mant. Pl. 1:29, 1767;

FBI. 7:10; C. 3:460; Bor. 340.



A tall erect grass reaching upto 1-5 m. Occasionally cultivated for its <sup>grains</sup> ~~grass~~ on the poorer soil. Often noted as a weed in cultivated fields or on the out-<sup>skirts</sup> ~~skirts~~ of the forest areas.

Local name: Kodra or Kodro.

Flowers & Fruits: September to December.

Bedi 3109, 3352.

Cultivated in the plains of India.

Brachiaria Griseb.

Spikelets turgid, broadly elliptic oblong or broadly obovate-elliptic, apiculate, 2.5-5 mm. long, 1.5-1.75 mm. wide; glabrous or hairy. . . . . ramosa

Spikelets not turgid, or if so rachis not triquetrous; spikelets widest above the middle, tapering to the base, rounded at the apex to an apiculate tip. . . . . distachya

Brachiaria distachya (Linn.) Stapf in Prain, Fl. Trop. Afr. 9:555, 1919; Ror. 281.

Panicum distachyan Linn., Mant. Alt. 183, 1771.

Digitaria distachya (Linn.) Pers., Syn. Fl. 1:85, 1805.



A slender, prostrate or erect grass. Spikes 2-4, 2-5 cm. long, distinct.

Occasionally noted as a weed in cultivated fields, along the banks of streams and sometimes as an undergrowth of forest.

Flowers & Fruits: September to December.

Bedi 1967.

Uttar Pradesh, Bengal.

India, Burma, Ceylon and the Malayan region to Australia.

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

Panicum ramosum Linn., Mant. Pl. 29, 1767; PSI.7:36 pro parte.

An erect or sub-erect grass 20-70 cm. high. Spikelets dorsally compressed or subterete, alternate.

Not common, subgregarious in habit noted growing in association with other grasses in open places. Considered to be a good fodder grass.

Flowers & Fruits: August to November.

Bedi 2747, 2749 (Patan Mata 4.8.62).

Deccan, S.K. country, Orissa, Madras.

Throughout India, Ceylon, Afghanistan.



Alloteropsis Presl amend Hitch.Alloteropsis cimicina (Linn.) Stapf in Prain, Fl. Trop.

Afr. 9:487, 1919; Blatt. &amp; McC. 129, t.83; Bor.276.

Milium cimicinum Linn., Mant. Alt. 184, 1771.Axonopus cimicinus Beauv. Agrost. 12:1812; FBI.7:64;

C. 3:441.

A tall erect or decumbent annual grass. Racemes  
spike like 4-8, borne on the top of slender peduncle.

Commonly seen in open moist places in the forest areas.  
More common on plains.

Flowers & Fruits: August to December.

Bedl 859, 1821, 2701.

Konkan, S.W. country, U.P., Bengal.

Throughout India in the plains and lower foot hills,  
Burma, Ceylon, Tropical Africa and Australia.

Digitaria Heist. ex Fabr.

Hairs present on the spikelets and always  
verrucose; annuals; culms creeping and  
rooting at the nodes. . . . . longiflora



Hairs on the spikelets, if any, never verrucose:

Hairs on the spikelets clavate, i.e. passing abruptly into an obtuse, obovate or

globular head. . . . . stricta

Hairs on the spikelets without spreading

hairs or clavate. . . . . adscendens

Digitaria longiflora (Retz.) Pers., Syn. Plan. 1:85,  
1805; C. 3:458; Blatt. & McC. 127, t.81; Bor. Fl.  
As. 211 & Bor. 302.

Paspalum longiflorum Retz. Obs. 4:15, 1786;  
FBI. 7:17 pro parte (non Trin.).

A sub-erect annual grass.

Rare at plains and in the hilly regions of Ratnashah.

Flowers & Fruits: (11.8.62 at Dhenpur).

Bedi 2916, 2917.

Bombay, Madhya Pradesh, Bengal.

Widely distributed in the tropics of the old world.

Digitaria stricta Roth ex Roem. et Schult., Syst. Veg.  
2:474, 1817., var. stricta; Bor. 305.

D. royleana (Nees) Prain, Beng. Plants, 1182, 1903;  
C. 3:459; Blatt. & McC. 127, t.82.

Paspalum royleanum Nees ex Thw., Enum. 358, 1864;  
FBI. 7:18.



