

NYCTAGINACEAE

Plants herbaceous, unarmed; leaves
opposite; flowers without coloured bracts :

A prostrate or ascending herbs;

flowers small, pinkBoerhavia

An erect herb or undershrub; flowers

showy, purple-blueMirabilis

Plants woody, generally armed; leaves

alternate; flowers subtended by coloured

bractsBougainvillea

Boerhavia Linn.

Boerhavia diffusa Linn. Sp. Pl. 3:1753; C. 2: 563; Sant. 220;

Fl. Dang, 78; Fl. Delhi, 292; Fl. Pavagadh, 194.

Boerhavia repens Linn. Sp. Pl. 3: 1753; FBI. 4: 709;

D. & G. 213.

B. procumbens Roxb. Fl. Ind. 1: 146, 1820; Wt. Ic. t.874.

Prostrate to ascending herb with swollen nodes and
purplish stems. Leaves opposite, unequal in pairs, broad ovate
or suborbicular. Flowers small, pink, bracteate; umbels
arranged in axillary and terminal panicles. Fruit clavate,

5-ribbed. (Fl. Fr. July - February). DNT. 653, 1396, 1642, 1862.

A common weed of waste lands, roadsides and cultivated fields.

Mirabilis Linn.

Mirabilis jalapa Linn. Sp. Pl. 177, 1753; C. 2: 567; Bailey, Man. Cult. Pl. 358; Sant. 221; Fl. Delhi, 292.

An erect, much-branched, herb or undershrub. Leaves opposite, ovate, truncate or cordate, acuminate, long-petioled. Flowers purple-blue, showy, in a calyx-like involucre; corolla tube elongated. (Fl. Fr. August - December). DNT. 999.

Rarely as an escape, often cultivated.

Bougainvillea Comm. ex Juss. (nom. cons.)

Bougainvillea spectabilis Willd. Sp. Pl. 2: 348, 1799; C. 2: 567; Bailey, Man. Cult. Pl. 358; Bor & Raizada, 269, f. 98; Sant. 221; Fl. Dang, 78; Fl. Delhi, 292; Fl. Pavagadh, 193.

A woody, armed, scandent or straggling shrub. Leaves ovate to orbicular-ovate. Flowers creamy white, subtended by

large, variously coloured bracts. (Fl. Fr. January - May).

DNT. 1613 A.

Cultivated in private gardens.

AMARANTHACEAE

Anther 1-celled :

Flowers in terminal, cylindric or
globose heads; stigma bifidGomphrena

Flowers in axillary, sessile heads;
stigma capitateAlternanthera

Anther 2-celled :

Leaves opposite :

Stamens perfect :

Flowers all perfect, in spikes.....Nothosaerva

Flowers 1-3 perfect, surrounded by
several imperfect ones with hooked
bristles, on long spikesPupalia

Stamens with interposed, fimbriate
staminodesAchyranthes

Leaves alternate :

Stamens perfect :

Ovary 2-many-ovuled; fruit a utricle....Celosia

Ovary 1-ovuled :

Flowers bisexual, pink; fruit

a crustaceous nutDigera

Flowers unisexual or polygamous;

fruit indehiscent or circumsciss....Amaranthus

Stamens with interposed staminodes

forming a hypogynous cupAerva

Gomphrena Linn.

Gomphrena celosioides Mart. in Nov. Act. Nat. Cur. 13: 301,

1826; Raizada, in Ind. For. 48: 675, 1949; Sant. 226;

Fl. Dang, 80; Nair & Nair, in BBSI. 5(3 & 4): 220,

1963; Fl. Delhi, 298; Fl. Pavagadh, 200.

A prostrate herb with smooth, silvery hairs. Leaves spatulate or oblong-elliptic. Flowers white or dirty white in cylindrical or oblong, terminal heads; heads substended by two leafy bracts. Fruit enclosed in the perianth. (Fl. Fr. June - October). DNT. 1734.

Commonly observed along roadsides and in cultivated fields.

Alternanthera Forsk.

Stamens 3sessilis

Stamens 5 :

Leaves suborbicular or circular;

perianth segments spine-tippedpungens

Leaves spatulate, broad at the apex

and decurrent along the petiole; perianth

covered with white woolly hairsparonychioides

Alternanthera sessilis (Linn.) DC. Cat. Hort. Monsp. 77, 1813;

Gr. 168; D. & G. 220; Wt. Ic. t. 727; Backer, in Fl.

Males. I, 4(2): 94, 1948; Sant. 225; Fl. Dang, 78;

Fl. Delhi, 299; Fl. Pavagadh, 200.

Gomphrena sessilis Linn. Sp. Pl. 225, 1753.

Alternanthera triandra Lamk. Encycl. 1: 95, 1783; C.2: 584.

A prostrate, much-branched, annual herb, usually rooting at nodes. Leaves linear-oblong, opposite, glabrous. Flowers white, sessile, in small axillary, sessile clusters. Seeds suborbicular. (Fl. Fr. June - November). DNT. 589, 1116, 1734, 1920.

A very common herb of moist-wet places throughout the area.

Alternanthera paronychioides St. Hill. Voy. Bres. 11: 439,
1833; Santapau, in JBNHS. 54: 476-477, 1956; Nair &
Nair, loc. cit. 219, 1963.

A prostrate, hairy herb, rooting at nodes. Leaves opposite, spatulate, broad at the apex and decurrent along the petiole. Flowers white, in axillary clusters; perianth covered with white woolly hairs. (Fl. Fr. December - February). DNT. 1888.

Rare; noted forming patches on the wet river banks at Hampsheshwar.

Alternanthera pungens H.B. & K. Nov. Gen. & Sp. 2: 206, 1818;
Melville, in KB. 174, 1958; Sant. 200; Raizada, in Ind.
For. 92(5): 301, 1966; Santapau & Shah, in JBNHS.
58(2): 550-553, 1961; Fl. Delhi, 298; Fl. Pavagadh, 198.

Alternanthera repens Link, Enum. Pl. Hort. Berol. 1: 154,
1821 (non J.F. Gmelin, 1791); Backer, in Fl. Males. I,
4(2): 91, 1949; Phatak & Joshi, in JMSUB. 5(2): 68,
1956; Van Steenis, in Fl. Males. I, 5: 554-555, 1958.

Achyranthes repens Linn. Sp. Pl. 205, 1753.

A prostrate, much-branched herb, rooting at nodes. Leaves suborbicular or nearly circular. Flowers white, in axillary heads; perianth segments spine-tipped. (Fl. Fr. August - December). DNT. 1742.

Noted in dense patches on open waste places.

Santapau & Shah (l.c.) mention this plant as a new record for Bombay in 1961. It may, however, be noted that the plant was reported from Baroda in 1956. (Phatak & Joshi, l.c.)

Nothosaerva Wight

Nothosaerva brachiata (Linn.) Wight, Ic. 611, 1853; FBI. 4: 726;

C. 2: 580; Backer, loc. cit. 86, 1949; Fl. Dang, 80;

Fl. Delhi, 299; Fl. Pavagadh, 198.

Achyranthes brachiata Linn. Mant. 1: 50, 1767.

An erect, much-branched, glabrous, annual herb. Leaves thin, opposite, elliptic-lanceolate, acute, tapering to the base. Flowers greenish-white, crowded, in small, dense axillary spikes; stamens 2. (Fl. Fr. September - December). DNT. 499, 593.

Commonly observed in moist situations near streams and in cultivated fields.

Pupalia Juss. (nom. cons.)

Pupalia lappacea (Linn.) Juss. in Ann. Mus. Hist. Nat. Paris,

2: 132, 1803; FBI. 4: 724; C. 2: 583; Fl. Delhi, 300;

Fl. Pavagadh, 199.

Achyranthes lappacea Linn. Sp. Pl. 204, 1753.

A large, straggling undershrub. Leaves ovate or elliptic, acute, tomentose on both sides. Flowers white or greenish white, in distinct clusters forming long, terminal spikes. Fruits with glabrous, hooked awns; seeds black, smooth. (Fl. Fr. July - February). DNT. 116, 443, 1013, 1600.

Commonly found in hedges and along forest paths.

Achyranthes Linn.

Achyranthes aspera Linn. var. porphyristachya Hook. f. in FBI.

4: 730, 1885; Sant. 224; Fl. Delhi, 299; Fl. Pavagadh, 196.

Achyranthes porphyristachya Wall. cat. 6925, 1832.

A. aspera Cooke, 2: 580, pro. parte; Fl. Dang, 78.

An erect, annual herb or undershrub. Leaves thick, elliptic or ovate, acute. Flowers greenish white, in long terminal spikes; bracts and bracteoles, persistent, ending in a spine. Utricle oblong. (Fl. Fr. June - February). DNT. 356.

Common weed of waste places, in hedges and along roadsides.

Celosia Linn.

Celosia argentea Linn. Sp. Pl. 205, 1753; Wt. Ic. t. 1767;

FBI. 4: 714; C. 2: 570; Sant. 221; Fl. Dang, 79; Fl.

Delhi, 295; Fl. Pavagadh, 195; Fl. Mel. 276.

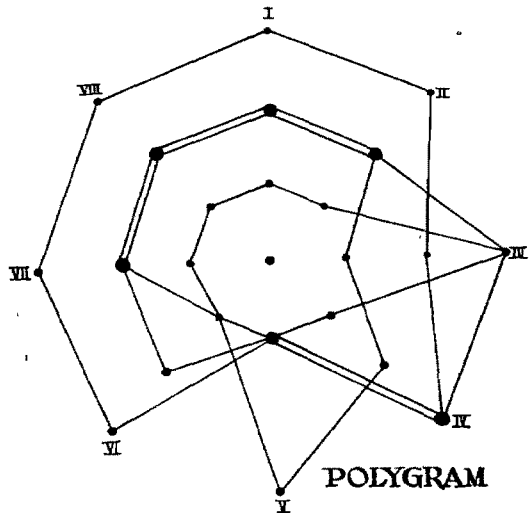
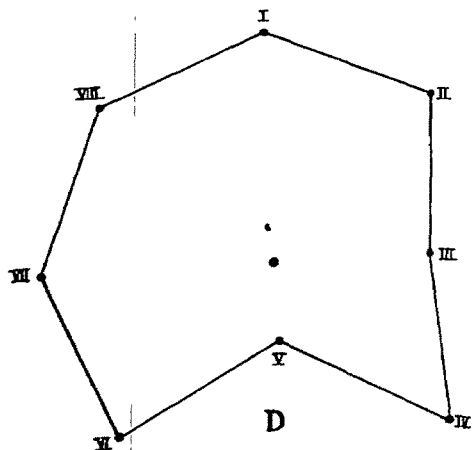
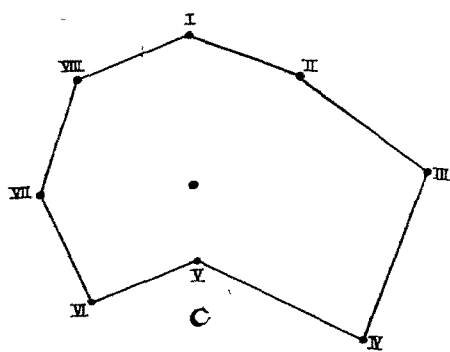
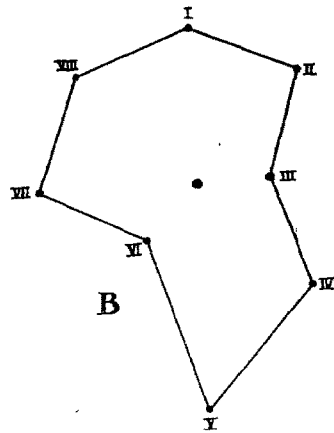
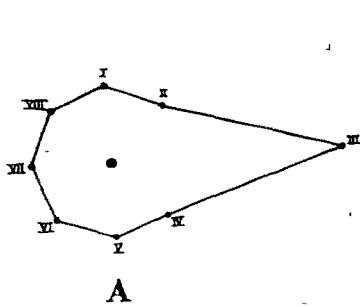
An erect, glabrous, annual herb. Leaves linear, ovate-lanceolate, acute, entire. Flowers pinkish-white, in dense, conical or oblong, terminal spikes. Capsule ellipsoid. (Fl. Fr. August - January). DNT. 360, 519, 1813, 1927.

Farily common; a much variable plant observed on the plains, in moist places, along roadsides and in cultivated fields.

Morphological characters

PLATE No. 63

	<u>Characters</u>	<u>Variations</u>	<u>Index value</u>
I	Height	less than 50 cm.	1
		between 50 to 70 cm.	3
		more than 70 cm.	5
II	Internodal length	less than 20 mm.	1
		between 20 to 30 mm.	3
		more than 30 mm.	5
III	Shape of the leaf	ovate	1
		linear-lanceolate	3
		ovate and linear-lanceolate	5
IV	Length of lamina	less than 20 mm.	1
		between 20 to 40 mm.	3
		more than 40 mm.	5



Celosia argentea Linn.

V	Position of spike	terminal	1
		axillary	3
		terminal and axillary	5
VI	Length of spike	less than 20 mm.	1
		between 20 to 40 mm.	3
		more than 40 mm.	5
VII	Length of bracts	less than 5 mm.	1
		between 5 to 7 mm.	3
		more than 7 mm.	5
VIII	Length of tepals	less than 7 mm.	1
		between 7 to 9 mm.	3
		more than 9 mm.	5

The variations observed in different populations of the species collected from various habitats are studied using polygraphic method. The range of variation in different characters are more or less co-related with the edaphic conditions of the habitats. The gross increase or decrease in size or length of the various parts (vegetative and reproductive) in robust and weak forms is very evident.

Digera Forsk.

Digera muricata (Linn.) Mart. in Beitr. Amar. No. 2: 77, 1825;

Backer, loc. cit. 80, 1949; Fl. Pavagadh, 198.

Achyranthes muricata Linn. Sp. Pl. (ed. 2) 295, 1762.

A. alternifolia Linn. Mant. 50, 1767.

Digera alternifolia (Linn.) Aschers. in Schwfth. Bactr.

Fl. Aethiopiens 180, 1867; Fl. Delhi, 295; Raizada,
in Ind. For. 92(5): 308, 1966.

D. arvensis Forsk. Aeg.-Arab. 65, 1775; D. & G. 218;

FBI. 4: 717; C. 2: 572.

An erect, annual herb with spreading branches. Leaves alternate, glabrous, entire, ovate, elliptic or lanceolate. Flowers pink or rose, in lax, axillary pedunculate spikes. Fruit globose, muricate. (Fl. Fr. June - November). DNT. 36, 573, 768.

A common weed of cultivated fields and along roadsides.

Amaranthus Linn.

Sepals 5; Stamens 5 :

Leaf axils with spinesspinosus

Leaf axils without spines :

Bracts and bracteoles shorter

than the perianthdubius

Bracts and bracteoles longer

Flowers greenish white, in axillary clusters or in axillary and terminal, interrupted spikes or panicles; bracts and bracteoles shorter than perianth, aristate. Seeds black. (Fl. Fr. July - December). DNT. 621.

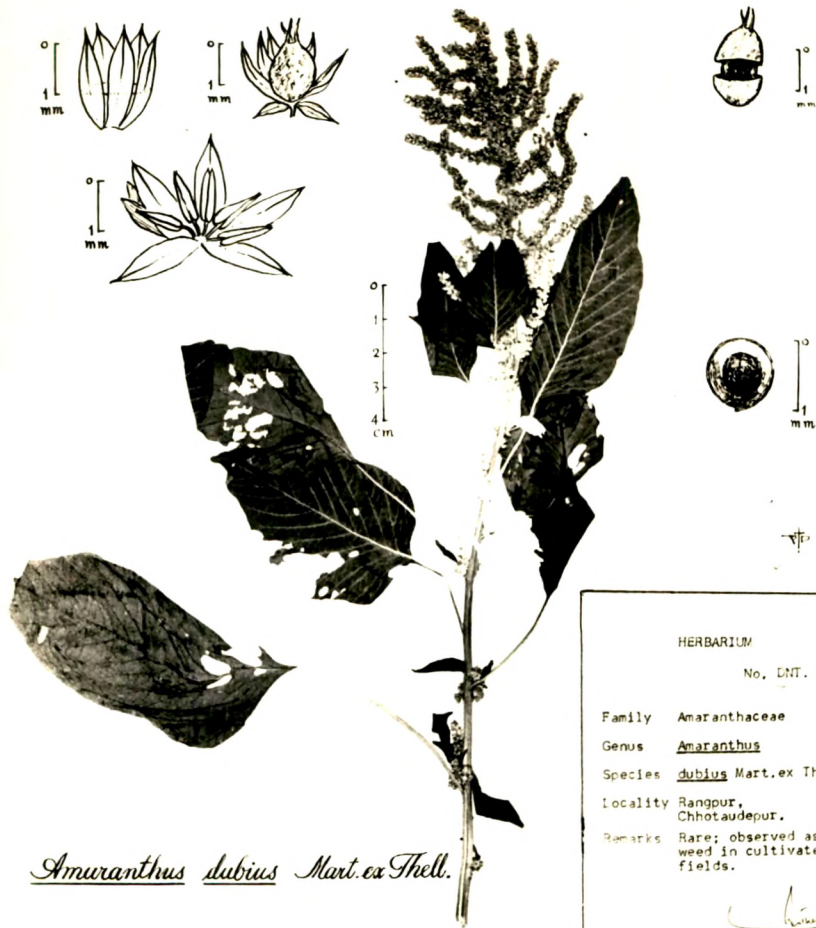
PLATE No.64

Rare; observed as a weed in cultivated fields at Rangpur.

Our observations tally with that of Backer (l.c.) while, they differ from the description and Fig. of Naik (l. c.) in the following respects :

1. Tepals midrib in the lower half is very thin, in upper half much thickened, produced into a short mucro. Naik showed it throughout thickened.
2. Utricles circumscrib a little below the middle not above the middle as shown by Naik.
3. Filament short, not exerted as shown by Naik.

A native of Tropical America, which was reported to be " rather a recent introduction to Java, collected for the first time in 1922 " (Backer, l.c.). The report of its occurrence in Osmanabad District of Marathwada region of Maharashtra State (Naik, l.c.) was its first record from India. The occurrence of this plant in our area is, therefore, very interesting.



Amaranthus dubius Mart. ex Thell.

HERBARIUM

No. DNT. 621.

Family *Amaranthaceae*
 Genus *Amaranthus*
 Species *dubius* Mart. ex Thell.
 Locality Rangpur,
 Chhotaudepur.
 Remarks Rare; observed as a
 weed in cultivated
 fields.

7-10-50. Collected by *[Signature]*

It is suggested that a careful reappraisal of all the available Indian material be made to throw light on the time of introduction of this weed and its present distribution in India.

Tentatively, therefore, the plant is reported here as a new record for Gujarat State.

Amaranthus hybridus Linn. ssp. cruentus (Linn.) Thell. var.

paniculatus Thell. in Aschers. & Graebn. Syn. 5(1):

247, 1914; Backer, loc. cit. 79; Sant. 224; Fl. Delhi, 296.

Amaranthus paniculatus Linn. Sp. Pl. 1406, 1763; FBI. 4:

718; C. 2: 573.

An erect, much-branched herb. Stems stout, grooved. Leaves ovate, ovate-lanceolate, acute. Flowers yellowish, in dense spikes. Capsule ovoid. (Fl. Fr. July - December). DNT. 53,1154.

Observed either under cultivation or as an escape.

Amaranthus tricolor Linn. Sp. Pl. 989, 1753; Backer, loc. cit.

77; Sant. 222; Fl. Delhi, 297.

Amaranthus gangeticus Linn. Syst. 1268, 1759; FBI. 4: 719;

C. 2: 574.

A. polygamus Linn. Amoen. Acad. 4: 294, 1759; C. 2: 575.

An erect, much-branched, stout herb. Leaves variable in size, ovate-oblong or lanceolate with a cuneate base. Flowers in axillary clusters, forming long, terminal, interrupted spikes. Fruit circumscissile, rugose; seeds black. (Fl. Fr. October - February). DNT. 57, 1497, 1519.

Observed in moist places in ditches and in waste places.

Amaranthus viridis Linn. Sp. Pl. (ed. 2) 1405, 1763, quoad.

descr. et Herb. Linn. Excl. ref. Bauhin et Tournefort;
FBI. 4: 720; C. 2: 575; Van Steenis, in Fl. Males. I,
4(2): 594, 1954; Sant. 222; Fl. Pavagadh, 196.

Amaranthus gracilis Desf. Tabl. Hort. Par. 43, 1804; Fl.
Delhi, 297.

An erect, much-branched, glabrous herb. ~~Leaves ovate.~~
Leaves ovate or deltoid-ovate; glabrous. Flowers pale-green,
in small, axillary clusters and in terminal paniculate spikes.
Fruit indehiscent, compressed, suborbicular. (Fl. Fr. October -
May). DNT. 627, 1741, 1777.

Observed as a weed in cultivated fields and in moist
places near streams.

Aerva Forsk. (nom. cons.)

Plants erect, flowers bisexual and
unisexual, spikes all axillarylanata

Plants sub-erect undershrub, often
climbing; flowers bisexual, spikes
terminal and axillarysanguinolenta

Aerva lanata (Linn.) Juss. in Ann. Mus. Par. 2: 131, 1808;
FBI. 4: 728; C. 2: 578; Backer, loc. cit. 84; Sant.
223; Fl. Delhi, 294; Fl. Pavagadh, 197.

Achyranthes lanata Linn. Sp. Pl. 204, 1753 (non Celosia
lanata Linn. ibid, 205).

An erect or sub-erect, much-branched, woolly tomentose
herb. Leaves alternate, elliptic, obovate or sub-orbicular,
obtuse, white-woolly beneath. Flowers greenish white or white,
in dense, axillary spikes. Seeds black, smooth. (Fl. Fr. August -
March). DNT. 413, 907, 1531, 1838, 1906.

A common weed of cultivated fields , also noted along
roadsides and in hedges.

Aerva sanguinolenta (Linn.) Blume, Bijdr. 547, 1825; Backer,
loc. cit. 85; Sant. 223; Fl. Dang, 78; Fl. Pavagadh,
197.

Achyranthes sanguinolenta Linn. Sp. Pl. (ed. 2) 294, 1762.

Aerva scandens Wall. Cat. 6911, 1829; Moq. in DC. Prodr.
13(2): 302, 1849; Wt. Ic. t. 724 (excl. utr. & seed);
FBI. 4: 727; C. 2: 577.

A sub-erect undershrub, often climbing. Leaves alternate and opposite, elliptic-lanceolate, acute, mucronate. Flowers white, in axillary and terminal, woolly spikes. Seeds smooth, black. (Fl. Fr. September - March). DNT. 524, 582, 1519.

Commonly observed on the slopes of the hillocks in moist, shaded localities.

CHENOPODIACEAE

Flowers usually bisexual, all similarChenopodium

Flowers unisexual, dimorphicSpinacea

Chenopodium Linn.

