

# New records for flora of Gorakhpur District, U.P.

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The present paper comprises an enumeration of 178 plant species as new record for the *Flora Gorakhpurensis*. A short description, frequency and dominance alongwith exact locality of occurrence of each taxon have been provided.

**Key-words** –Flora, Angiosperm, New record, Gorakhpur District, U.P.

## INTRODUCTION

GORAKHPUR District is the extreme north-east part of Uttar Pradesh bordering Nepal. The geographical limits of the district are 26°42' North latitude and 83°52' East longitude. The average height of the district is about 99.77 m above sea level. The monsoonic climate of Gorakhpur and neighbouring districts is very much influenced by the Himalayas being nearer to the region.

Floristically the eastern tarai region of Uttar Pradesh in which the Gorakhpur District falls is very interesting. Detailed floristic exploration of the region was carried out by Srivastava (1976) who recorded 820 phanerogamic species. In addition to plants already reported by Srivastava (1976), the present author has identified 178 species, belonging to 149 genera distributed among 70 families, as new record from Gorakhpur District.

The enumeration of new record furnishes currently accepted name of plants, their important synonyms, basionym, habit, habitat, frequency and locality. The families have been kept in the same sequence as in *Flora Gorakhpurensis*. For the sake of convenience the genera and species under each family have been arranged alphabetically.

## ENUMERATION OF TAXA

### Ranunculaceae

*Narvelia zeylanica* (L.) DC. Syst.1: 167.1817; FBI 1: 7.1872.

*Atragene zeylanica* L.Sp.Pl. 542.1753.

Climbing shrub. Leaves pinnately 5-foliolate, the upper three leaflets modified into a trifurcate hooked tendril. Flowers yellowish green or white, axillary or

terminal. Achene 3-3.5 mm long, short stalked, pointed at both ends, hairy with 4-5 cm long feathery tail.

Common, in Madhaulia forest.

*Fls. & Frts.* : November-January; *Loc.*: Madhaulia; D.C.Saini, 3873.

### Dilleniaceae

*Dillenia pentagyna* Roxb. Pl. Cor. 1: 21. t. 20. 1795; FBI 1 : 38; FUGP 1 : 23.

Deciduous tree upto 25 m tall. Leaves 20-50 x 10-20 cm, obovate oblong, nearly entire or dentate. Flowers yellow, 2-7 on short shoots. Fruits 15 x 13 mm, sub-globose, yellow, orange or red, 1-2 seeded. Seeds ovoid, 5.0 x 3.5 mm, exarillate.

Frequent, in Nichlaur forest.

*Fls. & Frts.*: June-November; *Loc.*: Nichlaur; D.C. Saini, 3536.

### Annonaceae

*Annona reticulata* L. Sp. Pl.537.1753.

A large shrub. Leaves elliptic-lanceolate. Flowers greenish yellow. Fruits ovoid. Seeds elliptic, brownish-black.

Rare in occurrence.

*Fls.* : February-April; *Frts.* : May-January; *Loc.*: Barhalganj; D.C. Saini, 3668.

*Meliusa velutina* (Dunal) Hook.f. & Thom. Fl. Ind.151. 1855; FBI 1: 87; FUGP1 : 26.

*Uvaria velutina* Dunal, Anon.91.1817.

A medium-sized tree. Leaves ovate oblong. Flowers greenish yellow on very long drooping pedicels. Fruits many, black, berry-like. Carpels 2 seeded.

Scattered in Sal forest.

*Fls. & Frts.* : May-July; *Loc.*: Madhaulia; D.C. Saini 3701.

**Brassicaceae**

*Eruca sativa* Mill. Gard. Dict.n.1.1768; FBI 1: 158; FGUP 1: 45.

An erect annual herb. Leaves lyrate-pinnatifid. Flowers whitish or yellow, petals with purple veins. Siliqua ovoid oblong. Seeds numerous, globose, reddish-brown.

Common, in cultivated fields.

*Fls. & Frts.* : February-April; *Loc.* : Nausarh; D.C. Saini, 3767.

*Roripa indica* (L.) Hiern, Cat. Afr. Pl. Welw. pt.1. 26. Addit & Corr. 1896.

*Sisymbrium indicum* L. Mant. 1: 93. 1767.

*Nasturtium indicum* DC. Prodr. 1 : 139.1824; FBI 1 : 134; FUGP 1: 39.

An erect glabrous or hairy annual herb. Leaves ovate lanceolate; radical leaves large, inciso-pinnatifid or lobed; upper smaller sessile or subsessile, dentate. Flowers yellow, small in long terminal racemes. Siliqua cylindrical. Seeds many, ellipsoid, reddish brown.

Common, along the margins of 'nullah' and crop fields.

*Fls. & Frts.* : February-April; *Loc.*: Ramgarh; D.C. Saini, 3999.

**Flacourtiaceae**

*Xylosma longifolium* Clos. Ann. Soc. Nat. Ser.8: 230. 1857; FBI 1 : 194; FUGP 1 : 57.

An evergreen glabrous tree, sometimes spinous. Leaves alternate, oblong lanceolate, toothed. Flowers yellow, deciduous. Berry globose, red or black.

Frequent, along road sides and in scrub forests.

*Fls. & Frts.* : November-January; *Loc.*: Lachhipur; D.C. Saini, 3548

**Polygalaceae**

*Polygala arvensis* Willd. Sp. Pl.ed. 3.2 : 86.1802.

*Polygala chinesis* auct. Pl. (non L.), FBI 1 : 204; FUGP 1 : 60.

An erect or decumbent ascending, simple or branched, annual herb. Leaves subsessile, oblanceolate oblong or obovate elliptic to lanceolate. Flowers yellowish or greenish yellow. Capsule broadly oblong, orbicular. Seeds black, patently hairy.

Common, in grassland, along road sides, agricultural fields and waste land.

*Fls. & Frts.* : July-November; *Loc.*: Farenda; D.C. Saini, 3614.

**Caryophyllaceae**

*Polycarpaea corymbosa* (L.) Lamk. Tabl. Encycl.2 : 129.1791; FBI 1 : 245; FUGP 1 : 65.

*Achyranthes corymbosa* L. Sp. Pl. 205. 1753.

An erect or procumbent, dichotomously branched annual herb. Leaves opposite or in false whorls, sessile, narrowly linear. Flowers white with pinkish tinge, minute in dense, much branched terminal cymes. Capsules very small, 3-valved, brown.

Common, in moist or dry, sandy soils of drying up ditches and along the banks of 'nullah' and rivers.

*Fls. & Frts.* : July-November; *Loc.*: Maniram; D.C. Saini, 4464.

**Bixaceae**

*Bixa orellana* L. Sp. Pl. 512.1753.

An evergreen large shrub or small tree. Leaves broadly ovate. Flowers pink in terminal panicles. Capsule softly echinate, ovoid or subglobose. Seeds dark brown or black.

Cultivated in gardens.

*Fls. & Frts.* : June-September; *Loc.*: Gorakhpur University Campus; D.C. Saini, 3698.

**Portulacaceae**

*Portulaca parvula* A. Gray in Proc. Am. Acad. 22: 274.1887; Murty & Singh in Proc. Nat.Inst. Sc.Ind. 27(1) : 14.1961.

A small prostrate and profusely branched annual herb. Leaves fleshy, linear with nodal appendage of tufted hairs. Flowers pink or red. Seeds blackish, granular.

Frequent, in gardens as weed.

*Fls. & Frts.* : July-October, *Loc.*: Gorakhpur University Campus; D.C. Saini, 3690.

**Malvaceae**

*Abutilon hirtum* K. Sachum. Mart. Fl. Bras. 12.3: 437.1891.

*Abutilon graveolens* W. & A. Prodr. 56. 1834; FBI 1 : 327; FUGP 1 : 78.

An erect undershrub. Leaves orbicular cordate. Flowers solitary, axillary, yellow with a crimson centre. Carpels densely stellately pubescent. Seeds with a yellow pubescence.

Frequent, along road sides and railway tracks.

*Fls. & Frts.* : August-December; *Loc.*: Sahjanwan; D.C. Saini, 369.

*Azanza lampas* (Cav.) Alef. in Bot. Zeit.19 : 298.1861.

*Hibiscus lampas* (Cav.) Diss.3 : 154, t. 56, t.2,1787.

*Thespesia lampas* (Cav.) Dalz. & Gibs, Bombay Fl.19.1861; FBI 1 : 345.

An erect shrub upto 3 m high. Leaves ovate cordate or suborbicular. Flowers yellow with crimson centre. Capsule 4-5 valves, pilose. Seeds glabrescent.

Common, along road side in Sal forest.  
Fls. & Frts. : August-November; Loc.: Madhaulia forest; D.C. Saini, 3633.

### Bombacaceae

*Ceiba pentandra* (L.) Gaertn. Fruct. 2: 224. t. 13. 1791.  
*Bombax pentandrum* L. Sp. Pl. 511. 1753.

A large tree with verticillate branching. Leaves palmately compound. Flowers white. Capsule elliptic to oblong. Seeds dark brown or black.

Cultivated in gardens and along road sides.  
Fls. & Frts. : July-September; Loc.: Chaurichaura; D.C. Saini, 3194.

### Sterculiaceae

*Guazuma ulmifolia* Lam. var. *tomentosa* K. Schum, in Backer & Brink, Fl. Java 1 : 408. 1963.

*Guazuma tomentosa* Kunth. in H.B. & K. Nov. Gen. Sp. 5: 320. 1823.

A tall tree with spreading crown, young shoots brown downy. Leaves lanceolate or oblong lanceolate, obliquely cordate at the base. Flowers dull yellow in axils. Capsule globose, black.

Rare, in the forest.

Fls. & Frts. : April-July; Loc.: Anandnagar; D.C. Saini, 3222.

*Helicteres isora* L. Sp. Pl. 963. 1753; FBI 1 : 365; FUGP 1 : 96.

A shrub or small tree. Leaves broadly ovate or suborbicular, irregularly crenate-serrate, base obliquely cordate. Flowers scarlet in axillary clusters. Follicle usually 5, twisted together. Seeds blackish, angular.

Common, in the forest along 'nullah' and rivers.

Fls. & Frts. : August-January; Loc.: Campierganj; D.C. Saini, 3228.

*Sterculia foetida* L. Sp. Pl. 1008. 1753.

A deciduous tree. Leaves crowded at the ends of branches, digitately compound. Flowers in subterminal panicle. Follicles 8- 14 x 5-9 cm, woody, glabrous or subglabrous, boat-shaped, bright red when ripe. Seeds 10-15, upto 2 cm long, ellipsoid oblong or ovoid oblong.

Commonly cultivated in gardens.

Fls. & Frts. : February-April; Loc.: Mohaddipur; D.C. Saini, 3220

### Tiliaceae

*Corchorus fascicularis* Lamk. Encycl. 2: 104. 1786; FBI 1 : 398; FUGP 1 : 114.

An erect or decumbent, branched annual herb. Leaves elliptic lanceolate or oblong lanceolate, serrate. Flowers yellow in subsessile, leaf opposed fascicles. Capsules straight, cylindrical, 3-valved, shortly beaked, hairy. Seeds trigonous black.

Frequent, in moist shady low lying areas.

Fls. & Frts. : August-November; Loc.: Lehra; D.C. Saini, 3438.

*Grewia rothii* DC. Prodr. 1: 509. 1824.

A small shrub upto 1.5 m high. Leaves oblong lanceolate or ovate lanceolate, serrulate, pale yellow above, whitish beneath. Flowers yellowish, 1-6, axillary. Fruits purple, persistently hairy.

Frequent, along the margins of forest.

Fls. & Frts. : August-October; Loc.: Lachhmipur; D.C. Saini, 3440.

*Grewia sapida* Roxb. Fl. Ind. 2 : 590. 1824; FBI 1 : 387; FUGP 1 : 109.

An undershrub with a woody underground root stock. Leaves ovate oblong, suborbicular or ovate, serrate. Flowers yellow, 3-5 in axils. Drupes globose, hairy black when ripe.

Frequent, in grassland.

Fls. & Frts. : March-July; Loc.: Brijmangunj; D.C. Saini, 3292.

### Oxalidaceae

*Oxalis corymbosa* DC. Prodr. 1 : 696. 1824; Calder in Rec. Bot. Sur. India 6 (8) : 337, t. 9. 1912.

A perennial, erect herb with scaly bulbs. Leaves palmately trifoliolate. Flowers in umbeliform 6-10 flowered cymes, purple.

Common, in gardens as weed.

Fls. & Frts. : December-April; Loc.: Domingarh; D.C. Saini, 3382.

### Burseraceae

*Garuga pinnata* Roxb. Hort. Beng. 33. 1814 & Pl. Cor. 3 : 5. t. 208. 1819; FBI 1 : 528; FUGP 1 : 139.