A slender, erect, perennial. Spikes 6 or more on a slender peduncle.

Common in open moist places near Pannar village.  
Rare in other areas.

Flowers & Fruits: August to September.

Bedi 2619.

Western Ghats, Madras, Sikkim.

Tropical Asia, including many parts of India,  
Burma, Ceylon.

Digitaria adscendens (H.B. & K.) Henrard in Blumea 1:92,  
1934; Bor 298; Maheshwari<sup>3</sup>289.

Panicum adscendens H.B. & K. Nov. Gen. & Sp. 1:97,  
1815.

Digitaria marginata var. Glabriata (Link) Stapf in  
Prain, Fl. Trop. Afr. 9:440, 1919; Blatt. & McC.  
125, t.78.

A tall erect annual grass, reaching upto 1 m. Spikes  
2 or more; spikelets bearded.

Seen growing as a weed in cultivated fields and in  
open grassy places in the forest areas.

Flowers & Fruits: August to September.

Bedi 3077 (Raiaingana 8.9.62).

Throughout the Presidency, Naga Hills.

Tropics of the old world.



Pennisetum Rich.

Pennisetum typhoides (Burm.) Stapf & Hubbard in Kew  
Bulletin 271, 1933; Bor 350.

Alopecurus typhoides Burm., Fl. Ind. 27, 1768.

The pearl millet or 'Bajri' commonly cultivated by  
the natives in various parts of the area.

Flowers & Fruits: During & after monsoon.

Bedi 8.10.64, Kanjeta.

Cultivated almost throughout India and in  
Tropical Africa.

Cenchrus Linn.

Cenchrus ciliaris Linn., Mant. Alt. 302, 1771; Raizada  
in Indian Forester 80:40, 1954; Bor 287, fig.33.

Pennisetum cenchroides Rich. in Pers. Syn. 1:72,  
1805; C. 3:432.

A tufted annual grass. Inflorescence a spike like  
raceme, pale purplish. Spikelets shortly pedicellate.

Not common, often seen in dry grassy places.



Flowers & Fruits: September to December.

Bodi 951.

Gujarat: Kathiawar; Deccan, Sind, Punjab, Uttar Pradesh, Western Peninsula.

Hotter and drier parts of India, Mediterranean region, Tropical and South Africa.

## Group II / POOIDEAE

### Key to the tribes of the Pooideae

1. Shrubs or trees with tall woody stems;  
leaves usually with a petiole-like base,  
articulated with the sheaths. . . . . Bambuseae
1. Herbs or shrubs; leaves usually sessile,  
not articulated with the sheaths:
  2. Spikelets borne in open, or <sup>0</sup>contorted  
or spike-like panicles<sup>less</sup> often in  
racemes or spikes:
    3. Spikelets usually with two or more  
fertile florets, if with one fertile  
floret than with <sup>Sessile</sup>sterile reduced  
florets above it:
      4. Inflorescence of panicles; if  
racemes or spikes the spikelets  
not secund. . . . . Eragrostaceae



4. Inflorescence of racemes or  
panicles of racemes, the spikelets  
second. . . . . Chloridene
3. Spikelets with one fertile floret (male  
or female in unisexual 1-flowered  
spikelets), with or without one or two  
male or barren florets below it, the  
latter often much reduced:
5. Glumes minute (usually represented  
by two semicircular inconspicuous  
lips) or suppressed; fertile lemma  
and palea very similar. . . . . Oryzaeae
5. Glumes well developed; fertile  
lemma and palea not similar:
6. Spikelets with two fertile  
floret; male or barren, usually  
with a palea; glumes unequal,  
the lower acute, the upper  
acuminate. . . . . Arundinelleae
6. Spikelets very rarely falling  
entire and then with firmly  
membranous to coriaceous, awned  
or 5-nerved lemmas:
7. Lemmas hyaline or membranous  
at maturity, rarely indurated  
and then laterally compressed..  
. . . . . Sporoboleae
7. Lemmas hardened or rigid at  
maturity, terete or dorsally  
compressed. . . . . Aristideae



