Chapter -9

Description of the Flora

1. **RANUNCULACEAE**

*Ranunculus* L.

*Ranunculus sceleratus* L. Sp. Pl. 551.1753; FBI 1:19; FUGP 1:21

An annual herb, erect, glabrous, yellow-green, 6-80 cm high; branches fistular, succulent. Leaves radical and cauleine; radical leaves deeply 3-5 lobed, segment obovate, cuneate, obtusely toothed near the top; cauleine leaves tripartite, segment narrow-oblong, entire or toothed. Flowers yellow; petals with nectariferous pit at base, receptacle conical, Achene 3.7 mm long, small, numerous, apiculate.

Abundantly occur along the bank of rivers and ‘nalas’ during late winter.

Local name: Jaldhania; Flowers and Fruits: December-May; Locality: Bhadohi. Kasturi Singh. 6001.

2. **MAGNOLIACEAE**

A. Leaves obovate, glabrous above, rusty-tomentose beneath; flowers terminal .................................................................1. *Magnolia*

AA. Leaves ovate-lanceolate, glabrous on both surfaces, flower axillary.................................................................2. *Michellia*

1. **Magnolia** L.

*Magnolia grandifolia* L. Syst. 1082, 1759.

A small evergreen tree with dense crown, Bark greenish black; blaze yellow. Leaves thick, oblong, obovate or elliptic. Flower cream coloured, fruits in groups, follicle.
An ornamental plant planted in gardens.


2. **Michelia L.**


An evergreen tree with oblong crown. Bark pale grey, smooth, blaze cream coloured, leaves 12-20 cm long, ovate-lanceolate, tapering at the ends, entire or wavy, shining above, pale glabarous beneath, flowers yellow, fruits ovoid, sub-sessile.

An ornamental garden plant, Flowers and fruits used as tonic.


3. **DILLENIACEAE**

*Dillenia pentagyana* Roxb. Pl. Corom. 1; 21, t. 20, 1795, FBI 1:38; FUGP 1:23 for Fl. U.P. 2:6

A deciduous tree of moderate size with cylindrical stem and ascending branches. Bark pale brown; blaze red; leaves alternate serrate acute 10-15 cm long, hairy. Flowers large white. Fruit woody with scales. Seeds compressed, margine hairy.

Plants grown in gardens. Juice of fleshy calyx is used by local inhabitants in fever. Fruit is highly laxative and used in preparation of pickles.


4. **ANNOACEAE**

A. Scandent shrub, peduncle hooked

2. *Artabotrys*
AA. Shrub or small tree:

B. Fruits are druplets: 1-seeded

BB. Fruits aggregate; many seeded

1. **Annona L.**

*Annona squamosa* L. sp. Pl. 537. 1753; FBI 1: 78; FUGP 1:23

A shrub or small tree. Bark black brownish ash coloured; blaze yellowish green. Leaves 5-15x2, 5-5 cm, oblong or oblong lanceolate, subacute or obtuse. Flower yellow-green, solitary, drooping, on short extra axillary peduncles. Fruits globose, yellow-green, fleshy, with well marked areoles. Seed numerous, brownish black, polished, embedded in cream colour pulp.

Found along road side. The leaf infusion is given in dysentery.

Local name: Sharifa, Sitaphal; Flower: March-May; Fruits: July to September. Locality: Aurai Kasturi Singh 6205.

2. **Artabotrys R. Br.**


A much branched, glabrous, scandent shrub. Leaves 5-20 X 2-8 cm, oblong-lanceolate, entire, acute, base rounded or sub-cordate, shining. Flowers yellow-green, fragrant, solitary or paired on hooked peduncles. Fruit in drupe like pistil, ovate-oblong, yellow when ripe seed dirty-whity fissured.

Ornamental cultivated in garden for its fragrant flowers. Essential flower from flower used in perfumery.


3. **Polyalthia Blume**
A. Leaves up to 12 cm long, oblong, entire, glabrous above, pubescent beneath fruit pisiform …………………… 2. *P. suberosa*

B. Leaves up to 30 cm long, narrow, lanceolate, undulate, glabrous on both surface, fruit ovoid………………… 1. *P. longifolia*


An evergreen glabrous, tree with pyramidal crown. Bark dirty gray; blaze yellowish-gray. Leaves 10-30 cm long, lanceolate, undulate, acuminate, base rounded, glossy-green, and glabrous. Flower yellowish green, numerous in umbellate, pendulous cyme. Fruits ovoid black at maturity.

Common plant of road sides in garden. Fruit decoction used as tonic.


An evergreen shrub. Leaves shortly petiolate, 3.8-12. 5 X 2.2-3.5 cm, oblong – lanceolate obtuse or acute, glabrous and shining above, pubescent beneath. Flowers small, greenish-yellow, usually solitary and extra-axillary. Fruits stalked, umbellate pisiform, black when ripe.


5. **MENISPERMACEAE**

A. Plant glabrous

Leaves yellowish-green, cordate;

Fruit red; seed ovoid …………………… 4. *Tinospora*

AA. Plant hairy
B. Carpels – 1 fruit red:

C. Leaves ovate; flower in pedunculate umbel 3. *Stephania*

CC. Leaves orbicular; flowers not as above …… 1. *Cissampelos*

BB. Carpels-3; fruit purple ………………………. 2. *Cocculus*

1. *Cissampelos* L.

*Cissampelos pareira* sp. Pl. 1031; FBI 1:103; FUGP 1:31.

A softly pubescent or tomentose climbing shrub. Rhizome slender, cylindrical often branched. Leaves 2.5-12 x 1-7.2 cm, orbicular, reniform, retuse or obtuse, mucronate, base cordate, pubescent or tomentose on both surface. Flowers minute, yellow-green, unisexual in softly villous, long axillary, dense racemose. Fruit drupe 6 mm in diam, globose, compressed, hirsute scarlet, when ripe.

Common in waste places, in grassland. The root is used in dysentery, heart trouble and urinary disorders, in bone fractures, the leaves are used for bandage by local inhabitants.


2. *Cocculus* DC.


A slender villously tomentose, climbing shrubs. Leaves 1.8-7.4 x 0.7 – 3.5 cm, ovate or ovate-oblong or subhastate, obtuse or retuse apiculate, base subcordate or truncate or rounded green above, glaucous beneath, tomentose. Flowers minute, white, male flower in axillary branched cymes; female flowers 1-3, small usually clustered in the leaf axils. Drupes 5 mm in diam., sub-
Description of the Flora

reniform, dark purple when ripe. Seeds black, obovoide, compressed, the sides with strong transverse ridges.

Common in cementry, grassland. The leaf juice mixed with water is externally applied to cure eczema.

Local name: Karsaini; Flowers: October-February; Fruits: January-March; Locality: Gopiganj. Kasturi Singh 6801.

3. **Stephania Lour.**


A selender glabrous twinning shrub. Leaves 9.5-12.5 cm long, thinly coriaceous ovate or sub-deltoide, acuminate, truncate or cordate at the base, dark green, glabrous above, pale or glaucous beneath, Flowers greenish white, minute in small capitates umbels on the long axillary peduncles. Pedicles short, numerous thickened at the top. Fruit drupe 7 mm in dia, glabose, red after ripe. Seed black, curved forming a ring.

Common, along river banks on the bushes. The plant is used to cure fever, dyspepsia, diarrhoea and urinary disease. Flowers: June-December, Fruit: December-January, Locality: Gopiganj. Kasturi Singh 6455.

4. **Tinospora Miers**


A large deciduous, glabrous, climbing succulent shrub. Bark lenticellate, corky, exfoliating in papery peelings. Leaves 5-12 cm long, membranous, broadly ovate, acute or acuminate, base cordate, usually with broad sinuses.
Flowers small, yellow, caduceus in slender axillary racemes or on the naked stem, male flowers fascicles, female solitary. Fruits drupes ovoid, red purple, glutinous, Crimson coloured when ripe. Seed curved reniform.

Common throughout the area especially moist and shady. The stem decoction is given in high fever and decoction with honey in gonorrhea. It is also used in rheumatism, hyperacidity and urinary troubles.