A large or medium sized, deciduous tree. Leaves imparipinnate, crowded at the end of branches. Flowers dull white or yellow, campanulate, polygamous in large, terminal tomentose panicles, crowded at the ends of naked branches. Drupe yellowish green, fleshy, pyriform or globose. Seeds 2, winged.

Frequent, in mixed forest, particularly in open areas.

Fls. & Frts. : March-July; Loc.: Ramgarh; D.C. Saini, 3489.

### Meliaceae

*Aphanamixis polystachya* (Wall.) Parker, in Indian For. 57. 486. 1931.

*Aglaiia polystachya* Wall. in Roxb. Fl. Ind. 2 : 429. 1824.

*Amoora rohituka* (Roxb.) W. & A. Prodr. 119. 1834; FBI 1 : 559; FUGP 1 : 142.

*Andersonia rohituka* Roxb. Fl. Ind. 2 : 213. 1832.

An evergreen small or moderate sized tree. Leaves large, imparipinnate, crowded at the end of branches. Flowers white. Capsule globular, yellow when ripe. Seeds 3 with scarlet aril and shinning black testa.

Frequent, along the bank of Malav nala.

*Fls.*: August-November; *Frts.*: December-July; *Loc.*: Madhauria; D.C. Saini, 3881.

### Celastraceae

*Elcodendron roxburghii* W. & A. Prodr. 157.1834; Santapau. Fl. Khandala 41.1967.

A small or moderate sized tree. Leaves opposite, ovate or elliptic, crenate. Flowers white or yellowish brown, many, small, in axillary dichotomously branched cyme. Drupes obovoid, yellowish green.

Frequent, along road side and in forests.

*Fls.*: April-June; *Frts.*: June-January; *Loc.*: Basarapur; D.C. Saini, 3111.

### Rhamnaceae

*Ziziphus rugosus* Lamk. Encycl.3 : 319.1798; FBI 1 : 636; FUGP 1 : 154.

A medium sized, straggling, evergreen tree, often climbing, young branches rusty-tomentose. Leaves alternate, ovate or elliptic, denticulate. Flowers greenish in axillary or terminal panicles. Drupe globose or pyriform, fleshy, white when ripe.

Frequent, along river banks in bushes and in open forest.

*Fls. & Frts.*: March-July; *Loc.*: Maniram; D.C. Saini, 3118.

*Ziziphus xylopyrus* (Retz.) Wild. Sp. Pl.1 : 1104.1797; FBI 1 : 634; FUGP 1 : 154.

*Rhamnus xylopyrus* Retz. 2 : 11.1781.

A small straggling tree. Leaves alternate, elliptic oblong to ovate, serrulate, rounded. Flowers greenish yellow in small dense pubescent, paniculate cymes. Drupe globose, woody, tomentose, dark green when ripe.

Rare, in the mixed and open forests.

*Fls.*: April-June, *Frts.*: October-December; *Loc.*: Lachhmipur; D.C. Saini, 3218.

### Vitaceae

*Cissus quadrangularis* L. Mant.39. 1767.

A glabrous, succulent, climbing herb, stem 4-angled. Leaves early deciduous, usually simple, rarely 3 to 5 lobed, broadly ovate. Flowers greenish white in axillary short peduncled cyme. Berry obovoid or sub globose, red when ripe. Seed one, rarely two.

Frequent, along road sides and railway tracks.

*Fls. & Frts.*: May-August; *Loc.*: Jagatbela; D.C. Saini, 3849.

### Leeaceae

*Leea edgeworthii* Santapau in RBSI 16 (1) : 54. 1953.

*Leea aspera* Edg. in TLS 20 : 36.1841; FBI 1 : 665; FUGP 1 : 164.

A shrub upto 1.5 m high. Leaves imparipinnate. Flowers dull white in trichotomously branched pubescent cymes. Berry about 1 cm across, globose, black.

Frequent, in shady places in forest and along road sides.

*Fls. & Frts.*: July-December; *Loc.*: Lehra; D.C. Saini, 3832.

*Leea indica* (Burm.) Merrill., in Phil. Journ. Sci. Bot. 14:245. 1919.

*Staphylea indica* Burm. Fl. Ind. 75, t.24.f.2. 1768.

*Leea sambucina* Willd. Sp. Pl. 1 : 1177.1797; FBI 1 : 666 pro parte FUGP 1 : 165.

A large woody shrub upto 3 m high. Leaves 2-3 pinnate. Flowers greenish white in large, branched glabrous cyme. Berry globular, black.

Common, throughout the area along railway tracks and among the scrub forests along river banks.

*Fls. & Frts.*: June-October; *Loc.*: Nichlaur; D.C. Saini, 3840.

### Anacardiaceae

*Buchanania lanzan* Spreng. in Schradr. Journ 4 : 234.1801.

*Buchanania latifolia* Roxb. Hort. Beng.32.1814; FBI 2 : 23; FUGP 1 : 173.

A small or medium sized tree. Leaves alternate, elliptic oblong, entire. Flowers small, yellowish white, bisexual, sessile on terminal and axillary, densely rusty hairy, pyramidal panicles. Drupe about 0.7 cm in diam., globose, black when ripe, stone hard - shelled. Seed biconvex, brown.

Rare, in the forests.

*Fls.*: January-March; *Frts.*: May-June; *Loc.*: Ramgarh forest; D.C. Saini, 3912.

### Fabaceae

*Alysicarpus longifolius* W.& A. Prodr. 233.1834; FBI 2 : 159; FUGPI 1 : 256.

An erect or straggling, annual herb upto 1.5 m tall. Leaves simple, oblong, lanceolate, glabrous and blotched above. Flowers greenish brown in long densely spicate racemes. Pods moniliform, apiculate, joints 2-6, striated.

Frequent, in grasslands and among the bushes and scrubs.

*Fls. & Frts.* : September-November; *Loc.* : Domin-garh; D.C. Saini, 3991.

*Butea parviflora* Roxb. Fl. Ind. 3 : 248.1832.

*Spatholobus roxburghii* Benth. in Miq. Pl. Jungh 238. 1852; FBI 2 : 193.

A large woody climber, young branches grey, pubescent. Leaves 3 - foliolate. Flowers white or cream-coloured in large terminal and lateral densely pubescent panicles. Pods oblong, base curved, ferruginous, tomentose. Seeds flat, dark brown.

Common, in the forests climbing over large trees.

*Fls.* : September-December; *Frts.* : February-April; *Loc.* : Madhulia forest; D.C. Saini, 3972.

*Crotalaria mysorensis* Roth. Nov. Pl. Sp. 338.1821.

*Crotalaria ferruginea sensu* Duthie, FUGP 1 : 2031929 (non Garh.ex Benth 1843); FBI 2 : 68.

An erect, sparsely branched, annual herb. Stem densely clothed with ferruginous, erecto-patent or patent hairs. Leaves sub-sessile, lanceolate, appressed, hairy. Flowers yellow in lax raceme. Pods sessile or short stalked. Seeds 0.2 - 0.22 cm long.

Common, in grassy areas along road sides and railway track.

*Fls. & Frts.* : August-December; *Loc.* : Nautanwan; D.C. Saini, 3968.

*Crotalaria pallida* Ait. Hort. Kew. 3 : 20.1789.

*Crotalaria striata* DC Prodr. 2 : 131. 1825; FBI 2 : 84.

*Crotalaria mucronata* Desv. in J. Bot. 3 : 76. 1814.

An erect suffruticose herb; branches thin, silky, striate. Leaves palmately trifoliate. Flowers yellow in 16-20 cm long racemes. Pods 3-5 cm long, deflexed, oblong, silky pubescent when young. Seeds dark brown.

Common, in open dry places along road sides and railway track.

*Fls. & Frts.* : August-January; *Loc.* : Gola; D.C. Saini, 3955.

*Crotalaria prostrata* Rottl. ex Willd. Enum. Hort. Berol. 2 : 747. 1809; FBI 2 : 67; FUGP 1 : 186.

A prostrate or decumbent-ascending, usually pluricaulous, appressed, pubescent, annual herb. Leaves sessile, lanceolate or oblong ovate. Flowers yellow in lax raceme. Pods oblong, glabrous. Seeds black, shining, reniform.

Common, in grassland, road side, river bank in shady places.

*Fls. & Frts.* : October-December; *Loc.* : Chauri-chaura; D.C. Saini, 3942.

*Crotalaria retusa* L.Sp. Pl. 715.1753; FBI 2 : 75, FUGP 1 : 205.

An erect undershrub or shrub like herb. Stem fistular. Leaves oblong obovate, often emarginate at the

apex. Flowers yellow in terminal racemes. Pods glabrous or sub-glabrous. Seeds brown.

Frequent, in open areas along railway track and river bank.

*Fls. & Frts.* : August-March; *Loc.* : Siswan; D.C. Saini, 3911.

*Crotalaria verrucosa* L.SP. Pl. 7153.

A much branched erect undershrub, with 4-ridges or winged shortly silky branches. Stipules large, broad, auriculate. Flowers blue or yellow. Pods sessile. Seeds brown.

Rare, in moist areas.

*Fls. & Frts.* : March-May; *Loc.* : Maharanjganj; D.C. Saini, 3922.

*Dalbergia volubilis* Roxb. Pl. Cor. 2 : 48.1798; FBI 2 : 235; FUGP 1 : 244.

A large woody climber. Leaves imparipinnate. Flowers purple or pale blue in long terminal or axillary leafless panicles. Pods linear oblong, glabrous, greenish yellow. Seeds 1-2, reniform.

Rare, in forests climbing on small trees.

*Fls. & Frts.* : February-August; *Loc.* : Daibhar; D.C. Saini, 3333.

*Goniogyne hirta* (Willd.) Ali, Taxon 16: 463.1967.

*Heylandia latebrosa* DC. Mem. Leg. 6 : 201.1825; FBI 2 : 65; FUGP 1 : 185.

A slender, dichotomously branched prostrate, hairy annual herb. Leaves simple, alternate, sessile, ovate. Flowers yellow, small, sessile, solitary axillary. Pods oblong, flat, silky. Seeds yellowish brown.

Common, in open grassland along road side and railway track especially on slopy areas.

*Fls. & Frts.* : February-April; *Loc.* : Lauriya; D.C. Saini, 3336.

*Indigofera tinctoria* L.SP. Pl. 751.1785; FBI 2 : 99; FUGP 1 : 335.

An erect annual undershrub; branches thinly clothed with white appressed hairs. Leaves imparipinnate. Flowers pink in axillary spicate racemes. Pods linear, glabrous, deflexed. Seeds 8-12.

Frequent, in waste land and along railway track.

*Fls. & Frts.* : January-March; *Loc.* : Sardarnagar; D.C. Saini, 3444.

*Millettia auriculata* Baker ex Brandis, For.Fl.Ind. 138.1875 FBI 2 : 108; FUGP 1 : 227.

A robust woody climber with grey silky branches. Leaves imparipinnate; leaflets ovate oblong. Flowers greenish in slender axillary raceme. Pods woody, strap shaped, rusty tomentose. Seed compressed, brown.

Frequent, in Sal forest climbing on large trees.

*Fls.* : April-June; *Frts.* : December-March; *Loc.* : Nagwan; D.C. Saini, 3545.

*Moghania macrophylla* (Willd.) O. Kuntz. Rev. Gen. Pl. 1 : 200.1891.

*Flemingia congesta* Roxb. Hort. Beng. 56.1814; FBI 2 : 228; FUGP 1 : 201.

An erect shrub up to 2 m in height, branches angular, drooping. Leaves 2-foliolate; leaflets ovate oblong or oblanceolate. Flowers pinkish or purplish in dense axillary, velvety, congested racemes. Pods turgid, finely pubescent. Seeds 2, black.

Frequent, in forests.

*Fls. & Frts.* : September-November; *Loc.* : Nichlaul; D.C. Saini, 3459.

*Ougenia oojeimensis* (Roxb.) Hoor. in Bull. Soc. Bot. Geneva, 13 & 14 : 51. 1909.

*Ougenia dalbergioides* Benth. in Miq. Pl. Jungh. 216.1852; FBI 2 : 161; FUGP 1 : 258.

A middle-sized deciduous tree. Leaves 3-foliolate. Flowers light pink or white appeared in leafless condition of tree, in fascicled racemes from the nodes of old branches. Pods jointed. Seed 1, smooth, brown when ripe.

Frequent, in the area.

*Fls.* : February-May; *Frts.* : May-June; *Loc.* : Chaurichaura; D.C. Saini, 3812.

*Psoralea corylifolia* L. Sp. Pl. 764.1753; FBI 2 : 103; FUGP 1 : 222.