6. Spikelets falling entire at maturity,  
either singly or in clusters from the  
axis of slender spike-like panicles or  
racemes; lemma delicate 1-3 nerved:
8. Spikelets fascicled or solitary;  
glumes not awned. . . . . Zoysiaceae
8. Spikelets solitary; glumes awned.... Perotideae
2. Spikelets sessile or shortly pedicelled <sup>along</sup> one side  
of the rachis of solitary, digitate, or scattered  
spikes, spike-like raceme or on opposite sides  
of the rachis of solitary spikes or racemes:
9. Spikelets on opposite sides of the  
rachis of solitary spikes or spike-  
like racemes. . . . . Triticeae
9. Spikelets secund on a tough rachis;  
1-2 florets hermaphrodite with  
sterile florets above; inflorescence  
of digitate or solitary spikes or  
panicles of spikes. . . . . Chlorideae

#### Key to the genera of Bambuseae

- Spikelets arranged in large panicles, not  
in globose fascicles. . . . . Bambusa
- Spikelets arranged in globose fascicles in  
compound panicles. . . . . Dendrocalamus



Bambusa Schreb. (nom. cons.)

Bambusa arundinacea Willd. Sp.Pl. 2,245, 1799; C.3:569;  
Holtum in Taxon 5:67, 1956; Sant. 271.

Bambusa arundinacea Retz. Obs. Bot. 5:24, 1789.

A tall, erect, graceful bamboo, reach upto 20 m.  
Stems many tufted on a stout root stock. Inflorescence  
a large panicle.

Fairly common in the hilly forest areas, on the  
ravine slopes and along the banks of stream, planted by  
forest departments, as well as they show a rapid natural  
regeneration. I have seen, the general flowering of this  
species during July 1960, and then during 1961, 1962, 1963.  
I observed only small clumps flowering.

On the question of the flowering of bamboos, see  
Blatter in JBNHS 33:899-921 & 34:135-141, 447-467.

Local name: Kasal.

Local uses: Grains are used as a food by the  
natives. This forms the major minor forest product  
of these forests. Large hollow stems are used to prepare  
flower pots.

Flowers & Fruits: July to February.

Medi 32, 182, 262.



Seed brought from these areas have been cultivated in Baroda Botanical garden which are growing very well.

For distribution and other important uses of the bamboos. please refer to: Raizada, M.B. in Indian Forester 82:215-218, 1954.

Gujarat Dangs, Western Ghats; Konkan.

Throughout India except the Himalayas; Ceylon.

Dendrocalamus Nees.

Dendrocalamus strictus Nees in Linnaea 9:476, 1834;  
FRI. 7:404; C. 3:572; Talb. ( 2 ed.) 347.

A tall, deciduous, densely tufted/ bamboo with strong erect stem. Inflorescence headed, in dense glabular heads.

Often gregarious in dense clumps. Common along the banks of stream, on ravine slopes, and on plains especially near Bencal and pepargota.

Local name: Nakor Vans or Vans.

Local uses: Construction of huts and natives use the young shoots to prepare pickles/.

Flowers & Fruits: July to February.



Flowering rare, see Diatter loc.cit. Noted  
small clumps in flowers.

Bedi 557, 974, 1776.

Gujarat: Panch Mahal; Deccan, Konkan, throughout  
the presidency in deciduous forests.

Throughout India, Java.

This species form an important minor  
forest product of the region.

#### Key to the genera of Eragrostene

1. Lemmas usually entire at the apex, obtuse,  
acute or acuminate or if 2-toothed (Acrachne)  
then glabrous near the margins and along  
the side nerves; cistogamous spikelets  
not developed in the axils of the leaf-sheaths:
2. Spikelets awnless in open, contracted  
or spike-like panicles; lemmas keeled,  
3-nerved. . . . . Eragrostis
2. Spikelets sessile or very short-  
pedicelled, loosely to densely  
imbricate in digitate or racemosely  
arranged spikes or spike like racemes,  
very rarely in solitary spikes (Eleusine Sp):
3. Axis and branches of the inflorescence  
ending in a spikelet:



4. Spikelets falling entire at maturity  
from the axis of straight spikes,  
the latter numerous and crowded  
into a long narrow dense panicle;  
glumes 1 nerved. . . . . Desmostachya
4. Spikelets breaking up at maturity;  
spikes few to several:
5. Spikelets digitate or sub-  
digitate; spikelets 3-6 flowered;  
glumes 1-5 nerved; grain oblong  
to globose, grooved, with a  
loose conspicuous pericarp... Eleusine
5. Spikelets usually in pseudo-  
whorls or scattered; spikelets  
8-20 flowered; grain coarsely  
rugose, grooved or hollowed  
on one face, with an early  
deciduous pericarp. . . . . Acrachne
3. Axis of the spikes terminating in  
a sharp point. . . . . Dactyloctenium
1. Lemmas usually emarginate or 2-4 lobed  
or toothed at the apex, rarely entire and  
then hairy along the nerves, frequently  
mucronate or awned; cleistogamous spikelets  
sometimes develop in the sheath; stout  
reed like grasses with large plumose-like  
panicles. . . . . Neyraudia



Acrachne Wight. et. Arn.

Acrachne racemosa (Heyne) Gchwi in Bull. Tokyo Sci.  
Mus. n. 13, 1 (1947); Bor. 437.

Eleusine racemosa Heyne ex Roem. et. Schult., Syst.  
Veg. 2, 533 (1917).

E. verticillata (Roxb., Fl. Ind. 1, 346 (1820).

Found growing in semidried sandy places. Not common,  
noted only few specimens near Panam village.

Flowers & Fruits: November to December.

Bedi 2037.

Rare grass in the Bombay Presidency, not  
mentioned by Cooke. Punjab, Madras.

Tropical Africa, South-east Asia, Ceylon and  
Australia.

Dactyloctenium Willd.

Dactyloctenium aegyptius (Linn.) P. Beauv., Ess. Agrost.  
Expl. Pl. 15, 1812; Blatt. & McC. 262, t.176;  
Fischer 1273; Bor. fig. 54, 489.

Cynosurus aegyptius Linn., Sp.Pl. ed.1, 72, 1753.

Eleusine aegyptia (Linn.) Desf., Fl. Atlant. 1:85,  
1798; PBI. 7:295; C. 3:560.



An annual stoloniferous herb, very variable in habit. Spikelets arranged digitately, spikes 2-5 cms. long.

A common grass in dried cultivated fields, along the paths and sandy places.

Flowers & Fruits: September to December.

Bedi 263, 2039, 3080.

Pavagadh, Konkan, Poona, Madras.

Ceylon, Afghanistan, Tropical regions of the old world, introduced into America.

Desmostachya Stapf.

Desmostachya bipinnata (Linn.) Stapf in Dyer, Fl.

Cap. 7:632, 1900; Bor 491.

Briza bipinnata Linn., Syst. Nat. ed.10, 2:875, 1759.

Eragrostis cynosuroides (Retz.) P. Beauv. Agrost.

162, 1812; FBI. 7:324; C. 3:550; D. & G. 298.

Desmostachya cynosuroides Stapf in Haines, Bot.

Bihar and Orissa 962, 1924.

A common grass in open dry places and sometimes noted as a weed in cultivated fields. Sometimes reaching upto 1m. high.



Local name: Dhrali

Flowers & Fruits: July to October.

Bedi 30, 2814, 3801.

Gujarat, Deccan, Sind, Madras, Bengal, Bihar.

Throughout India, Persia, Arabia, North Africa  
to Tropical Africa.

Eleusine Gaertn.

Spikes stout, broad (about 1 cm. wide),

incurved, hairy at the base; seeds

globose. . . . . E. coracana

<sup>S</sup>  
~~Spikes~~ slender, narrow (.5 mm. wide),

straight, nearly glabrous at the base;

seeds oblong, obtusely trigonous. . . . . E. indica

Eleusine coracana (Linn.) Gaertn., Fruct. 1:8, t.1, f 11,

1789; PBI. 7:294; C. 3:561; Gr. 235; D. & G.

Suppl. 97; Blatt. & McC. 260, t.173; Sant. 275;

Bor 492.

Cynosurus coracanus Linn. Syst. Nat. (ed.10) 2:875,  
1759.

Cultivated by the native tribes for its grains or  
on many occasions seen growing as a weed in rice fields  
and also noted as an escape.



Local name: Nagali.

Local uses: Grains used as a food.