6. NYMPHEACEAE

A. Petiole prickly; flower violet coloured partially submerged. ...................... 1. Euryale

AA. Plants not priekly; flower pink, white or red, floating. .......................... 2. Nymphaea

1. Euryale Salisb.


A densely prickly aquatic herb. Root stock short and thick. Leaves 20-100 cm in diam., orbicular, corrugate, green above, downy and red or purple beneath with strong spiny ribs. Flowers violet coloured, 2.5-5 cm long, partially submerged. Fruit berries, 5-7 cm in diam., nearly rounded, spongy, crowned with the persistant sepals and covoured with stout prickles. Seeds 8-20, globose with pulpy aril.

Frequent in taals, ponds and lakes. The fruits are edible and seeds are eaten after being roasted in hot sand. On roasting seed coat swells and bursts and can easily peeled off. The flower is used as arrowroot; it is nutritious and easily digested. The seeds are also used as tonic diobstruent by local people.

2. **Nymphaea Linn.**

A. Leaves entire or wavy, greenish beneath. .......... 2. *N. stellata*

AA. leaves sharply toothed purplish beneath. .......... 1. *N. nouchali*

1. *Nymphaea nouchali* Burm. F. Fl. Ind.: 120. 1768 – *N. pubescens* willd sp. Pl. 2: 1154. 1799. – *N. lotus* Hook. & Thoms. FBI 1-114. 1872 (non L.); FUGP. 1-34.

An aquatic herb. Leaves 15-30 cm across, floating, sub-sagittate when young, peltate, deeply cordate, irregularly sinuate-dentate, purplish, strongly veined, veins repeatedly bifurcated. Flowers variable in shape and colour, white, blue or red. Fruits globose ripening in the water. Seeds many ovoid.

Common in ponds, tals and depressions along railway tracks. The flowers open in morning and close shortly before noon. The rhizome is used for pile-cure and dysentery.

Local name: Kamal; Flowers and Fruits in September-October; Locality: Bhadohi. Kasturi Singh 6701.


A large floating-herb. Leaves 8-16 cm in diam. Peltate orbicular or elliptic, entire or undulate, cleft at base, blotched with purple beneath, glabrous on both surfaces. Flowers white, blue or purple. Fruit globular. Seeds longitudinally striated.

Common in tals.

Local name: Chhota Kamal; Flower: September-October. Locality: Bhadohi. Kasturi Singh 6704.

7. **NELUMBONACEAE**

*Nelumbo Adans.*

An aquatic herb with milky juice. Stem slender, creeping, rooting at nodes. Leaves 20-60 cm in diam., orbicular, peltate entire, floating and raised above the surface of water. Peduncle and petioles covered with minute prickles. Flower pink or white, solitary, 10-30 cm in diam. Fruiting torus 5-10 cm. across, elongated, obconic, spongy and dry, containing ovoid ripe carpels.

Common in pond, tals and road side deep land filled with water. The rhizome locally known as ‘Bhaser’ used as vegetables and leaves as food plate by village people. Fruit called Kamalgatta used as cooling agent.


8. **PAPAVERACEAE**

*Argemone* L.

A. Flowers yellow, stigma sessile. ………………… 1. *A. Mexicana*

AA. Flower yellowish white, stigma stalked. ……… 2. *A. ochroleuca*


An erect, branched, prickly, annual herb or under shrub, 30-90 cm high with yellow juice. Leaves 8-16 cm long sessile, half-amplexicaul, seneate-pinnatifid; segment spiny. Flowers yellow. Fruits capsules, 2-4 cm long, oblong or elliptical, prickly, dehiscing by valves. Seeds globose, blackish-brown, rugose.

Common along road sides and in harvested fields. The latex is useful in eye troubles. The oil obtained from seeds are used for painting and lighting purposes.


An erect, slender, branched, prickly annual herb or under shrub, 30-90 cm high with yellow juice. Leaves 5-10 cm long, sinuate-pinnatifled, deeply lobed with diffused whitish, capsule 2-4 cm long, oblong or elliptic prickly. Seeds globose, black-brown, rugose.

Abundant along road sides and on waste land associated with *Argemone mexicana* L.


9. **FUMARIACEAE**

*Fumaria* L.

*Fumaria indica* (Hassk) Pugsley in KLS 44:313, 1919


A diffused, much branched, glaucous annual herb with watery sep. leaves finely divided, segments flat, narrow linear ovate, mucronate, Flower pink, small in lax terminal or leaf opposed racemes. Capsule globose, rigose when dry with two pits at the top.

Common in cultivated field, associated with *Spergula arvensis* L. and *Stellaria media* (L.) Vill. The plant is used as vegetable by local inhabitants.


10. **BRASSICACEAE (Cruciferae nom. alt.)**

A. Prostrate or procumbent herb, fruit indehiscent, seed – 2. ............ 2.

*Coronopus*

AA. Erect herb, fruit dehiscent.
B. Plant hairy, flower whitish yellow with purple veins, fruit ovoid-oblong terete, beaked, seed many, 2-seriate, globose. ………….. 3.

*Eruca*

BB. Plant globrous, flower without purple veins

C. Fruits short, compressed or turged

D. Fruit orbicular tep notched, seed solitary in each shell. …………..

4. *Lepidium*

DD. Fruit obsordate, seeds many, 2-seriate. ………….. 1. *Capsella*

CC. Fruit elongated cylindrical ………………. 5. *Rorippa*

1. **Capsella** Medik. nom. cons.


An erect, glabrous or hairy, branched small annual herb, radical leaves 4-10 cm long, resulate, oblong, acute or oblanceolate, toothed or inciso pinnatified; cauline oblong-lanceolate, auricled. Flowers white, minute in terminal racemes. Fruits triangular or obcordate, glabrous flat. Seeds oblong, punctuate.

Common in cultivated fields. Plant is used as astrigent in diarrhoea.


2. **Coronopus** L. nom. cons.


A prostrate or ascending, slightly hispid annual herb, much branched from the base. Leaves pinnatified; lobes small, obovate, spreading. Flowers
minute, yellow-green in short leaf opposed racemes. Silicula 1-2 mm, separating into 2 indehiscent lobes. Seeds reniform, brown. Growing as weed in sandy and wet cultivated fields.

Flowers and fruits: December – March; Locality: Gopiganj. Kasturi Singh.

3. **Eruca Adans**

*Eruca sativa* Mill. Gard. Dict. N.l. 1768; FBI 1:158; FUGP 1:45.

An erect, hisped, annual herb upto 60 cm in hight. Leaves 7-15 cm long, lyrate-pinnatified; seguments linear-oblong or ovate oblong, the terminal largest, margin sub-entire or coarsely toothed, petioles winged. Flowers whitish yellow. Siliqua-1.5 – 3.5 cm long, ovoid-oblong, smooth, turgid, erect and appressed to stem, beak about half the length of fruit, flat. Seeds numerous, globose, reddish-brown.

Frequent in cultivated fields, associated to *Brassica compestris*.

Local name: Tori; Flowers and fruits: February – April. Locality: Bhadohi. Kasturi Singh. 6102.

4. **Lepidium L.**

*Lepidium sativum* L. Sp. Pl. 644, 1753; FBI 1:159; FUGP 1:47. Pl-I

An erect, glabrous, annual herb upto 40 cm high, lower leaves radical, 1-2 pinnate, upper pinnatified or lobed, often entire. Flowers white, small in long racemes. Fruit silicula- orbicular, deeply notched, 2-seeded. Seed brown brown compressed.

Commonly found as weed in cultivated fields and along road sides. Plant is used as expectoration in asthma cough and bleeding piles. Root is used in secondary syphilis and tenesmus. Seeds after boiling with milk to cause abortion.


An erect, glabrous or hairy, annual herb upto 30 cm high. Leaves 4-11 to 1-3.5 cm, ovate-lanceolate, radical larger, petiolate, pinnatified or lobed, lobes acute, dentate or subentire, acute, base often auricled. Flowers yellow, small in long terminal racemes. Fruit siliqua, 2.4 cm long cylindrical seeds many, ellipsoid, reddish-brown. Rare in moist shady places along streams and “nallah”


11. **CLEOMACEAE**

*Cleome* L. **PB.**

A. Gynophores present; stamens 6 ………………… 1. *C. gynandra*

AA. Gynophore absent; stamens more than 6 :

B. Erect herb; flowers yellow ………………… 2. *C. viscose*


An erect, branched, glandular-pubescent, annual herb with strong foetid smell, 30-60 cm high. Leaves 3-5 foliolate; leaflets 2-6 – 1-2 cm obovate, acute, entire or serrulate; flowers white, solitary in axils of leafy bracts, running into a terminal subcorymbose racemes; androgynophore 2.3 cm long. Capsule 4-8 oblong, viscid-pubescent, striated, seeds mucronste.