An erect annual herb upto 1 m in height, branches gland dotted and with sparse, appressed spreading white hairs. Leaves simple, alternate, orbicular, broadly elliptic, gland dotted, dentate. Flowers purple in long, dense peduncled axillary bracteate heads. Pods small, subglobose, gland dotted. Seed 1, wrinkled, black.

Common, in wheat field, road side and along railway track.

*Fls. & Frts.* : February-May; *Loc.* : Bansgaon; D.C. Saini, 3982.

*Teramnus libialis* (L.f.) Spreng. Syst. 3 : 235.1826; FBI 2 : 184; FUGP 1 : 214.

*Glycine labialis* L.f. Suppl. 325.1781.

A spreading or twining annual herb with appressed hairy stem. Leaves 3-foliolate; leaflets ovate oblong or ovate to lanceolate. Flowers pinkish or reddish, small in axillary racemes. Pods linear, straight or slightly curved. Seeds oblong, dark-brown.

Common, along road side, railway track, river bank, forest margin and in grassland.

*Fls. & Frts.* : September-December; *Loc.* : Kunraghat; D.C. Saini, 3989.

*Uraria logopoides* (L.) Desv. in Journ. Bot. 1 : 22.1813.

*Hedysarum logopoides* L. Sp. Pl. 1198.1753.

A suffruticose, prostrate annual herb with ascending branches. Leaves 3-foliolate; leaflets suborbicular or ovate oblong. Flowers pale blue or pink in dense, ter-

minial cylindrical racemes. Pods jointed, dull brown or black, smooth and polished. Seeds brown, shining.

Frequent, in forests in moist and shady places.

*Fls. & Frts.* : August-November; *Loc.* : Nichlaul; D.C. Saini, 3999.

### Caesalpiaceae

*Phanera vahlii* (W. & A.) Benth. in Miq. Pl. Jangh. 263.1852.

*Bauhinia vahlii* W. & A. Prodr. 297. 1834; FBI 2 : 279; FUGP 1 : 276.

A robust climber; branches clothed with dense grey or ferruginous tomentum. Leaves very variable, rusty or velvety beneath. Flowers white in long peduncled, terminal, dense, subglobose racemes. Pods flat, woody, rusty tomentose, dehiscent. Seeds 8-12, rounded, compressed, dark brown.

Frequent, in the forest.

*Fls.* : April-June; *Frts.* : December-March; *Loc.* : Madhauria; D.C. Saini, 3810.

*Mezonerum cucullatum* (Roxb.) W. & A. Prodr. 283.1834; FBI 2 : 258; FUGP 1 : 280.

*Caesalpinia cucullata* Roxb. Fl. Ind. 2 : 358.1832.

A woody climber armed with sharp, recurved prickles. Leaves pinnately compound. Flowers bright yellow in axillary and terminal panicles. Pods thin, oblong, flat, glabrous. Seeds one, orbicular, brown.

Common, in forests and frequent, along 'nullah', river bank, road side and railway track.

*Fls. & Frts.* : September-March; *Loc.* : Lachhmipur; D.C. Saini, 3801.

### Mimosaceae

*Acacia sinuata* (Lour) Merr. in Trans. Amer. Phil. Soc. n.s. 24 : 186.1935.

*Mimosa sinuata* Laur. Fl. Coch. 653.1790.

*Acacia concinna* DC. Prodr. 2 : 464.1825; FBI 2 : 296; FUGP 1 : 292.

A robust climber, copiously armed with hooked prickles. Leaves bipinnate. Flowers white or pink in globose heads, fascicled at the nodes. Pods linear oblong, thick fleshy, smooth and turgid, wrinkled when dry, indehiscent. Seeds 6-11, dark brown or black, elongated.

Common, in forests, along road side and railway track.

*Fls.* : January-March; *Frts.* : November-February; *Loc.* : Campierganj; D.C. Saini, 3804.

*Albizia procera* (Roxb.) Benth. in Hook. Lond. Journ. Bot. 3 : 89.1844; FBI 2 : 299; FUGP 1 : 296.

*Mimosa procera* Roxb. Pl. Cor. 2 : 12, t. 121.1798.

A large tree; bark greenish white. Leaves bipinnate with a large gland near the base. Flowers yellowish green, sessile in large terminal panicles. Pods strap

shaped, shortly stalked reddish brown, shining. Seeds 6-12. ovate, pale brown.

Common, in the forests.

Fls. : May-June; Frts. : October-February; Loc. : Bhatahat; D.C. Saini, 3809.

### Rosaceae

*Duchesnea indica* Focke, in Engler & Prantl. Pflanzenfam. 3 (3) : 33.1888.

*Fragaria indica* Audr. Bot.Rep. 7 : y.479.1807; FBI 2 : 343; FUGP 1 : 300.

A prostrate, silky hairy perennial herb with a stout root-stock. Leaves 3-foliolate; leaflets ovate or obovate, dentate. Flowers yellow, solitary, axillary on long hairy peduncle. Receptacle fleshy, globose, red.

Gregarious, on moist, sandy shady places along the river bank and on the margin of 'nullah'.

Fls. & Frts. : February-May; Loc. : Bhatahat; D.C. Saini, 3902.

*Rosa involucrata* Roxb.Fl.Ind. 2 : 513.1832; FBI 2 : 365; FUGP 1 : 302.

An erect or scandant and armed bushy shrub. Leaves pinnately compound, leaflets 3-9, opposite, finely serrate. Flowers white, solitary or in short corymbs. Fruits an aggregate of 1-seeded dry, hairy achene enclosed in fleshy calyx tube.

Abundant, on moist, shady low lying areas along the margin of 'nullah' and road side.

Fls. & Frts. : February-June; Loc. : Daibhar; D.C. Saini, 3904.

### Combretaceae

*Combretum nanum* Ham. ex D.Don. Prodr. Fl. Nep. 219.1825; FBI 2 : 457; FUGP 1 : 311.

An erect undershrub with woody root-stock. Leaves alternate or subopposite, obovate. Flowers white in simple or branched racemes. Fruits 4 winged, pink.

Frequent, in grasslands.

Fls. & Frts. : March-June; Loc. : Anandnagar; D.C. Saini, 3903.

*Combretum roxburghii* Spreng. Syst. 2 : 331.1825.

*Combretum decandrum* Roxb. Pl. Cor.1.59.1786; FBI 2 : 452; FUGP 1 : 311.

An evergreen woody climber. Leaves opposite, elliptic or elliptic-oblong, entire. Flowers greenish white in terminal and axillary rusty villous panicles. Fruits elliptic or oblong with 5 broad, smooth, papery wings.

Common, in forests, along the road side, railway track and 'nullah'.

Fls. & Frts. : November-June; Loc. : Ramgarh; D.C. Saini, 3905.

### Myrtaceae

*Syzygium cerasoides* (Roxb.) Chatt. & Kanjilal in J. Bombay nat. Hist.Soc. 55 : 518.1958.

*Eugenia cerasoides* Roxb.Fl. Ind. 2 : 482.1832.

*Eugenia operculata* Roxb. Fl. Ind.2 : 486.1832; FBI 2 : 498; FUGP 1 : 314.

A medium sized tree. Leaves broad ovate, suborbicular or elliptic oblong. Flower greenish, small tetramerous, sub-sessile in 3-flowered cymes. Berries globose, ovoid, dark purple, one seeded.

Frequent, in the forest.

Fls. & Frts. : April-July; Loc. : Nichlaur; D.C. Saini, 3909.

### Lythraceae

*Ammannia auriculata* Willd. Hort. Berol.1.t.7.1806.

*Ammannia senegalensis* DC. Prodr. 3 : 77.1828; FBI 2 : 570; FUGP 1 : 322.

An erect or suberect annual herb; branches sharply 4-angled. Leaves sessile, linear oblong, linear lanceolate, base subauriculate or subhastate. Flowers bright pink in axillary, whorled, compound peduncled cymes. Capsules globose, red. Seeds minute, dark brown or blackish.

Common, in moist shady places.

Fls. & Frts. : August-November, Loc. : Rajghat; D.C. Saini, 3804.

*Rotala densiflora* (Roth.) Koehne, in Bot. Jahrb. 1 : 164.1880.

*Ammannia densiflora* Roth. in R & S. Syst. 3 : 304.1818.

*Ammannia pentandra* Roxb. Fl. Ind.1 : 448.1820; FBI 2 : 568; FUGP 1 : 321.

An erect annual herb. Leaves sessile, opposite, oblong or lanceolate, base cordate, rounded or truncate. Flowers pinkish, solitary axillary, sessile. Capsule globose, 3-valved. Seeds black, hemispheric.

Common, in moist places along nullah and ponds.

Fls. & Frts. : July-January; Loc. : Domingarh; D.C. Saini, 3806.

### Lecythydaceae

*Careya arborea* Roxb. Pl. Cor. 3 : 14.t.218. 1819; FBI 2 : 511; FUGP 1 : 317.

A medium sized deciduous tree. Leaves alternate, sub-sessile, obovate. Flowers large, sessile, white or pink in clusters of 4-6 at the ends of branches. Fruits globose, green, fleshy, crowned with persistent calyx. Seeds many, embedded in pulp.

Frequent, in forest.

Fls. & Frts. : March-July; Loc. : Lachhmipur; D.C. Saini, 3702.

*Careya herbacea* Roxb. Pl. Cor. 3: 14, t. 217. 1819; FBI 2: 510; FUGP 1: 316.

A dwarf undershrub with woody root-stock. Leaves alternate, subsessile, obovate or oblanceolate. Flowers purple or pink, stalked in few flowered racemes. Fruits globose, crowned with persistent calyx.

Common, in grassland and in the forest.

*Fls. & Frts.* : March-July; *Loc.* : Maheshara; D.C. Saini, 3704.

### Passifloraceae

*Passiflora foetida* L. Sp. Pl. 959. 1753; FBI 2: 599.

A slender foetid climbing herb. Tendril simple. Leaves alternate, palmately 3-lobed, ciliate and gland-tipped, setaceous hair. Flowers greenish white, solitary, axillary with an involucre of finely pinnatifid bracteoles. Capsule globose, greenish. Seeds numerous, ellipsoid, warted, yellowish.

Frequent, climbing over bushes along road side and railway track.

*Fls. & Frts.* : August-December; *Loc.* : Sahjanwan; D.C. Saini, 3708.

### Cucurbitaceae

*Cucumis callosus* (Rottl.) Cogn. in Pfreich. 88. 129. 1924.

*Bryonia callosa* Rottl. in Heue Schrift. Ges. Nat. Fr. Berl. 4: 210. 1803.

A trailing, scabrous annual herb with angled stem and simple tendrils. Leaves suborbicular, usually deeply 5-7 lobed. Flowers yellow, monoecious. Fruit obovoid, pale yellow when ripe. Seeds white, ellipsoid.

Common, along road side and railway tracks

*Fls. & Frts.* : August-November; *Loc.* : Jagatbela; D.C. Saini, 3040.

### Cactaceae

*Cereus hexagonus* Mill. Gard. Dict. (ed. 8) no. 1. 1768.

An erect, tall, thorny, xerophytic shrub. Stem usually 6-angled. Leaves reduced to scales. Flowers white, large, solitary, funnel-shaped, fleshy with unequal spirally arranged petals. Berries succulent, smooth or tubercled.

Frequent, along road side and in open places.

*Fls. & Frts.* : July-October; *Loc.* : Naikot; D.C. Saini, 3049.

*Cereus triangularis* Mill. Gard. Dict. (ed. 8) No. 9. 1768.

An erect or straggling, thorny, xerophytic shrub. Stem 3-angled. Flowers white, large, solitary. Berries succulent.

Frequent, along road side and railway track.

*Fls. & Frts.* : July-November; *Loc.* : Nautanwan; D.C. Saini, 3050.

### Apiaceae

*Cnidium monieri* (L.) Cusson. Mem. Soc. Med. Par. 280. 1782.

*Selinum monieri* L. Cent. Pl. 1: 9. 1755.

An erect, glabrous annual herb upto 45-50 cm high. Leaves ternate pinnately decomposed. Flowers white, terminal and lateral compound umbel. Fruits globose, glabrous with 3-prominent dorsal wings and 2 lateral broader wings.

Frequent, on moist shady places, especially along the bank of 'nullahs'.

*Fls. & Frts.* : March-June; *Loc.* : Madhulia; D.C. Saini, 5118.

### Rubiaceae

*Gardenia turgida* Roxb. Hort. Beng. 15 1814; FBI 3: 118; FUGP 1: 388.

A small deciduous tree, armed with axillary often leaf bearing spines. Leaves coriaceous, opposite, elliptic, obovate or suborbicular. Flowers white, fragrant. Fruits ovoid or globose, smooth. Seeds numerous, angled.

Planted in gardens.

*Fls. & Frts.* : March-June; *Loc.* : Asuran; D.C. Saini, 5619.