Flowers & Fruits: August to November.

Bedi 1661, 3370.

Extensively grown in the hilly districts of  
Bombay Presidency; Madras, Kulu.

Widely cultivated in the tropics of the old world.  
Introduced into the new African Millet. Any critical  
notes on the identity or on nomenclature: Bor, l.c.  
writes: "Originally the specific name was spelt  
Coracan but Linnaeus corrected this to Coracanus in  
the second edition of species plantarum, 106, 1762.

Eleusine indica (Linn.) Gaertn., Fruct. 1:8, 1789;  
Blatt. & McC. 259. t.172; Sor 493.

Cynosurus indicus Linn., Sp.Pl. ed 1, 72, 1753.

Considered to be a good fodder grass, often noted  
as a weed in cultivated fields. Not very common.

Flowers & Fruits: October to November.

Bedi 733.

Throughout the Presidency, Manipur, Madras.

Tropical and sub-tropical regions of the earth.



Eragrostis P. Beauv., emend. Reichle.

1. Spikelets breaking up from above downward;  
rachis fragile:
  2. Culms and leaves more or less viscous...Viscosa ✓
  2. Culms and leaves not viscous. . . . . tenella ✓
1. Spikelets breaking up from below upwards:  
rachis tough; lemmas falling away with  
or without the paleas:
  3. Annuals:
  4. Plants glandular:
    5. Lemmas upto 1-5 mm. long; glandular  
band below culm nodes. . . . . pilosa
    5. Lemmas over 1-5 mm. long;  
plants with glands; glands  
conical and pitted on pedicels  
and margins of leaves, sheaths  
often with irregularly dis-  
tributed pitted glands. . . . . cilianensis
  4. Plants devoid of glands:
    6. Spikelets 2 mm. or more wide;  
ovate or ovate oblong:
    7. Paleas deciduous; spikelets  
green to reddish purple in  
colour; sheaths not bearded  
at the mouth; grains obovoid  
or ellipsoid, compressed..... unioloides ✓



7. Paleas persistent; spikelets  
leaden-gray in colour; sheaths  
bearded at the mouth; grains  
subglobose. . . . . cilianensis
6. Spikelets 1.5-2 mm. wide; seated  
on pedicels every 5 mm. long. . . . trazula ✓
3. Perennials; spikelets slaty-gray to black,  
at most 2 mm. wide; lemmas 1.5 mm. long. nigra

Eragrostis viscosa (Retz.) Trin in Mem. Acad. Sci.  
Petersb. (Ser. 6) 1:397, 1830; Blatt. & McC.  
235; Bor, GUF. 127 & Bor, 515.

Poa viscosa Retz., Obs. Bot. 4:20, 1786.

Eragrostis tenella Roem. & Schult. var. viscosa  
Stapf in FSI. 7:315, 1896; C. 3:546.

An annual, erect, tufted, viscid, sweet smelling  
herb. Commonly seen growing in dry fallow fields, also  
noted near moist spots.

Flowers & Fruits: September to March.

Bedi 950, 3747 ( on plains near Chari village).

Bombay Presidency, N.E. Himalayas, Madras.

India, Ceylon, Tropical and South Africa.

Eragrostis tenella (Linn.) Beauv. ex Roem. & Schult.,  
Syst. Veg. 2:576, 1817; Bor 513; Mahechhari,  
386.



Poa tenella Linn., Sp.Pl. 69, 1753.

Eragrostis tenella var. glabrosa (Retz.) Stapf. in  
H.K.V. FBI. 7:315, 1896; C. 3:545; Blatt. & McC.  
232, t. 155; Sant. 277.

A loosely tufted erect or ascending annual. Panicles  
contorted, green or purplish brown.

Commonly noted growing in open places in the forest  
areas among other grasses. Occasionally seen as a weed  
in cultivated fields near Panam village.

Flowers & Fruits: September to December.

Bedl 913, 2035, 3417 (Patan Mata 8.10.62).

Gujarat: Surat, Konkan, Deccan, Madras.

Widely spread in the tropics of the old world;  
introduced into America.

Eragrostis pilosa (Linn.) Beauv., Ess. Agrost. 71, 162,  
175, 1812; FBI. 7:323; C. 3:550; Blatt. & McC.  
241, t.160; Bor, 512.