Chenopodium album Linn. Sp. Pl. 219, 1753; FBI. 5: 3; Backer, in Fl. Males. I. 4(2): 102, 1949; Sant. 226; Fl. Delhi, 302; Fl. Pavagadh, 201.

Chenopodium viridis Linn. Sp. Pl. 219, 1753; Gr. 171.

An erect, annual herb, coated with white, granular pubescence. Leaves entire, lanceolate or rhomboid-oblong, acute. Flowers greenish, in axillary and terminal clusters, forming condensed spikes. (Fl. Fr. November - March). DNT. 623, 918, 1488, 1611.

A common weed of cultivated fields and noted in moist, waste places.

Spinacea Linn.

Spinacea oleracea Linn. Sp. Pl. 1027, 1753; FBI. 5: 6; C. 2: 595; Bailey, Man. Cult. Pl. 354.

An erect, annual herb. Radical leaves narrow-oblong to ovate-oblong, cauline leaves smaller, becoming lanceolate. Flowers greenish, unisexual; males in spikes or panicles; females in clusters. (Fl. Fr. June - August). DNT. 987 A.

Cultivated.

BASELLACEAE

Basella Linn.

Basella rubra Linn. Sp. Pl. 272, 1753; FBI. 5: 20; C. 2: 594; Bailey, Man. Cult. Pl. 354; Fl. Delhi, 304.

Basella alba Linn. Sp. Pl. 272, 1753.

A glabrous, twining, succulent herb. Leaves broad, ovate, cordate, entire. Flowers pink or pale-purple, in lax, axillary, elongated spikes. Fruit ovoid, fleshy utricle, black. (Fl. Fr. September - January). DNT. 656.

Cultivated on hedges.

POLYGONACEAE

- Perianth in two whorls, each 3-merous;
stigma fimbriateRumex
- Perianth 4-5-merous; stigma capitate.....Polygonum

Rumex Linn.

Rumex dentatus Linn. Mant. 2: 226, 1771; FBI. 5: 59; C. 3: 10;
Sant. 227; Fl. Delhi, 307.

An erect, glabrous, annual herb; stems ribbed, usually red. Radical leaves much longer than cauline ones, oblong, obtuse, rounded. Flowers pedicillate, in distant whorls. Nut trigonous, shining, black, almost winged. (Fl. Fr. January - April). DNT. 875, 1556.

Rare; noted in moist, muddy soils on the river banks at Hampleshwar.

Polygonum Linn.

- A diffusely branched prostrate herbplebeium

An erect herb :

- Stipules not ciliateglabrum

Stipules ciliate with long stiff bristles.....barbatum
var.gracile

Polygonum plebeium R. Br. Prodr. 420, 1810; FBI. 5: 27; C. 3:
4: Sant. 226; Fl. Dang, 80; Fl. Delhi, 305; Fl. Pava-
gadh, 201.

A diffusely branched, prostrate, glabrous herb. Leaves small, linear, oblong, acute; stipules short, hyaline, fimbriate. Flowers pink- or red, in axillary clusters. Nutlets trigonous. (Fl. Fr. October - February). DNT. 1563, 1912.

Commonly noted in moist places on the river banks.

Polygonum glabrum Willd. Sp. Pl. 2: 447, 1799; FBI. 5: 34;
C. 3: 5; Sant. 227; Fl. Delhi, 306.

An erect, stout, glabrous, annual herb. Leaves lanceolate, acuminate; stipules ochreate, not ciliate. Flowers pink, in terminal paniculate racemes. Nutlets black, biconvex. (Fl. Fr. September - January). DNT. 1913.

Noted in marshy places along the river banks.

Polygonum barbatum Linn. var. gracile Steward, in Contr. Gray
Herb. 88: 55, 1930; Sant. 227; Fl. Dang, 80.

Polygonum serrulatum Hook. f. in FBI. 5: 38, 1886 (excl.
var. donii); C. 3: 7 (non Lagasca nec Meissn. nec
Miq.).

An erect, glabrous, annual herb. Leaves sub-sessile, linear-lanceolate, acute; stipules strigose, ciliate with long, stiff bristles. Flowers pink, in terminal, paniculate, slender racemes. Nutlets trigonous, smooth. (Fl. Fr. September - January). DNT. 569, 1847.

Commonly observed on sandy banks of streams and rivers.

ARISTOLOCHIACEAE

Aristolochia Linn.

Aristolochia bracteolata Lamk. Encycl. 1: 258, 1783; Andrews, Fl. Pl. Ang.-Egy. Sudan 1: 121, f. 17, 1950; Santapau & Wagh, in BBSI. 5: 105, 1963; Fl. Pavagadh, 202; Raizada, in Ind. For. 92(5): 302, 1966.

Aristolochia bracteata Retz. Obs. Bot. 5: 29, 1789; FBI. 5: 75; C. 3: 16; Fl. Delhi, 308.

A glabrous, prostrate, annual herb. Leaves broadly ovate, obtuse, cordate at base or somewhat reniform. Flowers dark purple, tubular, with trumpet-shaped mouth, solitary, axillary. Capsule ribbed, oblong. (Fl. Fr. January - May). DNT. 1716.

Rare; noted in sandy soils on the river banks at Hampheshwar.

PROTEACEAE

Grevillea R. Br. (nom. cons.)

Grevillea robusta A. Cunn. in R. Br. Prot. Nov. 24, 1830;

Bailey, Man. Cult. Pl. 345; Sant. 233; Fl. Dang, 81;

Fl. Pavagadh, 308.

A tall, robust tree. Leaves bi- or tripinnate; leaflets pinnatifid. Flowers orange-yellow, in one-sided, showy racemes. (Fl. Fr. March - May). DNT. 1364.

Only one tree noted near Kawant village.

LORANTHACEAE

Leafless parasite; flowers unisexualViscum

Parasite with leaves; flowers

hermaphroditeDendrophthoe

Viscum Linn.

Viscum articulatum Burm. f. Fl. Ind. 211, 1768; FBI. 5: 226;

C. 3: 47; Bertal Hansen and Kai Larsen, in Dansk.

Bot. Arkiv. 27(1): 19, 1969; Fl. Mel. 282.

A leafless, parasitic, dichotomously much-branched shrub;

branches jointed, linear, flattened. Flowers minute, in fascicles, at the nodes. (Fl. April - August). DNT. 172.

Observed as a parasite on Diospyros and Cassine in the forests.

Dendrophthoe Mart.

Flowers white or white with a greenish tingefalcata

Flowers bright scarletfacata
var.coccinea

Dendrophthoe falcata (Linn. f.) Etting, in Denkschr. Akad.

Wissen. Math.-Naturw Cl. 32: 52, 58, t. 13, f. 14,
1872; Sant. 234; Fl. Dang, 81; Fl. Delhi, 309; Fl.
Pavagadh, 203; Fl. Mel. 283.

Loranthus falcatus Linn. f. Suppl. 211, 1781.

L. longifolius Desr. in Lamk. Encycl. 3: 598, 1789; Gr.
86; Wt. Ic. t. 302; FBI. 5: 214; C. 3: 42.

A large, bushy parasite. Leaves thick, coriaceous, ovate, linear-oblong, obtuse. Flowers white with or without a greenish tinge, in short, spreading, stout, axillary, unilateral racemes. (Fl. August - January). DNT. 1512.

Observed as a partial parasite, on Diospyros, Boswellia, Cassine etc..

Dendrophthoe falcata Etting, var. coccinea (Talb.) Santapau,
in Pl. Saur. 34, 1953; Sant. 234.

Loranthus longifolius Desr. var. coccinea Talb. Trees,
ed. 1. 172, 1894; C. 2: 549.

A large, bushy, branched parasite. Leaves large, thick, coriaceous, broadly ovate, linear-oblong, obtuse. Flowers bright scarlet, in stout, unilateral, axillary racemes. (Fl. October - March). DNT. 1634.

Observed as a partial parasite, on Madhuca.

SANTALACEAE

Santalum Linn.

Santalum album Linn. Sp. Pl. 349, 1753; FBI. 5: 231; C. 3: 49;
Fl. Pavagadh, 204; Fl. Mel. 284.

A small, ever-green tree with slender, drooping branches. Leaves elliptic-lanceolate, sub-acute, thin, acute, entire. Flowers bluish purple, in terminal and axillary panicle cymes. Fruit a black drupe. (Fl. Fr. January - April). DNT. 1583 A.

Noted in the temple premises at Hampheshwar.

EUPHORBIACEAE

1. Flowers in cyathia :

- 2. Involucre regularEuphorbia
- 2. Involucre obliquely zygomorphicPedilanthus
- 1. Flowers not in cyathia :
 - 3. Cells of the ovary 1-ovuled :
 - 4. Petals present, in one or both sexes
or if absent, calyx petaloid :
 - 5. Flowers in androgynous cymesJatropha
 - 5. Flowers in androgynous spikes or
racemesChrozophora
 - 4. Petals absent in both the sexes :
 - 6. Capsules pricklyRicinus
 - 6. Capsules not as above :
 - 7. Male sepals 4-6, imbricate, free..Baliospermum
 - 7. Male sepals closed in bud,
splitting valvately into 3-5
concave sepals :
 - 8. Herbs or undershrubs;
stamens less than 10Acalypha
 - 8.: Trees or shrubs; stamens
more than 10 :

- 9. Trees; filaments freeMallotus
- 9. Shrubs; filaments connate in
bundles or branchedHomonia
- 3. Cells of the ovary 2-ovuled :
- 10. Petals present, small; calyx valvate...Bridelia
- 10. Petals absent; calyx imbricate :
- 11. Pistillodes in males large, disc
present in both the sexesSecurinega
- 11. Pistillodes absent in males :
- 12. Herbs; fruits dry, capsular....Phyllanthus
- 12. Shrubs or trees; fruits fleshy :
- 13. Shrubs; fruits small,
dark purpleKirganelia
- 13. Trees; fruits large,
pale yellowEmblica

Euphorbia Linn.

- 1. Stems reduced to a fleshy, elongated,
underground tubers; leaves all radicalfusiformis

1. Stems well-developed, above ground;
leaves not radical :
2. Shrubs or trees :
 3. Plants armed with stipular spines.....neriifolia
 3. Plants unarmedtirucalli
2. Annual or perennial herbs :
 4. Involucre with a single, large gland.....heterophylla
 4. Involucral glands not large :
 5. Leaves exstipulate, alternate below,
opposite above or all alternate,
except the upper most floral leaves..dracunculoides
 5. Leaves all opposite, stipulate or
if stipules absent, the opposite
pairs of leaves jointed by inter-
petiolar line :
 6. Glands of involucre with a
conspicuous, petaloid limb;
capsules hairyhypericifolia
 6. Glands of involucre without a
petaloid limb, or limb not
conspicuous :

7. Erect or ascending herbs;

leaves up to 35 mm. longhirta

7. Prostrate herbs; leaves less than

15 mm. long :

8. Stems glabrous or nearly so;

capsules glabrous all overmicrophylla

8. Stems hairy :

9. Capsules pubescent all over ...thymifolia

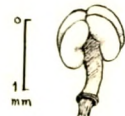
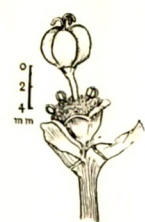
9. Capsules pubescent only at

the angles, glabrous elsewhere..prostrata

Euphorbia fusiformis Buch.-Ham. in Don, Prodr. Fl. Nep. 62,
1825; FBI. 5: 257; Santapau, in Bull. Bot. Soc. Beng.
8(1): 3, 1954:

Euphorbia acaulis Roxb. Hort. Beng. 36, 1814 nom. nud. &
Fl. Ind. 2: 472, 1832; C. 3: 57.

Stem reduced to stout, cylindric, underground rootstock.
Leaves all radical, sub-sessile, fleshy, obovate or oblanceo-
late, obtuse. Involucres in cymes, ^{dichotomous} on long peduncles from the
crown of the root stock after the leaves have fallen. ~~Dichotomous~~
(Fl. Fr. April - June). DNT. 187.



Euphorbia fusiformis Buch.-Ham.

HERBARIUM

No. DNT. 187.

Family Euphorbiaceae

Genus Euphorbia

Species fusiformis Buch.-Ham.

Locality Luni,
Chhotaudapur.

Remarks Observed on the plain
area in the forest.

30-7-69.

Collected by *Chhotaudapur*

Rare; observed on the plains in the forest at Luni.

Euphorbia neriifolia Linn. Sp. Pl. 451, 1753; FBI. 5: 255;
C. 3: 59; Sant. 240; Fl. Dang, 83; Fl. Delhi, 311;
Fl. Pavagadh, 206.

A large, fleshy, armed shrub. Leaves fleshy, obovate-oblong, alternate. Leafless during flowering and fruiting. Cyathia yellowish or greenish yellow. (Fl. Fr. January - May). DNT. 1545 A.

Commonly grown as a hedge plant around cultivated fields.

Euphorbia tirucalli Linn. Sp. Pl. 452, 1753; FBI. 5: 254; C. 3: 66; Fl. Dang, 84; Fl. Pavagadh, 206.

A leafless, unarmed shrub or a small tree. Branches green, smooth. Leaves very small or absent. Cyathia in sessile clusters at the top of branchlets. (Fl. Fr. August - October). DNT. 387 A.

Cultivated as a hedge plant.

Euphorbia heterophylla Linn. Sp. Pl. 453, 1753; Airy Shaw, in KB. 26(2): 264, 1972.

Euphorbia geniculata Orteg. Nov. Pl. Hort. Matrit. Dec. 18, 1797; FBI. 5: 239; C. 3: 66; Fl. Dang, 83; Fl. Delhi, 312.

An erect, fistular, annual herb. Leaves elliptic, lanceolate to ovate. Involucres 5-lobed with one, conspicuous, lateral gland. Capsule usually 3-celled. (Fl. Fr. June - November). DNT. 449, 1129.

Commonly observed along forest paths, forest fringes and hedges.

Euphorbia dracunculoides Lamk. Encycl. Method 2: 428, 1788;
FBI. 5: 262; C. 3: 66; Santapau, loc. cit. 11; Fl.
Delhi, 312; Fl. Pavagadh, 207.

An erect, dichotomously branched, annual herb. Leaves linear to linear-lanceolate, alternate or opposite. Involucres nearly sessile, solitary, glabrous; capsule glabrous. (Fl. Fr. March - May). DNT. 1693.

Observed as a weed in cultivated fields.

Euphorbia hypericifolia Linn. Sp. Pl. 454, 1753; FBI. 5: 249
(pro parte); Airy Shaw, loc. cit. 265.

Chamaesyce hypericifolia (Linn.) Millsp. in Publ. Field
Columb. Mus. Bot. 2: 303, 1909.

Euphorbia parviflora Linn. Syst. (ed. 10) 1047, 1759;
Roxb. Fl. Ind. 2: 472; Sant. 243; Santapau, loc. cit.
13; Fl. Pavagadh, 207.

E. hypericifolia var. parviflora Prain, Beng. Pl. 2:
924, 1903; C. 3: 69.

An erect or ascending herb. Leaves opposite, elliptic-oblong, obtuse. Involucres in axillary and terminal, usually many-flowered, pedunculate cymes. Capsules subglobose, hairy. (Fl. Fr. May - November). DNT. 58, 171, 409, 1225, 1608.

Fairly common; observed along roadsides and in cultivated fields.

Euphorbia hirta Linn. Sp. Pl. 454, 1753; Fl. Dang, 83; Fl.

Delhi, 312; Fl. Pavagadh, 207; Airy Shaw, loc. cit. 264.

Euphorbia pilulifera auct. (non Linn.); FBI. 5: 250; C. 3:
64.

Chamaesyce hirta (Linn.) Millsp. in Publ. Field Columb.
Mus. Bot. 2: 303, 1909.

An erect or ascending herb. Stem and branches covered with long yellowish crisped hairs. Leaves oblique, oblong-lanceolate. Involucres axillary and terminal, clustered, in dense, crowded, globose cymes. Capsules appressedly hairy. (Fl. Fr. May - March). DNT. 516.

A common weed of cultivated fields and roadsides.

Euphorbia microphylla Heyne ex Roth, Nov. Pl. Sp. 229, 1821

(non Lamk. 1786); FBI. 5: 252; C. 3: 65; Fl. Dang, 83; Airy Shaw, loc. cit. 266.

Euphorbia bombaiensis Santapau, in Bull. Bot. Soc. Beng. 8: 17, 1954; Fl. Pavagadh, 208.

A prostrate, much-branched, glabrous herb. Leaves opposite, rounded, elliptic or obovate. Involucres numerous, subsolitary, axillary. Capsules glabrous. (Fl. Fr. June - September). DNT.90.

A common weed in cultivated fields and waste places.

Euphorbia thymifolia Linn. Sp. Pl. 454, 1753; FBI. 5: 252; C. 3: 64; Sant. 241; Fl. Dang, 84; Fl. Delhi, 313; Fl. Pavagadh, 208; Airy Shaw, loc. cit. 265.

Chamaesyce thymifolia (Linn.) Millsp. in Publ. Field Mus. Nat. Hist. Chicago, Bot. 2: 412, 1916.

A small, prostrate, annual herb. Stem and branches hispidly pubescent. Leaves opposite, obliquely oblong, rounded. Involucres small, axillary or 2-3 in the axils. Capsules pubescent, erect. (Fl. Fr. August - November). DNT. 1165.

Rare; observed on the river banks at Hampheshwar.

Euphorbia prostrata Ait. Hort. Kew (ed. 1) 2: 139, 1789; FBI. 5: 266; Santapau, loc. cit. 16; Fl. Delhi, 313; Fl. Pavagadh, 208; Airy Shaw, loc. cit. 266.

Chamaesyce prostrata (Ait.) Small, Fl. SE. U.S. 711,

1903; Rao & Razi, in Journ. Mysore Univ. 55, 1969-1970.

A small, prostrate, glabrous, annual herb. Leaves small, opposite, nearly as broad as long, obliquely oblong. Involucres numerous, sub-solitary, axillary. Capsule pubescent at the angles, glabrous elsewhere. (Fl. Fr. January - August). DNT. 1557, 1715, 1903.

Commonly observed in muddy soils on the river banks.

Pedilanthus Neck.

Pedilanthus tithymaloides (Linn.) Poit. in Ann. Mus. Hist. Nat.

Paris 19: 390, t. 19, 1812; FBI. 5: 252; C. 3: 124;

Bailey, Man. Cult. Pl. 619; Sant. 252.

Euphorbia tithymaloides Linn. Sp. Pl. 453, 1753; D. & G.

Suppl. 76.

A slender, succulent, deciduous shrub with zigzag stem. Leaves ovate to ovate-lanceolate. Involucres scarlet-red, boat or slipper-shaped. (Fl. March - April). DNT. 1542.

Cultivated near habitation.

Chrozophora Juss. Corr. Benth. & Hook. f. (nom. cons.)

Plants erect; leaves glandular at the

base; hairs sessilerottleri

Plants prostrate; leaves not glandular

at the base; hairs stipitateprostrata

Chrozophora rottleri (Geis.) Juss. ex Spreng. Syst. 3: 850,
1826; Pax & Hoffm. in Pfreich. 57: 19; Sant. 248;
Fl. Pavagadh, 212.

Croton rottleri Geisel, Crot. Monogr. 54, 1807.

Chrozophora plicata Voigt, Hort. Sub. Calc. 156, 1846;
D. & G. 233; C. 3: 104 (non A. Juss.).

C. plicata (forma 1) Hook. f. in FBI. 5: 409, 1887.

An erect, stellately hairy herb. Leaves hairy, thick, ovate-orbicular or obscurely 3-lobed. Flowers yellowish, in pedunculate, densely hairy racemes. Capsule densely hairy when young. (Fl. Fr. January - June). DNT. 1745.

Commonly observed along roadside ditches and in waste places.

Chrozophora prostrata Dalz. in D. & G. 223, 1861; C. 3: 105;
Sant. 249; Fl. Delhi, 315.

Chrozophora plicata (forma 3) Hook. f. in FBI. 5: 410.

A prostrate, stellately hairy herb. Leaves broadly ovate or orbicular, finely pubescent. Flowers in short, few-flowered,

axillary racemes, capsules densely woolly. (Fl. Fr. December - June). DNT. 924 A.

Commonly noted along roadside ditches, in cultivated fields and in open waste lands..

Jatropha Linn.

Leaves lobed, eglandular; flowers
yellowish-greencurcas

Leaves lobed, margin with a row of short,
viscid glands; flowers red.....gossypifolia

Jatropha curcas Linn. Sp. Pl. 1006, 1753; FBI. 5: 383; C. 3:
95; Sant. 248; Fl. Dang, 84; Fl. Pavagadh, 214.

A large shrub or a small tree. Leaves 3-5-lobed or angled. Flowers yellowish-green, in terminal, cymose panicle. Capsule subglobose, glabrous. (Fl. Fr. August - December). DNT. 157.

Commonly noted in hedges.

Jatropha gossypifolia Linn. Sp. Pl. 1006, 1753; FBI. 5: 383;
C. 3: 94; Fl. Dang, 84; Fl. Delhi, 314.

A much-branched, glandular shrub. Leaves palmately 3-5-lobed, clothed with numerous fascicled and branched glandular

bristles. Flowers in terminal cymes. Capsule oblong, 3-lobed. (Fl. Fr. August - February). DNT. 956.

Noted on waste lands, roadsides and in hedges.

Baliospermum Blume

Baliospermum montanum Muell.-Arg. in DC. Prodr. 15(2): 1125, 1866; Fl. Dang, 81; Fl. Pavagadh, 215.

Baliospermum axillare Blume, Bijdr. 604, 1825; FBI. 5: 461; C. 3: 106.

B. polyandrum Wt. Ic. t. 1885; D. & G. 232.

A stout undershrub. Leaves sinuately toothed, alternate, the upper ones lanceolate. Flowers numerous, small, in axillary racemes or contracted panicles. Capsule ovoid. (Fl. Fr. December - April). DNT. 909, 1866.

Commonly observed as an undergrowth of forests and in waste places.

Ricinus Linn. -

Ricinus communis Linn. Sp. Pl. 1007, 1753; FBI. 5: 457; C. 3: 125; Sant. 252; Fl. Dang, 85; Fl. Delhi, 316; Fl. Pavagadh, 214.

An evergreen shrub or a small tree. Leaves peltate, palmately 3-7-lobed. Flowers in terminal panicles. Capsules 3-lobed, echinate. (Fl. Fr. October - March). DNT. 955.

Cultivated in fields and in gardens.

Acalypha Linn.

Bracts concealing the capsule :

Bracts of female flowers shortly dentate,
truncateindica

Bracts of female flowers fimbriateciliata

Bracts not concealing the capsulemalbarica

Acalypha indica Linn. Sp. Pl. 1003, 1753; Wt. Ic. t. 877;

FBI. 5: 416; C. 3: 108; Fl. Dang, 81; Fl. Delhi, 316;

Fl. Pavagadh, 213.

An erect, annual herb with spreading branches. Leaves membranous, ovate, serrate, acute. Flowers minute, in lax, elongate axillary spikes; male clusters towards the top; females solitary or paired, enclosed by a shortly dentate, truncate bract. Capsule hispid, concealed by persistent bract. (Fl. Fr. September - January). DNT. 61.