Common in gardens, agriculture fields and waste places. It is also useful in scorpion –bite and also as insecticides and pesticides. It is also used as intestinal wormicide and in urinary troubles.

Local name : Safed hur-hur; Flowers & Fruits : July to October; Locality : Gyanpur. Kasturi Singh, 6503.

An erect, glandular-pubescent herb, 15-70 cm high. Leaves 3-5 foliate, leaflets obovate or elliptic oblong, gradually becoming shorter upwards; the floral leaves often subsessile. Flower yellow. Capsule 4-7 cm long.

Common in neglected places and along road sides. It is used as a vesicant and also as carminative stimulant.

Local name: Peela hur-hur; Flowers & Fruits: July to October; Locality: Gyanpur. Kasturi Singh, 6506.

12. **CAPPARACEAE (CAPPARIDACEAE)**

*Capparis* L.

A. Young branches glabrous; Fruit black, 1-seeded ............ 1. *C. sepiaria*

AA. Young branches rusty tomentose; fruit red, many seeded ... 2. *C. zeylanica*


A evergreen, climbing shrub, twigs pubescent. Leaves 2-3 cm long, ovate, elliptic or elliptic-lanceolate, obtuse or acute, glabrous when mature, bright green; stipular spine, recurved. Flowers 0.5-1 cm across, white, sessile or shortly pedunculate umbels; fruit 5 mm in diam. Globose, smooth, black when ripe.

Common in grassland, along margins of gardens and in graveyards.

Flowers: May to August; Fruits: September to December; Locality: Gopiganj. Kasturi Singh, 6401.


A rigid, tall, prickly, climbing shrub, young parts clothed with dense rusty ferrugineous pubescent. Leaves 4-7, 5x 2.5-5 cm, alternate, ovate or
elliptic, mucronate, entire, base cuneate, stipular spined very short, straight. Flowers large, white, changed to red-brown, supra axillary. Fruits 2-3.5 cm in diam., subglobose or globose smooth, bright scarlet when ripe, seeds numerous, embedded in a creamy foetid pulp, subreniform.

Commonly found along railway track, river banks and also climbing on large trees. Upper surface of mature leaves are heavily infected by *Cephalaleuros* forming reddish brown spots or patches.

Local name : Bhagnaha; Flowers : February-June; Fruits : August-October; Locality : Bhadohi. Kasturi Singh, 6106.

13. **FLACUORTIACEAE**

*Flacourtia Commers.*


A small deciduous tree or shrub, armed with axillary thorns. Leaves 2-8 cm long, variable, ovate or sub-orbicular, elliptic-oblong, acute or obtuse, crenate-serrate, glabrous or pubescent. Flowers greenish yellow, small, in short simple or branched, usually tomentoes racemes. Drupes about 8 mm in diam., dark red or black, seeds 8-14, warded rough.

Common along road sides. The wood is used for preparing agricultural implements. Fruits are edible.

Local name : Kankar; Flowers : March-April; Fruits : May-June; Locality : Aurai. Kasturi Singh, 6203.

14. **CARYOPHYLLACEAE**

A. Leaves linear, subulate :

B. Plant glabrous; flowers white ............... 4. *Spergula*
BB. Plants glabrescent; flowers pink .......... 2. *Polycarpacea*

AA. Leaves not as above :

B. Leaves sessile :

C. Plants glandular-pubescent ................. 3. *Silene*

CC. Plants glabrous :

D. Flowers pink; seeds black, reniform ....... 6. *Vaccaria*

DD. Flower white; seeds brown, subreniform .. 1. *Gypsophila*

BB. Leaves petiolate .................................... 5. *Stellaria*

1. *Gypsophila L.*


An erect, diffusely branched herb, leaves 0.5-2.5 cm long, ovate,- lanceolate or linear-lanceolate, acute. Flowers white in many branched, multiflowered panicles. Capsules globose or ovoid. Seeds ovoid, many, brown.

Mostly cultivated as ornamental plants in garden.


2. *Polycarpacea Lamk. nom. cons.*


An erect or decumbent, hoary tomentose, glabrescent, annual herb; branches numerous, dichotomous. Leaves 0.5-2 cm long, opposite or pseudo-verticillate, narrow, linear or subulate, acuminate, acute or obtuse. Flowers white with pinkish tinge, minute in dense, much branched terminal cymes, bract silvery, bristles-pointed. Capsule very small, 3 valved, brown, seeds brown.

Common along river beds, ‘nallah’ and in drying up ditches.

Flowers & fruits : July-November; Locality : Gopiganj. Kasturi Singh, 6504.
3. **Silene L.**

*Silene conioidea* L. *Sp. Pl. 418, 1753; FBI 1:218.*

An erect, glandular-pubescent, annual herb, 15-50 cm high. Leaves 5-10 cm long, narrowly lanceolate. Flower pink, few in terminal panicles. Capsule ovoid. Seeds minute, numerous brown.

Very common in crop field in winter season.


4. **Spergula L.**

*Spergula arvensis* L. *Sp. Pl. 440, 1753; FBI 1:243; FUGP 1:63.*

A diffuse, glabrous, annual herb, leaves 1-5 cm long, in false whorls, linear, subulate spreading, grooved beneath. Flowers white in terminal peduncled, penciled cymes. Capsules ovoid, glabrous, seeds keeled, narrowly winged, granulated or papillose, black.

Common in cultivated fields and garden beds in moist shady condition.


5. **Stellaria L.**


An erect or decumbent, branched, glabrescent annual herb. Leaves 1-4 x 0.7-1.5 cm, ovate, entire, obtuse, base rounded or sub-cordate. Flowers white in axillary cymes. Capsule ovoid, seeds brown, acutely tubercled.

Common in crop field. Garden beds and dried river-beds associated with *Spergula arvensis* L.


6. **Vaccaria Medik.**

A stout, sparingly branched, glabrous, annual herb. Leaves 2-8 cm long, ovate-lanceolate, acute, acuminate, base with rounded auricles. Flower pink in dense terminal corymbs with many small floral leaves. Capsules ovoid or oblong, dehiscent by 4 teeth at apex.

Common weed of wheat and gram fields.

Local name: Bargehua; Flowers & fruits: January-April; Locality: Gopiganj.
Kasturi Singh, 6002.

15. **PORTULACACEAE**

*Portulaca* L.

A. Flowers large & showy:

   Flower multicoloured .................. 3. *P. pipiosa var grandiflora*

AA. Flowers small about 7 mm in diam.:

   B. Flowers yellow:

      C. Leaves obvate .................. 1. *P. oleracea*

      CC. Leaves elliptic ................. 4. *P. quadrifolia*

BB. Flower red ................. 2. *P. parvula*


   A glabrous, sub-succulent, prostrate or ascending annual herb, stem reddish, swollen at nodes. Leaves 0.5-2 cm long, cuneate-oblong or spatulate, rounded or truncate at the apex, succulent. Flower yellow, sessile in terminal head, ovoid, circumsciss. Seeds muricate, black.

   Common weed of waste places, garden bed and river banks. The plant is very good refrigerant and alternative. The leaves are eaten as vegetable.

Local name: Kulfa, Flowers & Fruits: April-September, Locality: Gopiganj.
Kasturi Singh, 6303.

   An ascending or spreading, annual herb, stem much branched, bearing tuft of long hairs in the axils of leaves and partly clothing the internodes. Leaves 5-8 mm long, fleshy, linear, acute. Flower pink, 5-8 mm in diam., terminal. Capsule ovoid, seeds black, minute tubercled.

   Common in garden beds and other moist-shady places.


   A prostrate or ascending, succulent glabrous herb. Leaves 1-1.5 cm long, linear-lanceolate. Flowers rose-purple, pink, red, orange or yellow in terminal, sessile clusters. Capsule ovoid. Seed reniform, tubercled, black.


   A small glabrous, prostrate, annual herb with filiform stem, rooting at nodes. Leaves 0.25-0.75 cm long, opposite, elliptic or ovate-lanceolate, stipular appendage a ring of silvery hairs. Flower yellow surrounded by silky hairs. Capsules conical. Seeds tubercled, grey.