*Hymenodictyon excelsum* (Roxb.) Wall. in Roxb. Fl. Ind. 2: 149. 1824; FBI 3: 35; FUGP 1: 377

*Cinchona excelsa* Roxb. Pl. Cor. 2: t. 106. 1798.

A medium-sized deciduous tree. Leaves elliptic oblong. Flowers greenish white in large terminal drooping, spicate panicles. Capsules reddish-brown, ellipsoid. Seeds numerous, brown, lenticular, winged around the margins.

Commonly cultivated in gardens, occasional in the forests.

*Fls. & Frts.* : May-February; *Loc.* : Sardarnagar; D.C. Saini, 5232.

*Meyna laxiflora* Robyns, in Bull. Jard. Bot. Etat. Bruellse 11: 228. 1921; Raizada Suppl. FUGP 95. 1976.

An armed shrub or small tree. Leaves opposite or three in a whorl, ovate, oblong or elliptic oblong. Flowers greenish white, pedicellate in shortly compound lax cymes. Drupes sub-globose, smooth, fleshy, yellow.

Frequent, in forests and along river bank and railway track.

*Fls. & Frts.* : February-August; *Loc.* : Jagatbela; D.C. Saini, 5434.

*Oldenlandia affinis* (R. & S.) DC. Prodr. 4: 428. 1830.

*Hedyotis affinis* R. & S. Syst. 3: 114. 1818.



*Oldenlandia dichotoma* (Roth.) HK.f. in FBI 3 : 67,1880; FUGP 1 : 281.

An annual herb; branches filiform, glabrous or hairy. Leaves linear, linear-lanceolate or narrowly lanceolate. Flowers bluish white, minute, solitary on long filiform pedicels. Capsules globose oblong, granulate.

Common, in moist shady places and in grass lands.

*Fls. & Frts.* : August-October; *Loc.* : Kusami; D.C. Saini, 5898.

*Paedaria scandens* (Lour.) Merr. in Contr. Arn. Arb. 8 : 163. 1934; Raizada Supp. FUGP 97, 1976.

*Gentiana scandens* Lour. pl. Cochin. 1 : 171.1790.

*Paedaria foetida* auct non L. HK.f. in FBI 3 : 195.

A slender, glabrous, twining, foetid shrub. Leaves opposite, elliptic ovate. Flowers purple or white in axillary and terminal 2 to 3 - chotomously branched, paniced cymes. Fruits elliptic ovate, black. Seeds black, winged.

Frequent, in forests.

*Fls. & Frts.* : August-November; *Loc.* : Lachhmipur; D.C. Saini, 5762.

*Xeromphis spinosa* (Thunb.) Keay, Bull. Jard. Bot. Etat. Brux. 28 : 37.1958.

*Gardenia spinosa* Thunb. Diss. Gard.40.7.1780.

*Randia dumetorum* (Retz.) Poir. in HK.f. FBI 3 : 110.1880; FUGP 1 : 386.

A small tree or shrub, armed with strong, straight, axillary, opposite decussate spines. Leaves fascicled, obovate. Flowers greenish white, subsessile, 1-3 at the ends of short lateral leaf-bearing branchlets on short peduncle. Berries globose or ovoid, glabrous, yellow when ripe. Seeds numerous, embedded in gelatinous brown pulp.

Common, in the forests and in waste land.

*Fls. & Frts.* : April-February; *Loc.* : Siswan; D.C. Saini, 5627.

*Xeromphis uliginosa* (Retz.) Maheshwari, in Bull. Bot. Univ. Sagar, 10 (1 & 2) : 40.1958.

*Gardenia uliginosa* Retz. Obs. 2 : 14.1781.

*Randia uliginosa* DC. Prodr. 4: 386 1830; FBI 3 : 110; FUGP 1 : 385.

A small armed tree. Leaves crowded towards the ends of branchlets, obovate oblong or elliptic. Flowers white fragrant. Berries ovoid or ellipsoid, yellowish, smooth, crowned by persistent calyx lobes. Seeds numerous, compressed closely packed in dry pulp.

Common, in grassland.

*Fls. & Frts.* : May-December; *Loc.* : Anandnagar; D.C. Saini, 3663.

### Asteraceae

*Ageratum houstonianum* Mill. Gard. Dict. (ed. 8) No. 2. 1768.

An erect herb. Leaves opposite, deltoid. Head discoid in terminal and axillary dense corymbs. Involucre

biseriate. Achene 5-angled, black, hairy; pappus scales 5, serrate, awn-tipped.

Common, in waste places.

*Fls. & Frts.* : November-March; *Loc.* : Loharpurwa; D.C. Saini, 5123.

*Acanthospermum hispidum* DC. Prodr. 5 : 522.1836.

An erect hispid herb. Stem dichotomously branched. Leaves ovate. Head greenish yellow, solitary in the forks of stem. Achene compressed tirangular, prickly with a pair of horn-like spines at the top.

Rare, along railway track.

*Fls. & Frts.* : August-May; *Loc.* : Chaurichuara; D.C. Saini, 5238.

*Blumea lacera* (Burm.f.) DC. in Wight, Contrib. 14.1834; FBI 3 : 263; FUGP 1 : 414.

*Conyza lacera* Burm.f. Fl. Ind. 180. t. 59. f. 1. 1768.

An erect, coarse glandular pubescent annual herb. Leaves finely silky pubescent on both sides, sharply dentate serrate, elliptic oblong or obovoid. Head yellow in short axillary cymes and terminal panicles. Pappus white. Achene grey brown, 4-angled, smooth, glabrous.

Common, in moist, shady and sandy places.

*Fls. & Frts.* : March-May; *Loc.* : Naikot; D.C. Saini, 3961.

*Blumea oxydonta* DC. in Wight, Contrib. 15.1834; FBI 3 : 266; FUGP 1 : 413.

A small prostrate or decumbent, pubescent or glabrous, annual herb. Leaves membranous spinous-toothed, pubescent, ovate or elliptic. Head yellow, solitary or corymbose on slender peduncles. Pappus white. Achene slightly hairy, 8-10 ribed.

Frequent, along road side, railway track and along the margins of crop field.

*Fls. & Frts.* : March-June; *Loc.* : Khorabar; D.C. Saini, 4003.

*Conyza leucantha* (D. Don) Ludlow & Raven, in Kew Bull. 17: 71.1963.

*Erigeron leucantha* D. Don Prodr. Fl. Nep. 171 1825.

An erect much branched, glandular-pubescent, annual herb. Leaves alternate, lanceolate, entire or crenate. Head purplish or pinkish white. Achene very minute, ovoid, glabrous, pale. Pappus copious pinkish.

Common, in moist, shady and sandy places.

*Fls. & Frts.* : December-April; *Loc.* : Tinkoniya; D.C. Saini, 4127.

*Erigeron bonariensis* L. Sp. Pl. 863. 1753.

*Erigeron linifolius* Willd. Sp. Pl. 3.1855; FBI 3 : 254.

An erect hairy, deep-rooted, annual herb. Leaves alternate, linear, entire. Head numerous in corymbose panicles; ray florets pale purple; disc florets pale yellow. Pappus hairy. Achene oblong, brown, lax hairy.

Abundant, in the area.

*Fls. & Frts.* : April-September; *Loc.* : Bliandpur; D.C. Saini, 4197.

*Erigeron canadensis* L. Sp. Pl. 863.1753; FBI 3 : 254; FUGP 1 : 408.

An erect or decumbent, much branched, pubescent, hirsute or nearly glabrous annual herb. Leaves alternate, narrowly linear or linear lanceolate. Head yellowish, combined into a large, leafy branched panicles. Pappus dirty white. Achene narrow, glabrous or thinly hairy.

Common, along road-side under shady situation.

*Fls. & Frts.* : November-March; *Loc.* : Maniram; D.C. Saini, 3895.

*Gnaphalium purpureum* L. Sp. Pl. 854.1753; FBI 3 : 289; FUGP 1 : 421.

A cottony erect annual herb. Leaves spatulate. Head dull white or yellowish in spicate, globose clusters. Pappus hairy or minutely papillose.

Common, in moist and shady places.

*Fls. & Frts.* : March-May; *Loc.* : Uska; D.C. Saini, 3955.

*Mikania cordata* (Burm.f.) Robinson, in Contrib. Gray Herb.n.s. 104 : 65.1934.

*Eupatorium cordatum* Burm. f. Fl. Ind. 176.t. 58, f.2.1768.

A glabrous or puberulous trailing or twining perennial herb. Leaves opposite, ovate, crenate, base cordate or truncate. Heads white in terminal corymbose panicles. Pappus reddish. Achene truncate, angled, glandular.

Frequent, in moist places, twining on bushes.

*Fls. & Frts.* : March-September; *Loc.* : Rajahi; D.C. Saini, 4200.

*Parthenium hysterophorus* L. Sp. Pl. 988.1753.

An erect, tufted, profusely branched perennial herb. Leaves alternate, pinnately dissected. Capitula heterogamous, in axillary or terminal leafy, lax, corymb like cymes. Achene obovate, black crowned by persistent remnants of corolla.

Abundant, throughout area.

*Fls. & Frts.* : Throughout the year; *Loc.* : Bichhiya; D.C. Saini, 3954.

*Pulicaria crispa* Benth. in Gen. Pl. 2 : 336. 1873; FBI 3 : 299; FUGP 1 : 425.

A suffruticose, white cottony annual herb. Leaves sessile, linear or linear oblong, crisped and toothed, amplexicaule. Head bright yellow on terminal short peduncles. Pappus white. Achene oblong, glabrous.

Frequent, on open places, along road side and river bank.

*Fls. & Frts.* : January-April; *Loc.* : Nautanwan; D.C. Saini, 4199.

*Pulicaria foliolosa* DC Prodr. 5 : 480.1836; FBI 3 : 298; FUGP 1 : 424.

A copiously branched, glandular pubescent or tomentose annual herb. Leaves sessile, linear oblong or oblanceolate, entire, amplexicaule. Heads orange yellow on lateral or terminal, slender peduncles. Pappus white. Achene minute, sparsely hairy.

Common, on sandy soil along the banks of the river and 'nullah'.

*Fls. & Frts.* : April-May; *Loc.* : Sahjanwan; D.C. Saini, 4098.

*Saussurea affinis* Spreng. ex DC. Prodr. 6 : 540. 1838; FBI 3 : 373; FUGP 1 : 439.

An erect annual herb; stem puberulous. Leaves alternate membranous, lyrate-pinnatifid, glabrous or puberulous above, white cottony beneath. Head pinkish or white on long slender peduncles. Pappus white, feathery. Achene oblong obovoid, brown, smooth, 10-ribbed.

Common, in moist, shady places in the forests.

*Fls. & Frts.* : March-May; *Loc.* : Madhulia; D.C. Saini, 3982.

*Soliva anthemifolia* (Juss.) R. Br. ex Less. Syn. Compos. 268. 1833.

*Gymnostyles anthemifolia* Juss. in Ann. Mus. Paris 4 : 262.1804.

A flat, diffuse annual herb. Stem much shorter than leaves, forming dense tufted growth. Leaves radical, finely dissected into minute, linear segments. Heads sessile, greenish. Achene dark brown, lenticular, devoid of pappus.

Common, in dry up ditches.

*Fls. & Frts.* : February-May; *Loc.* : Ramgarh; D.C. Saini, 5872.

*Vernonia anthelmintica* Willd. Sp. pl. 2 : 1634. 1800; FBI 3 : 235; FUGP 1 : 402.

An erect pubescent annual herb. Leaves lanceolate or elliptic lanceolate, coarsely serrate, base tapering into short petiole. Head reddish or purple, subcorymbose. Pappus reddish. Achene black, 10-ribbed, hairy.

Frequent, in moist and shady places.

*Fls. & Frts.* : September-January; *Loc.* : Bilandpur; D.C. Saini, 3796.

*Vernonia divergens* (Roxb.) Edg. in JASB 21 : 172.1853; FBI 3 : 234' FUGP 1 : 403.

*Eupatorium divergens* Roxb. Fl. Ind. 3. 414.1832.

A stout, erect, tomentose-pubescent, perennial undershrub. Leaves elliptic or lanceolate, irregularly toothed. Head purple or greenish yellow, short peduncled usually in dense, rounded, much branched, paniced corymbs. Pappus white or dirty white. Achene minute, truncate, glabrous, pale brown, 10 ribbed.

Frequent, along road side in the forests.

*Fls. & Frts.* : December-May; *Loc.* : Nichlaur; D.C. Saini, 3970.

**Campanulaceae**

*Campanula colorata* Wall. ex Roxb. Fl. Ind. Caray & Wall. 2 : 101.1828; FBI 3 : 440.

An erect hispid annual herb. Leaves alternate, sessile linear oblong or lanceolate. Flowers pale-lilac or yellowish white, usually subspicate on branched panicles. Capsules obconic. Seeds numerous, ellipsoid, minute.