A common weed of waste lands and cultivated fields.

Acalypha ciliata Forsk. Fl. Aeg.-Arab. 162, 1775; FBI. 5: 417;

C. 3: 109; Fl. Pavagadh, 214.

An erect, stout, annual herb. Leaves alternate, ovate, thin, acuminate, finely serrate. Flowers in axillary, androgynous spikes; bracts fimbriate. Capsules glabrous. (Fl. Fr. July - November). DNT. 144, 433, 447.

A common weed of waste places and along forest paths.

Acalypha malabarica Muell.-Arg. in Linnaea 34: 42, 1865; FBI.

5: 416; C. 3: 109.

A stout, branched, annual herb. Leaves elliptic-lanceolate, sub-acute. Flowers in axillary, androgynous spikes; bracts glabrous. Capsule not concealed in the bract. (Fl. Fr. August - November). DNT. 5, 60, 1596.

Commonly observed as a weed in cultivated fields and along forest paths.

Mallotus Lour.

Mallotus philippensis (Lamk.) Muell.-Arg. in Linnaea 34: 196,

1865; FBI. 5: 442; C. 3: 113; Sant. 249; Fl. Dang, 85;

Airy Shaw, loc. cit. 300.

Croton philippensis Lamk. Encycl. 2: 206, 1786.

Rottlera tinctoria Roxb. Pl. Cor. 2: 36, t. 167, 1798;

Gr. 184; D. & G. 230.

A much-branched tree. Leaves ovate-lanceolate, alternate, acuminate, slightly toothed. Flowers dioecious; males in erect, terminal spikes; females in short, sessile spikes. Capsule 3-lobed, covered with bright red powder. (Fl. Fr. October - January). DNT. 557, 1873.

Observed on the slopes of the hillocks and along forest paths.

Homonia Lour.

Homonia riparia Lour. Fl. Cochinch. 637, 1790; FBI. 5: 455;

C, 3: 118; Fl. Dang, 84; Thaker & Sabnis, in JMSUB.

19 & 20(3 & 4): 45, 1970-1971; Airy Shaw, loc.cit. 282.

Adelia neriifolia Roth, Nov. Pl. Sp. 375, 1821; Gr. 185;

D. & G. 231; Wt. Ic. t. 1868.

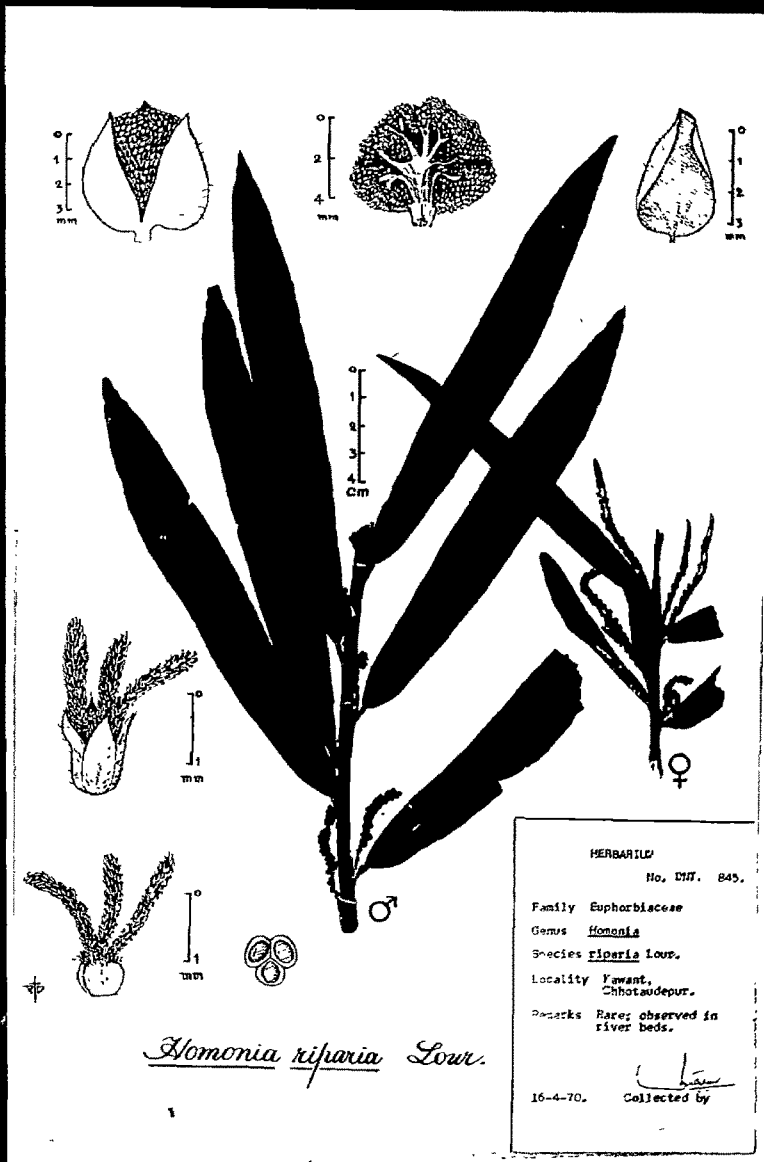
A rigid, evergreen shrub. Leaves numerous, closely set, linear-oblong or linear-lanceolate, acute. Flowers dioecious, sessile, in axillary bracteate spikes; stamens numerous, filaments branched or connate in bundles; styles 3, papillose. (Fl. Fr. February - May). DNT. 845.

PLATE No. 66

Rare; noted in river beds at Kawant.

Bridelia Willd.

Bridelia squamosa (Muell.-Arg.) Gehrm. in Engl. Bot. Jahrb.



Homonia riparia Lour.

HERBARIUM
No. DIT. 845.

Family Euphorbiaceae
Genus *Homonia*
Species *riparia* Lour.
Locality Yawant,
Chhotaudepur.
Remarks Rare; observed in
river beds.

16-4-70. Collected by *Lour.*

41, Beibl. 95: 30, 1908; Santapau, in JBNHS. 50: 308,
f. 2, 1951; Sant. 243; Fl. Dang, 82; Fl. Pavagadh, 209.

Bridelia retusa Spreng. var. squamosa Muell.-Arg. in DC.
Prodr. 15(2): 493, 1866; FBI. 5: 268.

B. retusa Hook. f. in FBI. 5: 268; C. 3: 68; (ambo pro
parte, non Spreng.).

A medium-sized tree. Leaves coriaceous, elliptic-oblong to
ovate-lanceolate, obtuse, tomentose beneath. Flowers yellowish-
green, in axillary clusters or on long axillary paniced spikes.
Fruit a fleshy drupe. (Fl. Fr. June - October). DNT. 526, 989,
1356.

Fairly common and abundant in the area. Observed in asso-
ciation with Lannea, Anogeissus and Mitragyna.

Securinega Juss. (nom. cons.)

Securinega virosa (Roxb. ex Willd.) Pax & Hoffm. in Pfam. (ed.2)
19 c : 60, 1931; Sant. 244; Fl. Dang, 85; Fl. Delhi,
318; Airy Shaw, loc. cit. 340.

Phyllanthus virosus Roxb. ex Willd. Sp. Pl. 4: 578, 1805.

Fluggea microcarpa Blume, Bijdr. 580, 1825; FBI. 5: 328;
C. 3: 77.

An erect, glabrous, unarmed shrub. Leaves variable, obovate

or rounded, obtuse. Flowers greenish-yellow, minute, in axillary clusters. Fruit globose, white. (Fl. Fr. July - December). DNT. 39, 100, 438, 1026.

Fairly common; observed in hedges and along forest paths.

Phyllanthus Linn.

Stipules peltate; anthers with vertical dehiscence :

Leaves scattered on the branches;

capsule smoothmaderaspatensis

Leaves closely set on the branches;

capsule not as above :

Anthers oblong, connective apiculate

or muticous; capsule echinateurinaria

Anthers small, connective with

crescentic crest; capsule crustaceous..simplex

Stipules simple; anthers with transverse

dehiscenceasperulatus

Phyllanthus maderaspatensis Linn. Sp. Pl. 982, 1753; Wt. Ic. t.

1895; FBI. 5: 292; C. 3: 82; Sant. 246; Fl. Delhi, 319;

Fl. Pavagadh, 210.

An erect, glabrous herb. Leaves scattered, obovate-cuneate. Male flowers in clusters, small, sub-sessile; females large, axillary, solitary, shortly pedicillate. Capsule depressed, globose, smooth. (Fl. Fr. August - January). DNT. 59, 464, 966, 1142, 1604.

Common among grasses on open grounds and as a weed in cultivated fields.

Phyllanthus urinaria Linn. Sp. Pl. 982, 1753; FBI. 5: 293; C. 3: 83; Sant. 45; Fl. Dang, 85.

A prostrate, annual herb. Leaves distichously imbricate, sessile, linear-oblong. Flowers minute, axillary. Capsule globose. (Fl. Fr. July - December). DNT. 28, 571, 1217.

Fairly common; observed in open waste lands, along forest paths and in cultivated fields.

Phyllanthus simplex Retz. Obs. 5: 29, 1789; FBI. 5: 295; C. 3: 83; Fl. Delhi, 319; Fl. Pavagadh, 210.

An erect, annual herb. Leaves linear-oblong, distichous, obtuse. Flowers unisexual, solitary, axillary on slender pedicels; females borne below the males. Capsule globose, crustaceous. (Fl. Fr. September - January). DNT. 1504.

Rare; observed growing on the river banks at Hampsheshwar.

Phyllanthus asperulatus Hutch. in KB. 27-28, 1920; Webster,
in JAA. 37: 14, 1956; Sant. 245.

Phyllanthus niruri auct. non Linn.; FBI. 5: 298; Wt. Ic. t.
1894; C. 3: 84.

A small, erect, annual herb. Leaves simple, oblong,
distichous. Flowers axillary, solitary, hanging down below the
branchlets; males 1-3 together, females solitary. Capsule
globose, smooth. (Fl. Fr. June - November). DNT. 56, 574, 1554.

A common weed of cultivated fields.

Kirganelia Baill.

Kirganelia reticulata (Poir.) Baill. Etud. Gen. Euph. 613, 1858;
Sant. 246; Fl. Dang, 84; Fl. Delhi, 320; Fl. Pavagadh, 211.

Phyllanthus reticulatus Poir. in Lamk. Encycl. 5: 298, 1804;
FBI. 5: 288; C. 3: 81.

A large, glabrous, straggling, shrub with drooping branches.
Leaves oblong-elliptic, acute, thin. Flowers axillary; males in
fascicles of 2-6; females solitary. Berry globose, smooth. (Fl.
Fr. June - September). DNT. 81, 412, 1167.

Noted wild in hedges and on the elevated banks of rivers.

Emblica Gaertn.

Emblica officinalis Gaertn. Fruct. 2: 122, 1791; Wt. Ic. t.

1896; Sant. 246; Fl. Delhi, 320; Fl. Pavagadh, 211.

Phyllanthus emblica Linn. Sp. Pl. 982, 1753; FBI. 5: 289;

C. 3: 81.

A small tree. Leaves linear-oblong, distichous. Flowers yellow, in axillary fascicles below the leaves; male flowers many, on short, slender pedicels; female flowers few, subsessile. Fruits fleshy, globose, pale yellow. (Fl. Fr. April - October). DNT. 675.

Commonly observed on the slopes and at the foot of the hillocks.

ULMACEAE

Fruit dry, winged Holoptelea

Fruit a drupe Trema

Holoptelea Planch.

Holoptelea integrifolia (Roxb.) Planch. in Ann. Sc. Nat. (ser.3)

10: 259, 1848; Wt. Ic. t. 1968; FBI. 5: 481; C. 3: 123;

Sant. 252; Fl. Dang, 86; Fl. Delhi, 321.

Ulmus integrifolia Roxb. Fl. Cor. 1: 56, t. 78, 1795;
Gr. 188.

A medium-sized, deciduous tree. Leaves broadly ovoid or ovate, acuminate. Flowers greenish, in fascicles at the scars of fallen leaves. Fruit a samara, orbicular, with reticulately veined wings. (Fl. Fr. March - May). DNT. 855.

Commonly observed along roadsides and on the slopes of the hillocks.

Trema Lour.

Trema orientalis (Linn.) Blume, Mus. Bot. Lugd.-Bat. 2: 58, 1856; FBI. 5: 884; C. 3: 129; Talb. 2: 500; Sant. 253; Fl. Dang, 86; Fl. Pavagadh, 215.

Celtis orientalis Linn. Sp. Pl. 1044, 1753; Gr. 189.

A small tree. Leaves rough, obliquely ovate, serrate, acuminate. Flowers greenish, minute, in axillary cymes. Drupe black. (Fl. Fr. 101, 555, 1416.

Commonly observed along forest paths and at the foot and slopes of hillocks.

URTICACEAE

Laportia Gaudich.

Laportea interrupta (Linn.) Chew, in Gard. Bull. Singapore,
19: 200, 1965; Raizada, in Ind. For. 94(5): 445, 1968.

Urtica interrupta Linn. Sp. Pl. 985, 1753.

Fleurya interrupta (Linn.) Gaud. in Bot. Freye. Voy.
497, 1826; Wt. Ic. t. 1975; FBI. 5: 548; C. 3: 131;
Sant. 253; Fl. Dang, 86; Fl. Pavagadh, 216.

An annual herb with stinging hairs. Leaves alternate,
broadly ovate, acuminate, coarsely crenate, serrate. Flowers
greenish, in solitary, axillary spikes or racemes. Achenes
much compressed. (Fl. Fr. August - November). DNT. 212.

Rare; observed as an undergrowth in the forest at Ambadungar.

MORACEAE

Flowers in short spikes or heads;
stamens inflexed in bud :.....Streblus

Flowers crowded in globose heads or inside
fleshy receptacles; stamens straight in bud :

Flowers all exposedArtocarpus

Flowers on the inner wall of a
closed receptacleFicus

Streblus Lour.

Streblus asper Lour. Fl. Cochinch. 2: 615, 1790; FBI. 5: 489;
C. 3: 141; Talb. 2: 502, t. 516; Fl. Dang, 87; Fl.
Delhi, 329; Fl. Pavagadh, 217.

A small tree. Leaves elliptic, obovate, rough, acute.
Flowers unisexual; males in shortly pedunculate, globose heads;
females solitary, on axillary fascicled pedicels. Fruit yellow,
subglobose. (Fl. Fr. January - March). DNT. 1930.

Observed at the foot of hillock and in hedges.

Artocarpus J.R. & G. Forst. (nom. cons.)

Artocarpus heterophyllus Lamk. Encycl. 3: 210, 1789; Bailey,
Man. Cult. Pl. 338; Sant. 260; Fl. Delhi, 322.

Artocarpus integrifolius auct. (non Linn. f.); C. 3: 158.

A large, evergreen tree. Leaves elliptic to obovate,
coriaceous. Flowers crowded on globose large receptacle; male
heads cylindric; females cylindric, tubercled and very large
at maturity, hanging on the trunk and old branches.

Ficus Linn.

Receptacle sessile :

Leaves glabrous :

Leaves broadly ovate, cordate,
 acuminate; aerial roots absentreligiosa

Leaves elliptic or narrowly oblong-ovate,
 acute; aerial roots often presentamplissima

Leaves tomentose beneathbenghalensis

Receptacle stalked :

Leaves alternate :

Male flowers with 1-stamen :

Receptacle solitaryasperimma

Receptacle in pairsvirens

Male flowers with 2-stamensracemosa

Leaves oppositehispida

Ficus religiosa Linn. Sp. Pl. 1059, 1753; FBI. 5: 513; C. 3:

149; Talb. 2: 514; Sant. 257; Fl. Delhi, 325; Fl.

Pavagadh, 219.

Urostigma religiosa Gasp. Ric. Caprif. 82, t. 7, ff.1-5,

1845; Wt. Ic. t. 1967.

A large, glabrous tree. Leaves entire, ovate, cordate,

acuminate, shining. Receptacles depressed-globose, smooth, sessile. (Fl. Fr. July - December). DNT. 1515.

Observed at the foot of hillocks and near habitation.

Ficus amplissima Sm. in Rees, Cyclop. 14: 1, ; Santapau & Janardhanan, 46.

Ficus tsiela Roxb. Fl. Ind. 3: 549, 1832; FBI. 5: 515;

C. 3: 150; Talb. 2: 518; Fl. Delhi, 325.

A large, glabrous tree with or without aerial roots. Leaves elliptic-lanceolate, acute; stipules ovate, acuminate. Receptacles sessile, globose, clustered at the end of branches. (Fl. Fr. April - October). DNT. 1739.

Commonly seen as a strangler on Borassus flabellifer along roadside at Saidivasan.

Ficus benghalensis Linn. Sp. Pl. 1059, 1753; FBI. 5: 499; C. 3:

145; Talb. 2: 507, f. 514; Sant. 256; Fl. Dang, 86; Fl.

Delhi, 324; Fl. Pavagadh, 219.

A large, evergreen tree with long, spreading branches, sending down aerial roots. Leaves ovate, obtuse, coriaceous. Receptacles axillary globose, sessile in pairs, red when ripe. (Fl. Fr. March - May). DNT. 1613.

Commonly noted near habitation.

Ficus asperrima Roxb. Fl. Ind. 3: 554, 1832; FBI. 5: 552;

C. 3: 153; Talb. 2: 522, f. 529; Sant. 258.

A small tree. Leaves oblong-lanceolate, entire, elliptic, crowded at the end of branchlets. Receptacles solitary, pedunculate, globose. (Fl. Fr. March - April). DNT. 835 A.

Rare; noted near habitation at Kawant.

Ficus virens Ait. Hort. Kew 3: 451, 1789; Corner, in Gard. Bull.

17: 376, 1960; Sant. 258; Fl. Delhi, 327.

Ficus infectoria Roxb. Fl. Ind. 3: 551, 1832; C. 3: 151;

Talb. 2: 519.

F. infectoria Roxb. var. lambertiana King, Sp. Fic. 63,

t. 76, 1887; FBI. 5: 516; C. 3: 151; Talb. 2: 520.

A large, deciduous tree. Leaves coriaceous, rounded, ovate or ovate-oblong, emarginate, Receptacles axillary, in pairs, stalked. (Fl. Fr. September - December). DNT. 1475.

Rare; noted at the foot of a hillock near Banganga stream.

Ficus racemosa Linn. Sp. Pl. 1060, 1753; Corner, in Dansk. Bot.

Arkiv. 23: 28, 1963; Sant. 259.

Ficus glomerata Roxb. Pl. Cor. 2: 13, t. 123, 1798; Wt. Ic.

t. 667; FBI. 5: 535; C. 3: 154; Talb. 2: 524, f. 531;

Fl. Dang, 87; Fl. Delhi, 326; Fl. Pavagadh, 219.

A medium-sized, deciduous tree. Leaves ovate-oblong to elliptic-lanceolate, glabrous; stipules scarious, ovate-lanceolate. Receptacles clustered, on short leafless branchlets. (Fl. Fr. April - August). DNT. 154.

Noted near habitation and at the foot of hillocks.

Ficus hispida Linn. f. Suppl. 442, 1781; FBI. 5: 522; C. 3: 154; Talb. 2: 523, f. 530; Sant. 258; Fl. Dang, 87; Fl. Pavagadh, 218.

A shrub or a small tree, all parts more or less pubescent. Leaves opposite, petiolate, ovate, oblong, apiculate. Receptacles obovoid, hispid, in pairs or fascicled on short, tubercled branches. (Fl. Fr. April - August). DNT. 1538.

Commonly observed in hedges, near streams and in crevices of old walls.

CASUARINACEAE

Casuarina Linn.

Casuarina equisetifolia Linn. Amoen. Acad. 4: 143, 1759.

('equisetifolia'); FBI. 5: 598; C. 3: 161; Sant. 261; Fl. Dang, 87; Fl. Delhi, 330; Fl. Pavagadh, 220.

A tall, weak tree. Branches drooping; branchlets very

slender, cylindrical, jointed, internodes ribbed. Leaves reduced to scales, arranged in whorls. Male flowers in cylindric spikes; females in globose or ovoid heads. (Fl. Fr. March - July). DNT. 972.A.

Commonly grown in gardens.

Class II MONOCOTYLEDONS

HYDROCHARITACEAE

Leaves cauline and in whorlsHydrilla

Leaves radicalVallisneria

Hydrilla Rich.

Hydrilla verticillata (Linn. f.) Royle, Ill. Bot. Himal. t.

376, 1839; FBI. 5: 659; C. 3: 170; Fl. Delhi, 331;

Subramanyam, in Aquat. Angios. 55, f. 37.

Serpicula verticillata Linn. f. Suppl. 416, 1781.

A submerged, much-branched, slender herb. Leaves sessile, oblong-linear, entire in whorls. Flowers dioecious; male flowers small, pedicillate, female ones sessile. (Fl. Fr. September - December). DNT. 1419 A.

Common along river banks.

Vallisneria Linn.

Vallisneria spiralis Linn. Sp. Pl. 1015, 1753; FBI. 5: 660;

C. 3: 171; Sant. 262; Subramanyam, loc. cit. 57, f.

39; Fl. Delhi, 331.

A submerged, stoloniferous herb. Leaves radical, linear, narrow. Flowers unisexual; male flowers small, on short peduncles; female ones on long spirally coiled peduncles. (Fl. January - April). DNT. 1558.

Abundant along the banks of Narmada.

ORCHIDACEAE

Epiphytic herbs :

Flowers pinkish-white; column

prolonged into a footAerides

Flowers yellow with brown lines and white

margins; column not prolonged into a foot.....Vanda

Terrestrial herbs :

Leaves 2.5 to 5 cm. long, linear; flowers

greenish-whiteZeuxine

Leaves 15 to 25 cm. long, elliptic-lanceolate;

flowers greenish-yellowPeristylus

Aerides Lour.

Aerides crispum Lindl. (in Wall. Cat. 7319, 1832 nom. nud.)

Gen. Sp. Orch. 239, 1833, Cum. descr. Bot. Reg. t. 55, 1841; FBI. 6: 45; C. 3: 203; Sant. 267; Santapau & Kapadia, in JBNHS. 57(1): 133, 1960.

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

An epiphytic herb. Leaves thickly coriaceous, linear-oblong, unequally 2-lobed at the apex. Flowers pinkish-white, in long paniculately branched racemes. Capsule pyriform, deeply ribbed. (Fl. Fr. May - June). DNT. 190.