   Common in garden beds.

   Local name : Lonia Flowers & fruits : July-October, Locality : Gyanpur. Kasturi Singh, 6506.
16. TAMARICACEAE

*Tamrix* L.


A shrub or small tree, with long spreading, drooping branches. Leaves minute, scale like, closely appressed, apex obliquely truncate, abruptly acuminate. Flowers pink, in dense cylindrical spike. Capsule about 5 mm long, 3 valved, seed dark brown, comose.

Common along the bank of rivers. The wood is chiefly used as fuel and branches as toothsticks.


17. ELATINACEAE

*Bergia* L.


An erect, decumbent or diffuse hispidulous, annual herb. Leaves 0.7-2 x 0.1-0.8 cm, opposite, sessile, elliptic or oblanceolate, sharply serrulate, acute base cuneate, hispid on both the surfaces; stipules subulate, hairy. Flowers pink, minute, subsessile in dense axillary fascicles. Capsule 5-celled. Seeds many, ovoid.

Common in harvested paddy fields, along ‘nallah’ and on the margin of lake usually associated with *Amminian baccifera* L. to which it resembles in habit and general appearance, but can be differentiated by its hispidulous nature and serrate leaves.

18. DIPTEROCARPACEAE

Shorea Roxb.


A large, semi-deciduous tree, young shoots tuff tomentose. Leaves 10.5-20.8 x 5-11 cm, alternate, ovate or ovate-oblong, glabrous and shining, acuminate base rounded or cordate. Flower yellowish or cream, unilateral on the branches of tomentose, oxillary panicles. Calyx segments enlarged into spathulate wings. Fruits 1-4 cm long, ovoid, acute indehiscent.

Common along road sides. It is an important timber tree. The resin ‘Krayaral’ is used as an ingredient of ointment for skin diseases.

Local name: Sakhoo, Sal; Flowers: March-April; Fruits: May-June; Locality: Bhadohi. Kasturi Singh, 6264.

19. MALVACEAE

A. Tree:

B. Leaves stellately hairy, unisexual, white, small .......... 4. Kydia

BB. Leaves glabrous, flowers bisexual, yellow, large .... 8. Thespesia

AA. Herb or shrub:

B. Epicalyx absent:

C. Mericarps 1 seeded .................. 7. Sida

CC. Mericarps 2 seeded ............... 1. Abutilon

BB. Epicalyx present:

C. Epicalyx – 3:

D. Fruit a capsule ............... 2. Gossypium

E. Leaves lanceolate-oblong; stigma capitulate ...

6. Malvastrum

EE. Leaves orbicular, stigma linear ...... 5. Malva
CC. Epicalyx-5

D. Fruits covered with hooked prickles …… 9. *Urena*

DD. Fruits not as above …………………. 3. *Hibiscus*

1. *Abutilon Gasrtn*

   A. Flowers with crimson centre, mericarp not beaked …… 1. *A. hirtum*

   AA. Flowers without crimson centre, mericarp beaked … 2. *A indicum*


   Wight & Arn. Frodr. 36, 1834; FBI 1:327; FUGP 1:78.

   An erect annual under shrub, covered with minute glandular pubescence, mixed with spreading hairs. Leaves 5-10 cm in diam., orbicular-cordate or ovate cordate, crenate, shortly acuminate, velvety on both sides. Flowers yellow with crimson centre, solitary, axillary, carpels densely stellate-pubescent. Seeds with yellow pubescence.

   Found in waste land near orchards.


   A downy annual undershrub. Leaves 2.5-10 x 2.3-8 cm, orbicular-cordate or ovate-cordate, irregularly dentate stellate pubescent above, finely grey felted and sparsely hairy beneath. Flowers orange-yellow, solitary, axillary. Carpel black at maturity, reniform, shortly beaked, seeds dark brown, minutely stellate-hairy.

   Commonly found in grassland, neglected places around gardens and along river banks. The leaf decoction is taken in bronchitis. It is also used in urinary troubles, piles, etc.

   Local name: Kanghi; Flowers & Fruits: August-December; Locality: Gopiganj. Kasturi Singh, 6602.
2. **Gossypium**

   A. Bracteoles united :

      B. Flowers yellow with purple claw ........ 2. *G. herbaceum*

      BB. Flowers purple ....................... 1. *G. arboreum*

   AA. Bracteoles free, leaves hirsute ............ 3. *G. hirsutum*


   An erect, pilose, shrub. Leaves palmately 5-7 lobed shining green above. Flowers purple or yellow. Capsules oblong-pointed.

   Cultivated in garden for ornamental purpose.


   An erect hairy shrub. Leaves 5-7 lobed, cordate at the base. Flowers large yellow with purple centre. Capsule ovate, pointed.

   Cultivated in garden for ornamental purposes.


3. **Hibiscus** L.

   A. Plants prickly :

      B. Calyx fleshy, red, edible .................. 4. *H. sabdariffa*

      BB. Calyx not as above ...................... 1. *H. cannabinus*

   AA. Plants not prickly :

      B. leaves ovate, glabrous, as above ........ 3. *H. rosasinensis*

      BB. Leaves 5-angled, hairy; flowers pink or white turning red in the evening .................. 2. *H. mutabilis*

An annual or perennial muricated herb. Stem glabrous lower leaves cordate; upper deeply palmated lobed; lobes narrow, serrate, mid nerve glandular beneath; petioles prickly. Capsule globose, pointed bristly. Seed glabrous.

Cultivated for its fiber and is grown on margins of field.


A large, spreading tomentose shrub. Leaves broad ovate, 3-5 lobed, lobes triangular, acute or acuminate. Shallowly crenate-dentate. Flower white or pink. Capsules sub-globose, hirsute.

Cultivated in garden for ornamental purpose.


An evergreen shrub, leaves 7-12 cm long, glabrous, ovate, acute or acuminate, toothed, shining green above and pale beneath. Flower red, yellow, pink.

An ornamental plant cultivated in garden.

Local name: Gurhal; Flowers: Throughout the year; Locality: Gyanpur. Kasturi Singh, 6706.


Erect, glabrous, annual shrub. Stem often reddish, lower leaves undivided, upper palmately 3-5 lobed; lobes dentate or serrate, acuminate.
Flowers yellow with a dark crimson eye, axillary. Capsule ovoid, pointed, shorter than calyx.

Cultivated for its strong, silky fiber.

Local name: Patua; Flowers: August-November; Fruits: January; Locality: Suriyava. Kasturi Singh, 6603.

4. **Kydia Roxb.**


A moderate size, deciduous tree, young plants stellately pubescent, bark grey or pale, rough, exfoliating in long strips; blaze whitish. Leaves 6.15 cm long, rounded or sub-orbicular, cordate or slightly lobed, main nerve 5-7, innermost nerve with large glands at the base on the ventral surface. Flowers white or pink, polygamous in axillary or terminal panicles. Capsule 5 x 5 mm, 3 valved, sub-globose, tomentose, seeds reniform, furrowed, brownish black.

Rarely flowers and fruits. Leaves are applied in casay body-ache. Gopiganj. Kasturi Singh, 6604.

5. **Malva L.**


A small spreading, procumbent, downy, annual herb, leaves 3-5 cm in diam., orbicular, crenate. Flowers yellow in axillary tufts. Carpel winkleled.

Common along road sides.


6. **Malvastrum Gray nom. cons.**

An erect or procumbent, much branched, stout, hairy annual herb or under shrub. Leaves 1.5-7.5 cm long, ovate or oblong-ovate, crenate-serrate, acute. Flowers yellow, solitary. Carpels 8-12, reniform, hispid on the top and with 3 projecting points.

A common shrub growing in fruit orchards and along river banks.


7. **Sida L.**

A. Procumbent or trailing herb ………………… 3. *S. cordata*

AA. Erect herbs or under shrubs :

B. pedicles jointed above the middle :

C. Plant yellowish green, leaves lanceolate …. 1. *S. acuta*

CC. Plant purplish green, leaves rhomboid or obovate …… 5. *S. rhombifolia*

BB. Pedicles jointed near the apex :

C. Stipules in form of spiny tubercles, flower white …… 2. *S. alba*

CC. Stipules not as above, flowers yellow ……… 4. *S. cordifolia*


An erect, branched, annual herb or under shrub. Branches sparsely stellate hairy. Leaves 2-8 cm long, lanceolate or lanceolate-oblong, serrate, acute, base rounded, glabrous, pale beneath. Flowers pale-yellow, axillary, solitary or in pairs; pedicles jointed about the middle, mericarp on seeded.