Poa pilosa Linn. Sp.Pl. 68, 1753.

A loosely tufted annual. Panicles erect 5-15 cms.  
long.

Common near moist localities in the hilly forest  
regions. Considered by the native Bheels, as a good  
fodder grass.



Flowers & Fruits: September to December.

Bedi 267, 269 (Bendal).

Deccan, Madras, Bengal, Bihar, U.P.

Throughout India, Ceylon, very widely distributed in the tropical and warm regions of the old world.

Eragrostis cilianensis (All.) Link. ex Lutati in  
Malpighia 18:386, 1904; Blatt. & McC. 237,  
t.157; Fischer, 1264; Bor. <sup>UP</sup>Gaz. 133 & Bor. 508.

Poa cilianensis All. Fl. Pedem. 2:246, t.91, f.2,  
1785.

Eragrostis major Host, Gram. Austr. 4:14, t.24, 1809;  
FBI. 7:320; C. 548.

An annual erect grass. Leaves few small.

Rare, often noted in association with E. unioloides  
(Retz.) near ex Steud., in the hilly forest regions near  
Bendol, Considered as a fodder grass.

Flowers & Fruits: After monsoon.

Bedi 1769.

Gujarat: Kathiawar, Deccan, Sind, Punjab, Madras.

Very widely distributed in the warmer regions  
of the world.

For the nomenclature: Please see Bore, loc.cit.



Eragrostis unioloides (Retz.) Nees ex Steud., Syn. Pl.

Glum. 1:264, 1854; Blatt. & McC. 235, t.156;

Bor, GUP. 129, t.29 & Bore, 515.

Poa unioloides Retz. Obs. Bot. 5:19, 1789.

Eragrostis amabilis FBI. 7:317, 1896; C. 3:546.

A slender, erect or ascending annual grass. Panicles oblong or ovoid. Panicles not much branched.

Common near ditches, along paths and as a weed in cultivated fields.

Flowers & Fruits: September to December.

Bedi 264, 1975, 2914.

Bombay, Madras, Assam.

Found all over India, Ceylon, Burma and in South-east Asia generally.

Eragrostis tremula Hochet. ex Steud., Syn; Pl. Glum

1:269, 1854; FBI. 7:320; C. 3:549; Bor. 514.

An annual, erect weak grass. Spikelets many flowered, long, narrow flattened.

Common on dry sandy soil and in rocky places near the banks of streams and Panam river.



Flowers & Fruits: October to April.

Bedi 1243, 1710 (Kanjeta 25.11.61) used as  
fodder grass.

Gujarat: Kathiawar, Deccan, Madras, Bengal.

India and Burma to Tropical Africa.

Eragrostis nigra Nees ex Steud., Syn Fl. Glum. 1:267,  
1854; FBI. 7:524; Fischer, 1265.

A slender grass common near moist places, restricted  
and localised in distribution.

Flowers & Fruits: 27.3.63 (noted near Dhenpur).

Bedi 3708.

Madras, U.P., Naga hills.

Wide spread in India and Ceylon and extending  
up to China.

Neyraudia Hook. f.

Neyraudia reynaudiana (Kunth) Keng ex Hitchc. in Amer.  
J. Bot. 21, 131, 1934; Bor, 518.

Arundo reynaudiana Kunth, Rev. Gram. 1:275, t.49,  
1830.



Neyraudia madagascariensis var. <sup>351</sup>~~351~~ lingeri Hook.f.,  
FBI. 7:305, 1896.

A tall (2 to 5 m.) sturdy grass. Inflorescence  
20-50 cm. long. Rare, noted along the banks of streams  
near Kharari hill and Banvaro.

Flowers & Fruits: November to December.

Bedi 956.

I could not trace the distribution of this  
species in the Western India. So it appears to be  
a new record for this region.

Sikkim, Assam.

Eastern India, Burma, Malaya, China, Japan.

#### Key to the genera of Chlorideae

Inflorescence terminal, spicate, not of  
digitate or racemose spikes; lemmas not  
obovate. . . . . Melanocenchris

Inflorescence of digitate spikes or spikes  
racemose, spikelets with one fertile floret  
and no imperfect florets; spikelets awnless. Cynodon



Melanocenchris Nees.