PLATE No. 67

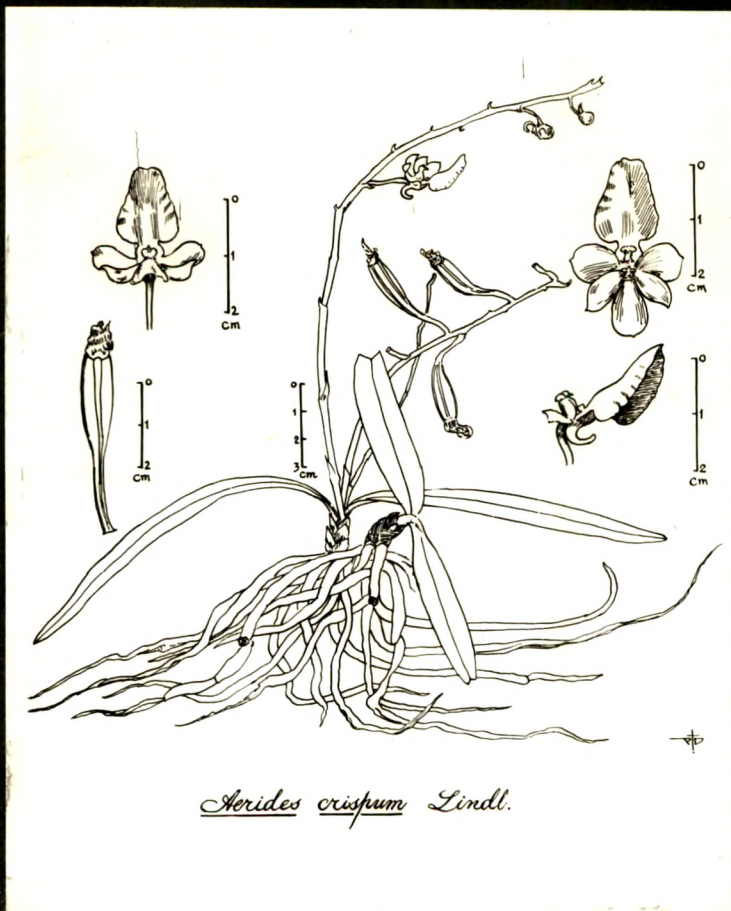
Rare; noted as an epiphyte on Madhuca indica at Luni.

Vanda R. Br.

Vanda tessellata Hook. Fl. Brit. Ind. 6: 52, 1892; Haines, 3: 1233; G. 3: 1010.

Vanda roxburghii R. Br. in Bot. Reg. 6: t. 506, 1820; FBI. 6: 52; Wt. Ic. t. 916; C. 3: 208.

An epiphytic, stout herb. Leaves thickly coriaceous, recurved. Flowers yellow with brown lines and white margins, in axillary, simple or dense lax-racemes. Capsules clavate-



Aerides crispum Lindl.

oblong with acute ribs. (Fl. Fr. July - August). DNT. 132.

Commonly observed as an epiphytic on Madhuca and Mangifera.

Zeuxine Lindl. Corr. Roep.

Zeuxine strateumatica (Linn.) Schltr. Orch. Deutsch. N. Guin. 77, 1911; Fl. Delhi, 332; Shah, in Ind. For. 89(4): 290, 1963; Thaker & Sabnis, in JMSUB. 19 & 20 (3 & 4): 46, 1970 - 1971.

Orchis strateumatica Linn. Sp. Pl. 943, 1753.

Zeuxine sulcata Lindl. Gen. & Sp. Orch. 485, 1840; FBI. 6: 106; C. 3: 213.

A delicate, terrestrial herb. Leaves small, linear, acuminate, sessile passing into linear bracts. Flowers greenish-white, in dense terminal racemes. Capsule ellipsoid. (Fl. January). DNT. 1534.

Rare; noted on muddy escarpments near streams along roadside at Chikhli.

Peristylus Blume

Peristylus goodyeroides Lindl. Gen. Sp. Orch. 299, 1835; D. & G. 300; Santapau & Kapadia, loc. cit. 133; Thaker & Sabnis, loc. cit. 46.

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

Gr. 201; FBI. 6: 161.

Peristylus goodyeroides var. affinis Lindl. loc. cit. 300;

C. 3: 216.

A terrestrial, stout herb with tuberous roots. Leaves elliptic-lanceolate, acute. Flowers greenish-yellow, in dense spikes; bracts lanceolate, finely acuminate. (Fl. August - November). DNT. 1221.

PLATE No. 68

Rare; noted on the plains under the shade of Madhuca at Luni.

ZINGIBERACEAE

Lateral staminodes broad; corolla tube

funnel-shapedCurcuma

Lateral staminodes 0 or small; corolla

tube cylindric :

Filaments forming with the produced

connective an oblong petaloid process with

linear anther cells placed in its middle....Costus

Filaments shortZingiber

Curcuma Linn.

Curcuma inodora Blatter in Journ. Asiatic Soc. Beng. 26(1):

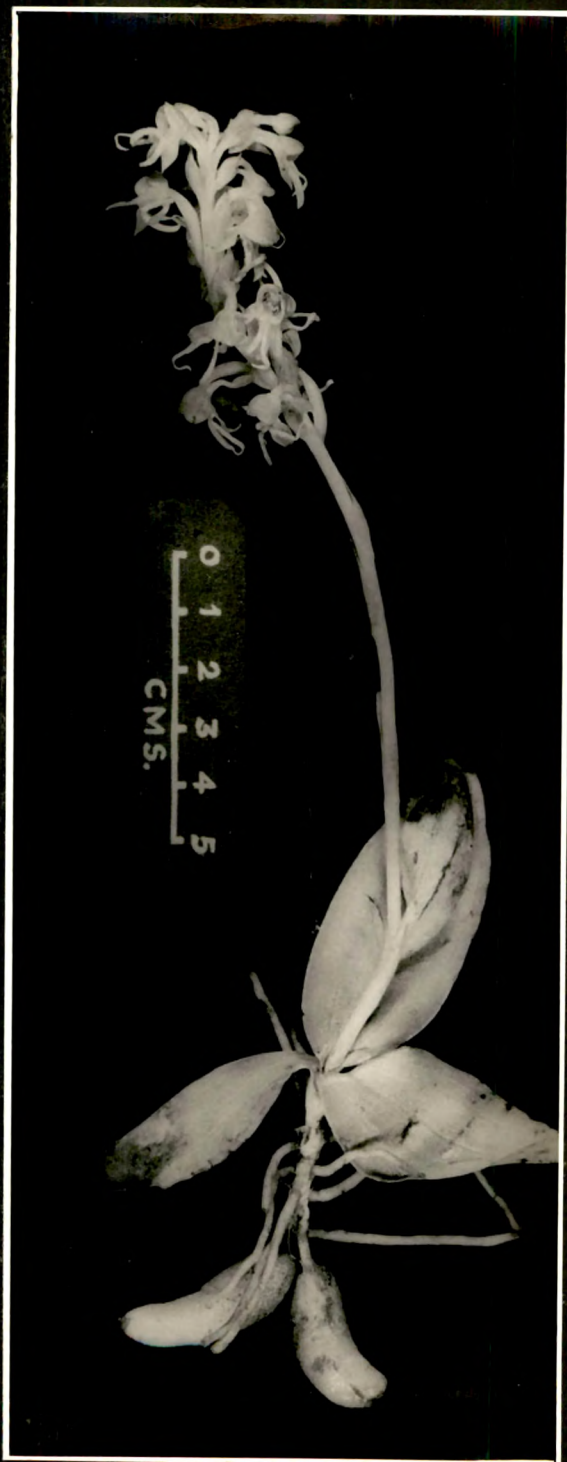


PLATE No. 68.

357-358; Santapau, in JBNHS. 51: 135-139, t. 1, 1952;
Fl. Dang, 88; Fl. Pavagadh, 221.

A monsoon herb with few, oblong-lanceolate, petiolate leaves. Flowers pink to purple with a yellow streaks at the top, in spikes directly produced from rootstock; bracts rosy pink to purple, darker at the apex. (Fl. July - August). DNT. 19, 198.

Commonly observed as an undergrowth of forest in shaded localities.

Costus Linn.

Costus speciosus (Koenig) Smith, in TLS. 1: 249, 1800; Wt. Ic. t. 2014; FBI. 6: 249; C. 3: 243; Sant. 276; Fl. Dang, 88.

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

An erect plant. Leaves cauline, sub-sessile, oblong or oblanceolate, acute, glabrous above and silky pubescent beneath. Flowers large, white, in dense spikes; petals white, yellow in the centre, crisped. Capsule subglobose, trigonous. (Fl. Fr. July - October). DNT. 1082 A.

Noted in moist places on the slopes of the hillocks.

Zingiber Boehm. (nom. cons.)

Zingiber officinale Roscoe in TLS. 8: 358, 1807; Bailey, Man.

Cult. Pl. 288; Fl. Delhi, 333.

A small, herb with horizontal, fleshy rhizome. Leaves distichous, linear-lanceolate, sessile. Flowers in long spikes; corolla tubular. (Fl. April). DNT. 925 A.

Cultivated near habitation.

MUSACEAE

Musa Linn.

Musa paradisiaca Linn. Sp. Pl. 1043, 1753; Moore, in Bailey 5: 185, 1957; Fl. Delhi, 332.

Musa paradisiaca Linn. ssp. sapientum (Linn.) K. Schum. in Pfreich. 4(45): 20, 1900; C. 3: 249.

M. paradisiaca Linn. var. sapientum Kuntze, Rev. Gen. 2: 692, 1891; Bailey, Man. Cult. Pl. 286.

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

A stoloniferous, large, tree-like herb, with false stems formed by large, sheathing leaf-bases. Leaves large, oblong, erect or ascending. Flowers in large, drooping spikes; bracts many-flowered, deciduous. Fruit oblong, yellowish-green when ripe, sweet and edible. (Fl. Fr. April - July). DNT. 937 A.

Cultivated for its fruits.

CANNACEAE

Canna Linn.

Canna indica Linn. Sp. Pl. 1, 1753; FBI. 6: 260; C. 3: 251;
Sant. 277.

A large, tall herb. Leaves alternate, elliptic-lanceolate, acuminate. Flowers generally red, showy, in terminal racemes; staminodes petaloid. (Fl. mostly throughout the year). DNT. 929 A.

Cultivated in gardens.

AMARYLLIDACEAE

Crinum Linn.

Crinum pratense Herbert, Amaryllid. 256, 1837; FBI. 6: 282; C. 3: 257.

A herb with tunicated white bulb. Leaves linear, sub-erect with entire margin. Flowers white, large, showy, in umbels, surrounded by large, ovate acute bracts. (Fl. Fr. October - January). DNT. 1571.

Observed on sandy banks.

AGAVACEAE

Agave Linn.

Agave americana Linn. Sp. Pl. 323, 1753; Bailey, Man. Cult.

Pl. 239 & Cycl. Hort. 234, ff. 139, 140.

A stout shrub with radical leaves. Leaves persistent, stiff, heavy with spiny apex and margins. Flowers in panicles, on stout, very long scapes. (Fl. Fr. June - October). DNT. 1086 A.

Fairly abundant along roadsides, in hedges and waste places.

HYPOXYDACEAE

Curculigo Gaertn.

Curculigo orchioides Gaertn. Fruct. 1: 63, t. 13, 1788; FBI. 6: 279; C. 3: 255; Sant. 278; Fl. Dang, 89.

Curculigo malabarica Wight, Ic. t. 2043, f. 1, 1853; D. & G. 276.

A herb with stout, cylindrical rootstock. Leaves linear or linear-lanceolate, membranous with sheathing leaf bases. Flowers bright yellow, bisexual or unisexual, distichous on a very short scape. Capsule 1-4-seeded. (Fl. Fr. July - August). DNT. 9.

Commonly observed as an undergrowth in forests.

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, in Ind. For. 92(5): 324, 1966.

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

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

A perennial herb with globose rootstock. Leaves large, circular in outline, 3-partite, the segments variously pinnatifid, margins undulate. Flowers pedicillate, drooping; involucre bracts acuminate, tinged with purple; perianth greenish-yellow. Fruit globose or ovoid, yellow, 6-ribbed. (Fl. Fr. July - September). DNT. 8, 1179.

PLATE No. 69

Commonly found growing along the banks of streams and other moist spots in the hilly forest areas.

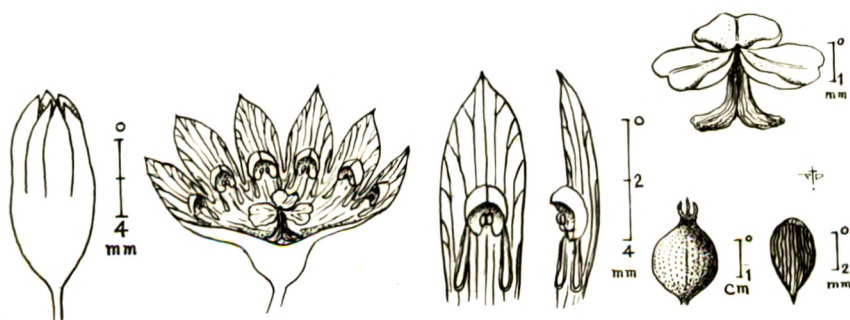
DIOSCOREACEAE

Dioscorea Linn.

Leaves simple :

Stems climbing by twining to the left;

leaves as broad as longbulbifera



Tacca leontopetaloides (Linn.) O. Kuntze

Stems climbing by twining to the right;

leaves much longer than broadbelophylla

Leaves compound :

Fertile stamens 6; leaf usually 3-foliolate..hispid

Fertile stamens 3; leaf 3-5-foliolatepentaphylla

Dioscorea bulbifera Linn. Sp. Pl. 1033, 1753; Wt. Ic. t. 878;

C. 3: 265; Prain & Burkill, Ann. RBC. 111-132, tt. 49-51, 1936; Santapau, in JBNHS. 49: 628, 1949; Sant. 281; Burkill, in Fl. Males. I, 4(3): 311, 1951; Fl. Delhi, 335; Fl. Pavagadh, 223.

Dioscorea sativa Thunb. Fl. Jap. 151, 1784; FBI. 6: 295

(excl. D. cliffortiana auct. non Linn.).

A large, twining herb with unarmed stem. Leaves broadly ovate, cordate, acuminate with axillary bulbils of various sizes. Flowers greenish-white in spikes. Fruit a quadrately oblong, glabrous capsule. (Fl. Fr. August - October). DNT. 199, 659, 1130.

Commonly observed in the forest and on hedges.

Dioscorea belophylla Voigt. Hort. Sub. Calc. 653, 1845; G. 3:

1056; Prain & Burkill, loc. cit. 348, t. 127; Santapau, loc. cit. 634; Sant. 281.

A large, twining herb. Leaves sagittate ovate, upper cordate ovate, much longer than broad, acuminate, membranous, lower alternate, upper usually opposite. Male flowers in spike on special leafless branches. Capsule covered with small hairs. (Fl. Fr. July - September). DNT. 76.

Rare; observed in the forest at Ambadungar.

Dioscorea hispida Dennst. Schuss Hort. Malab. 15, 1818; Prain & Burkill, loc. cit. 188, ff. 77-78; Santapau, loc. cit. 629; Fl. Dang, 89.

Dioscorea daemona Roxb. Hort. Beng. 72, 1814 & Fl. Ind. 3: 805, 1832; Wt. Ic. t. 811; FBI. 6: 289; C. 3: 264.

A large twiner with stems more or less prickly. Leaves usually 3-foliolate; leaflets cuneate-obovate, caudate, acuminate, 3-5-nerved, lateral leaflets oblique. Male flowers in dense, cylindric pedunculate spikes; female flowers in elongated, solitary spike. (Fl. July - October). DNT. 1.

Observed as a climber in forests.

Dioscorea pentaphylla Linn. Sp. Pl. 1032, 1753; Wt. Ic. t. 814; FBI. 6: 289; C. 3: 264; Prain & Burkill, loc. cit. 160-170, tt. 57 & 67; Santapau, loc. cit. 631; Sant. 280; Fl. Dang, 90.

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

A large twiner with oblong root-tubers. Stem slender, glabrous, prickly towards the base. Leaves 3-5-foliolate; leaflets variable in size and shape. Male flowers in pedunculate racemes; female flowers in pendulous spikes. (Fl. July - September). DNT. 151.

Commonly observed in the forest.

LILIACEAE

Leaves thick, succulent with dentate marginAloe

Leaves not as above :

Climbing or straggling herbs :

Leaf apex tendrillar; flowers large,
scarlet to crimsonGloriosa

Leaves scaly; flowers small, whiteAsparagus

Erect herbs :

A distinct bulb or corm present :

Flowers on a leafless scape; leaves
appearing after the flowersUrginea

Racemes leafyIphigenia

Small perennating organ present or
absent, but a distinct bulb or corm
absent :

Ovules 2 in each cellAsphodelus

Ovules 4 or more in each cellChlorophytum

Aloe Linn.

Aloe barbadensis Mill. Gard. Dict. n. 2, 1788; Bailey, Man.

Cult. Pl. 209; Fl. Delhi, 335.

Aloe perfoliata var. vera Linn. Sp. Pl. 320, 1753.

A. vera (Linn.) Webb. & Berth (non Mill.).

An erect herb with highly succulent, radical leaves.
Leaves thick, numerous, dentate, linear-lanceolate. Flowers
yellowish green, in simple, erect racemes. (Fl. March - April).
DNT. 852 A.

Cultivated near habitation.

Gloriosa Linn.

Gloriosa superba Linn. Sp. Pl. 305, 1753; Wt. Ic. t. 2047; FBI.

6: 358; C. 3: 274; Sant. 282; Fl. Dang, 90; Fl. Pavagadh,
224.

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

A herbaceous climber. Leaves sessile, ovate, lanceolate, tip tendrilar. Flowers generally large, axillary, solitary, scarlet to crimson coloured. (Fl. Fr. July - October). DNT. 1171.

Commonly noted on hedges.

Asparagus Linn.

Asparagus racemosus Willd. var. javanica Baker, in JLS. 14:

624, 1874; FBI. 6: 316; C. 3: 270; Sant. 282.

An extensively, scandent, spinous, much-branched, under-shrub. Leaves scaly, linear-subulate, cladode very slender. Flowers white, fragrant, in simple racemes. (Fl. Fr. July - October). DNT. 567.

Commonly noted in shaded localities in forests.

Urginea Steinh.

Urginea indica (Roxb.) Kunth, Enum. 4: 333, 1843; FBI. 6: 347;

C. 3: 277; Sant. 283; Fl. Delhi, 337.

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

A herbaceous plant with tunicated bulb. Leaves flat, linear,

acute, appearing after the flowers. Flowers dingy brown, very distant, in slender laxly-flowered racemes. Capsule ellipsoid, tapering to both ends. (Fl. Fr. March - April). DNT. 941, 957.

Commonly observed in the forests.

Iphigenia Kunth.

Iphigenia indica (Linn.) A. Gray, in Kunth. Enum. 4: 213, 1843;

FBI. 6: 357; C. 3: 275; Sant. 283.

Melanthium indicum Linn. Mant. 226.

A small, delicate herb with sub-globose corm. Leaves alternate, few, sessile, linear or linear-lanceolate, acuminate, coriaceous, sheathing. Flowers purple in few-flowered terminal, erect racemes. Capsule oblong-ellipsoid. (Fl. Fr. June - August). DNT. 191.

PLATE No. 70

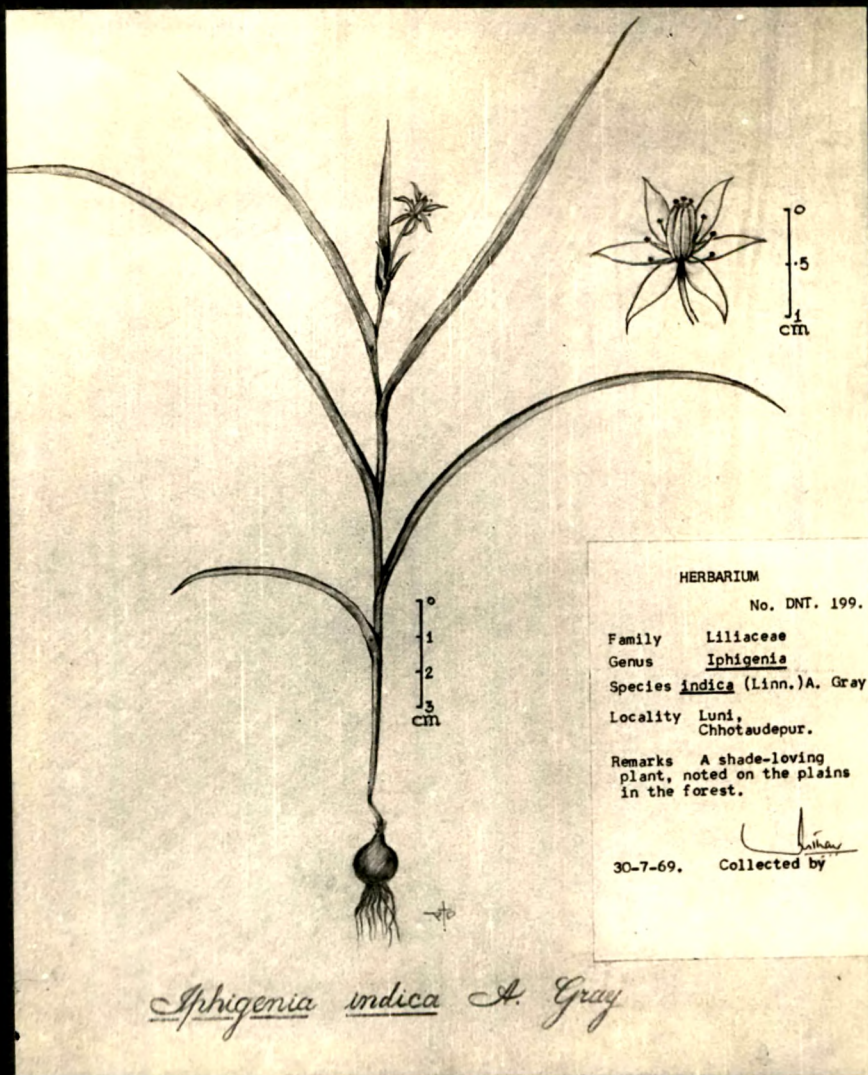
Rare; a shade-loving plant. Observed in the forests at Luni.

Asphodelus Linn.

Asphodelus tenuifolius Cav. in Ann. Gene. Nat. 3: 46, t. 27,

f. 2, 1801; FBI. 6: 332; C. 3: 279; Fl. Delhi, 337.

Annual, erect, glabrous herb with radical, fistulous leaves.



Flowers white with purple streaks, in lax-racemes on a scape.
Capsule globose. (Fl. Fr. January - April). DNT. 925, 1505, 1652.

A common weed of cultivated fields of winter crops.

Chlorophytum Ker.

Chlorophytum tuberosum (Roxb.) Baker, in JLS. 15: 322, 1875;

FBI. 6: 334; C. 3: 281; Sant. 283; Fl. Delhi, 225.

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

A herbaceous plant with hard rootstock and many fascicled tuberous roots. Leaves radical, flat, linear, numerous. Flowers white, in simple or shortly branched racemes. Capsule obovoid, emarginate. (Fl. Fr. July - October). DNT. 62, 118, 140, 183.

Common as an undergrowth in hilly forest area; also noted on barren or sparsely vegetated hillocks.