Common in grasslands associated with *Malvastrum coromandelianum* (L.) Gareke and *Peristrophe bicalyculatus* (Refs.) Nees. Leaf juice is effective in removing worms and also in snake bite.
Local name : Bariar; Flowers & Fruits ; August-November; Locality : Gyanpur. Kasturi Singh, 6605.


   A small, erect, much branched, stellately-hairy, annual shrub or under shrub. Two recurved spine tubercles present below the petioles. Leaves 1.3-2.5 cm long, ovate or elliptic-ovate, crenate-serrate, acute or obtuse, base subcordate, rounded or truncate, glabrous above, finely stellate pubscent beneath; peduncles jointed near the top. Flowers white. Seed smooth.

   Common in bushes and along road sides.


   A procumbent or trailing much branched hairy, perennial herb or under shrub. Leaves 1.5-5 x 1.5-4.5 cm, ovate, acute or acuminate, crenate-serrate, base cordate. Flowers yellow, pedicles jointed a little above the middle.

   Common in grasslands, along margines of road sides.


   An erect, much branched, under shrub with grey, long spreading and stellate hairs. Leaves 1.75-6 x 1.75-5.5 cm, ovate or ovate-orbicular, acute or obtuse, base cordate, flowers yellow, axillary, solitary or few; peduncle jointed near the apex. Ripe carpel 7-10, strongly reticulate.

   Common along road sides.

5. **Sida rhombifolia** L. Sp. Pl. :684, 1753; FBI 1:323; FUGP 1:76.

An erect, small, hairy undershrub. Leaves 2-5 x 1-2.5 cm, rhomboid-lanceolate, acute, margine entire or dentate-serrate above, glabrous or slightly hairy above, stellate hairy beneath. Flowers yellow or white, carpel 10 with short or long beaks.

Common in grasslands.


8. **Thespesia Soland. excorr. Nom. com.**


A small or moderate sized tree, bark ashy-grey, blaze yellowish. Leaves 5-10 cm long, ovate-cordate, acuminate, entire, with a glandular pore between the nerves. Flowers yellow with purple throat, axillary. Fruits globose woody.

Cultivated in gardens and along road sides.


9. **Urena L.**

*Urena lobata* (L.) Sp. Pl. 692, 1753; FBI 1:329; FUGP 1:80.

A stout, erect, stellate-pubescent under shrub upto 1 meter high. Leaves 4-10 x 3-8 cm, sub-orbicular, 5-7 lobed or angled, hairy on both surfaces, with glands on the three median nerves beneath at the base. Flowers pink in axillary clusters. Carpels 5, covered with hooked bristles, stellately hairy. Seeds dark-brown, smooth, wedge-shaped.

Common in grasslands, along road sides.

20. **BOMBACACEAE**

*Bombax L.*


A large, deciduous tree, base of stem buttressed, branches in whorls. Leaves digitate, glabrous, leaflet 5-7, petiolate, acuminate, base acute, polar beneath. Flower large, bright red, clustered towards the end of branches on short thick pedicles, before the leaves. Capsule 10-15.5 cm long, oblong, 5-angled, downy, seeds numerous, smooth covered with much fine silky fibre.

Cultivated in gardens and parks for cotton fibre.

Local name : Semal; Flowers : February-March; Fruits : April-May; Locality : Gyanpur. Kasturi Singh, 6107.

21. **STERCULIACEAE**

A. Tree; seeds winged ......................... 3. *Pterospermum*

AA. Herb; seeds not winged :

B. Flowers red, solitary, axillary ........ 2. *Pentapetes*

BB. Flowers pinkish-white in terminal clusters .......... 1. *Melochia*

1. **Melochia L.**

*Melochia corchorifolia* L. *Sp. Pl. 675, 1753; FBI 1:374; FUGP 1:100.*

Pl-XXX

A small, erect or procumbent, stout, branched, glabrous annual herb or under shrub. Leaves 1.25-10 x 1-4 cm, ovate, oblong-ovate, serrate, acute, base rounded or truncate. Flowers pinkish white, subsessile, densely crowded in terminal or axillary clusters, intermixed with many hairy bracteoles. Capsule about 0.4 cm long, depressed, globose, sparingly hairy. Seeds dark grey, angular.
Common along paddy fields and nullah.


2. **Pentapetes L.**

*Pentapetes phoenicea* L. Sp. Pl. 698, 1753; FBI 1:371; FUGP 1:99. Pl-XXXI

A small, branched, glabrous, annual herb or under shrub. Leaves 2.5-10 cm long, linear-lanceolate or hastate-lanceolate, strongly crenate-serrate, glabrous above, stellate-hairy of the veins beneath. Flower scarlet, solitary or in pairs on very short peduncles; pedicels jointed near the top. Capsule sub-globose, shorter than the persistant sepals. Seeds angular, rough, blackish brown.

Commonly found in paddy field along ‘nullah’ and tals.


3. **Pterospermum Schreb.**


A large evergreen tree, young part covered with rusty, stellate tomentose, leaves large, deeply cordate or peltate, sinuately lobed, glabrous above, grey tomentose beneath. Flowers 10-12 cm long, white, fragrant, solitary axillary. Capsules 5-angled, woody rusty tomentose. Seeds obliquely oval, compressed, winged.

Planted in garden for sweet-scented flowers.


22. **TILIACEAE**

A. Herbs or under shrub; fruit capsular:
B. Leaves lobed ........................................ 1. Corchorus

AA. Shrub or small tree, fruit drupaceous ........... 2. Grewia

1. Corchorus L.

A. Capsule depressed-globose, muricate ............. 2. C. capsularis

AA. Capsule elongated, glabrous:

B. Capsule winged, seed brown ..................... 1. C. aestuans

BB. Capsule not winged, seed black:

C. Capsule 0.5-1.2 cm long, hairy ...... 3. C. fascicularis

CC. Capsule 2.5-6 cm long, glabrous ... 4. C. olitorius


   An erect or ascending, branched, annual herb. Leaves 2.8 x 1.5-5 cm, ovate, serrate, acute, base rounded. Flower yellow, axillary. Capsules 1.5-3 cm long, 6-angled, out of six, 3 angles winged, beak 3-fied. Seeds dark brown, truncate.

   Abundant along road side and in grasslands. Seeds are used in stomach disease and in pneumonia.


   An erect, branched, glabrous herb upto 1.2 m tall. Leaves 5-10 x 1.5-3.2 cm, ovate-lanceolate, acute or acuminate, serrate, base rounded, the lowers serrature on each side usually prolonged into filiform appendages, stipules filiform, as long as petioles. Flowers yellow in leaf opposed short cymes. Capsule 1.25 cm in diam., subglobose, depressed at the apex, muricate, 5-valved. Seed brown.
Common along agriculture field. Infusion of leaves help in relieving stomach; fever and liver disorder. The jute fibre obtained used for making ropes.


An erect or decumbent, much branched, glabrous annual herb. Leaves 1.5-4 x 0.3-0.7 cm, elliptic lanceolate or oblong lanceolate, serrate, acute or obtuse, base-rounded or cuneate, glabrous. Flowers yellow subsessile in leaf opposed fascicles. Capsules 0.5-1.2 x 0.1-0.2 cm, straight, cylindric, 3 valved, shortly beaked, hairy, seed trigonous, black.

Frequent in low lying areas, along road sides.

Local name : Laungra; Flowers & Fruits : August-November; Locality : Gopiganj. Kasturi Singh,


Erect, much branched, glabrous, annual undershrub. Leaves 2.5x1.2 x2-6 cm, ovate-lanceolate or elliptic lanceolate, acute or acuminate, serrate, the lower serrature on each side prolonged into a filiform appendage, base sub acute or rounded. Flowers pale yellow. Capsules 2.5-6 cm long, cylindric, 10 ribbed, beaked, glabrous, 5-valved, with transverse partitions between the seeds, seeds black, trigonous.