Melanocenchris jacquemontii Jaub. et. Spach, Ill.

Pl. Or 4:36, 1851; Bor. 473.

Gracilella royleana Hk.f., FDI. 7:284, 1896; C.3:553.

Melanocenchris royleana Nees in Proc. Linn. Soc.

1:95, 1841; nom. nud.

A slender, densely tufted, annual grass. Spikes  
filiform, spikelets cottony on a flexuous, zigzag rachis.

Not on dry sandy, stony or in rocky crevices at

Charl. Not common.

Flowers & Fruits: August to October.

Bedi 3307.

Gujarat: Dangs, Deccan, S.M. country, Bihar,  
Madras.

Bengal, Bombay state, Sind, North-west India.

Cynodon Rich. ex Pers (nom.cons.)

Cynodon dactylon (Linn.) Pers. Syn. 1:85, 1805;

FDI. 7:288; C. 3:554; Blatt. & McG. 250,

t.166; Bor GUP. 110, t.22 & Bor 469, fig.52.



Panicum dactylon Linn. Sp.Pl. 58, 1753.

A perennial, creeping grass, with erect or ascending flowering branches.

Common on grassy paths in open areas and along the bunds around the fields <sup>G</sup> good fodder grass.

Flowers & Fruits: October.

Bedi (Kanjeta, October 1962).

Deccan, extensively used as a fodder grass in the Bombay Presidency, Madras, Bengal, Lushi hills.

This is a grass with an extremely wide distribution, being found in all warm countries and even persisting in cold climates.

## Oryzeae

### Oryza Linn.

Oryza sativa Linn., Sp.Pl.333, 1753; FBI.7:92; C.3:565; Blatt. & McC. 274, t.197; Bor. 605.

The rice plant is cultivated by the natives during monsoon. Less common in the hilly regions.

Local name: Danger. Chokha.

Flowers & Fruits: September to November.



ArundinelleaeArundinella Raddi.

Arundinella pumila (Hochst.) Steud. Syn. Fl. Glum. 1:114;  
1854; Bor. Fl. As. 181, in JIB.27:61 and Bor. 423.

Acratherum pumilum Hochst. ex A. Rich., Tent. Fl.  
Abyss. 2:414, t. 1851.

A. tenella Nees & Wt. ex Steud. Nom. ed.2, 1:143,  
1840; FBI. 7:71; C. 3:522; D. & G. 292; Blatt.  
& McC. 193, t.127.

An annual, glabrous, slender grass. Common near moist  
rocky places near Patan Mata caves.

Flowers & Fruits: October.

Bedi 3414 (Patan Mata caves.)

Deccan, Madras, Central India, North-West  
Himalaya, Mount Abu, Khasia.

Common in India, Ceylon, Burma, extending to  
South East Asia, Abyssinia and Nigeria.

SporoboleaeSporobolus R. Br.

Sporobolus marginatus Hochst. ex A. Rich. Tent. Fl.  
Abyss. 2:397, 1851; Bor 632.



S. pallidus Boiss. Fl. Orient. 5:512, 1884; Chavan & Mehta in JMSU 7(2):78.

S. aralucus Boiss. Diagn. (Ser.1) 13:47, 1853; FBI. 7:252; C. 3:542.

A small, tufted, perennial grass. Panicle pyramidal, branches slender, possessing very small spikelets at the tips.

Common in open grassy places during and after monsoon, also noted as a weed in cultivated fields on plains near Mohindri, Kanjeta and Alindra. Often seen under shady trees in open places.

Flowers & Fruits: August to November.

Bedi 120, 1830, 3074 (8.9.62 Raiaingana).

Western peninsula, gangetic plain, Sind, Central India.

North West India, Baluchistan and Tropical East Africa.

# Aristideae

## Aristida Linn.

Awns not articulat<sup>t</sup> on the floral glume, tripartite from the base without a column.....adscensionis

Awns with a twisted column, readily seperating but not truly articulate. . . . . redacta



Aristida adscensionis Linn. Sp.Pl. 82, 1753; FBI.7:224;  
C. 3:529; Blatt. & McC. 209, t.138; Bor 407,  
fig. 43; Maheshwari 398.