Common, in moist and shady places.

Fls. & Frts.: March-April; Loc. : Lehra; D.C. Saini, 3980.

**Lobeliaceae**

*Lobelia alsinoides* Lamk. Encycl. 3 : 588.1791.

*Lobelia trigona* Roxb. Fl. Ind. 2 : 111.1824; FBI 3 : 423; FUGP 1 : 452.

An erect or ascending, glabrous annual herb. Stem trigonous, rooting at the base. Leaves alternate, sessile or subsessile, broadly ovate or suborbicular. Flowers blue or pale violet, solitary axillary; peduncles angular. Capsule 3.5 mm long, ellipsoid, 3-valved. Seed trigonous.

Common, in moist and shady places.

Fls. & Frts. : October-January; Loc. : Bansgaon; D.C. Saini, 2843.

**Myrsinaceae**

*Embelia ribes* Burm.f. Fl. Ind. 62.t.23.1768; FBI 3 : 513.

A large shrub with lenticellate bark. Leaves elliptic or elliptic-oblong. Flowers greenish yellow, small in pubescent paniced racemes, terminal or in axils. Berry globose, smooth, black tipped with persistent style. Seed one.

Common, along bank of river and 'nullah'

Fls. & Frts. : February-August; Loc. : Nichlaur; D.C. Saini, 4429.

*Embelia tsjariam-cottom* A.DC. in .L.s.17 : 131. 1823.

*Embelia robusta* Cl. in FBI 3 : 515.1882; FUGP 1 : 463.

A shrub or small tree with lenticellate branches. Leaves elliptic or oblanceolate, serrulate. Flowers greenish yellow, fragrant, small in axillary or terminal simple or fascicled racemes. Berry globose, red when ripe with persistent style. Seed one.

Frequent, in Sal forests.

Fls. & Frts. : April-December; Loc. : Ramgarh; D.C. Saini, 4446.

**Ebenaceae**

*Diospyros chloroxylon* Roxb. Pl. Cor. 1 : 38, t. 49. 1795; FBI 3 : 560; FUGP 1 : 471.

A shrub or small tree often thorny. Leaves alternate, obovate or elliptic oblong. Flowers small, white. Fruits globose with persistent calyx. Seeds 2-3.

Frequent, in Sal forests and in grassland.

Fls. & Frts. : May-September; Loc. : Lachhmipur; D.C. Saini, 4347.

*Diospyros exculpta* Buch. -Ham. in TLS Lond. 15.110.1827.

*Diospyros tomentosa* Roxb. Fl. Ind. 2 : 532. 1832; FBI 3 : 564.

A small or medium sized deciduous tree. Leaves subopposite or alternate, broadly ovate, oblong or elliptic. Flowers dull white. Fruits globose or ovoid, yellow when ripe. Seeds 4-8 with ruminant albumen.

Common, in Sal forests.

Fls. & Frts. : April-August; Loc. : Anandnagar; D.C. Saini, 4227.

**Oleaceae**

*Jasminum arborescens* Roxb. Hort. Heng. 3.1814; FBI 3 : 594 FUGP 1 : 475.

A large, scandent shrub with hairy branches. Leaves simple opposite, broadly ovate. Flowers white in lax, terminal trichotomous, hairy cymes. Berry 1-2, ovoid or oblong, black when ripe.

Frequent, along the forest margins.

Fls. & Frts. : April-July; Loc. : Madhauria; D.C. Saini, 3996.

**Apocynaceae**

*Wrightia tinctoria* R.Br. in Mem. Wern. Soc. 1 : 47.1811; FBI 3 : 653; FUGP 1 : 489.

A small, deciduous tree. Leaves opposite, elliptic ovate or elliptic oblong. Flowers white in lax terminal dichotomous cymes. Follicles pendulous, slender, glabrous. Seeds linear with a tuft or silky brown hairs.

Frequent, in the forest area.

Fls. & Frts. : March-December; Loc. : Betiya-hata; D.C. Saini, 4156.

**Asclepiadaceae**

*Cryptolepis sinensis* (Lour.) Merr. in Philip. Journ. Sc. 15 : 254.1919.

*Pergularia sinensis* Lour. Pl. Cochinch. 167.1790.

A large, glabrous twining shrub with milky latex. Leaves opposite, elliptic ovate. Flowers yellow in lax terminal or axillary cymes. Follicles divaricate, terete, tapering. Seeds ovate, oblong, compressed, brown. Coma silky white.

Common, along road side, 'nullah' and river.

Fls. & Frts. : May-January; Loc. : Sahjanwan; D.C. Saini, 3534.

### Gentianaceae

*Canscora diffusa* R.Br. Prodr. 451.1810; FBI 4 :103; FUGP 1 : 522.

A slender, spreading, dichotomously branched annual herb, stem obtusely quadrangular. Leaves membranous, opposite, broadly ovate or elliptic lanceolate. Flowers pink, many in lax diffuse paniculate cymes. Capsule narrowly oblong, membranous

Common in moist, shady and low lying areas.

*Fls. & Frts.* : September-March; *Loc.* : Bhatahat; D.C. Saini, 3542.

*Nymphoides cristatum* (Roxb.) O.Kuntz. Rev. Gen. Pl. 429. 1891.

*Menyanthes cristata* Roxb. Pl. Cor. 2 : 3.t.105.1798.

*Limnanthemum cristatum* Griesb. Gen. & Spec. Gent. 342. 1839; FBI 4 : 131; FUGP 1 : 525.

An attached aquatic herb with floating leaves and flowers. Rhizome short, erect. Leaves suborbicular, deeply cordate, green shining above, purplish beneath. Flowers white. Capsule broadly ovoid or subglobose. Seeds 10 or more, tubercled, pale yellowish brown.

Abundant, in ponds and ditches.

*Fls. & Frts.* : April-December; *Loc.* : Domingarh; D.C. Saini, 3549.

### Boraginaceae

*Arnebia hispidissima* DC. Prodr. 10 : 94.1846; FBI 4 : 176; FUGP 1 : 541.

A small diffuse herb, clothed with white, hispid hairs. Leaves sessile, linear lanceolate, clothed with bulbous based stiff white hairs. Flowers yellow in dense, second racemes or spikes. Nutlets 4, minute, trigonous, tuberculate.

Frequent, on dry and sloopy areas.

*Fls. & Frts.* : March-June; *Loc.* : Near Gorakhpur Medical College; D.C. Saini, 4056.

*Cynoglossum meeboldii* Brand in Fedde. Report.14. 323.1916

*Cynoglossum denticulatum* var. *zeylanicum* Cl. in FBI 4 : 157.1883; FUGP 1 : 540.

Erect, branched, softly hairy or strigose annual herb. Leaves alternate, ovate lanceolate or elliptic. Flowers white, distant in terminal and axillary racemes. Nutlets glochidiate.

Common, on sandy, moist and shady places.

*Fls. & Frts.* : March-August; *Loc.* : Kunraghat; D.C. Saini, 3736.

### Convolvulaceae

*Argyreia sericea* Dalz. in Dalz. & Gibs. Bom. Fl. 169.1861; FBI 4 : 188.

A large, silky twiner. Leaves broadly ovate. Flowers pink in capitata or subcapitata peduncled cymes. Berries baccate, orange coloured. Seeds 4.

Frequent, in forests climbing on trees.

*Fls. & Frts.* : July-January; *Loc.* : Lachhmipur; D.C. Saini, 3605.

*Convolvulus arvensis* L.Sp. Pl. 153.1753; FBI 4 : 219; FUGP 1 : 548.

A creeping or twining glabrous, annual herb. Leaves variable ovate or oblong lanceolate, base auriculate or hastate. Flowers pink or white, solitary axillary. Capsule globose, glabrous. Seeds usually 4, sub-trigonus, reddish brown.

Common, as a rabi-crop weed and also found in grassland and along the banks of river.

*Fls. & Frts.* : October-February; *Loc.* : Naikot; D.C. Saini, 4292.

*Ipomoea muricata* (L) Jacq. Hort. Schenb: 30.40.t.323.

1974, FBI 4 : 197.

*Convolvulus muricatus* L. Mant. 44.1767; FUGP 1 : 559.

A twining herb; stem muricate. Leaves broadly ovate, base deeply cordate. Flowers pink, 1-5 in peduncled cymes. Capsules globose, apiculate, glabrous. Seeds smooth, polished, black.

Frequent, along the railway tracks, road sides and among the scrub forest.

*Fls. & Frts.* : August-December; *Loc.* : Sahjanwan; D.C. Saini, 4307.

*Merremia dissecta* (Jacq.) Hallier f.Bot. Jahrb.16 : 552. 1893.

*Convolvulus dissectus* Jacq. Obs. 2 : 4.1767.

*Ipomoea sinuata* Ortega, Hort. Matr. Dec. 7 : 84.1798; FBI 4 : 214; FUGP 1 : 551.

A twining herb; branches clothed with long; spreading brown, hairs. Leaves 5-7 partite, nearly glabrous. Flowers white with purple centre, 1-2 axillary. Capsules subglobose, glabrous. Seeds usually 4, black.

Frequent, along road side, railway track and river bank.

*Fls. & Frts.* : September-December; *Loc.* : Jagatbela; D.C. Saini, 4252.

*Merremia gangetica* (L.) Cufodont. in Bull. Jard. Bot.Etab. Brux. Suppl.31. : 743.1961.

*Merremia emarginata* Hall. f. in Engler, Bot. Jahrb. 16. 552. FUGP 1 : 551

*Ipomoea reniformis* Choisy in Mem. Soc. Phys. Genev. 6 : 446.183; FBI 4 : 206.

A prostrate, subglabrous annual herb; stem creeping and rooting at the nodes. Leaves reniform. Flowers yellow, axillary solitary or 2-3 together. Capsule subglobose, smooth, 2-celled. Seeds 2-4 brown, glabrous.

Common, on dry and sloopy areas.

*Fls. & Frts.* : September-December; *Loc.* : Maniram; D.C. Saini, 4267.

*Operculina turpathum* Silva, Manso, Enum. Subst. Braz. 16 & 49. 1836; FUGP 1 : 522.

*Ipomoea turpathum* R.Br. Prodr. 485. 1810; FBI 4 : 212.

A large twiner; stem angled and winged pubescent with milky latex. Leaves ovate or oblong, base cordate or truncate. Flowers white in axillary cymes. Capsules globose, enclosed in the enlarged, embricate, brittle calyx segments. Seeds obovoid, brown or black, minutely reticulate, glabrous.

Frequent, along river bank, 'nullah', road side and railway track.

*Fls. & Frts.* : March-November; *Loc.* : Uska; D.C. Saini, 4294.

*Rivea hypocrateriformis* Choisy in Mem. Soc. Phys. Geneve. 6 : 408. 1833; FBI 4 : 184; FUGP 1 : 560.

A woody, hairy twiner. Leaves orbicular, cordate, glabrous above, silky hairy beneath. Flowers white, fragrant, usually solitary. Fruits globose, woody, shining indehiscent. Seeds 4, glabrous.

Common, in forest climbing on trees.

*Fls. & Frts.* : August-September; *Loc.* : Campierganj, D.C. Saini, 4298.

### Solanaceae

*Solanum erianthum* D. Don. Prodr. Fl. Nep. 96. 1826.

*Solanum verbacifolium* L. Sp. Pl. 184. 1753; FBI 4 : 230; FUGP 2 : 2.

A large erect unarmed shrub, covered with dense, stellate tomentum. Leaves elliptic lanceolate or ovate. Flowers white in woolly, dichotomous, peduncled, corymbose cymes. Berries globose, sparsely hairy, yellow when ripe. Seeds slightly rugose.

Common, in forest and along 'nullah' and river bank.

*Fls. & Frts.* : Almost throughout the year; *Loc.* : Anandnagar; D.C. Saini, 3546.

*Solanum incanum* L. Sp. Pl. 188. 1753; FUGP 2 : 4.

An erect, branched, prickly herb, densely clothed with soft stellate, pale fulvous hairs. Leaves ovate elliptic, sinuate or lobed. Flowers blue or pale purple. Berries subglobose, yellow. Seeds minutely pitted.

Frequent, in grassland.

*Fls. & Frts.* : January-May; *Loc.* : Maniram; D.C. Saini, 3951.

### Scrophulariaceae

*Limnophila gratissima* Blume, Bijdr. 749. 1826; FBI 4 : 268.

A glabrous annual herb, stem decumbent at the base, copiously rooting at the lower nodes. Leaves opposite or in verticels of 3, sessile or sub-sessile, lanceo-

late oblong. Flowers purplish, numerous axillary and terminal racemes. Capsule ovoid oblong.

Common, along the margins of 'nullah', ponds, and puddles.