Frequent in moist shady places. Leaves are used as tonic.


2. *Grewia* L.

A small or medium sized deciduous tree. Leaves 7.8-13 x 5-9.5 cm, obliquely ovate, sub-orbicular or elliptic, oblong, acuminate, serrate, base rounded, sub-glabrous above, white, tomentose beneath. Flowers yellow in densely crowded axillary cymes. Drupe 8 mm in diam., globose, dark brown.

Rare or few plants seen in Chauri region. Leaves are used as application to pustular eruption. Fruits used as cooling agent.

Local name: Phalsa; Flowers: April-June; Fruits: July-September; Locality: Bhadohi. Kasturi Singh.

3. *Triumfetta* L.


A erect, branched annual herb or under shrub with terete, violet branches. Leaves 2.5-8 x 1-7 cm, lower suborbicular or 3-5 lobed, base rounded, upper rhomboid or ovate-lanceolate, narrowed at both sides, irregularly toothed, sparsely stellately hairy. Flowers yellow in dense axillary or terminal cymes. Fruits 3-5 x 2-4 mm, ellipsoid, spiny or bristly, indehiscent. Seeds 1-2 in each cell.

Common in cultivated fields, grassland and sloppy margin of railway line and roads.


23. MALPIGHIACEAE

*Hiptage* Gaertn

An evergreen climbing shrub. Leaves 7-15 x 3-7 cm, ovate or elliptic-lanceolate, entire, acuminate, base pale beneath. Flowers white, yellow in the centre, axillary. Fruits winged.

Planted in gardens. Leaves are useful in chronic rheumatism, skin diseases and asthma. Juice of leaves is used as insecticide.


24. **ZYGOPHYLLACEAE**

*Tribulus* L.


An annual, prostrate or procumbent herb, clothed with silky hairs. Leaves paripinnate, leaflet 4-6 pairs, 0.5-1.5 cm long, subequal, oblong, entire, mucronate, base oblique. Flowers yellow, axillary or pseudaxillary, solitary. Fruits schizocarpic, breaking in 4-6 woody cocci, each with two, hard, sharp, divaricated spines. Seeds many in each cocci.

Commonly found in grassland, elevated mounds, road sides. The infusion of the fruit is useful in gout and in urinary troubles. Fruits are cooling agent, the tonic, decoction of fruit is also taken in sexual weakness by local people.

Local name : Gokhroo; Flowers & Fruits : July-December; Locality : common along road side Gopiganj. Kasturi Singh, 6513.

25. **AVERRHOACEAE**

*Averrhoa* L.


A medium sized tree with close drooping branches, leavesimparipinnate leaflet 5-11, ovate, oblong, acuminate, entire, base oblique, glabrous. Flower pink, in short axillary racemes, fruits oblong, actually angled, yellow or grey seed arillate.
Commonly planted in garden for its fruits. Dried fruits are cooling agent, used in fever.
Local name: Amarakh; Flowers: June-September; Fruits: September-October; Locality: Gyanpur. Kasturi Singh, 6458.

26. **OXALIDACEAE**

A. Prostrate herb (with or without stem), leaves pinnately 3 foliolate ….. 2. *Oxalis*

AA. Erect, herb, leaves pinnately compound, crowded at the apices of aerial stem. ……………….. 1. *Biophytum*

1. **Biophytum DC**


A small, erect, unbranched, hispid, pubescent, annual herb upto 20 cm high. Leaves 2-10 cm long, pinnate, crowded into a rosette on the top of the stem; leaflets 0.25-1 cm long, opposite, 6-15 pairs, sessile, oblong or oblong ovate, apiculate, base oblique or truncate. Flowers yellow, on 10 cm long, hispid, peduncle. Capsules about 0.5 cm long, ellipsoid, apiculate, 5-grooved. Seeds few, ovoid, transversely striated.

Common in grassland, moist and shady places. Leaves are diuretic. Powded seeds are applied to wounds.

2. **Oxalis L.**

A. Plants smaller, flowers yellow. …………………….. 1. *O. corniculata*

AA. Plants longer, flowers violet. …………………….. 2. *O. corymbosa*


A slender, annual, diffuse or creeping with procumbent branches, pubescent, rooting at the nodes. Leaves subsessile, broader than long,
obcordate, entire, base acute or cuneate. Flowers yellow, axillary, subumbellate. Capsules 1-2.5 cm long, linear oblong, 5-angled, shortly beaked, tomentose, seeds deep brown, transversely ribbed.

Commonly found in large patches along nullah, moist and shady places, garden beds and agriculture fields.

The leaves on chewing give sour taste. The extract of leaf is often used as remedy for Jaundice by local people.

Local name: Tinpatia; Flowers & Fruits: November-June; Locality: Gyanpur. Kasturi Singh, 6902.


Perennial, acaulescent herb with scaly, bulbous root stock. Leaves palmately trifoliolate, radical; leaflets 2-3.5 cm in diam, broadly abcordate, entire, cuneate at the base. Flowers pink in umbeliform 6-10 flowered cymes.

Common in waste places near garden.


27. **RUTACEAE**

A. Armed shrubs or trees:

B. Rachis winged, leaflets dark green. ............... 2. *Feronia*

BB. Rachis not winged, leaflets yellowish green. .. 1. *Aegle*

AA. Unarmed shrubs or trees:

B. Leaflets 1-7; styles persistant, not articulated. ............... 2. *Glycosmis*

BB. Leaflets 9-25; styles deciduous, articulated at the base. .. 1. *Murraya*
1. *Aegle Correa nom. cons.*

*Aegle marmelos* (L.) Corea in TLS 5:223, 1800; FBI 1:516; FUGP 1:134-
*Crataeva marmelos* L. Sp. Pl. 444, 1753.

A medium sized deciduous tree armed with sharp straight axillary spines up to 2.5 cm long. Leaves alternate, 3-foliate, 4-7 cm long, ovate or ovate-lanceolate, crenate, acuminate, glabrous, terminal long petioled, lateral nearly sessile. Flowers greenish white, sweet scented in short lateral pubescent panicles. Fruit stony, 5-20 cm in diam., globose, yellow when ripe. Seeds many, embedded in a clear mucilage and yellow or orange, sweet aromatic pulp.

The fresh juice of leaves mixed with honey is used as mild laxative in fever. Fruit pulp is used in chronic diarrhoea & syphilis.

Local name: Bel; Flowers & Fruits: March-May; Locality: Gyanpur. Kasturi Singh, 6206.

2. *Feronia Lorrea*


A medium sized, deciduous tree with strong, straight, axillary spines. Leaves imparipinnate; rachis flat winged, jointed, leaflets 5-7 sessile or short petiolate 2-5 cm long, cuneate or obovate, glabrous, coriaceous, stiff, entire, apex rounded or emarginated. Flowers pale green, linged with red in globose, pubescent panicles. Fruits 5-9 cm in diam, globose, hard, woody, grey coloured. Seeds in an edible pulp.

Frequent along slopy margines of railway lines and few plants were seen planted near villages.

The acidic pulp is eaten by children. The pulp is applied externally as a remedy for bites of venomous insects and reptiles.

3.  *Glycosmis Correa.*

*Glycosmis pentophylla* DC. Prodr. 1:538, 1824; FBI 1:499; FUGP 1:127.

An evergreen unarmed shrub or tree. Leaves pinnate, leaflets 1-5, shortly petiolate, 5-18 x 2-5 cm, elliptic or oblong, crenulate, acute or acuminate, base acute or cuneate, dark green, glabrous above, pale beneath. Flower small white, fragrant, in axillary or terminal, erect pubescent panicles. Berries 6-12 mm across, globose, bluish white or pinkish, 1-seeded.

Rare found in shade, stem and twigs are used as tooth sticks. Roots pounded and mixed with sugar in low fever.

Local name: Ban nibu; Flowers & Fruits: almost throughout the year; Locality: Suriyava. Kasturi Singh, 6403.

4.  *Murraya Koen. ex. L.*

A.  Leaflets 9-25, glossy dark green, serrate, pubescent, berries black.  
…… 1. *M. koenigii*

AA.  Leaflets 3-9, not glossy, yellow-green, entire, berries red.  
…… 2. *M. paniculata*

*Berkera koenigii* L. Mant. 1:565, 1767.