COMMELINACEAE

Fertile stamens 3, staminodes present :

Cymes enveloped in spathaceous bractsCommelina

Cymes in panicles, not enveloped in
spathaceous bractsMurdannia

Fertile stamens 6, staminodes absent :

Inflorescence sessile, embedded in the
hollow axil of the leaf-sheathAmischocephalus

Inflorescence not as aboveCyanotis

Commelina Linn.

Spathes funnel-shaped or with margins
connate to the top :

Ovary 5-ovuled; capsule 3-5-seededbenghalensis

Ovary 3-2-ovuled; capsule 3-2-seededundulata

Spathes complicate with dorsal margins,
free to the basediffusa

Commelina benghalensis Linn. Sp. Pl. 41, 1753; Wt. Ic. t. 2056;

FBI. 6: 370; C. 3: 291; Sant. 284; Fl. Dang, 90; Fl.

Delhi, 340; Tiwari & Maheshwari, in Ind. For. 91(8):

582, 1965; Fl. Pavagadh, 226.

A branched, diffuse or slender herb with stem dichotomously branched from the base upwards. Leaves ovate-obtuse, leaf sheath with ciliate margins. Flowers blue, enclosed in ovate-lanceolate spathes. Capsule usually 5-seeded. (Fl. Fr. July - November).
DNT. 96, 396.

Commonly noted everywhere during monsoon.

Commelina undulata R. Br. Prodr. 270, 1810; Rolla Rao, in Notes from the Roy. Bot. Gard. Edin. 26(4): 351, 1966; Raizada, in Ind. For. 94(6): 438, 1968.

Commelina obliqua Buch.-Ham. var. mathewii C. B. Clarke, in DC. Mon. Phan. 3: 179, 1881; FBI. 6: 372; C. 3: 293.

C. kurzii C.B. Clarke, in J. Linn. Soc. 11: 144, 1869; FBI. 6: 373; Rao & Kammathy, in JBNHS. 59(1): 61, 1962; Tiwari & Maheshwari, loc. cit. 583.

A glabrous, stout, diffuse herb. Leaves variable in size, lanceolate or linear-lanceolate, acute-acuminate. Flowers violet-blue, spathes sessile, solitary or crowded, in terminal heads. Capsule 3-2-seeded. (Fl. Fr. August - October). DNT. 1012.

Observed as an undergrowth in forest.

Commelina diffusa Burm. f. Fl. Ind. 18, t. 7, f. 2, 1768; Merr. in JAA. 18: 64, 1937; Sant. 284; Tiwari & Maheshwari, loc. cit. 582.

Commelina nudiflora auct. Plur. non Linn.; FBI. 6: 369; C. 3: 290; Fl. Dang, 90.

An erect, diffuse herb, rooting at nodes. Leaves sessile, ovate-lanceolate, acute. Flowers blue, enclosed in boat-shaped spathes; peduncles long. Capsule usually 5-seeded. (Fl. Fr. July - October). DNT. 478, 1320.

Commonly noted along roadside ditches and forest paths.

Murdannia Royle (nom. cons.)

Flowers in sub-globose or sub-corymbose cymes
at the end of the branches of the panicle;
cells of the ovary 2-ovuled; capsule 3-celled
with 2 seeds in each cellnudiflora

Flowers few, in branched panicles; cells of
the ovary 3-many-ovuled; capsule 3-gonous, the
cells 3-7-seeded.....spirata

Murdannia nudiflora (Linn.) Brenan, in KB. 189, 1952; Rao, in
BBSI. 3(3 & 4): 393, 1961; Raizada, loc. cit. 447.

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

Murdannia malabarica (Linn.) Bruckn. in Afam. (ed. 2)
159: 178, 1930; Sant. 286; Raizada, in Ind. For.
92(5): 317, 1966.

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

Aneilema nudiflorum R. Br. Prodr. 271, 1810; FBI. 6: 378;
C. 3: 298.

A slender, procumbent annual, often rooting at nodes.
Leaves linear-oblong or lanceolate, acute-acuminate. Flowers

blue-purple, in terminal panicles. Capsule 3-gonous, sub-globose, 3-celled, having 2 seeds in each cell. (Fl. Fr. July - October). DNT. 181, 1121, 1166.

Commonly observed in moist places along roadside ditches and in sandy soil near water.

Murdannia spirata (Linn.) Bruckn. in Pfam. (ed. 2) 15 A : 173,

1930; Sant. 285; Tiwari & Maheshwari, loc. cit. 587.

Commelina spirata Linn. Mant. 176, 1767.

Aneilema spiratum R. Br. Prodr. 271, 1810; FBI. 6: 377;

C. 3: 296.

A small, branched, annual herb. Leaves narrowly linear-lanceolate, acute, base cordate and amplexicaul, ribbed when dry. Flowers few in branched panicles. Capsule oblong, shining, 3-gonous. (Fl. Fr. September - October). DNT. 328, 596.

Commonly observed in moist places along river banks.

Amischophacelus Rolla Rao et Kammathy

Anther filaments beardedaxillaris

Anther filaments nearly nakedcucullata

Amischophacelus axillaris (Linn.) Rolla Rao et Kammathy, in

J. Linn. Soc. (Bot.) 59 (379) : 306, 1966; Raizada,

in Ind. For. 94(5): 431, 1968; Thaker & Sabnis, in
JMSUB. 19 & 20 (3 & 4): 46, 1970-1971.

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

Cyanotis axillaris (Linn.) J.A. & J. H. Schult. Syst. Veg.
7(2): 1154, 1830; FBI. 6: 388; C. 3: 305; Fl. Delhi,
340; Tiwari & Maheshwari, loc. cit. 584.

A diffusely branched erect or prostrate herb. Leaves
narrowly linear-lanceolate or linear, acute-acuminate. Flowers
violet-blue, clustered in the inflated sheaths, cymes reduced
to axillary fascicles. (Fl. Fr. August - October). DNT. 979, 1019.

Commonly noted on hillocks exposed to sun-light and near
streams.

Amischophacelus cucullata (Roth) Rolla Rao et Kammathy, loc. cit.
306; Raizada, loc. cit. 431; Thaker & Sabnis, loc. cit. 46.

Tradescantia cucullata Roth, Nov. Pl. Sp. 189, 1821.

Cyanotis cucullata (Roth) Kunth, Enum. 4: 107, 1843; FBI.
6: 389; Tiwari & Maheshwari, loc. cit. 585.

A glabrous, prostrate herb. Leaves linear, acute. Flowers
clustered in the hollow axils of leaf sheaths. Capsule depressed
in the centre with 3 horns. (Fl. Fr. August - October). DNT. 1058,
1117.

Commonly observed along roadside ditches and as a weed in cultivated fields during monsoon.

Cyanotis D. Don (nom. cons.)

Filaments bearded with hairs of one colour;

seeds 3-gonous, striatecrisata

Filaments bearded with hairs of two colour;

seeds oblong, faintly rugosefasciculata

Cyanotis crisata (Linn.) Schult. F. Syst. 1150, 1830; Wt. Ic.

t. 2082; FBI. 6: 385; C. 3: 304; Sant. 288; Fl. Dang, 91; Tiwari & Maheshwari, loc. cit. 585; Fl. Pavagadh, 227.

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

Creeping herbs with fibrous roots. Leaves ovate-oblong with villous, ciliate margins. Flowers blue, in recurved, scorpioid cymes. Capsule trigonous. (Fl. Fr. August - October). DNT. 470, 975.

Commonly noted in moist shaded localities.

Cyanotis fasciculata (Heyne ex Roth) Schult. F. Syst. 7: 1152,

1830; Wt. Ic. t. 2086; FBI. 6: 387; C. 3: 303; Sant. 287; Tiwari & Maheshwari, loc. cit. 585.

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

189, 1821.

A small, branched herb. Leaves sessile, linear-lanceolate, acute or acuminate. Flowers blue-purple, in axillary and terminal cymes. Capsule oblong, trigonous. (Fl. Fr. August - October). DNT. 1384.

Rare; observed as a weed in moist places, cultivated fields at Amirpura.

ARECACEAE (PALMAE)

Leaves simple, palmate or fan-likeBorassus

Leaves compound, pinnate :

Lower leaflets not spinescentCocos

Lower leaflets spinescentPhoenix

Borassus Linn.

Borassus flabellifer Linn. Sp. Pl. 1187, 1753; FBI. 6: 482;

C. 3: 321; Blatter, Palms Brit. Ind. 174-213, tt. 38-

39; Sant. 289; Fl. Dang, 91; Fl. Pavagadh, 227.

A tall tree with palmately divided leaves. Flowers unisexual, on branched spadix, enclosed into numerous open spathes.

Drupe subglobose, brown. (Fl. Fr. February - May). DNT. 1768.

Fairly common; planted near habitation for 'toddy'.

Cocos Linn.

Cocos nucifera Linn. Sp. Pl. 1188, 1753; FBI. 6: 482; C. 3: 322; Bailey, Man. Cult. Pl. 175; Fl. Dang, 91.

A tall palm with pinnate leaves. Flowers in large spadix; male flowers above, female flowers below. Drupe fibrous, large, obovoid. (Fl. mostly throughout the year). DNT. 1746 A.

Observed at few places in private gardens.

Phoenix Linn.

Phoenix sylvestris (Linn.) Roxb. Hort. Beng. 73, 1814, nom. nud.

& Fl. Ind. 3: 787, 1832; FBI. 6: 425; C. 3: 311; Blatter, Palms 3, tt. 2, 3; Sant. 288; Fl. Dang, 91; Fl. Delhi, 343; Fl. Pavagadh, 228.

Elate sylvestris Linn. Sp. Pl. 1189, 1753, pro parte.

A tall palm, sometimes with stunted growth. Trunk usually with persistent leaf bases. Leaves pinnate, long; lower leaflets modified into spines. Flowers dioecious, in compound spadix. Drupe oblong-ellipsoid, orange-yellow. (Fl. Fr. January - April). DNT. 1588.

Noted near habitation.

PANDANACEAE

Pandanus Linn. f. (nom. cons.)

Pandanus odoratissimus Linn. f. Suppl. 424, 1781; St. John, in
Taxon 12(5): 201-204, 1963.

Pandanus fascicularis Lamk. Encycl. 1: 372, 1785; FBI. 6:
485; Fl. Delhi, 344.

P. tectorius Soland ex Balf. f. in JLS. 17: 63, 56, 1876;
C. 3: 324.

A much-branched thick bush. Leaves erect, acuminate, dentate,
closely, spirally arranged at the end of branches. Flowers
dioecious; spadix with sessile cylindric spikes. (Fl. February-
August). DNT. 1756.

Rare; observed near water at Rangpur.

TYPHACEAE

Typha Linn.

Typha angustata Bory & Chaub. Exp. Mor. 3(2): 33, 1832; FBI. 6:
489; Graebn. in Pfreich. 2: 14, f. 4f.; C. 3: 326; Sant.
289; Fl. Delhi, 344.

T. elephantina Gr. 227, 1839 (non Roxb.).

An erect, stout, marshy shrub. Leaves semi-cylindric, linear, long, usually exceeding the flowering stem. Flowers small, brown, in very dense superposed cylindric spikes; the males and females separated by a considerable interval. (Fl. August - October). DNT. 1955.

Observed along streams and roadside ditches.

ARACEAE

Leaves entire, peltateColocasia

Leaves divided :

Flowers often dioecious; male

flowers stipitateArisaema

Flowers always monoecious; male

flowers sessile or nearly soSavromatum

Colocasia Schott

Colocasia esculenta (Linn.) Schott, in Schott & Endl. Melet.

1: 18, 1832; Sant. 293; Fl. Delhi, 345.

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

Colocasia antiquorum Schott, loc. cit. 18; FBI. 6: 523;

C. 3: 340.

A rhizomatous, erect herb. Leaves large, ovate with a broad triangular sinus, peltate. Spathe petaloid, pale-yellow, erect. Spadix shorter than the spathe. (Fl. September - October) DNT. 83.

Cultivated for its edible leaves.

Arisaema Mart.

Arisaema neglectum Schott, in Bonpl. 7: 26, 1859; FBI. 6: 504; Engler, in Pfreich. 192, f. 43; Sant. 290; Fl. Pava-gadh, 228.

A tall, tuberous herb. Leaves pedatipartite; leaflets ovate-lanceolate. Flowers monoecious or dioecious; spadix covered by green spathe, male flowers stalked. (Fl. July - August).DNT.121.

Observed at the foot and slopes of the hillocks.

Sauromatum Schott

Sauromatum guttatum (Wall.) Schott, in Melet. 1: 17, 1832; FBI. 6: 508, emend; Engler, loc. cit. 123, f. 18-A-L; C. 3: 335; Sant. 291; Fl. Dang, 92.

Arum guttatum Wall. Pl. As. Rar. 2: 10, t. 15, 1831.

A tuberous herb, leafing after flowering. Leaves pedatisect

with a long petiole, segments elliptic, acuminate. Flowers monoecious, spathe with a short peduncle; spadix sessile; male flowers above, females below and neuters in between. (Fl. April - May). DNT. 940.

PLATE No. 71

Observed at the foot of hillocks in thickly shaded localities.

LEMNACEAE

Spirodela Schleid.

Spirodela polyrhiza (Linn.) Schleid. in Linnaea 13: 392, tt.

5, 6, 1839; McCann, in JBNHS. 43: 156, 1942; Subramanyam, in Aquat. Angios. 77, 1962; Fl. Delhi, 346.

Lemna polyrhiza Linn. Sp. Pl. 970, 1753; FBI. 6: 557;
C. 3: 343.

A small, free-floating, aquatic herb. Fronds obovate to orbicular, green above, purple below with multiple roots. (Fl. not observed). DNT. 419 A.

Commonly noted in roadside ditches during monsoon.

ALISMATACEAE

Sagittaria Linn.



Suromatum guttatum (Wall.) Schott.

Sagittaria sagittifolia Linn. Sp. Pl. 2: 993, 1753; FBI. 6:

561; C. 3: 345; Chavan & Sabnis, in JIBS. 40(1): 127,
1961; Subramanyam, in Aquat. Angios. 87, 1962.

A floating aquatic or semiaquatic, fibrous rooted herb. Leaves with long petiole, sagittate, acute, smooth. Flowers white, in 3-5 whorls along the scapes, usually 3-5 flowers in each whorl in paniculate, cuspidate whorls. Fruits globose. (Fl. Fr. April - May). DNT. 900 A.

Rare; noted along the river banks at Hampsheshwar.

POTAMOGETONACEAE

Potamogeton Linn.

Potamogeton crispus Linn. Sp. Pl. 126, 1753; FBI. 6: 566; C. 3: 350; Fl. Delhi, 349.

A submerged, aquatic herb. Leaves linear-oblong, crisped, finely serrulate. Flowers in few-flowered spikes. (Fl. March - April). DNT. 841.

Rare; noted in ditches along river banks at Hampsheshwar.

ERIOCAULACEAE

Eriocaulon Linn.

Eriocaulon cuspidatum (?) Dalz. in Kew Journ. Bot. 3: 281, 1851;

D. & G. 280; FBI. 6: 581; C. 3: 360.

A small, stemless, tufted plant, about 10 to 12 cm. high. Leaves narrowly linear, subulate. Flower peduncles numerous with small, white, globose heads. (Fl. Fr. September - November). DNT. 313, 1206.

Observed on marshy ground or rice fields during monsoon.

CYPERACEAE

1. Achene-bearing glumes containing perfect stamens as well :
2. Glumes all distichously arranged;
hypogynous bristles 0Cyperus
2. Glumes spirally arranged (basal ones sometimes distichous in Fimbristylis); hypogynous scales or bristles sometimes present :
3. Style base dilated and constricted or articulated above the achene :
4. Leaves 0; spikelets solitary, terminal;
hypogynous bristles presentEleocharis
4. Leaves usually developed; spikelets many; hypogynous bristles 0 :

- 5. Style-base persistent, if falling,
not leaving a tumour on the achene.....Fimbristylis
- 5. Style deciduous, leaving a tumour
on the acheneBulbostylis
- 3. Style-base not dilated, continuous with achene :
 - 6. Hypogynous scale or bristles absentScirpus
(in part)
 - 6. Hypogynous scale or bristles present :
 - 7. Hypogynous scales 6, divided to the
base into numerous hair like segments..Eriophorum
 - 7. Hypogynous bristles presentScirpus
(in part)
 - 1. Achene-bearing glume devoid of perfect stamens;
inflorescence panicle; achene bony, variously
sculptured and exsertedScleria

Cyperus Linn.

- 1. Spikelets in a sessile heads or clusters :
 - 2. Heads usually greenish-.....Michelianus
ssp. pygmaeus
 - 2. Heads white :
 - 3. Spikelets in angular or lobed headstriceps

- 3. Spikelets in globose headsleucocephalus
- 1. Spikelets in umbels :
 - 4. Umbels usually simple :
 - 5. Spikelets 1-floweredcyperoides
 - 5. Spikelets more than 1-flowered :
 - 6. Style bifid :
 - 7. Fruit a laterally compressed achene :
 - 8. Stamens usually 1; glumes
bifidpumilus
 - 8. Stamens 2; glumes obtuseglobosus
 - 7. Fruit a dorsally compressed
achenelaevigatus
 - 6. Style trifid :
 - 9. Spikelets in globose heads on
the rays of an umbeldifformis
 - 9. Spikelets spicate on the umbel rays :
 - 10. Small or medium annuals :
 - 11. Spikelets golden yellow...squarrosus

- 11. Spikelets green, compressedcompressus
- 10. Perennials :
 - 12. Stolon slender; glumes closely imbricaterotundus
 - 12. stolon long, slender; glumes plicate-striateesculentus
- 4. Umbels usually compound or decompound :
 - 13. Umbels usually compound :
 - 14. Plant robust :
 - 15. Spikelets in cylindric spikes, 8-20-floweredexaltatus
 - 15. Spikelets in cylindric spikes, many-floweredeleusinoides
 - 14. Plant not robust; glumes with a continuous, glistening with at the backpseudokyllingioides
 - 13. Umbels decompound :
 - 16. Rachis flexuous, hispid on the angles; glumes dorsally 7-nervedrectangularis
 - 16. Rachis glabrous; glumes dorsally 3-5-nervediria

Cyperus michelianus (Linn.) Link. ssp. pygmaeus (Rottb.) Aschers.
et Graebner, Synops. 2: 273, 1903; Kuekenth. in Pfreich.
101: 312; Sant. 300; Sabnis, in BBSI. 4(1-4): 200, 1962.

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

Cyperus pygmaeus Rottb. Descr. et Icon. 20, 1773; C. 3:
372; Fl. Delhi, 352.

Juncellus pygmaeus C.B. Clarke, in FBI. 6: 596.

A small prostrate or sub-erect herb. Leaves numerous,
linear, acuminate, green. Spikelets in compact, terminal, greenish
heads; glumes of the spikelets distichously arranged. Achene
ellipsoid, tipped by the style base. (Fl. Fr. July - November).
DNT. 322.

Commonly observed on sandy river banks and on dried road-
side ditches forming dense tufted patches.

Cyperus triceps (Rottb.) Endl. Cat. Hort. Vindob. 1: 94, 1842;
Kuekenth, loc. cit. 578; Sant. 301; Sabnis, loc. cit.
200; Fl. Delhi, 353.

Kyllinga triceps Rottb. Descr. et Icon. 14, t. 4, f. 6,
1733; FBI. 6: 587; C. 3: 391.

A small, glabrous, tufted plant. Leaves linear, acute, as
long as or longer than the stems. Spikes white, sessile, angular

heads in groups of 3; spikelets 1-flowered. Achene oblong or ellipsoid-oblong. (Fl. Fr. July - October). DNT. 150, 316.

Very common throughout the area in moist places and open grasslands during monsoon.

Cyperus leucocephalus Retz. Obs. 5: 11, 1789; Kuekenth, loc. cit. 278, f. 31; FBI. 6: 602; C. 3: 377; Sant. 299; Sabnis, loc. cit. 195.

A glabrous herb. Leaves narrow; shorter than the stem. Spikelets in white, globose heads, compressed, 10-18-flowered. Achene trigonous, oblong-ellipsoid. (Fl. Fr. July - October). DNT. 30.

Commonly noted as an undergrowth of forests immediately after rains.

Cyperus cyperoides (Linn.) O. Kuntze, Rev. Gen. 3(2): 333, 1898; Kuekenth, loc. cit. 514; Sant. 298.

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

Mariscus sieberianus Nees, in Linnaea 9: 286, 1834; FBI. 6: 622.

M. paniceus Vahl Enum. ii. partly; FBI. 6: 620; Chavan & Sabnis, in JBNHS. 56: 369-370, 1959.

A slender, stolon-bearing, perennial sedge. Spikelets

usually 1-flowered, divaricately arranged in simple umbels. (Fl. Fr. July - October). DNT. 1223.

Observed as an undergrowth of forest in moist, shaded localities.

Cyperus pumilus Linn. Cent. Pl. 2: 6, 1756 & Sp. Pl. (ed. 2) 69, 1762; Kuekenth, loc. cit. 375, f. 44 A-E; Fl. Delhi, 352; C. 3: 370; Sant. 300.

Pycneus pumilus Domin, in Bibl. Bot. 85: 417, 1915.

P. nitens Nees, in Nov. Act. Nat. Cur. 19 (Suppl. 1) : 53, 1843; FBI. 6: 591.

A small, glabrous, tufted annual. Leaves narrowly linear, acuminate. Spikelets arranged in umbels, 20-30-flowered, linear, compressed, glumes ovate, bifid; stamens usually 1; stigma 2. Achene compressed, ellipsoid or obovoid. (Fl. Fr. August - October). DNT. 880, 1095, 1101, 1564.

Observed on wet sandy soils of river banks.

Cyperus globosus All. Auct. Fl. Pedem. 49, 1789; Vahl, Enum. 2: 329, 1806; Kuekenth, loc. cit. 352; C. 3: 370; Sant. 299.

Pycneus globosus Reichb. Fl. Germ. Excurs. 140, 1830.

P. capillaris Nees, in Linnaea 9: 283, 1834; FBI. 6: 591.

A small, tufted, slender annual. Leaves slender, filiform,

shorter than the head. Spikes arranged in simple umbels; rachilla not winged; spikelets 20-30-flowered, glumes obtuse; stamens 2. Achene narrowly obovoid, laterally compressed. (Fl. Fr. September - October). DNT. 1040.

Commonly noted on sandy river beds.

Cyperus laevigatus Linn. Mant. 179, 1771; Kuekenth, loc. cit. 321; C. 3: 373; Fl. Delhi, 352.

Juncellus laevigatus C. B. Clarke, in FBI. 6: 596, 1893.

An erect, glabrous, tufted annual. Leaves linear, usually short. Spikelets 12-30-flowered, linear, compressed. Achene dorsally compressed. (Fl. Fr. August - October). DNT. 1729.

Observed in wet, sandy places along the river banks.