*Fls. & Frts.* : October-February; *Loc.* : Lehra; D.C. Saini, 3780.

*Lindernia antipoda* (L.) Alston, in Trin. Handb. Fl. Ceyl. 6 : 214. 1931.

*Ruellia antipoda* L. Sp. Pl. 635. 1753.

*Bonnaya veronicaefolia* Spr. Syst. 1 : 14. 1824; FBI 4 : 285; FUGP 2 : 26.

A decumbent or creeping annual herb, often rooting at the nodes; branches more or less glandular, pubescent. Leaves opposite, subsessile, oblong lanceolate or elliptic. Flowers bluish, pinkish or white. Capsule linear, septical.

Common, in moist and shady places.

*Fls. & Frts.* : August-December; *Loc.* : Khajni; D.C. Saini, 3887.

*Lindernia verbenaefolia* (Calm.) Pennell, Scroph. West Himal. 31. 1943.

*Gratiola verbenaefolia* Colsm. Prodr. Desc. Grat. 8. 1793.

An erect or suberect, glabrous annual herb; stem decumbent or creeping at the base, often rooting at the nodes, branches more or less glandular. Leaves sessile or subsessile, linear oblong or oblanceolate. Flowers purplish in terminal or axillary racemes. Capsules linear. Seeds truncate at the both ends.

Common, in moist and marshy places.

*Fls. & Frts.* : July-December; *Loc.* : Tura-nala; D.C. Saini, 3849.

### Bignoniaceae

*Stereospermum suaveolens* DC. Prodr. 9 : 211. 1845; FBI 4 : 382. FUGP 2 : 45.

A large deciduous tree. Leaves imparipinnate. Flowers dull-crimson, fragrant, in large, lax trichotomous viscidly hairy panicles. Capsules cylindrical, dark grey, rough with elevated white specks. Seeds wedge shaped, winged.

Occasional, in forest and open areas.

*Fls. & Frts.* : April-February; *Loc.* : Maniram; D.C. Saini, 4136.

### Acanthaceae

*Blepharis molluginifolia* Pers. Syn. 2. 2 : 180. 1807; FBI 4 : 479; FUGP 2 : 54.

A prostrate, hispid annual herb. Leaves sub-sessile in whorl of 4, unequal, fleshy, oblong obovate or elliptic. Flowers blue, sessile, solitary axillary. Capsule ellipsoid, compressed, glabrous, brownish, shining. Seeds 2.

Common, in dry and shady places especially in and around the orchards.

*Fls. & Frts.* : July-December; *Loc.* : Gauribazar; D.C. Saini, 4198.

*Hygrophilla difformis* (L.f.) Sreemadhavan et Bennet, in Bull. bot. Surv. India 10 (2) : 222.1968.

*Ruellia difformis* L.f. Suppl.289.1781.

An erect or decumbent, pubescent, aromatic annual herb; stem obtusely quadrangular, rooting below. Leaves opposite, ovate, -elliptic-ovate or ovate lanceolate. Flowers bluish white or purplish, 1-3 in axillary whorls. Capsules narrow, sessile. Seeds many, ovoid.

Common, in swampy places.

*Ruellia suffruticosa* Roxb. Fl. Ind. 3 : 53.1832; FBI 4 : 4B; FUGP 2 : 58.

An erect, pubescent undershrub with fusiform roots. Leaves elliptic lanceolate. Flowers white, solitary, terminal, subsessile. Capsule oblong, glabrous. Seeds few.

Common, as undergrowth in forests.

*Fls. & Frts.* : July-October; *Loc.* : Kushmi; D.C. Saini, 4026.

*Strobilanthes auriculatus* Nees, in Wall. Pl. As. Rar. 3.86.t.195. 1832; FBI 4 : 453; FUGP 2 : 64.

A shrub; branches many, divaricate or zig-zag, angled, nearly glabrous. Leaves opposite, sessile, unequal, ovate-lanceolate or elliptic-lanceolate. Flowers blue in axillary and terminal, linear oblong spikes. Capsule glabrous. Seeds 4.

Frequent, in forest.

*Fls. & Frts.* : November-April; *Loc.* : Rajahi; D.C. Saini, 4336.

### Verbenaceae

*Callicarpa arborea* Roxb. Hort. Beng. 10. 1814. nom.nud.et Fl. Ind. 390.1832; FBI 4 : 567; FUGP 2 : 86.

A small tree, branchlets tomentose. Leaves ovate or ovate lanceolate. Flowers pale-purple in 2-chotomous corymbose cymes. Drupes about 2mm long of 4- distinct, 1-seeded pyrenes, purplish, ultimately turning black.

Common, in the forest.

*Fls. & Frts.* : April-November; *Loc.* : Lachhmipur; D.C. Saini, 4437.

*Lippia alba* (Mill.) N.E. Br. ex Britton & Wilson in Sc. Surv. Porto Rico & Virgin Islands 6 : 141.1925.

*Lantana alba* Mill, Gard. Dict. 8: 8.1768.

A straggling, aromatic shrub. Leaves ovate or elliptic ovate, rugose. Flowers pink in dense cylindrical spikes. Fruits small, separating into 1-2 seeded pyrenes.

Common, along road side, railway track and along the bank of the rivers and 'nullah'.

*Fls. & Frts.* : March-October; *Loc.* : Sardarnagar; D.C. Saini, 4084.

### Lamiaceae

*Ajuga macrosperma* Wall. ex Benth. in Wall. Pl. As. Rar. 1 : 58.1830; FBI 4 : 704; FUGP 2 : 121.

A procumbent annual herb, sparingly hairy below, villous near the inflorescence, often rooting at the lower nodes. Leaves opposite, obovate or ovate oblong. Flowers bluish in terminal spikes; whorls continuous or interrupted. Nutlets oblong, rugosely pitted.

Common, in moist and shady places.

*Fls. & Frts.* : March-May; *Loc.* : Maniram; D.C. Saini, 4060.

*Plecteranthus japonicus* (Burm.f.) Koidz in Bot. Mag. Tokyo 43 : 386.1929.

*Scutellaria japonica* Burm.f. Fl. Ind. 130.1768.

An erect much branched, strong smelling, softly pubescent undershrub. Leaves ovate or ovate lanceolate. Flowers bluish purple in numerous short cymes which are arranged in long axillary and terminal pubescent racemose panicles. Nutlets broadly ellipsoid or sub orbicular, yellow, smooth.

Frequent, along road side and railway track.

*Fls. & Frts.* : December-February; *Loc.* : Rawatganj; D.C. Saini, 3644.

*Teucrium viscidum* Bi. Bijdr. 827.1826.

*Teucrium stoloniferum* Roxb. Fl. Pl. Ind. 3 : 3.1832; FBI 4 : 700; FUGP 2 : 120.

An erect glabrous or pubescent stoloniferous herb, rooting at the lower nodes. Leaves ovate or ovate-oblong. Flowers purple or white, tinged with purple in axillary or terminal, simple or paniced lax racemes. Nutlets minute, smooth, enclosed in calyx.

Common, in low lying areas.

*Fls. & Frts.* : April-June; *Loc.* : Loharpurwa; D.C. Saini, 436.

### Polygonaceae

*Polygonum minus* Huds. fl. Angl. 1 : 148.1762; FBI 5 : 36.

A erect or ascending, profusely branched, slender, glabrous annual herb. Leaves sessile, linear or oblong to lanceolate. Flowers white or pinkish in slender erect racemes. Nuts broadly ellipsoid, biconvex, brown, polished.

Frequent, in marshy places.

*Fls. & Frts.* : October-January; *Loc.* : Nautanwan; D.C. Saini, 4348.

**Lauraceae**

*Bielschneidia roxburghiana* Nees, in Wall. Pl. As. Rar. 2 : 69. 1830; FBI 5 : 121; FUGP 2 : 164.

*Laurus bilocularis* Roxb. Fl. Ind. 2 : 311.1874.

A small or medium sized evergreen tree. Leaves sub-opposite or alternate, elliptic or elliptic oblong. Flowers yellowish green, small, in axillary peduncled racemes. Fruits oblong obovoid, dark purple when ripe.

Frequent, in Sal forests.

*Fls. & Frts.* : April-August; *Loc.* : Lachhmipur; D.C. Saini, 4420.

*Litsea glutinosa* (Lour.) Robinson, in Philipp. Journ.Sc.Bot. 6 : 321.1911.

*Schifera glutinosa* Lour. Fl. Cochinch, 638. 1790.

*Litsea chinensis* Lamk. Encycl. 3 : 574, FBI 5 : 157.

A medium sized, evergreen tree. Leaves alternate, elliptic or ovate lanceolate. Flowers yellowish green, 4-9 in axillary peduncled corymbose or racemose umbels, fruits globose, black, supported by thickened club-shaped perianth tube.

Frequent, in mixed and Sal forests.

*Fls. & Frts.* : April-December; *Loc.* : Anandnagar; D.C. Saini, 4419.

*Litsea monopetala* (Roxb.) Pers. Syn. Pl. 2 (1) : 4.1806.

*Tetranthera monopetala* Roxb. Pl. Cor. 2 : 26.t.148. 1800.

*Litsea polyyantha* Juss. in Ann. Mus. Hist. Nat. 6 : 211.1805; FBI 5 : 162; FUGP 2 : 168.

A moderate-sized evergreen tree. The young parts of inflorescence and underside of leaves rusty-tomentose. Leaves alternate, elliptic oblong, ovate or obovate. Flowers white, 5-6 in a umbel. Fruit ovoid.

Common, in swamp forests.

*Fls. & Frts.* : March-September; *Loc.* : Ramgarh; D.C. Saini, 4135.

**Loranthaceae**

*Viscum monoicum* DC. Prodr. 4 : 278.1830; FBI 5 : 224; FUGP 2 : 176.

A tufted epiphytic shrub. Leaves opposite, subsessile, obliquely ovate, elliptic or lanceolate. Flowers greenish, in axillary fascicles. Berries shortly stipitate, oblong, smooth, blackish brown when ripe.

Rare, in the forest.

*Fls. & Frts.* : November-January; *Loc.* : Bhagirathpur; D.C. Saini, 3559.

**Euphorbiaceae**

*Chrozophora prostrata* Dalz. in D. & G. Bomb. Fl. 233. 1861.

*Chrozophora plicata* Hook.f. in FBI 5 : 409.1887.

A prostrate, stellate tomentose annual herb, branches spreading from the root. Leaves broadly ovate, or orbicular. Flowers yellowish, few in short, axillary racemes. Capsule stellate, tomentose.

Frequent, in open, dry and sandy places.

*Fls. & Frts.* : February-June; *Loc.* : Jhamat; D.C. Saini, 3696.

**Urticaceae**

*Goniostegia pentandra* (Roxb.) Miq. Ann. Mus. Bot. Lugd. Bat.4 : 302.1869.

*Urtica pentandra* Roxb. Fl. Ind. 3 : 583. 1832.

An erect or decumbent, glabrous perennial herb. Leaves sessile or shortly petioled, lower always opposite, upper gradually smaller and alternate, oblong lanceolate or linear lanceolate. Flowers pink, clustered in axils of floral leaves. Achenes with 2-3 winged perianths.

Common, in marshy and shady places.

*Fls. & Frts.* : August-November; *Loc.* : Purandarpur; D.C. Saini, 4006.

**Ulmaceae**

*Celtis tetrandra* Roxb. Fl. Ind. 2 : 63.1832; FBI 5 : 482.

A medium sized, deciduous tree with drooping branches. Leaves alternate, obliquely ovate, elliptic or ovate lanceolate. Flowers yellowish green, small polygamous in axillary cymes, sometimes solitary. Drupe ellipsoid, orange-red when ripe.

Common, in the mixed forests, forming middle story.

*Fls. & Frts.* : February-November; *Loc.* : Campierganj; D.C. Saini, 4421.

**Salicaceae**

*Salix tetrasperma* Roxb. Fl. Cor. 1 : 66.t. 97.1798; FBI 5 : 626; FUGP 2 : 253.

A medium-sized or large tree, with silky white, drooping branchlets. Leaves simple, alternate, lanceolate or ovate lanceolate, green above, white, and silky beneath. Flowers dioecious. Capsule stipitate, glabrous. Seeds 4-6.

Common, along the bank of river and 'nullah'.

*Fls. & Frts.* : January-April; *Loc.* : Uska; D.C. Saini, 4409.

**Hydrocharitaceae**

*Necamandra alternifolia* (Roxb.) Thw. Enum. 332. 1864.

*Vallisneria alternifolia* Roxb. Pl. Cor. 2 : t. 165.1802.

A submerged aquatic. Stem filiform. Roots fibrous. Leaves sessile, alternate, oblong lanceolate. Male flower: Spathe ovoid, enclosing many, minute shortly stalked flowers; female flowers solitary, sessile with 2-fid spathe, wrapping round the lower part of flower. Fruit ovoid to oblong or linear. Seeds many.