A small, deciduous, strongly scented pubescent tree. Leaves 30 cm long, leaflets 9-25, 2-6x1-3 cm, ovate or lanceolate, irregularly crenulate, acuminate, dark green, pubescent beneath. Flowers white, fragrant in terminal corymbose panicles. Berries 0.5-1 cm in diam., ovoid, rugose, apiculate, black when ripe, seeds 2.
Common along margin of garden, forest, roadsides and in grassland. The fresh leaves are used to flavour curries.

Local name: Kathnim; Flowers: April-May; Fruits: April-July; Locality: Gyanpur. Kasturi Singh, 6305.


A handsome, evergreen shrub or small tree. Leaves 7.5-18 cm long, leaflets 3-9, 2.5-7.5 cm long, rhomboid or elliptic-lanceolate, base oblique, entire or obscurely crenulate. Flowers white, in terminal and axillary corymbs. Berries ovoid, red or orange when ripe, usually 2-seeded.

Planted in gardens for its beautiful fragrant flower and also as hedge plant.


28. **SIMAROUBACEAE**

*Alianthus* Desf. Nom. cons.


A large, deciduous tree. Bark ashy white, blaze yellowish. Leaves pinnate crowded at the end of branches, leaflets 8-14 pairs, 8-12 x 3-4.5 cm, nearly opposite, ovate, acuminate, base oblique, coarsely toothed. Flower greenish yellow small, in large lax much branched panicles. Fruit samara 3-5 together 6x1.3 cm, lanceolate, reddish brown when ripe, twisted at the base. Seeds compressed.

Common in area and also along road sides. The fruits remain attached for a long time.
Bark and leaves are used as tonic especially in debility after child birth.


29. MELIACEAE

A. Leaflets entire; fruit capsular. ............... 3. Toona

AA. Leaflets serrate; fruit drupaceous :

B. leaves unipinnate, flower white, fruit ovoid-oblong. .... 1.
   Azadirachta

   BB. Leaves bipinnate, flower purple; fruit globular. ...... 2. Melia

1. Azadirachta A. Juss.


A moderate sized, deciduous tree. Leaves imparipinnate, 20-35 cm long, crowded near the ends of branches; leaflets 9-18, subopposite, shortly petiolate, 2-10 x 1-3.5 cm, lanceolate, base oblique, glabrous. Flower white, fragrant numerous large axillary panicles. Fruit drupe, 1.5 cm long, 1-celled, 1-seeded, ovoid-oblong, smooth, greenish yellow when ripe.

Tender twigs are used as tooth sticks, bark is powdered and poultice is applied on cuts & wounds. Leaves are placed besides patient in small pox by local inhabitants.

Local name : Neem; Flowers : March-May; Fruits : May-July; Locality : Road side in Gyanpur and Bhadohi. Kasturi Singh, 6207.

2. Melia L.

Melia azedarach L. Sp. Pl. 384, 1753; FBI 1:544, FUGP 1:141.

A medium sized, deciduous tree. Leaves bipinnate, occasionally 3-pinnate; leaflets 2.5-7.5 cm long, serrate, ovate or lanceolate, acuminate, base
oblique, glabrous. Flowers lilac-blue and purple, fragrant in lax panicle of cymes. Ovary 5-celled, drupe globose, yellow and wrinkled at maturity, 1-seeded.

Planted in garden, villages for its foliage and flowers. Flowers and leaves applied as poultice to relieve nervous headaches. Seeds are used in rheumatism. Fruits contain a poisonous constituent, used in leprosy and scrofula.

Local name: Bakain; Flowers: March-April; Fruits: November-December; Locality: Aurai. Kasturi Singh,

3. **Toona Roem.**


A large handsome, deciduous tree with dense spreading crown. Leaves paripinnate; leaflets 5-20, subopposite, 5-15 x 2-5.5 cm, ovate-lanceolate, entirely or slightly undulate, acuminate, base oblique, glabrous. Flower cream-coloured, scented, in large much branched drooping panicles. Capsules about 2 cm long, oblong, smooth, dark brown. Seeds reddish –brown with membranous wings of either end.

Common along road sides and garden. Bark is applied on ulcer externally.


30. **CELASTRACEAE**

*Celastrus L.*


A large deciduous climbing shrub with pendulous branches. Leaves 5-11 x 3-6.5 cm, alternate, elliptic-ovate, abruptly short acuminate or retuse, base
acute, glabrous on both surfaces. Flowers yellowish-green in terminal panicle, unisexual, dioecious, capsule 5-1 cm in diam., globose, orange coloured at maturity. Seeds 3-6, black, enclosed in scarlet axil.

Frequent in moist places in bushes. Bark is abortice. Seeds are bitter used in rheumatism, leprosy and paralysis. Oil from seed is used in beri-beri.


31. RHAMNACEAE

A. Scandent shrub, fruit dry winged ................. 1. Ventilago

AA. Shrub or small tree, fruits drupaceous not winged .... 2. Zizyphus

1. Ventilago


A large, woody climber, young part pubescent. Leaves 5-11 x 3-4 cm, alternate, elliptic-ovate, crenulate, acute or acuminate, base rounded or acute, glabrous. Flowers small, greenish, in large spreading and drooping, leaflets, pubescent, terminal panicles. Nut 5 mm in diam., subglobose, yellowish, supported by persistant calyx in form of disc at the base; wing 3.5-5 cm long, linear-oblong, rounded at the apex.

Common along river banks, also found climbing on large tree. Leaves are found infected with fungus *Synchytrium* causing rolling of leaves from the margin.


2. Zizyphus Mill.

A. Spine 1

B. Climbing shrub .................. 3. *Z. oenoplia*
BB. Erect shrub ............... 4. Z. rugosus

AA. Spines 2

B. Leaves glabrous above .......... 1. Z. mauritiana
BB. Leaves pubescent above ........ 2. Z. nummularia


A moderate-sized, deciduous tree or under tree; young part tomentose. Leaves 2.5-7 x 2-3.5 cm, elliptic-oblong or ovate, serrulate, obtuse or acute, base oblique or rounded, glabrous above, buff-tomentose beneath; stipular spines-2, straight and hooked. Flowers greenish-yellow in short axillary fascicles or cymes. Drupe about 1.5 cm in diam., globose, fleshy, yellow or red.

Frequent in grassland and along road side, often cultivated. The fruits are largely eaten and considered to purify the blood and aid digestion. Root decoction is used in fever and powder for treatment of old wounds and ulcers.

Local name : Ber; Flowers : September-November; Fruits : November-March; Locality : Chauri-Bhadohi. Kasturi Singh, 6710.


A small, thorny, tomentose, bushy shrub. Leaves 3-4.5 x 1.8-3 cm, alternate, orbicular or ovate, spinous-dentate, obtuse, base acute or slightly rounded, dark green and shining, pubescent above, rusty-tomentose beneath; stipular spines 2, one straight and other short, hooked. Flowers greenish-yellow in axillary short compact cymes. Drupes 8 mm in diam., globose, glabrous, red or black.

Abundant in grasslands on slopy margins of railway tracts. The leaves are used as fodder for goats, sheeps. The fruits are acidic in taste eaten by children.

Local name : Jharber; Flowers : May-September; Fruits : October-November; Locality : Suriyava. Kasturi Singh, 6405.

A straggling or climbing, armed shrub. Leaves 2-5.5 x 2-2.5 cm, ovate-lanceolate, entire or minutely denticulate, acute or sub-acuminate, base very oblique, glabrous above, silky beneath, stipular spine-1, stout hooked. Flower green in short axillary, dichotomous, densely pubescent cymes. Drupe above 5 mm in diam., ovoid, black and shining when ripe.

Common in moist localities on slopy margin of railway tracts. Root and bark decoction is used to heal fresh wounds. Fruit is used as ingradient of pills for stomach pain.

Local name: jharber; Flower: April-July; Fruits: September-December; Locality: Bhadohi. Kasturi Singh, 6307.


A medium-sized, straggling, tree, often climbing young branches rusty-tomentose. Leaves 5-12 x 3-7 cm, ovate or elliptic, denticulate, subacute, base oblique or sub-cordate, dark-green and glabrous above, grey and rusty-tomentose beneath. Spines short, single, very stout, recurved. Flowers green in axillary or terminal panicles. Drupe about 1 cm in diam., globose or pisiform, fleshy, white when ripe.