Cyperus difformis Linn. Cent. Pl. 2: 6, 1756; FBI. 6: 599; C. 3: 376; Kuekenth, loc. cit. 237; Sabnis, loc. cit. 200; Sant. 298; Fl. Delhi, 355; Fl. Pavagadh, 229.

A small herb with weak stems. Leaves linear, smooth, shorter than the stem. Spikelets green, in compact, globose heads, in umbels. Achene trigonous, obovoid, brown. (Fl. Fr. September - January). DNT. 161, 651, 1037.

Commonly observed on muddy or sandy banks during monsoon and post-monsoon periods.

Cyperus squarrosus Linn. (non C. B. Clarke) Cent. Pl. 2: 6, 1756; Kuekenth, loc. cit. 505; Sant. 300; 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; Sabnis, loc. cit. 200.

A small, tufted, glabrous annual. Leaves linear, acuminate, usually shorter than the stem. Spikelets golden-yellow or brown, arranged on the rays of an umbel; glumes with squarrosely recurved arista. Achene apiculate, trigonous and reddish-brown. (Fl. Fr. July - February). DNT. 644, 1038, 1173.

Commonly noted in moist places and also noted as a weed in cultivated fields and on loose gravelly soils.

Cyperus compressus Linn. Sp. Pl. 1: 46, 1753; FBI. 6: 605; C. 3: 379; Kuekenth, loc. cit. 156; Sant. 297; Sabnis, loc. cit. 200; Fl. Delhi, 356.

A small, glabrous, tufted annual. Umbels simple. Spikelets much compressed, green, later turning to dark brown. Achene obovoid, triquetrous, black. (Fl. Fr. August - March). DNT. 603, 1105, 1833.

A very common weed; usually noted in cultivated fields, in moist places among grasses and along the banks of streams.

Cyperus rotundus Linn. Sp. Pl. 1: 45, 1753; FBI. 6: 614; C. 3:

385; Kuekenth, loc. cit. 107; Sabnis, loc. cit. 201;
Fl. Delhi, 356; Fl. Pavagadh, 229.

An erect, glabrous, perennial herb. Stem triquetrous stolon slender, long. Leaves linear, narrow, shorter or longer than the stem. Spikelets reddish-brown, in simple umbels; glumes closely imbricate. Achene grey-black, trigonous, obovoid. (Fl. Fr. September - December). DNT. 419, 1572.

A common weed of cultivated fields and waste places during monsoon and post-monsoon periods.

Cyperus esculentus Linn. Sp. Pl. 1: 45, 1753 & 2: 67, 1762;
FBI. 6: 616.

A tall, erect, perennial, amphibious herb. Stolon long and slender. Spikelets are usually shorter and broader than those of C. rotundus; glumes plicate-striate. Achene trigonous. (Fl. Fr. July - January). DNT. 200.

Usually noted along the banks of streams and rivers.

Cyperus exaltatus Retz. Obs. 5: 11, 1789; Clarke, in JLS. 21: 186 & FBI. 6: 617; C. 3: 386; Kuekenth, 64, f. 9 A-F.

A large, glabrous perennial. Leaves few with more or less scaberulous margins. Umbels compound; spikelets 8-20-flowered,

glumes closely imbricate. Achene ellipsoid. (Fl. Fr. September-January). DNT. 99.

Observed in marshy places along streams and river banks.

Cyperus eleusinoides Kunth, Enum. 2: 39, 1837; FBI. 6: 608; Sant. 298; Fl. Delhi, 357.

An erect, glabrous, robust, perennial herb. Stem triangular. Leaves linear, acuminate. Umbels compound; spikelets spicate on ultimate branches, linear, pale brown; glumes broadly keeled. Achene trigonous, ellipsoid. (Fl. Fr. July - September). DNT. 881, 1099.

Commonly noted in moist places along the banks of rivers and streams.

Cyperus pseudokyllingioides Kuekenth, in Engl. Pfreich. 101 : 501, 1936.

Courtoisia cyperoides Nees, in Wight, Contrib. Bot. Ind. 92, 1832 et Linnaea 9: 286, 1834; FBI. 6: 625; C. 3: 391.

An erect, herbaceous annual. Spikelets yellowish-brown to almost golden yellow, in globose heads on the rays of an umbel; glumes with a continuous, glistening wing at the back. (Fl. Fr.

December - February). DNT. 1342, 1374.

Usually found in moist places among grasses.

Cyperus rectangularis (Kuekenthal) Bennet, in Ind. For. 95 :
692, 1969.

Cyperus iria var. rectangularis Kuekenth, loc. cit. 152.

Cyperus alulatus Kern, in Reinwardtia, 1(4): 463-466,
1962.

A small, tufted annual. Spikelets small, few-flowered, in
decompound umbels. The plant resembles Cyperus iria from which
it differs in having hispid rachis and glumes dorsally 7-
nerved. (Fl. Fr. July - October). DNT. 496.

Commonly noted on muddy banks.

Cyperus iria Linn. Sp. Pl. 45, 1753; FBI. 6: 606; Kuekenth.
loc. cit. 150; Sant. 299; Fl. Delhi, 357.

An erect, glabrous annual. Stem triquetrous. Leaves
linear, acuminate. Umbels decompound; spikelets linear, oblong,
compressed; glumes dorsally 3-5-nerved. Achene triquetrous,
ellipsoid, black. (Fl. Fr. August - October). DNT. 594, 616,
1091, 1102.

Noted in moist places along the banks of streams and rivers.

Eleocharis R. Br.

Eleocharis atropurpurea (Retz.) Kunth, Enum. 2: 151, 1837;

FBI. 6: 627; C. 3: 403; Sant. 302; Sabnis, loc. cit.

200; Fl. Delhi, 358.

Scirpus atropurpureus Retz. Obs. 5: 14, 1789.

A small, tufted, slender annual. Leaves absent. Spikelets ovoid, obtuse or sub-acute, dark brown, solitary and terminal; glumes broadly ovate-oblong; bristles white. Achene minute, black, biconvex. (Fl. Fr. July - January). DNT. 299.

Commonly noted on sandy or muddy river banks.

Fimbristylis Vahl (nom. cons.)

Style bifid, ovary and fruit compressed,
biconvex :

Small tufted annualsbisumbellata

Tall plants :

Achenes smooth, not ribbed nor

trabeculateferruginea

Achenes pale, ribbed and trabeculate....dichotoma

Style trifid, ovary and fruit trigonous :

Spikelets solitary or rarely fewovata

Spikelets many, in decompound umbels :

Slender annual plants; achenes

irregularly tubercledtenera

Taller annual plants :

Spikelets ellipsoid; glumes mucronate....miliacea

Spikelets globose; glumes obtuselittoralis

Fimbristylis bisumbellata (Forsk.) Bub. Dodec. 30, 1850; Kern,
in Reinwardtia 6(2): 47, 1961; Sant. 301; Santapau &
Janardhanan, 51.

Scirpus bisumbellatus Forsk. Fl. Aeg.-Arab. 15, 1775.

Fimbristylis dichotoma (non Vahl) Sensus Clarke, in FBI.
6: 635; C. 3: 394.

A densely, tufted annual. Stems striate, smooth. Spike-
lets yellowish-brown, in compound umbels. Achene ribbed,
trabeculate. (Fl. Fr. June - December). DNT. 840.

Observed on sandy or muddy banks of river and streams.

Fimbristylis ferruginea (Linn.) Vahl, Enum. 2: 291, 1806;

FBI. 6: 638; C. 3: 396; Sabnis, loc. cit. 200; Fl. Delhi, 359.

Scirpus ferrugineus Linn. Sp. Pl. 50, 1753.

A densely tufted, perennial. Spikelets pale-brown in simple umbels; glumes broadly ovate, hoary, pubescent in the upper half. Achene pale-brown, biconvex, smooth. (Fl. Fr. July - October). DNT. 1198, 1214.

Commonly noted on muddy banks of streams.

Fimbristylis dichotoma (Linn.) Vahl, Enum. 2: 287, 1806; FBI. 6: 635; Kern, loc. cit. 147; Sabnis, loc. cit. 201; Fl. Delhi, 359.

Scirpus dichotomus Linn. Sp. Pl. 50, 1753.

Fimbristylis diphylla Sensus Clarke, in FBI. 6: 636; C. 3: 396.

A tall, tufted, perennial herb. Stems slender, angled, striate, smooth. Leaves with scaberulous margins. Spikelets in simple umbels; glumes mucronulate, smooth. Achene trabeculate, ribbed. (Fl. Fr. July - December). DNT. 1031, 1212.

Common on river beds and muddy banks of streams.

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

Carex ovata Burm. f. Fl. Ind. 194, 1768.

Fimbristylis monostachya (L.) Hassk. Pl. Jav. Rar. 61,
1848; FBI. 6: 649; C. 3: 399; Sabnis, loc. cit. 200.

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

A slender, densely tufted herb. Leaves crowded on the swollen base of the stem. Spikelets solitary, rarely 2, compressed, ovate, straw-coloured; stigma 3. Achene trigonous. (Fl. Fr. July - December). DNT. 1052.

Observed on open grassy slopes near river banks.

Fimbristylis tenera Roem. & Schult. Syst. Mant. 2: 57, 1824;
FBI. 6: 642; Sant. 269.

Fimbristylis monticola Hochst. ex Steud. Sy. Pl. Cyp.
111, 1855; C. 3: 399.

F. tenera Roem. & Schult. var. oxylepis (Steud.) C. B.
Clarke, in FBI. 6: 642.

A slender, annual. Stems filiform, striate, obtusely trigonous. Spikelets brown, in simple or compound umbels; glumes loosely imbricate. Achenes globose. (Fl. Fr. July - December). DNT. 643.

Observed on loose, gravelly soils of river beds.

Fimbristylis miliacea Vahl Enum. 2: 287, 1806; FBI. 6: 644;
C. 3: 397.

An erect, glabrous herb. Umbels decompound; spikelets not globose but acute; glumes mucronate. Achene tuberculate, white or pale-yellow. (Fl. Fr. August - December). DNT. 1574.

Commonly observed in marshy places.

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

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

An erect, glabrous sedge. Spikelets brown, globose, in decompound umbels; glumes obtuse. Achene tuberculate. (Fl. Fr. July - February). DNT. 1213.

Commonly noted in marshy situations during monsoon.

Bulbostylis Kunth (nom. cons.)

Bulbostylis barbata (Rottb.) C. B. Clarke, in FBI. 6: 651;

Kern, loc. cit. 51; Sabnis, loc. cit. 200; Fl. Delhi, 361.

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

Stenophyllus barbatus (Rottb.) Cooke, 3: 401.

A small, tufted annual. Stems filiform. Leaves thread-like. Spikelets small, brown, crowded, in terminal clusters or heads. Achene trigonous, dull white. (Fl. Fr. July - December). DNT. 95, 193.

Commonly noted on loose, sandy soils of rivers and streams.

Eriophorum Linn.

Eriophorum comosum Wall. ex Nees, in Wight Contrib. Bot. Ind. 110, 1834; FBI. 6: 664; C. 3: 411; Fl. Delhi, 363.

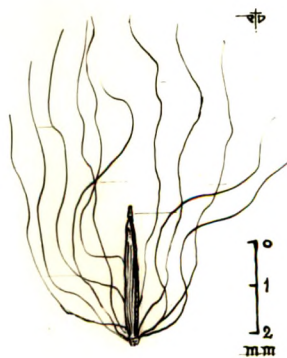
A densely tufted sedge, growing in the crevices of rocks. Stems cylindrical below and trigonous above, leafy at the very base. Leaves as long as or even longer than the stem, linear, rigid with serrulate margins. Spikes in decompound umbel; spikelets reddish brown. Glumes mucronate. Achene trigonous, greyish-black with white bristles divided nearly to the base into innumerable comose segments. (Fl. Fr. December - May). DNT. 564, 1881.

PLATE No. 72

Rare; observed in the crevices of rocks along Banganga stream.

Scirpus Linn.

Inflorescence a sublateral head of few small spikelets with squarrosely



Eriophorum comosum Wall. ex Nees

PLATE No. 72.

aristate glumessquarrosus

Inflorescence a compact, terminal

head of sessile, whitish spikelets.....strobilinus

Scirpus squarrosus Linn. Mant. 181, 1771; FBI. 6: 663; C. 3: 410.

A slender, tufted, glabrous annual with filiform, terete, striate stems. Leaves shorter than the stem, filiform, acuminate. Spikelets green, solitary or 2-3 together forming sublateral heads; glumes with recurved mucro. Achene obovoid, trigonous. (Fl. Fr. August - November). DNT. 607, 1377.

Commonly observed on sandy river banks.

Scirpus strobilinus Roxb. Hort. Beng. 6, 1814 & Fl. Ind. 1: 222, 1820; Koyama, in Acta Phytotax. Geobot. 17(2): 50, 1957.

Scirpus maritimus Linn. var. affinis C. B. Clarke, in FBI. 6: 659; C. 3: 408; Sabnis, loc. cit. 200.

An erect, sedge with smooth, creeping rhizome. Stems sharply trigonous. Spikelets 3-1, straw-coloured, sessile, crowded in terminal heads; glumes sparingly hairy. Achene lenticular, dark brown, ovate, apiculate. (Fl. Fr. April - November). DNT. 873, 1048.

Commonly noted on sandy or muddy river banks.

Scleria Berg.

Scleria tessellata (?) Willd. Sp. Pl. 4: 315, 1805; FBI. 6:
686; C. 3: 414.

A tufted, slender, leafy plant, with triquetrous stems. Leaves long, linear with scaberulous margins. Spikelets in panicles. Achene bony, white, exserted, concellately tessellate with square depressions. (Fl. Fr. September - October). DNT. 1960.

Rare; noted along roadside ditches near cultivated fields at Rangpur.

POACEAE (GRAMINEAE)

(Keys to the groups, genera and species have been adapted and prepared following Bor - The Grasses of Burma, Ceylon, India and Pakistan, 1960).

Key to the groups of Poaceae

Spikelets 2-flowered, falling entire at maturity, usually with the upper floret 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...Panicoideae

Spikelets 1-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 2-flowered and falling entire, the glumes and lemmas all membranous and with a globose wrinkled seed which splits the palea when maturePooideae

Key to the genera of Panicoideae

1. Male and female spikelets in separate inflorescence
or in different parts of the same inflorescence :

2. Female spikelets enclosed in a osseous
or ivory bead-like structureCoix
2. Female spikelets in crowded longitudinal
rows on a very thick axis, not enclosed
as aboveZea
1. Spikelets all hermaphrodite with male or
barren or hermaphrodite spikelets mixed in
the same inflorescence :
3. Spikelets often paired, with one sessile
and the other pedicelled, those of each
pair similar or more often dissimilar, rarely
solitary and all alike; upper lemma
usually awned :
4. Spikelets of each pair similar, the
sessile and the pedicelled hermaphrodite;
joints of the panicle thin, linear or
somewhat expanded at the top :
5. Spikelets awnedSpodiopogon
5. Spikelets unawnedSaccharum
4. Spikelets in each pair dissimilar, the
sessile hermaphrodite, the pedicelled

male or sterile; joints of the raceme
and the pedicel thick and swollen :

6. Joints of the rachis and pedicel of
the pedicelled spikelet swollen, 3-
angled, rounded or flattened :

7. Sessile spikelet with a male and
a hermaphrodite floret; upper
lemma awned Apluda

7. Sessile floret with a hermaphrodite
floret only or occasionally with a
male floret below; upper lemma unawned :

8. Sessile spikelet spherical..... Hackelochloa

8. Sessile spikelet not spherical in
shape Rottboellia

6. Joints of the rachis and the pedicel
narrow, seldom thickened upwards, occasionally
with a translucent longitudinal groove :

9. Spikelets collected in whorled panicles,
not interrupted by spathes :

10. Spikelets dorsally compressed, in
panicles of many pairs or in threes

of which one is hermaphrodite.....Sorghum

10. Spikelets compressed from the sidesChrysopogon

9. Spikelets in paniculate racemes, interrupted
by spathes, or the espatheate racemes
digitate or in pairs or solitary and
terminal :

11. Upper lemma of the sessile spikelet
with a basal awnArthraxon

11. Upper lemma of the sessile spikelet
awned from the tip or from the cleft
or upper lemma reduced to hyaline base
of the awn, very rarely unawned :

12. Upper lemma of the sessile spikelet
not cleft, often stipitate and
passing into the awnDichanthium

12. Upper lemma of the sessile spikelet
2-lobed or 2-cleft, awned in the
sinus :

13. Aromatic grasses; racemes in
pairs supported by spathes,
often collected into huge
paniclesCymbopogon

13. Grasses not aromatic; racemes in pairs, or digitate or solitary :
14. Racemes solitary at the ends of the branches, surrounded at the base by an involucre of homogamous spikelets :
15. Involucral spikelets pedicellate; deciduous; callus of fertile spikelets very short, truncate or obtuseIseilema
15. Involucral spikelets sessile, not deciduous; callus of fertile spikelets pointedThemeda
14. Racemes without an involucreHeteropogon
3. Spikelets solitary or paired, more or less similar; upper lemma usually awnless :
16. Spikelets falling slightly, not subtended by bristles, or if so, then the bristles persisting after the spikelets have fallen :
17. Spikelets arranged in more or less often panicles, or with the panicles contracted and spike-like :

- 18. Spikelets not subtended by
bristles like branchesPanicum
- 18. Spikelets subtended or replaced by
one to many bristle-like branchlets,
which are persistentSetaria
(in part)
- 17. Spikelets arranged in one-sided spikes
or spike-like racemes; spikes or racemes
digitate or scattered, rarely solitary :
- 19. Lemma of the upper floret more or less
crustaceous or coriaceous, usually with
narrow inrolled margins, exposing much
of the palea :
- 20. Spikelets abaxial :
 - 21. Lower glume developed, although
sometimes small :
 - 22. Glumes acuminate or awned,
rarely only acute; upper
lemma not mucronate :
 - 23. Leaf-blade linear;
racemes dense.....Echinochloa
 - 23. Leaf-blade lanceolate

to ovate; racemes

loose to moderately dense; Oplismenus

22. Glumes awnless, upper lemma

acute, not mucronate.....Paspalidium

21. Lower glumes usually absent;

spikelets plano-convexPaspalum

20. Spikelets adaxialBrachiaria

19. Lemma of the upper floret thinly cartilaginous,
usually with flat, hyaline margins :

24. Spikelets awnlessDigitaria

24. Spikelets awnedAlloteropsis

16. Spikelets with an involucre of bristles or
subtended by a solitary bristle and falling
with or without the bristle at maturity :

25. Upper lemma smooth; bristles caducous :

26. Involucre of free, naked or

plumose bristlesPennisetum

26. Involucre of spines or rigid bristles

united at the base into a hard cupCenchrus

25. Upper lemma transversely rugose;

bristles persistentSetaria
(in part)

Coix Linn.

Coix lacryma-jobi Linn. Sp. Pl. 972, 1753; FBI. 7: 100;

C. 3: 517; Fl. Dang, 93; Blatt. & McC. 3; Bor, 264;

Patel, in Ind. For. 91(5): 321, 1965.

A tall, annual or perennial grass. Leaves long, flat, broad. Inflorescence a drooping raceme with unisexual flowers. Male florets are terminal, drooping and each subtended by a bract. Female florets at the base, enveloped by hard, polished bluish-grey bracts. (Fl. Fr. October - March). DNT. 1768, 1877.

Commonly noted along roadside ditches in association with Typha.

Zea Linn.

Zey mays Linn. Sp. Pl. 971, 1753; FBI. 7: 102; C. 3: 574;

Gr. 240; Blatt. & McC. 2; Fl. Dang, 95; Bor, 270;

Patel, loc. cit. 321.

A tall, stout, annual. Male spikelets are produced terminally and female ones axillary lower down on the stem.

(Fl. Fr. July - October). DNT. 1191.

Cultivated as a staple crop.

Spodiopogon Trin.

Spodiopogon rhizophorus (Steud.) Pilger, in Pfam. (ed. 2)

14 e: 119, 1940; Fl. Dang, 94; Bor, 246; Patel, loc.

loc. cit. 319; Fl. Pavagadh, 240.

Andropogon rhizophorus Steud. Syn. Pl. Glum. 1: 381,
1854.

Spodiopogon albidus (Wall.) Benth. in JLS. 19: 66, 1881;

FBI. 7: 108; C. 3: 464; Blatt & McC. 51.

A weak, straggling, tufted, leafy grass. Spikelets 1-2-flowered, silky-villous, one pedicellate, the other sessile, awned. (Fl. Fr. August - October). DNT. 559.

Observed as an undergrowth of forests.

Saccharum Linn.

Saccharum spontaneum Linn. Mant. Ait. 183, 1771; FBI. 7: 118;

C. 3: 465; Blatt. & McC. 45; Fl. Dang, 94; Bor, 214;

Fl. Delhi, 371; Patel, loc. cit. 318; Fl. Pavagadh, 239.

An erect, perennial grass. Leaves linear, acuminate,

coriaceous. Panicles silvery white with slender rachis, giving elegant appearance to the plant. (Fl. Fr. August - January). DNT. 343, 567, 684.

PLATE No. 73

Very common; observed along river banks and along water canals.

Apluda Linn.

Apluda mutica Linn. Sp. Pl. 82, 1753; Bor, 93; Patel, loc.cit, 311; Fl. Pavagadh, 243.

Apluda aristata Linn. Amoen. Acad. 4, 303, 1756; Bor, Fl. As. 5: 431; D. & G. 303; Sant. 303; Fl. Delhi, 369.

Apluda varia Hack. in DC. Monogr. Phan. 6: 196, 1889; FBI. 7: 150; C. 3: 474; Blatt. & McC. 29, t. 20.

An erect, slender, leafy, annual herb with branches spreading among the hedges and bushes. Inflorescence a panicle, each one enclosed in a spathe. Spikelets sessile and pedicellate. (Fl. Fr. September - December). DNT. 547.

Commonly noted in hedges and on dry rocky places.

Hackelochloa O. Kuntze

Hackelochloa granularia (Linn.) O. Kuntze, Rev. Gen. Pl. 776,



PLATE No. 73. Saccharum spontaneum Linn.

1891; Bor, 159; Patel, loc. cit. 315; Fl. Pavagadh, 243.

Cenchrus granularis Linn. Mant. 2: 575, 1771.

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

An erect, leafy annual. Inflorescence consisting of a solitary, axillary raceme resembling a string of minute beads. Sessile spikelets spherical; pedicelled spikelets reduced. (Fl. Fr. September - January). DNT. 1023, 1185.

Commonly observed on escarpments of hillocks and in moist places along with grasses.

Rottboellia Linn.

Rottboellia exaltata Linn. f. Nov. Gram. Gen. 40, t. 1, 1779
et in Suppl. Pl. 114, 1781; FBI. 7: 156; C. 3: 472;
Bor, 206, f. 13; Patel, loc. cit. 318.

An erect, leafy grass. Leaves linear-lanceolate, setaceously acuminate, scabrid or hispid and green above, smooth, glaucous beneath. Racemes glabrous, fragile, involucreal glumes scarcely winged. (Fl. Fr. September - December). DNT. 540.