Fls. & Frts. : August-February; Loc. : Kauriya; D.C. Saini, 4206.

### Orchidaceae

*Calentheplantagenia* Lindl. In Wall. Cat. 7346 1826; FBI 5 : 853.

A small, erect, terrestrial herb with fibrous roots. Leaves petiolate, lanceolate or elliptic lanceolate. Flowers white or pale lilac in slender terminal or axillary dense racemes. Capsule oblong.

Frequent, in marshy and shady places.

Fls. & Frts. : February-June; Loc. : Campierganj; D.C. Saini, 4303.

*Geodorum densiflorum* (Lamk.) Schlter. in Fedd. Report. Beih. 4 : 259.1929.

*Limodorum densiflorum* Lamk. Encycl. 3 : 516. 1791.

An erect terrestrial herb with tuberous rootstock. Leaves plicate, elliptic or elliptic-oblong, tapering into a long sheath forming pseudostem. Flowers pale-purple in short drooping corymbose racemes but becoming erect in fruiting stage. Capsule ellipsoid.

Rare, in moist, sandy and shady places.

Fls. & Frts. : June-November; Loc. : Lachhmipur; D.C. Saini, 4452.

*Malaxis versicolor* (Lindl.) Santapau & Kapadia in Journ. Bombay nat. Hist. Soc. 58 : 347.1961.

*Microstylis versicolor* Lindl. Gen. Sp. Orch. 21.1830 non Wight; FBI 5 : 590.

A slender, terrestrial, stoloniferous herb bearing numerous sheaths on the stem. Leaves alternate, many, ovate or elliptic lanceolate, base with unequal sides, decurrent into sheathing petiole, purplish beneath. Flowers greenish yellow or purple, fragrant in slender, bracteate racemes. Capsule clavate-oblong, stipitate.

Common, in moist, sandy and shady places.

Fls. & Frts. : July-November; Loc. : Ramgarh; D.C. Saini, 4463.

*Nervilia carinata* (Roxb.) Sch. in Bot. Jahrb. 45 : 406.1911.

*Epipactis carinata* Roxb. Fl. Ind. 3 : 454.1832.

A small, erect, terrestrial herb with globose white tubers. Leaves plicate, broadly ovate or orbicular. Flowers dirty white, numerous in lax racemes.

Frequent, in moist, sandy and shady places.

Fls. & Frts. : May-July; Loc. : Nichlaur; D.C. Saini, 4442.

### Smilacaceae

*Smilex zeylanica* L. Sp. Pl. 1029.1753; FBI 6 : 309.

A large climber, stem armed with few small, distant prickles. Leaves ovate or suborbicular. Flowers white, deciduous in axillary many flowered paniculate umbels. Berries globose, red when ripe.

Frequent, in swamp forests.

Fls. & Frts. : July-November; Loc. : Ramgarh; D.C. Saini, 1833.

### Dioscoreaceae

*Dioscorea belophylla* Voigt. Hort. Sub. Calc. 653.1845; FBI 6 : 294; FUGP 2 : 323.

A large, glabrous, annual climber. Leaves simple, opposite or alternate, ovate or ovate-oblong, base deeply cordate or sagittate. Male spike in leaf axils or sometimes forming leafless panicles; female spike usually solitary axillary. Capsule about 2.5 cm long. Seeds winged.

Frequent, climbing over bushes.

Fls. & Frts. : September-February; Loc. : Brijmangunj; D.C. Saini, 4495.

*Dioscorea glabra* Roxb. Fl. Ind. 3 : 804.1832; FBI 6 : 294.

A large glabrous climber, stem often prickly. Leaves simple, opposite or lower alternate, ovate or ovate-oblong, base subcordate or rounded. Male flowers in long terminal panicles; female spike usually solitary axillary or in fascicles. Capsule 2 cm in diameter with obconic base and depressed apex. Seeds winged.

Common, climbing on bushes.

Fls. & Frts. : September-March; Loc. : Lehra; D.C. Saini, 4496.

*Dioscorea wightii* Hook.f. in Fl. Brit. India 6 : 29.1892.

A glabrous unarmed, annual climber. Leaves simple, opposite or alternate, variable. Male spike solitary or clustered; female spike usually solitary, axillary. Capsule obtusely quadrate. Seeds winged.

Rare, climbing on bushes and small trees.

Fls. & Frts. : October-February; Loc. : Loharpurwa; D.C. Saini, 3950.

### Zingiberaceae

*Zingiber squarrosus* Roxb. in Asiat. Res. 11 : 348.1810; FBI 6 : 245.

An erect annual herb with horizontal tuberous root stock. Leaves oblong lanceolate, base tapering into amplexicaule sheaths, green and glabrous above, paler and pubescent beneath. Flowers yellowish white or pinkish in dense globose spikes. Capsule oblong. Seeds large, globose, arillate.



Common, in moist and shady places.

*Fls. & Frts.* : February-June; *Loc.* : Rawatgunj; D.C. Saini, 4424.

### Pontederiaceae

*Monochoria vaginalis* (Burm.f.) Presl. Reliq. Hoenk.1 : 128.1827; FBI 6 : 363; FUGP 2 : 336.

*Pontederia vaginalis* Burm.f. Fl. Ind. 80.1768.

A small aquatic or marshy herb with short suberect rootstock. Leaves linear or ovate lanceolate, acuminate, base rounded. Flowers blue in subspicate racemes. Capsule oblong. Seeds ovoid, many ribbed.

Frequent, in ponds and ditches.

*Fls. & Frts.* : September-October; *Loc.* : Ramchaura; D.C. Saini, 3817.

### Commelinaceae

*Commelina communis* L. Sp. Pl. 40.1753; FBI 6 : 374.

An erect or prostrate glabrous annual herb, rooting at the lower nodes. Leaves sessile, ovate lanceolate. Spathes sessile, numerous, clustered in axillary and terminal heads, curved. Flowers violet. Capsule membranous. Seeds pitted, black.

Common, moist and shady places.

*Fls. & Frts.* : September-November; *Loc.* : Kauria, D.C. Saini, 4497.

### Araceae

*Scindapsus officinalis* (Roxb.) Schott Melet. 1 : 21.1832; FBI 6 : 541; FUGP 2 : 367.

*Polthos officinalis* Roxb. Fl. Ind. 1 : 452.1820.

A robust and succulent climbing herb, rooting at the nodes. Leaves broadly ovate or elliptic ovate. Spathes beaked, yellowish, deciduous. Spadix stout, sessile, cylindric, dense flowered. Berries obpyramidal. Seeds reniform, arillate at the base.

Abundant, in Sal forest.

*Fls. & Frts.* : July-May; *Loc.* : Madhauria; D.C. Saini, 3583.

*Plesmonium margaritiferum* (Roxb.) Schott, Syn. Aroid. 1 : 34.1856; FBI 6 : 518; FUGP 2 : 364.

*Arum margaritifera* Roxb. Fl. Ind. 3 : 512.1832.

An erect glabrous herb with white varty hemispherical tubers. Leaves radical, 3-foliolate; leaflets pinnatifid. Scapes preceding the leaves, brown streaked. Spathes broadly ovoid or deltoid, coriaceous, yellowish green outside, pinkish inside, and dark purple at the base. Spadix stout, stipitate. Berry oval. Seeds ellipsoid, exalbuminous.

Common, in sandy, moist and shady places.

*Fls. & Frts.* : April-June; *Loc.* : Purandarpur; D.C. Saini, 4443.

### Butomaceae

*Tenagocharis latifolia* (D. Don.) Buchen. Abh. Nauturw. Ver. Bremen 2 : 6.1868.

*Butomus latifolius* D. Don. Prodr. Fl. Nep. 22.1825.

*Butomopsis lanceolata* Kunth, Enum. Pl. 3 : 165. 1841; FBI 6 : 562 FUGP 2 : 372.

An erect scapigerous annual herb with milky juice. Leaves radical, lanceolate or elliptic lanceolate. Scape exceeding the leaves. Flowers white in bracteate, 3-20 flowered terminal umbels. Capsules shortly beaked. Seeds numerous, dark brown, shining.

Frequent, in marshy places.

*Fls. & Frts.* : September-January; *Loc.* : Barwa-Kalan; D.C. Saini, 3818.

### Aponogetonaceae

*Aponogeton crispum* Thunb. Nov. Gen. 4 : 78.1781; FBI 6 : 564; FUGP 2 : 374.

A scapigerous aquatic herb. Leaves variable, submerged, lanceolate or linear oblong, undulate or crisped. Flower white in solitary crowded spike. Folicle 3, smooth, beaked. Seeds 1-2, smooth.

Abundant, in ponds, ditches and 'tals'.

*Fls. & Frts.* : September-November; *Loc.* : Naikot; D.C. Saini, 4498.

### Potamogetonaceae

*Potamogeton nodosus* Poir. Encycl. Suppl. 4 : 535.1816.

*Potamogeton indicus* Roxb. Fl. Ind. 1.1820; FBI 6:565; FUGP 2:374

A brownish pale purple floating aquatic herb. Stem terete creeping below. Leaves alternate, oblong elliptic or elliptic lanceolate. Flowers white in spike. Spikes generally above the surface of water, erect, dense-flowered, reddish brown. Drupelets small, smooth, 3-ribbed on the back.

Common, on ponds, ditches and 'tals'.

*Fls. & Frts.* : November-March; *Loc.* : Nautanwan; D.C. Saini, 4305.

### Cyperaceae

*Cyperus amabilis* Vahl Enum. 2 : 318.1806; FBI 6 : 598; FUGP 2 : 383.

A dwarf, slender, tufted annual sedge. Leaves half or less than half the length of stem, finely acuminate, sheath dark brown or purplish. Spikelets yellow or brown in compound umbel. Stamen 1. Style 3, shorter than nut. Nuts very small trigonous, obpyramidal, brown with minute raised dots.

Common, in sandy soils.

*Fls. & Frts.* : April-December; *Loc.* : Campierganj; D.C. Saini, 4328.

*Cyperus distans* L.f. Suppl. 103.1763; FBI 6 : 607; FUGP 2 : 309.

An erect and stout perennial sedge. Stolon woody, covered with dark brown elliptic, acute scales. Leaves shorter or often as long as the stem. Umbels compound, ray often very long, slender. Spikelets dark brown. Stamens 3. Style shorter than the nut. Nut nearly as long as the glume, narrow oblong, trigonous, dark brown or black.

Abundant, in wet sandy-loamy soil.

*Fls. & Frts.* : July-October; *Loc.* : Unaula; D.C. Saini, 3755.

*Cyperus imbricatus* Retz. Obs. 5 : 12.1789.

*Cyperus radiatus* Vahl. Enum. 2 : 369.1806; FBI 6 : 617; FUGP 2 : 386.

An erect and stout glabrous perennial sedge with thick root stock. Stem triquatrous, striated, covered with red-brown leaf sheath, Leaves linear lanceolate, shorter than the stem. Umbel simple or compound with digitate, sessile cylindrical spikes. Stamens 3. Style 3-fid, half as long as nut. Nut ovoid, trigonous, about half the length of glume.

Common, in ponds, lakes and 'nullah'.

*Fls. & Frts.* : September-December; *Loc.* : Mohadipur; D.C. Saini, 4314.

*Cyperus leucocephalus* Retz. Obs.Fasc. 5 : 11.1789; FBI 6 : 602.

A small caespitose and glabrous sedge with a very short woody rhizome. Leaves filiform shorter than the stem. Spikelets compressed, clustered into dense globose, whitish or pale brown heads. Stamen 1. Style 3-fid shorter than the nut. Nut oblong- ellipsoid, trigonous, apiculate, granulate, black.

Common, in wet, sandy-loamy soil.

*Fls. & Frts.* : April-August; *Loc.* : Purandarpur; D.C. Saini, 3739.

*Cyperus sanguinolentus* Vahl Enum. 2: 351.1806.

A slender tufted sedge with creeping rhizome. Leaves few, shorter than the stem. Spikelets flat, oblong lanceolate, reddish brown, clustered in head. Stamen 3. Style 3-fid. Nut shorter than glume, suborbicular, laterally compressed, biconvex, dark brown.

Frequent, in moist and sandy soil.

*Fls. & Frts.* : October-November; *Loc.* : Loharpurwa; D.C. Saini, 3781.

*Fimbristylis albo-virdis* C.B. Clarke in Fl. Brit. India 6 : 638.1893.

An erect, slender annual sedge. Leaves as long as the stem or longer. Umbel compound. Spikelets numerous, greenish white, often tinged with purple. Style 2-fid. Nut straw-coloured, obovoid, with numerous obscure, longitudinal striations.

Common, in moist and shady places.