An erect or ascending slender grass, usually found in  
dense clump<sup>p</sup>s. Inflorescence linear spike-like panicle.

Not common, noted on dry sandy or rocky places on  
plains near Chari and Kundawala.

Flowers & Fruits: October.

Bedi 3470 (10.10.62 Chari).

Gujarat: Kathiawar, Deccan near Poona, U.P.

Dehra Dun, North-West India.

A widely distributed species in the old and new  
worlds, but strangely enough not common in India.

Aristida redacta Stapf in Kew Bulletin 85, 1892; FBI.7:227;  
C. 3:531; Bor 412, Chavan & Mehta, Loc.cit. 78.

Stipa aristoides Stapf ex Liaboa in JBNHS. 7:358,  
1892.

A slender, annual with tufted stem. Panicles 20-30 cm.  
with usually twin branches; spikelets on capillary  
penduncles; awns prominent.

Not common, seen growing on dry sandy places.



Flowers: October.

Bedi 3431, 3433 (10.10.62 Kundawala).

Bombay, Madhya Pradesh, Western Peninsula,  
Deccan, Konkan.

India, endemic.

Zoysieae

Tragus (Hall.) Scop. (Nom.cons.)

Nazia Adans.

Tragus biflorus Schult., Syst. Veg. 2:205, 1824; Bor 682.

Lappago biflora Roxb. Fl. Ind. 1:284, 1820.

Tragus racemosus of PBI. 7:97, 1896; C. 3:535  
(non. Scop. 1777.)

Small, prostrate or sub-erect grass. Culms creeping.  
Pedicels 2-flowered.

Very rare, found on dry sandy soil near a stream  
at Seema Moai. Only once noted few specimens.

Flowers: October, 1962.

Bedi 3368, 3369 (4.10.62 Seema Moai).

Gujarat: Surat, Kathiawar, Deccan, Madras.

South-east Asia and East Africa.



Perotideae

Perotis Ait.

Perotis indica (Linn.) Kuntze, Rev. Gen. 2:787, 1891;  
Blatt. & McC. 220, t.147; Bor. 611, fig. 72.

Anthoxanthum indicum Linn. Sp.Pl. 28, 1753.

Perotis latifolia Ait., Hort. Kew 1:85, 1789;  
FBI. 7:98; C. 3:538.

A slender, sub-erect, annual, tufted grass. Racemes  
slender, dense, spike-like, purplish-violet.

Commonly seen as a weed in fallow fields, more common  
on dry sandy beds of river Panam and other streams near  
Kanjeta.

Flowers & Fruits: October to November.

Bedi 1712, 3565 (14.10.62 near Panam beds Bendel).

Gujarat: Baroda, Surat; Konkan, S.M. country,  
Madras, Bengal, more or less throughout India.

Widely distributed from Ceylon, South India,  
Burma, Malaya to South east Asia generally.

Key to the genera of Triticeae

Spikelets normally solitary at each node of the  
spike axis; spikelets usually more than 2-  
flowered. . . . . Triticum



Spikelets 1-flowered, usually with a rudiment of the second floret; spikelets three at each node of the spike-axis: Central spikelet sessile, fertile, the lateral pair pedicelled, barren. . . . . Hordeum

Triticum Linn.

Triticum aestivum Linn. Sp.Pl. 85, 1753; Blatt. & McC. 279; Bor 679.

T. sativum Lamk. Fl. Franc. 3:625, 1778; C. 3:574.

T. vulgare Vill. Hist. Pl. Dauph. 2:153; FBI.7:367.

Widely cultivated in all parts of the world. Not commonly cultivated crop in Katanmahal Hills. Grains are used as a chief source of food throughout the world.

Local name: Gahun.

Flothers & Fruits: December to March.

Hordeum Linn.

Hordeum vulgare Linn. Sp.Pl. ed.1, 84, 1753; FBI. 7:371; C. 3:575.

An annual about 1 m.



Cultivated in the hilly forest areas at few places near Banvaro and Alindra. Grains are eaten by the native.

Local name: Jau.

Flowers & Fruits: January to March.

Bedi 16.2.62 Banvaro, 17.2.62 Alindra.

Cultivated in various parts of Gujarat, Sind, Northern India, Bengal.

Supposed by DeCandelle to have originated in western temperate Asia.