Rare; observed along with grasses as an undergrowth of forest at Ambadungar.

Sorghum Moench (nom. cons.)

Panicles usually dense; rachis of
spikelet not fragile vulgare

Panicles usually open; rachis of
spikelet fragile halepense

Sorghum vulgare Pers. Syn. 1: 107, 1805; Blatt. & McC. 58;

Patel, loc. cit. 319.

Andropogon sorghum Brot. Fl. Lus. 1: 88, 1804; FBI. 7:

183; C. 3: 511.

A tall, stout, annual grass. Inflorescence a decompound panicle. Extensively cultivated for its grain. (Fl. Fr. October-February). DNT. 1442.

Cultivated.

Sorghum halepense (Linn.) Pers. Syn. Pl. 1 : 101, 1805; Bor,

222; Patel, loc. cit. 319; Fl. Pavagadh, 243.

Holcus halepensis Linn. Sp. Pl. (ed. 1) 1047, 1753.

Andropogon halepensis Brot. Fl. Lus. 1: 89, 1804; FBI.

7: 182; C. 3: 502.

An erect, perennial, leafy grass. Leaves linear-lanceolate,

margins scabridly serrulate. Inflorescence a decompound panicle, brown and purplish in colour; spikelets ovoid-lanceolate, dorsally compressed. (Fl. Fr. September - January). DNT. 689.

Observed along the roadsides and river banks.

Chrysopogon Trin.

Chrysopogon fulvus (Spreng.) Chiov. Fl. Somalia 1: 327, 1929;

Bor, 116; Fl. Delhi, 401; Fl. Pavagadh, 244.

Pollinia fulvus Spreng. Pugill. 2: 10, 1815.

Andropogon monticola Roem. & Schult. Syst. Veg. 2: 665,

1827; FBI. 7: 192; C. 3: 505.

A tall, densely tufted perennial. Leaves linear, acute, flat, rigid, glaucous. Panicles open; spikelets few, compressed from the sides. (Fl. Fr. August - October). DNT. 1056.

Rare; noted on dry or water-logged soils along roadsides at Hampheshwar.

Arthraxon Beauv.

Arthraxon lancifolius (Trin.) Hochst. in Flora 39: 188, 1856;

Blatt. & McC. 77; Bor, 100; Fl. Pavagadh, 246.

Andropogon lancifolius Trin. in Mem. Acad. Sci. Petersb.

Ser. 6, 2: 271, 1832.

Arthraxon microphyllus (Trin.) Hochst. in Flora 39: 188,

1856; FBI. 7: 147; C. 3: 488.

A perennial grass. Stem decumbent and creeping. Leaves short, broad, cordate at the base. Panicles of 2-5 slender branches; spikelets awned. (Fl. Fr. September - January). DNT. 1477.

Observed on the escarpments of hillocks near stream.

Dichanthium Willemet

Dichanthium annulatum (Forssk.) Stapf, in Prain, Fl. Trop.

Afr. 9: 178, 1917; Blatt. & McC. 94, t. 62; Bor, 133;

Patel, loc. cit. 314; Fl. Pavagadh, 247.

Andropogon annulatum Forssk. Fl. Aeg.-Arab. 173, 1775;

FBI. 7: 196; C. 3: 508.

A closely tufted, perennial grass. Leaves linear, finely acuminate. Racemes subdigitately fascicled, nearly white. (Fl. Fr. August - January). DNT. 35.

Commonly noted in cultivated fields and in open waste places.

Cymbopogon Spreng.

Panicles narrow, of short dense fascicles
of raceme-pairs; joints and pedicels
villous all over; hairs long, more or less
concealing the sessile spikeletsjwarancusa

Panicles often very large, decompound or
compound, sometimes narrow but then with
hairs not covering the joints and pedicels
but confined to the edges of the joints and
pedicels and increasing in length from below
upwards and not concealing the sessile
spikeletsmartinii

Cymbopogon jwarancusa (Jones) Schult. Syst. Veg. 2, Mant.

458, 1824; Blatt. & McC. 102; Bor, 128; Patel, loc.
cit. 313.

Andropogon jwarancusa Jones, in Asiat. Res. 4: 109, 1795.

A. iwarncusa ssp. iwarncusa proper Hook. f. FBI. 7: 203;
C. 3: 495.

A pale, often glaucous green, tall perennial. Panicles
very variable; branches distant or crowded, simple or branched;
joints and pedicels villous all over; proper spathes longer
than the peduncles of the racemes. (Fl. Fr. August - January).
P. & T. 281.

Rare; noted along with grasses in hedges at Raisingpura.

Cymbopogon martinii (Roxb.) Wats. in Atkins. Gaz. N.W. Prov.

Ind. 392, 1882; Blatt. & McC. 104; Sant. 307; Bor,
129; Patel, loc. cit. 314.

A tall, erect, perennial, aromatic grass. Spikelets first green turning reddish-brown when old. (Fl. Fr. August - December). DNT. 127, 336, 1630.

Fairly common in the forest areas.

Iseilema Anders.

Lower glumes of hermaphrodite spikelet
convexly humped, appressed hairy at the
base and ciliate on the margins in the
basal quarter anthephoroides

Lower glume of hermaphrodite spikelet
flat or depressed longitudinally,
glabrous and echinate in the lower
quarter prostratum

Iseilema anthephoroides Hack. Mon. Phan. 6: 683, 1889; FBI.

7: 219; Blatt. & McC. 112; Bor, 187; Patel, loc. cit.
317; Fl. Pavagadh, 248.

A small, tufted, leafy, perennial grass. Involucral spikelets broadly oblong, ciliate on the margins. (Fl. Fr. September - November). DNT. 1202.

Observed along with grasses as an undergrowth of forests.

Iseilema prostratum (Linn.) Anderss. in Nov. Act. Soc. Sci.

Upsal. (s. 3) 2: 251, 1856; Bor, 188; Patel, loc. cit. 317.

Andropogon prostratus Linn. Mant. Alt. 304, 1771.

Iseilema wightii Anderss. loc. cit. 251; FBI. 7: 218;

C. 3: 516; Blatt. & McC. 113.

A small, prostrate, perennial grass. Leaves linear, acute. Panicle occupying half the stem or more; spikelets not in dense fascicles. (Fl. Fr. August - October). P. & T. 156.

Noted along with grasses on roadsides.

Themeda Forssk.

Themeda quadrivalvis (Linn.) O. Kuntze, Rev. Gen. Pl. 2: 794,

1891 var. quadrivalvis; Blatt. & McC. 118; Bor, 252;

Patel, loc. cit. 320; Fl. Pavagadh, 249.

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

758, 1774.

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

Themeda ciliata (Linn. f.) Hack. in DC. Monogr. Phan. 6:
664, 1889; C. 3: 514.

A stout annual. Stems suberect, terete, glabrous. Panicles suberect, bearing at equal distances, shortly pedunculate clusters of racemes; spikelets brown red. (Fl. Fr. August - December). DNT. 325, 406, 1125.

Fairly common; noted as an undergrowth of foresta along roadsides and on waste lands.

Heteropogon Pers.

Heteropogon contortus (Linn.) Beauv. ex Roem. et Schult. Syst.
2: 836, 1817; Blatt. & McC. 109, t. 71; Bor, 163, f.
6; Sant. 355; Patel, loc. cit. 315; Fl. Pavagadh, 249.

Andropogon contortus Linn. Sp. Pl. 1045, 1753; FBI. 7:
199; C. 3: 510.

A densely tufted, erect, perennial grass. Racemes with short internodes; spikelets closely appressed, the lower 2-6 or more, sessile, awnless, male or neuter, the upper sessile spikelets narrow, long-awned, female. (Fl. Fr. August - December). DNT. 368, 1028.

Observed in open forest areas and along roadsides.

Panicum Linn.

Lower glumes cuspidate or cuspidate-acuminate.....trypheron

Lower glumes not cuspidate-acuminate and
spikelets not gaping :

Annuals; lower glume $\frac{1}{4}$ to $\frac{1}{2}$ the length
of the spikeletmiliare

Perennials; lower glume $\frac{1}{2}$ to $\frac{3}{4}$ th the
length of the spikelet or moreantidotale

Panicum trypheron Schult. Syst. Veg. 2: 244, 1824; FBI. 7: 47;
C. 3: 452; Blatt. & McC. 158; Bor, 331; Patel, loc.
cit. 325.

An erect, annual grass. Leaves flat, thin, linear, acuminate. Panicles 8-10 cm. long; spikelets very distant, ovoid, lower glumes cuspidate-acuminate. (Fl. Fr. August - November).
P. & T. 185.

Observed in open forest areas and in waste places.

Panicum miliare Lamk. Ill. 1: 173, 1791; FBI. 7: 53; C. 3:456;
Blatt. & McC. 158; Bor, 331; Patel, loc. cit. 325.

An erect, annual grass. Leaves linear, acuminate. Nodes and leaf sheaths glabrous. Spikelets persistent, panicle contracted. (Fl. Fr. August - November). DNT. 536, 1297.

Cultivated for its edible grains.

Panicum antidotale Retz. Obs. Bot. 4, 17, 1786; FBI. 7: 52;
C. 3: 453; Blatt. & McC. 163; Bor, 322; Patel, loc.
cit. 324.

A tall, glabrous, perennial grass with creeping, stoloniferous root stock. Leaves long, linear. Panicles compound, pyramidal, branches filiform; spikelets laxly crowded on the branches. (Fl. Fr. March - October). DNT. 347.

Rare; noted as a weed in cultivated fields at Luni.

Setaria Beauv. (nom. cons.)

Bristles retrosely barbedverticillata

Bristles antrorsely barbed :

Upper glume as long as the upper lemma;
the latter quite smooth or minutely
ruguloseitalica

Upper glume shorter than the upper
lemma; the latter rugose :

Inflorescence a narrow panicle,
 sometimes loosely lobed below
 and tapering upwardstomentosa

Inflorescence a cylindric false spike :

Upper lemma coarsely rugose, boat-
 shaped and slightly keeled upwards,
 broad and dorsally strongly curved
 in profileglauc

Upper lemma usually finely rugose,
 narrow and dorsally gently curved,
 not at all keeledpallide-fusca

Setaria verticillata (Linn.) Beauv. Agrost. 51, 1812; FBI. 7:

80; C. 3: 436; Blatt. & McC. 174; Bor, 365; Fl. Delhi,
 378; Patel, loc. cit. 327; Fl. Pavagadh, 250.

Panicum verticillatum Linn. Sp. Pl. (ed. 2) 82, 1762.

A much tufted, annual grass. Leaves linear-lanceolate,
 tapering to the point. Panicles spike-like, cylindrical or
 oblong; spikelets ellipsoid; bristles of the involucre retrosely
 barbed. (Fl. Fr. September - April). DNT. 537, 1046.

Commonly noted on plains and in open forest areas along
 with grasses.

Setaria italica (Linn.) Beauv. Agrost. 51, 1812; FBI. 7: 78;
Blatt. & McC. 175; Bor, 362.

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

An erect, tufted, annual grass. Panicles dense, spike-like, bristles few, smooth. (Fl. Fr. September - November).
DNT. 440, 1120.

Cultivated.

Setaria tomentosa (Roxb.) Kunth, Rev. Gram. 1: 47, 1829; Bor, 365; Fl. Delhi, 379; Patel, loc. cit. 327; Fl. Pavagadh, 251.

Setaria intermedia Roth, R. & S. Syst. 2: 489, 1817;
FBI. 7: 79; C. 3: 436; Blatt. & McC. 174.

A weak, annual grass. Leaves linear-lanceolate, thin, flat, acuminate. Panicle narrowly pyramidal. (Fl. Fr. August - September). DNT. 143.

Commonly noted along forest paths and roadsides.

Setaria glauca (Linn.) Beauv. Agrost. 51, 1812; FBI. 7: 78;
C. 3: 435; Blatt. & McC. 172; Bor, 360; Patel, loc. cit. 327; Fl. Pavagadh, 251.

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

A tall, tufted grass with erect or ascending, glabrous culms. Leaves linear, scabrid at the margins. Inflorescence a panicle of cylindric, spike-like racemes; spikelets closely set on rachis. (Fl. Fr. August - December). DNT. 541.

Fairly common on open waste places.

Setaria pallide-fusca (Schumach.) Stapf & C. E. Hubb. in KB.
1930; Bor, 363; Patel, loc. cit. 327.

Panicum pallide-fuscum Schumach. Beskr. Guin. Pl. 58, 1827.

A tall, tufted annual. Spike erect, dense; branches reduced to involucre bristles, supporting a solitary, perfect spikelet. (Fl. Fr. July - October). DNT. 98, 898, 1170, 1782.

Commonly noted on plains, along forest paths and river banks.

Echinochloa P. Beauv.

Spikelets 3-4 mm. long, densely crowded,
unawned; spikes thickened, sometimes
incurved, grains not deciduousfrumentacea

Spikelets upto 5 mm. long (if densely
crowded, 3-3.5 mm. long and awned);
grains deciduous :

Lower lemma and upper glume equally
acute or cuspidate, not awned colonum

Lower lemma and upper glume acuminate,
cuspidate, the former often produced
into considerable awn crusgalli

Echinochloa frumentacea Link, Hort. Berol. 1: 204, 1827;

Bor, 311.

Panicum frumentaceum Roxb. Fl. Ind. 1: 307, 1820 (non
Salisb. 1796).

An erect, tall, robust annual. Leaves linear. Spikelets
densely crowded, unawned. Grains not deciduous. (Fl. Fr. Sept-
ember - November). DNT. 451, 982.

Cultivated.

Echinochloa colonum (Linn.) Link, Hort. Berol. 2: 209, 1833;

Blatt. & McC. 148, t. 94; Bor, 308; Fl. Delhi, 393;

Patel, loc. cit. 323; Fl. Delhi, 252.

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

A slender, erect to ascending annual. Spikes 8-15, sessile,
simple, distant, generally appressed to the axis. Rachis stout,
angular. Spikelets globosely ovoid. (Fl. Fr. July - November).

DNT. 131, 145, 482.

Commonly noted in moist places along roadsides, banks of streams and in cultivated fields.

Echinochloa crusgalli (Linn.) P. Beauv. Ess. Agrost. 53 :

161, 1812; Blatt. & McC. 150; Bor, 310; Patel, loc. cit. 323.

Panicum crusgalli Linn. Sp. Pl. 56, 1753; FBI. 7: 30.

An erect annual grass. Leaves linear, flat, spikelets more or less hispid, lower lemma and upper glumes acuminate, cuspidate. (Fl. Fr. August - October). DNT. 1146.

Noted in marshy places in cultivated fields.

Oplismenus Beauv.

Oplismenus burmannii (Retz.) Beauv. Agrost. 54, 1812; FBI. 7:

68; C. 3: 443; Blatt. & McC. 154; Bor, 317; Patel, loc. cit. 324; Fl. Pavagadh, 252.

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

A prostrate or procumbent, slender, annual grass. Leaves ovate or ovate-lanceolate with scattered hairs on both surfaces. Spikes secund, close in short panicles; spikelets 1-2-nate, shortly pedicellate; involucre and lower floral glume awned. (Fl. Fr. August - January). DNT. 1318, 1829.

Very common and abundant, forming a close group in shaded localities along roadsides and on escarpments of hillocks.

Paspalidium Stapf

Paspalidium flavidum (Retz.) A. Camus, in Lecomte, Fl. Gen. de l'Indo-chine 7: 419, 1922; Blatt. & McC. 141; Bor, 333; Fl. Pavagadh, 252.

Panicum flavidum Retz. Obs. Bot. 4: 15, 1786; FBI. 7: 28; C. 3: 445.

A tall, tufted, annual grass. Leaves narrowly linear, acuminate, thinly coriaceous; sheath compressed. Panicles of a few distant spikes, shorter than internodes; spikelets ovate or elliptic. (Fl. Fr. August - December). DNT. 972, 1126 B.

Common on moist, muddy river banks and on the plains along with grasses.

Paspalum Linn.

Paspalum scrobiculatum Linn. Mant. Pl. 1: 29, 1767; FBI. 7: 10; C. 3: 460; Blatt. & McC. 136; Bor, 340; Patel, loc. cit. 326.

An erect, glabrous, tufted annual. Leaves glabrous or

softly hairy, lanceolate, acuminate. Spikelets in spike, sessile, broadly elliptic or suborbicular. (Fl. Fr. September - December). DNT. 538.

Cultivated for the grains.

Brachiaria Griseb.

Spikelets 5-many, turgidramosa

Spikelets 2-4, not turgiddistachya

Brachiaria ramosa (Linn.) Stapf, in Prain, Fl. Trop. Afr. 9: 542, 1919; Blatt. & McC. 134; Bor, 284; Patel, loc. cit. 322.

Panicum ramosum Linn. Mant. 29, 1767; FBI. 7: 36; C. 3: 449.

A perennial grass. Leaves linear, rachis triquetrous. Panicle various; spikelets pedicellate, clustered or pairs. (Fl. Fr. July - October). DNT. 122, 155.

Commonly noted in open clayey soils along river banks and in cultivated fields.

Brachiaria distachya (Linn.) Stapf, in Prain, Fl. Trop. Afr. 9: 565, 1919; Bor, 281; Patel, loc. cit. 321.

Panicum distachyon Linn. Mant. 1: 138, 1767; FBI. 7: 37.

An erect, perennial grass. Leaves narrow. Panicles various; spikelets arranged singly on a flattened or triquetrous rachis, crowded. (Fl. Fr. July - October). DNT. 973, 1025, 1612.

Commonly noted along river banks and on clayey soils in cultivated fields.

Digitaria Heist. ex Fabr.

Hairs present on the spikelets and
always verrucose longiflora

Hairs on the spikelets, if any, never
verrucose :

Spikelets of each pair heteromorphous,
sessile spikelets nearly glabrous in
front; the pedicelled coated with
long hairs often spreading at maturity... biformis

Spikelets of each pair not heteromorphous,
both spikelets of each pair with the
same type of indumentum adscendens

Digitaria longiflora (Retz.) Pers. Syn. Pl. 1: 85, 1805;

C. 3: 458; Blatt. & McC. 127; Bor, 302; Patel, loc.
cit. 323.

Paspalum longiflorum Retz. Obs. 4: 15, 1786; FBI. 7:17.

An erect, slender, annual grass. Leaves flat, narrow. Spikes 2-5, terminal, very slender; spikelets appressed to the rachis, elliptic, obtuse, pale or purplish. (Fl. Fr. August - October). DNT. 186.

Noted along river banks.

Digitaria biformis Willd. Enum. Pl. Hort. Berol. 92, 1809; Bor, 299; Patel, loc. cit. 323.

An annual grass, culms not thickened at the base. Spikelets of each pair heteromorphous; lower lemma of pedicelled spikelet with hairs and bristles. (Fl. Fr. July - October). DNT. 49.

Noted on open ground and in cultivated fields.

Digitaria adscendens (HBK.) Henr. in Blumea 1: 92, 1934; Bor, 298; Patel, loc. cit. 322; Fl. Pavagadh, 254.

Panicum adscendens HBK. Nov. Gen. & Sp. 1: 97, 1815.

A tall, erect, annual grass. Spikes 2 or more; spikelets bearded with soft spreading hairs. (Fl. Fr. April - August). DNT. 978, 1025, 1762.

Commonly noted on plains along with grasses.

Alloteropsis F.S.Presl ex C.B.Presl

Alloteropsis cimicina (Linn.) Stapf, in Prain, Fl. Trop. Afr.

9: 487, 1919; Blatt. & McC. 129; Bor, 276; Patel, loc.
cit. 321; Fl. Pavagadh, 254.

Axonopus cimicinus Beauv. Agrost. 12, 1812; FBI. 7: 64;
C. 3: 441.

A perennial grass. Leaves bifarious, acuminate, linear.
Spikelets solitary or 2-nate, erect; upper lemma shortly
aristate. (Fl. Fr. July - October). DNT. 154.

Observed in waste places along with grasses.

Pennisetum Rich.

Pennisetum typhoides (Burm.) Stapf & Hubbard, in KB. 271, 1933;

Bor, 350; Fl. Delhi, 380; Patel, loc. cit. 327; Fl.
Pavagadh, 254.

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

Pennisetum typhoides Rich. in Pers. Syn. 1: 72, 1805;
FBI. 7: 82; C. 3: 432.

A tall, erect, stout annual. Leaves broad, linear-lanceolate.
Panicles terminal, spike-like, dense, cylindric. (Fl. Fr. July -
October). DNT. 1762.

Cultivated.

Cenchrus Linn.

Bristles of involucre retrorsely scabrid,
short and hookedbiflorus

Bristles of involucre antrorsely scabrid :

Bristles connate at the base
only, filiformciliaris

Bristles connate into a cup, 1-3 mm.
long, not filiformpennisetiformis

Cenchrus biflorus Roxb. Fl. Ind. 1: 238, 1820; Fl. 7: 89;
C. 3: 433; Blatt. & McC. 185, t. 118; Bor, 287; Fl.
Delhi, 377; Patel, loc. cit. 322.

An erect or ascending grass. Stems tufted, geniculate,
branching from the base. Spikes cylindric, solitary; bristles
retrorsely scabrid or spiny. (Fl. Fr. September - April).
DNT. 1769.

Commonly noted along river banks and in open waste places.

Cenchrus ciliaris Linn. Mant. Alt. 302, 1771; Raizada, in Ind.
For. 80: 40, 1954; Bor, 287, f. 33; Fl. Delhi, 377;
Patel, loc. cit. 322; Fl. Pavagadh, 255.

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

An annual, tufted grass. Spikes cylindric, pale purplish; spikelets shortly pedicellate; bristles ciliate on the margin, longer than the spikelets. (Fl. Fr. August - December). DNT. 339, 456.

Observed along forest paths and roadsides.

Cenchrus pennisetiformis Hochst. et Steud. ex Steud. Syn. Pl.
Glum. 1: 109, 1854; Bor, 289.

Pennisetum cenchroides var. echinoides Hook. f. in FBI.
7: 88.

A tufted, perennial grass. Leaves linear, tapering to a fine point. Spikes cylindric, dense; rachis scaberulous. Bristles connate at the base, into a cup, tapering to a setiform tip. (Fl. Fr. July - December). P. & T. 286.

Observed in fallow fields and open waste places.