*Fls. & Frts.* : June-October; *Loc.* : Maniram; D.C. Saini, 4350.

*Fimbristylis falcata* (Vahl) Kunth. Enum. Pl.2 : 239.1837.

*Scirpus falcatus* Vahl Enum. Pl.2 : 275.1806.

*Fimbristylis junciformis* Kunth Enum. Pl.2 : 239.1837; FBI 6 : 647. FUGP 2 : 407.

An erect small sedge with a short, creeping rhizome. Stem angular, striate. Leaves crowded at the base, shorter than the stem, spreading and recurved. Spikelets chestnut brown coloured, clustered or solitary in compound umbels. Stamens 3. Style with conical base; stigma 3, as long as style. Nut obovoid, trigonous, pale straw-coloured or white, verrucose.

Common, in grasslands.

*Fls. & Frts.* : May-September; *Loc.* : Rawatganj; D.C. Saini, 3860.

*Fimbristylis tenera* Roem. & Schult. Syst. Mant. 2 : 57.1824; FBI 8 : 642; FUGP 2 : 406.

A slender tufted annual sedge. Leaves about half the length of stem, very narrow, flat. Spikelets light brown in lax sub-compound umbels. Style glabrous, base swollen. Stigma 3. Nut trigonous, obovoid, dirty white, minutely verrucose.

Frequent, along the margins of 'nullah', 'tals' and ponds.

*Fls. & Frts.* : September-November; *Loc.* : Ramchaura; D.C. Saini, 4176.

*Rhynchospora hookeri* Boeck. in Linnaea, 37 : 621.1873.

An erect and stout glabrous sedge. Leaves flat, scabrous; sheath closed or open. Spikelets clustered on the ends of branches of large irregular, loose corymbiform, decomposed, terminal and axillary umbels. Spikelets ovate lanceolate, acuminate, reddish brown. Hypogynous bristles 6, shorter or as long as the nut. Nut ovoid smooth, chest nut coloured, suddenly narrowed into a very small cylindrical neck, beak linear as long as the nut, greenish or straw-coloured.

Abundant, in moist and shady situations.

*Fls. & Frts.* : August-October; *Loc.* : Lachhmipur; D.C. Saini, 4259.

*Scirpus affinis* Roth, in Roem. & Schult. Syst. 2 : 140.1817.

An erect, stout sedge with horizontal rhizome. Stem triquatrous. Sheath long, often half the length of stem. Leaves as long as or longer than the stem. Spikelets ovate oblong, terminal, solitary or 2-5, reddish brown. Hypogynous bristles 3-6, unequal shorter than the nuts. Stamens 3. Style 2-fid. Nut obovoid, compressed, planoconvex, straw coloured.

Common, along the banks of river and 'nullah' and along the margins of ponds and puddles.

*Fls. & Frts.* : February-June; *Loc.* : Uska; D.C. Saini, 4111.

*Scleria levis* Retz. Obs.4 : 13.1786; FBI 6 : 694.

*Scleria hebecarpa* Nees in Linnaea 9 : 303.1835; FUGP 2 : 416.

An erect grass-like perennial herb with woody rhizome clothed with dark red scales. Leaves flat, 3-nerved, rigid, margin scabrous; sheaths often winged, mouth truncate; ligule ovate, pubescent. Panicles terminal, brown. Spikelets unisexual, solitary or in small clusters. Style 3-fid. Nut globose or broadly ovoid, obscurely trigonous, apiculate, white, polished.

Rare, along river bank and along the margin of 'nullah'.

*Fls. & Frts.* : September-February; *Loc.* : Uska; D.C. Saini, 4120.

### Poaceae

*Alloteropsis cimicina* (L.) Stapf. in Prain Fl. Trop. Afr. 9 : 487.1919.

*Milium cimicinum* L. Mant. Alt. 184.1771.

An erect, slender, hairy tufted annual grass. Leaves ovate lanceolate, base subcordate or rounded, margin covered with dense, bulbous based hairs; ligule of short hairs. Racemes spiciform. Spikelets solitary or clustered on short pedicels. Stamens 3. Caryopsis dorsally compressed.

Common, in moist, shady places.

*Fls. & Frts.* : July-October; *Loc.* : Maniram; D.C. Saini, 4182.

*Aristida histricula* Edg. in J. Linn. Soc. (Bot.) 6 : 208.1862; FBI 7:227.

A densely caespitose, dwarf annual grass. Leaves subulate, curved, sheath glabrous; ligule a small line of hair. Panicles shorter than awns. Spikelets erect. Caryopsis brown.

Frequent, on sandy and dry soils in grasslands.

*Fls. & Frts.* : October-February; *Loc.* : Kauriram; D.C. Saini, 4103. FBI 7 : 395.

*Bambusa arundinacea* (Retze.) Willd. Sp. Pl. 2(1):245.1799; FBI 7:395.

A large caespitose, thorny tree-like grass. Leaves linear or linear lanceolate, base rounded, sheath with a thick callus, ligule short. Spikelets sessile. Caryopsis oblong, rice-like.

Frequent, along river banks.

*Fls. & Frts.* : April-June; *Loc.* : Domingarh; D.C. Saini, 4119.

*Cenchrus ciliaris* L. Mant. Alt. 302.1771.

An erect or decumbent, much branched tufted, perennial grass. Leaves narrowly linear; sheath striate; ligule a narrow, ciliate membrane. Spikelets in long panicles.

Common, in sandy, dry and graveled soil.

*Fls. & Frts.* : August-October; *Loc.* : Khajni; D.C. Saini, 4094.

*Chionachne koenigii* (Spreng.) Thw. Enum. Pl. Zeyl. 357. 1864.

*Coix koenigii* Spreng. Syst.1: 239.1825.

A robust, perennial grass. Leaves linear, flat; sheath loose, covered with stiff bulbous based hairs; ligule narrow, tomentose. Inflorescence of racemes in panicles. Stamens 3. Caryopsis enveloped in the thickened lower glume, pale-yellow, smooth, fusiform or oblong.

Frequent, along the bank of 'nullah'.

*Fls. & Frts.* : September-February; *Loc.* : Pipiganj; D.C. Saini, 3890.

*Cyrtococcum patens* (L.) A. Camus, in Bull. Mus. Hist. Nat. Paris 27 : 118.1921.

*Panicum patens* L. Sp. Pl. 58.1753; FBI 7 : 57.

A very slender, ascending grass. Stem creeping and rooting below. Leaves ovate lanceolate; sheath with ciliate mouth, ligule membranous, rounded. Panicles contracted or diffuse. Spikelets variable, ovate, obtuse, glabrous, brownish.

Common, in moist and shady places.

*Fls. & Frts.* : October-January; *Loc.* : Bansgaon; D.C. Saini, 3851.

*Digitaria biformis* Willd. Enum. Pl. Hort. Berol. 92. 1809.

An erect or ascending loosely tufted annual grass. Leaves linear lanceolate; sheath slightly hairy near the mouth. Spike digitate, flexible. Rachis trigonous or flattened. Spikelets lanceolate, acute.

Common, in moist places.

*Fls. & Frts.* : July-November; *Loc.* : Kauriram; D.C. Saini, 3581.

*Echinochloa stagninum* (Retz.) P. Beauv. Ess. Agross. 53 : 161.1812.

*Panicum stagninum* Retz. Obs. Bot.5 : 17.1789.

A slender ascending annual or perennial grass. stem decumbent and rooting at the base. Leaves linear; ligule a fringe of stiff hairs particularly in lower leaves. Panicle erect, contracted or pyramidal, rachis slightly angular. Spike many, erect, secund. Spikelets elliptic ovate, acuminate, long awned.

Frequent, in muddy places along the bank of 'nullah', ditch and 'tals'.

*Fls. & Frts.* : July-November; *Loc.* : Sahjanwan; D.C. Saini, 4185.

*Eragrostis pilosa* (L.) P. Beauv. Ess. Agrost. 71 : 162. 1812.

*Poa pilosa* L. Sp. Pl. 68.1753.

A slender erect or geniculately ascending densely caespitose annual grass. Leaves short, narrow linear; sheath appressed, bearded at the mouth; ligule a ring of

soft hairs. Panicle erect, oblong or pyramidal. Caryopsis ellipsoid.

Common, in shady places.

*Fls. & Frts.* : June-December; *Loc.* : Uska; D.C. Saini, 3562.

*Eragrostis japonica* (Thunb.) Trin. in Mem. Acad. Sci. Petersb. 1 : 405.1813.

*Poa japonica* Thunb. Fl. Jap. Sl. 1784.

An erect or geniculately ascending tufted annual or perennial grass. Leaves narrowly linear; sheath glabrous, close; ligule a fimbriate membrane. Spikelets ovate or linear, loose. Caryopsis obovoid.

Frequent, in grasslands.

*Fls. & Frts.* : October-January; *Loc.* : Bankata; D.C. Saini, 4298.

*Erianthus ravennae* (L.) P. Beauv. Ess. Agros. 14.1812.

*Saccharum ravennae* (L.) Murr. Syst. Veg. (ed.13) : 88.1774.

A gigantic tufted perennial grass. Culms solid, thick striate, smooth and polished, bearded at the nodes. Leaves variable, upper shorter than the lower, sheath covered with yellow brown on white stiff hairs from bulbous bases; ligule membranous, ciliate hairy. Panicle large, dense, plumose.

Frequent, in drying ditches.

*Fls. & Frts.* : August-December; *Loc.* : Nautanwan. D.C. Saini, 3888.

*Eriochloa procera* (Retz.) C.E. Hubbard in Kew Bull. 19 30 : 256.1930.

*Eragrostis procera* Retz. Obs. Bot.4 : 19.1786.

A slender glabrous tall erect or ascending annual or perennial grass. Leaves linear; sheath loose, shorter than the internodes; ligule very short. Caryopsis oblong smooth.

Common, in marshy places.

*Fls. & Frts.* : August-November; *Loc.* : Nausarh; D.C. Saini, 3889.

*Leersia hexandra* Swartz. Prod. Veg. Ind. Occ.21. 1788.

A slender perennial grass with geniculate base, rooting at the nodes with floating flexuous, striate branches; nodes hairy. Leaves linear, finely acuminate; sheath scabrid; ligule short, truncate membranous. Panicle narrow. Caryopsis oblong free within the glume and palea.

Frequent, in swampy places.

*Fls. & Frts.* : October-December; *Loc.* : Ramgarh; D.C. Saini, 3772.

*Lolium temulentum* L.Sp. Pl.83.1753; FBI 7 : 364.

An erect, stout unbranched annual grass. Leaves linear lanceolate, flat; sheath as long as the internode,

smooth or scaberulous; ligule membranous, very short. Caryopsis elliptic oblong, grooved in upper part.

Common, in Rabi crop field.

*Fls. & Frts.* : October-February; *Loc.* : Rajghat; D.C. Saini, 3957.

*Oryza rufipogon* Griff. Notul. 3 : 5.1851; FBI 7 : 92.

An erect annual grass. Leaves linear lanceolate, caudate acuminate; sheath glabrous, inflated many nerved. Caryopsis oblong, brownish.

Frequent, in swampy places.

*Fls. & Frts.* : July-November; *Loc.* : Anandnagar; D.C. Saini, 4181.

*Panicum miliare* Lamk. Tabl. Encycl. 1 : 173.1791; FBI 7 : 46.

An erect or geniculate, tufted simple or branched glabrous annual grass. Leaves narrow linear; sheath loose, ciliate with a few bulbous based hairs; ligule very short truncate, ciliate. Caryopsis brown, ovate or oblong.

Common, in grassland.

*Fls. & Frts.* : June-October; *Loc.* : Maniram; D.C. Saini, 4467.

*Saccharum bengalense* Retz. Obs. Bot. 5 : 16.1789.

*Saccharum munja* Roxb. Fl. Ind. 1 : 250.1820.

A very large tufted perennial grass. Culms solid. Leaves narrow, linear, finely acuminate; sheath long; ligule densely villous. Panicle dull white or grey.

Abundant, along railway track and along the bank of river.

*Fls. & Frts.* : October-December; *Loc.* : Domingarh; D.C. Saini, 3257.

*Setaria pallide-fusca* (Schum.) Stapf. et. C.E. Hubb. in Kew Bull. 1930 : 259.1930.

*Panicum pallide-fuscum* Schum. Baskr. Guin. Pl.58. 1827.

An erect tufted annual grass. Leaves linear; sheath smooth, striate, ligule of stiff hairs. Panicle cylindrical, dense spiciform. Caryopsis yellowish white, ellipsoid.

Common, in the grassland.

*Fls. & Frts.* : August-October; *Loc.* : Siswan; D.C. Saini, 4840.

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## REFERENCE

Srivastava, T.N. 1976. *Flora Gorakhpurensis*. New Delhi.