Key to the genera of Pooideae

1. Shrubs or trees with tall, woody stems;
leaves usually with a petiole-like base,
articulated with the sheathsDendrocalamus

1. Herbs or shrubs; leaves usually sessile,
not articulated with the sheaths :
2. Spikelets borne in open or contracted
or spike-like panicles, less often in
racemes or spikes :
3. Spikelets usually with two or more
fertile florets, or if with one fertile
floret then with sterile reduced
floret above it :
4. Inflorescence of panicles; if racemes
or spikes the spikelets not secund :
5. Lemma usually entire at apex,
obtuse acute, or acuminate or
if 2-toothed (Arachne) then
glabrous near the margins and
along the side nerves :
6. Glumes aristate or aristate-
acuminateDinebra
6. Glumes obtuse, acute or
acuminate, not aristate :
7. Spikelets in open, contracted
or spike-like panicles, rarely
in solitary, secund spikes :

- 8. Spikelets awned, in dense
globose clustersElytrophorus
- 8. Spikelets awnless :
 - 9. Inflorescence a panicle, some-
times spike-likeEragrostis
 - 9. Inflorescence a solitary,
second spikeEragrostiella
- 7. Spikelets sessile or shortly pedicelled,
loosely to densely imbricate in digitate
or racemosely arranged spikes or spike-
like racemes, very rarely in solitary
spikes :
 - 10. Axis and branches of inflorescence
ending in a spikelet :
 - 11. Spikelets falling entire at
maturity from the axis of
straight spikes; spikes
numerousDesmostachya
 - 11. Spikelets breaking up at
maturity; spikes few to
several :

- 12. Spikes digitate or subdigitate;
spikelets 3-6-flowered.....Eleusine
- 12. Spikes usually in pseudo-whorls
or scattered; spikelets 8-20-
floweredArachne
- 10. Axis of spikes terminating in a sharp
pointDactyloctenium
- 5. Lemma usually emarginate or 2-4-lobed or
toothed at the apex; spikelets in terminal
solitary secund spikesTripogon
- 4. Inflorescence of racemes or panicles of
racemes, the spikelets secund :
- 13. Inflorescence terminal, spicate, not of
digitate or racemose spikes; lemmas
not obovate :
- 14. Inflorescence of spaced clusters of
awned spikelets on a simple rachis..Melanocenchris
- 14. Inflorescence a simple spike or
spikes of awned spikeletsSchoenefeldia
- 13. Inflorescence of digitate spikes or
spikes racemose; lemma obovate :

- 15. Spikelets with one or more fertile
florets and one or more imperfect
florets above them :
 - 16. Spikes 1-3; fertile florets
2 or moreTetrapogon
 - 16. Spikes 4 or more; fertile
florets 1 onlyChloris
- 15. Spikelets with one fertile floret and
no imperfect florets; spikelets
awnlessCynodon
- 3. Spikelets with one fertile floret, with or
without one or two male or barren florets
below it, the latter often much reduced :
 - 17. Glumes minute; fertile lemma and palea
very similarOryza
 - 17. Glumes well-developed; fertile lemma
and palea not similar :
 - 18. Spikelets very rarely falling entire
and then with firmly membranous to
coriaceous, awned or 5-nerved lemmas :
 - 19. Lemmas hyaline or membranous at

maturity, rarely indurated
and then compressedSporobolus

19. Lemmas indurated or rigid at
maturity, terete or dorsally
compressedAristida

18. Spikelets falling entire at maturity;
lemma delicate, 1-3-nerved; spikelets
in spike-like purplish-violet racemes..Perotis

2. Spikelets borne in spikes; spikes long,
more or less loose, somewhat dorsally
compressedTriticum

Dendrocalamus Nees

Dendrocalamus strictus Nees, in Linnaea 9: 476, 1834; FBI. 7:
404; C. 3: 572; Blatt. & McC. 285; Patel, loc. cit. 330.

A tall, deciduous, densely tufted bamboo with strong,
erect stem. Leaves broad, rounded, gradually narrow upwards
into an acuminate, twisted point. Inflorescence a large
branching panicle of dense globular heads. (Fl. Fr. July -
February). DNT. 126, 550, 1527.

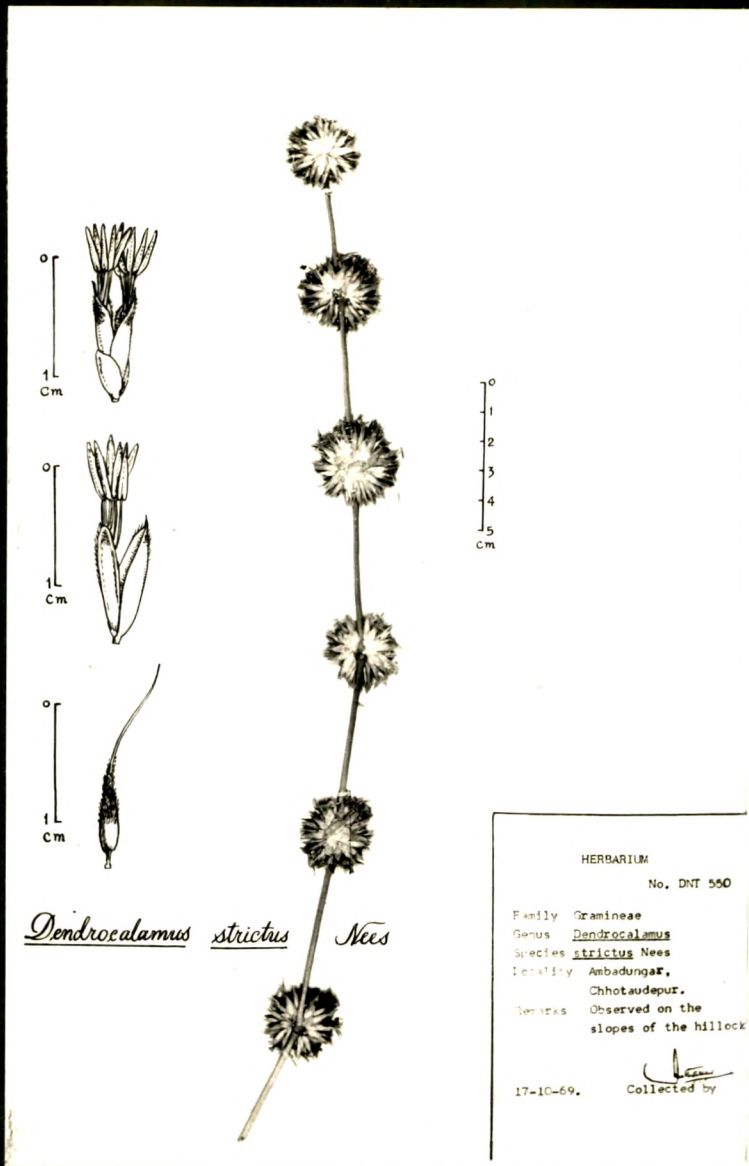


PLATE No. 74.

Observed on the slopes of the hillocks at Hampsheshwar and Ambadungar.

Dinebra Jacq.

Dinebra retroflexa (Vahl) Panz. in Denkschr. Acad. Munch. 270, 1814; Blatt. & McC. 264; Bor, 491; Patel, loc. cit. 332; Fl. Pavagadh, 255.

Cynosurus retroflexus Vahl, Symb. Bot. 2: 20, 1791.

Dinebra arabica Jacq. Fragm. 77, t. 121, f. 1, 1807; FBI. 7: 297; C. 3: 562.

An annual, tufted, slender grass with ascending stems. Leaves linear, finely acuminate, contracted at the insertion. Inflorescence a panicle of spikes; spikes 3-5 cm. long, sessile, racemosely arranged on the axis; spikelets sessile, alternately arranged on flattened branches; involucre glumes lanceolate, hyaline, keeled, with recurved, scaberulous awns. (Fl. Fr. July - October). DNT. 641.

Observed along forest paths and as a weed in cultivated fields.

Elytrophorus Beauv.

Elytrophorus spicatus (Willd.) A. Camus, in Lecomte, Fl. Gen.

de 11' Indo-chine 7: 547, 1923; Bor, 493; Patel,
loc. cit. 333; Fl. Pavagadh, 258.

Dactylis spicata Willd. in Ges. Naturl. Freunde Berlin,
 Neue Schrifi 3: 416, 1801.

Elytrophorus articulatus Beauv. Agrost. 67, t. 14, f. 2,
 1812; FBI. 7: 306; C. 3: 567.

An erect, annual grass. Leaves much longer, linear, acute.
 Inflorescence panicle, much longer; spikes globose or oblong;
 spikelets awned. (Fl. Fr. September - January). DNT. 1317.

Observed in moist situation along with grasses in the forest.

Eragrostis P. Beauv.

Spikelets breaking up from above downwards :

Keel of the palea more or less ciliate :

Panicles spiciform, or compact

and denseciliaris

Panicles effuse :

Culms and leaves more or less viscous..viscosa

Culms and leaves not viscoustenella

Keel of the palea scabrid or smooth,

not ciliatediarrhena

Spikelets breaking up from below upwards :

Spikelets ovate or ovate-oblong; grain
obovoid or ellipsoid, compressedunioloides

Spikelets linear or linear-oblong,
grain sub-globosetremula

Eragrostis ciliaris (Linn.) R. Br. in Tuckey, Narr. Exp.

Congo, App! 478, 1818; FBI. 7: 314; Blatt. & McC. in
JBNHS. 33: 488, 1929; Bor, 506; Patel, loc. cit. 334;
Fl. Pavagadh, 256.

Poa ciliaris Linn. Syst. Nat. ed. 10, 2: 875, 1759.

Eragrostis ciliaris var. ciliaris (Linn.) Stapf, in Hook.
f. FBI. 7: 314, 1896.

A slender, erect, annual grass. Leaves linear. Panicles
short; spikelets crowded in a spike-like manner, compressed.
(Fl. Fr. July - October). DNT. 1054.

Observed along with grasses on the river banks.

Eragrostis viscosa (Retz.) Trin. in Mem. Acad. Sc. Petersb.

(Ser. 6) 1: 397, 1831; Blatt. & McC. 233; Bor, 515;
Patel, loc. cit. 334; Fl. Pavagadh, 256.

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

Eragrostis tenella var. viscosa (Retz.) Stapf, in FBI. 7:

315; C. 3: 546.

A tufted, viscid, erect annual. Stems and rachis more or less viscid. Inflorescence a compound panicle with slender, filiform, spreading branches; spikelets 7-10-flowered. Grains pale brown, ovoid, polished. (Fl. Fr. April - October). DNT. 104, 601, 866.

Commonly noted along roadsides and river banks.

Eragrostis tenella (Linn.) Beauv. ex Roem. & Schult. Syst. Veg.

2: 576, 1817; Bor, 513; Fl. Delhi, 386; Patel, loc.

cit. 335; Fl. Pavagadh, 257.

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

Eragrostis tenella var. plumosa (Retz.) Stapf, in Hk. f.

FBI. 7: 315, 1896; C. 3: 545.

An erect or ascending, loosely tufted, annual grass. Panicles dense or loose but contracted, axis more or less hairy at nodes. (Fl. Fr. August - November). DNT. 1324, 1379.

Common and abundant along roadsides and near streams.

Eragrostis diarrhena (Schult.) Steud. Syn. Pl. Glum. 1: 266,

1854; Bor, 507; Patel, loc. cit. 334.

Poa diarrhena Schult. Syst. Veg. 2, Mant. 616, 1827.

Eragrostis interrupta auct. non P. Beauv. Agrost. 71:
1812.

A tall, glabrous, annual or perennial grass. Leaves narrow, flat, Panicle erect, contracted; spikelets small; usually 6-14-flowered, smooth, often interrupted; rachilla articulate between the flowering glumes. (Fl. Fr. April - November). DNT. 619,860.

Commonly noted in marshy places.

Eragrostis unioloides (Retz.) Nees ex Steud. Syn. Pl. Glum. 1:
264, 1854; Blatt. & McC. 235, t. 156; Bor, 515; Patel,
loc. cit. 353; Fl. Pavagadh, 258.

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

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

A small, glabrous, annual grass. Panicles not much branched; spikelets compressed, pedicillate, ovate-oblong, green to reddish-purple. (Fl. Fr. September - December). DNT. 614.

Noted along with grasses near river banks and roadsides.

Eragrostis tremula Hochst. ex Steud. Syn. Pl. Glum. 1: 269,
1854; FBI. 7: 320; C. 3: 549; Blatt. & McC. 239; Bor,
514; Patel, loc. cit. 335.

An erect annula, densely tufted. Leaves linear, lanceolate.

Panicles large, ovate; spikelets delicate, long, narrowly flattened and many-flowered; versatile. (Fl. Fr. August - October). DNT. 349, 352.

Observed in moist places along with grasses in the forest.

Eragrostiella Bor

Eragrostiella brachyphylla (Stapf) Bor, in Ind. For. 66: 270, 1940; Bor, 494; Fl. Delhi, 383; Patel, loc. cit. 334.

Eragrostis brachyphylla Stapf, Hook. f. FBI. 7: 327, 1896; Blatt. & McC. 242.

An erect, perennial grass. Leaves linear, acute, filiform. Inflorescence a solitary secund spike; spikelets awnless. (Fl. Fr. July - October). DNT. 165.

Rare; noted in open places along with grasses at Luni.

Desmostachya Stapf

Desmostachya bipinnata (Linn.) Stapf, in Dyer, Fl. Cap. 7: 632, 1900; Blatt. & McC. 244, t. 162; Bor, 491; Patel, loc. cit. 332; Fl. Pavagadh, 258.

Briza bipinnata Linn. Syst. 875, 1759.

Eragrostis cynosuroides (Retz.) Beauv. Agrost. 162, 1812;

FBI. 7: 324; C. 3: 550.

A perennial, tall, deep-rooted, tufted, grass. Panicles erect, narrowly pyramidal or cylindrical, purplish or brownish at maturity; spikes many and crowded. (Fl. Fr. July - October). DNT. 315.

Observed on open areas and in cultivated fields.

Acrachne Wight et Arn.

Acrachne racemosa (Heyne) Ohwi, in Bull. Tokyo Sci. Mus. n. 18, 1, 1947; Bor, 487; Patel, loc. cit. 332.

Eleusine verticillata Roxb. Fl. Ind. 1: 346, 1832; FBI. 7: 295; Blatt. & McC. 260.

An erect, annual grass. Spikes usually in pseudo-whorls or scattered; spikelets 8-20-flowered. Grains coarsely rugose. (Fl. Fr. July - October). DNT. 103.

Observed in moist places along roadsides.

Eleusine Gaertn.

Eleusine indica (Linn.) Gaertn. Fruct. 1: 8, 1789; Blatt. & McC. 259; FBI. 7: 293; C. 3: 560; Bor, 493; Patel, loc. cit. 333; Fl. Pavagadh, 259.

Cynosurus indicus Sp. Pl. 72, 1753.

An erect, annual grass. Leaves flat, glabrous. Spikes 2-7, elongate, digitate; spikelets in 2-series, 3-6-flowered, pointing forward at an acute angle. (Fl. Fr. July - November). DNT. 156.

Commonly noted in moist places along roadsides.

Dactyloctenium Willd.

Dactyloctenium aegyptium (Linn.) Beauv. Agrost. Expl. Pl. 72, 1812; Blatt. & McC. 262, t. 176; Sant. 308; Bor, 489; Patel, loc. cit. 332; Fl. Pavagadh, 259.

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

Dactyloctenium aegyptiacum Willd. Enum. 1029; Gr. 235; D. & G. 297.

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

An erect annual with stoloniferous branches. Spikes 2-6, digitately radiating; spikelets 3-5-flowered, spreading at right angles to the rachis. (Fl. Fr. August - December). DNT.294.

A common weed usually noted along roadside ditches and in cultivated fields.

Tripogon Roem. et Schult.

Leaves and culm glaucous; leaves less
than 20 cm. long, involute, filiform;
ligule very short but definite, ciliate...jacquemontii

Leaves and culm green, not glaucous;
leaves more than 20 cm. long, usually flat,
sometimes rolled; ligule obsoletelisboae

Tripogon jacquemontii Stapf, in KB. 85, 1892; FBI. 7: 286;
C. 3: 559; Blatt. & McC. 267; Bor, 522; Patel, loc.
cit. 336.

A perennial grass. Leaves filiform. Spikelets 10-20-
flowered; awns shorter than its glumes. (Fl. Fr. July -
October). DNT. 178.

Commonly noted in shallow soil exposed to sunlight.

Tripogon lisboae Stapf, in KB. 85, 1892; FBI. 7: 289; C. 3:
558; Bor, 522.

A perennial grass. Leaves and culms not glaucous, flat.
Spikelets usually densely crowded; glumes coriaceous. (Fl. Fr.
July - October). DNT. 1046.

Observed in muddy soils along river banks.

Melanocenchris Nees

Melanocenchris jacquemontii Jaub. et Spach, Ill. Pl. Or. 4:

36, 1851; Bor, 473; Patel, loc. cit. 331; Fl. Pava-
gadh, 260.

Gracilea royleana Hk. f. FBI. 7: 284; C. 3: 553; Blatt. &
McC. 248.

A small, slender, tufted annual. Leaves very narrow,
linear. Inflorescence consisting of clusters of cottony spike-
lets on a flexuous, zigzag rachis. (Fl. Fr. July - October).
DNT. 32, 980.

Commonly noted in open areas in shallow soils on rocky
substrate.

Schoenefeldia Kunth.

Schoenefeldia gracilis Kunth, Rev. Gram. 1: 283, t. 53, 1830;

Bor, 474.

Chloris pallida (Edgew.) Hook. f. FBI. 7: 289; Blatt. &
McC. 252.

A perennial grass. Leaves flat. Inflorescence a simple
spike or spikes of awned spikelets in terminal whorls. (Fl. Fr.
August - October). DNT. 346.

Rare; noted on plains in the forest along with grasses at Luni.

Tetrapogon Desf.

Tetrapogon tenellus (Roxb.) Chiov. in Ann. Ist. Bot. Roma 8: 352, 1908; Blatt. & McC. 254; Bor. 475; Patel, loc. cit. 332; Fl. Pavagadh, 260.

Chloris tenella Roxb. Fl. Ind. 1: 330, 1820; FBI. 7: 290; C. 3: 555.

A slender, annual grass. Leaves linear, ligulate. Spikes solitary, terminal; spikelets 3-awned, distichously arranged; lemmas glabrous. (Fl. Fr. August - November). DNT. 1036.

Rare; noted in moist places on the river banks at Hampshwar.

Chloris Sw.

Chloris virgata Sw. Fl. Ind. Occ. 1: 203, 1797; FBI. 7: 291; Blatt. & McC. 225, t. 170; Bor. 468; Fl. Delhi, 388; Patel, loc. cit. 331; Fl. Pavagadh, 261.

A tufted, leafy, annual grass. Leaves flaccid, linear-lanceolate. Spikes 6-15, erect, digitate; spikelets 2-rowed.

Fruit trigonous, polished. (Fl. Fr. July - December). DNT.1057.

Rare; noted along with grasses in cultivated fields at
Hampleshwar.

Cynodon Rich. ex Pers. (nom. cons.)

Cynodon dactylon (Linn.) Pers. Syn. 1: 85, 1805; FBI. 7: 288;
C. 3: 554; Blatt. & McC. 250, t. 166; Bor, 469, f. 52;
Patel, loc. cit. 331; Fl. Pavagadh, 261.

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

A perennial, creeping grass with erect or ascending branches.
(Fl. Fr. July - January). DNT. 1769.

Common throughout the area in all habitats.

Oryza Linn.

Oryza sativa Linn. Sp. Pl. 333, 1753; FBI. 7: 92; C. 3: 565;
Blatt. & McC. 274, t. 187; Bor, 605; Patel, loc. cit.
336.

An annual. Leaves striate, scaberulous. Spikelets persi-
stent, in drooping panicles. (Fl. Fr. July - October). DNT. 629,
856.

Cultivated.

Sporobolus R. Br.

Upper glume distinctly shorter than the
lemma; lowest branches not truly whorled....diander

Upper glume as long as or longer than the
lemma; lowest branches whorled or notmarginatus

Sporobolus diander (Retz.) Beauv. Agrost. 26, 1812; FBI. 7:

247; C. 3: 539; Blatt. & McC. 221; Bor, 629; Patel,
loc. cit. 337; Fl. Pavagadh, 263.

Agrostis diandra Retz. Obs. Bot. 5: 19, 1789.

An erect, slender, annual or perennial grass. Stems tufted.
Panicles narrow, pyramidal; spikelets small, very shortly pedicelled, 1-flowered. (Fl. Fr. April - August). DNT. 853.

Noted along with grasses, along roadsides and near streams.

Sporobolus marginatus Hochst. ex A. Rich. Tent. Fl. Abyss. 2:

397, 1851; Bor, 632; Patel, loc. cit. 338; Fl. Pavagadh,
263.

Sporobolus pallidus Boiss. Fl. Orient. 5: 512, 1884.

Sporobolus arabicus Boiss. Diagn. (Ser. 1) 13: 47, 1853;
FBI. 7: 252; C. 3: 541.

A tufted, perennial grass with stoloniferous base. Leaves narrowed to the tip. Panicles pyramidal; slender branches bearing small spikelets at the tips. (Fl. Fr. July - November). DNT. 138, 158.

Very common in open waste places, and along roadsides, in shaded places.

Aristida Linn.

Lateral awns much reduced and of a different texture from the third awn, sometimes absent altogetherredacta

Lateral awns well developed, if shorter than the central awn, of the same texture.....adscensionis

Aristida redacta Stapf, in KB. 85, 1892; FBI. 7: 227; C. 3: 531; Blatt. & McC. 215; Bor, 412; Patel, loc. cit. 329; Fl. Pavagadh, 264.

An annual, tufted grass. Leaves slender. Spikelets on long or short capillary pedicels; awns with a twisted column. (Fl. Fr. August - October). DNT. 1189.

Commonly noted along with grasses in the forest.

Aristida adscensionis Linn. Sp. Pl. 82, 1753; FBI. 7: 224;

C. 3: 529; Blatt. & McC. 209, t. 138; Bor, 407; Fl.

Delhi, 398; Patel, loc. cit. 328.

A slender, erect or ascending grass. Leaves convolute, filiform. Panicles with filiform, hair-like branches; involucreal glumes awned; spikelets purplish-violet. (Fl. Fr. July - February). DNT. 48, 977, 1624.

Commonly noted along roadsides and in cultivated fields.

Perotis Ait.

Perotis indica (Linn.) Kuntze, Rev. Gen. 2: 787, 1891; Blatt. &

McC. 220, t. 147; Bor, 611; Fl. Delhi, 373; Patel, loc.

cit. 337.

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

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

C. 3: 538.

A slender, tufted annual. Leaves linear-lanceolate. Racemes slender, dense, spike-like, purplish-violet; spikelets narrow, involucreal glume long-awned. (Fl. Fr. July - December). DNT. 158, 359.

Commonly noted in shaded places as an undergrowth of forest.

Triticum Linn.

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

Bor, 679; Patel, loc. cit. 338.

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

Triticum vulgare Villars, Hist. Pl. Dauph. 2: 153, 1787;

FBI. 7: 367.

An annual, tall, tufted grass. Spikes long, more or less loose; spikelets borne in spikes. (Fl. Fr. December - April).
DNT. 1598.

Cultivated.

P T E R I D O P H Y T E S

Actiniopteris austrials (Linn. f.) Link.

Adiantum lunulatum Burm.

Aleuritopteris farinosa Forsk. Fel.

Azolla pinnata R. Br.

Marsilea quadrifida Linn.

Ophioglossum fibrosum Schum.

Selaginella sp.