Rarely found in gardens but cultivated.

Local name: Sita-ber; Flower: March-May; Fruits: April-June; Locality: Gyanpur. Kasturi Singh, 6210.

32. **VITACEAE**

A. Leaves simple: flowers pentamorous.

B. Leaves 3-7 lobed, fruits 2-3 seeded …………. 1. *Ampelocissus*

BB. Leaves not lobed, fruits 1 seeded …………. 3. *Cissus*
AA. Leaves compound, 3-foliolate, flowers tetrmerous ….. 2. *Caryratia*

1. *Ampelocissus* Planch


A weak, hollow stem, glabrous climber. Tendrils long, forked, often flower bearing. Leaves 5-8 x 5-10 cm, suborbicular, 3-7 angled or lobed, unequally. Sharply repanddentate, base cordate, tomentose when young; flowers deep reddish-brown, in compact, compound, pyramidal panicked cyme on short thick pedicles. Berry globose, black 2-3 seeded. Seeds with rugose margins and linear tubercles on back, bluntly ridged on face.

Common along river banks, along margins of roads and in bushes. Roots are applied to wounds.

Local name : Panibel; Flowers : July-September; Fruits : September; Locality : Gopiganj. Kasturi Singh, 6514.


A large herbaceous climber, stem angular, pubescent when young, woody at the base. Tendrils slender, leaf opposed, branched, ending in adhesive disks. Leaves 3-foliolate, leaflet 1.5-9 x 0.8-3.5 cm, ovate, elliptic, acute or obtuse, crenate or less pubescent on both sides. Flowers greenish white in trichotomous compound leaf-opposed cymes. Dry globose-ovoid 2-4 seeded. Seeds triangular, round on back, wedge-shaped on the face.

Common throughout the area, climbing on trees, old walls.

Local name : Imiriti; Flowers : July-September; Fruits : August-November; Locality : Aurai. Kasturi Singh, 6515.
3. **Cissus L.**

A. Stem quadrangular; leaves entire; tendril simple. … 2. *C. quadrangulares*

AA. Stem cylindrical, leaves bristly-serrate; tendril forked. .. 1. *C. adnata*


A large woody climbing shrub, young parts densely pubescent and quadrangular. Tendril slender, forked. Leaves 5.5-18 x 3-11 cm, broadly ovate, bristly-serrate, acuminate, cordate, glabrous above, rusty tomentose beneath. Flowers greenish yellow in leaf-opposed, peduncled, dense compound umbellate cymes. Berries 6 mm in diam., obovoid or sub-globose, glabrous, apiculate, black when ripe, seed one.

Common in moist localities. Slopy margin of railway line and road side.

Decoction of tubers are supposed to be blood purifier.

Local name: Siraua; Flowers: November-January; Fruits: February-March; Locality: Gopiganj. Kasturi Singh, 6904.


Straggling or climbing herb. Stem succulent, quadrangular, angles slightly winged, nodes much constricted. Leaves 3-5 x 2-4 cm, alternate, ovate or reniform, acute or scuminate, base cordate. Flowers white in axillary umbellated cymes. Berries ovoid, apiculate, reddish brown, seeds smooth.

Cultivated as ornamental plant in garden.

33. LEEACEAE

Leea L.


An erect, branched, deciduous shrub upto 1m high, leaves imparpinnate, leaflet 5-7, 6.5-1.4 x 2.5 x 5 cm, elliptic, acuminate, cordate or rounded at the base, dentate, flowers dull-white in trichotomously branched, pubescent cyme. Berries about 1 cm in diam., depress globose black.

Common in moist shady places, along the bank of rivers.

Flowers : July-September; Fruits : October-December; Locality : Gopiganj. Kasturi Singh, 6516.

34. SAPINDACEAE

A. Climbing herb ......................... 1. Cardiospermum

AA. Shrubs or trees

B. Leaves pinnate

C. Margin emarginated .......... 4. Sapindus

CC. Margin acute ................. 5. Schleichera

BB. Leaves simple

C. Fruits winged ................. 2. Dodonea

CC. Fruits not winged ............ 3. Nephalium

1. Cardiospermum L.


A glabrescent, trailing or climbing stem and branches striated. Leaves alternate, termately pinnate, each with three leaflets, the central one is longest; leaflets lanceolate, linciso serrate, acute, base narrowed. Flowers white, small,
few in axillary umbellate cymes with a pair of opposite closely twisted, spring
like tendril below the cymes. Capsule trigonous, bladder-like winged at the
angles. Seed globose, smooth black with white, heart-shaped arils.

Common in moist and shady places on bushes. Plants are used in
rheumatism and snake bite. The root is said to be emetic, laxative and
stomachic.

Local name : Kali gugahi; Flowers & Fruits : August-March; Locality :

2. **Dodonea L.**

*Dodonea viscosa* (L.) Jacq. Enum. Pl. Carib. 19, 1760; FBI 1:697; FUGP

An evergreen shrub or small tree branches angular, young part more or
less viscid with yellow reginous exudation. Leaves alternate, simple, elliptic,
ob lanceolate, acute or emarginated or apiculate base cuneately alternate,
glabrous and shining green. Flower greenish yellow in short terminal panicles
with racemose branches. Capsules membranous, skeptical, 2-4 valved each
valve broadly winged on the backe, yellowish-brown. Seeds black.

Common, cultivated in gardens as hedge plant also found as an escape
in waste lands.

Local name : Vilayati Mehndi; Flowers : August-February; Fruits : February-
March; Locality : Gyanpur. Kasturi Singh, 6615.

3. **Nephalium L.**

1:887. – *Dimocarpus litchi* Lour. Fl. Cochin, 1:233, 1790. – *Litchi chinensis*

A small, spreading, evergreen tree. Leaves alternate, paripinnate; leaflets
2-5 pairs, 5-12 cm long, oblong-elliptic lanceolate, entire, acuminate, base
cuneate, coriaceous, glabrous, shining green above, glaucous beneath. Flowers small, in rusty, pubescent, terminal panicles. Fruits globose, covered with pointed tubercles, red when ripe. 1-seeded, seeds brown, elliptic or oblong, glossy, arillate, aril white, translucent, delicious.

Cultivated for its delicious fruits. Leaves are used to cure bites of animals.


4. **Sapindus L.**


A medium sized, evergreen tree. Leaves alternate, paripinnate; leaflets 2-3 pairs, 3.5-15 cm long, terminal pair usually largest, elliptic oblong or ovate, obovate, entire, apex emarginated, base cuneate, glabrous above, hairy beneath. Flowers whitish, in terminal panicles. Fruits glabrescent on maturity-brown. Seeds black, ovoid.

Rare, planted in gardens for its dense crown and sapanaceous fruits.


4. **Schleichera Willd.**


It is common growing in dense plantation area. The inflorescence is recommended in snake bite by local people.

35. **ANACARDIACEAE**

A. Leaves simple

B. Stamens 1 or 2 ……………………… 3. *Mangifera*

BB. Stamens more than 2

C. Drupe on a fleshy receptacle .... 4. *Semecarpus*

CC. Drupe not a fleshy receptacle .. 1. *Buchanania*

AA. Leaves compound

B. leaflets with intramarginal veins ……. 5. *Spondias*

BB. Leaflet without intramarginal veins. .. 2. *Lannea*


A small or medium sized tree, leaves alternate, 8-20 x 3-10 cm, elliptic oblong, obtuse, coreaceous, flowers small yellowish white, bisexual, drupe about 1.2 cm in diam., globose, black when ripe. Stone hard celled. Seeds biconvex.


A large, moderate-sized, deciduous tree, young parts stellate tomentose. Leaves 25-40 cm long, unparipinnate, crowded at the ends of branches; leaflets
3-15, opposite, 4.5-12 x 2.7 cm, ovate or ovate-oblong, entire, acuminate base, oblique, glabrous on both surfaces, shining above, pale beneath. Flowers greenish-yellow, small, diaceous, tetramerous, almost sessile, clustered and forming numerous simple usually drooping racemes, the male in thick branches. Drupes 8-15 mm long, reniform, compressed, red when ripe. Seed 1.

The bark decoction is used in body swelling and pain by local people.

Local name : Jigna; Flowers : March-April; Fruits : April-June; Locality : Aurai. Kasturi Singh, 6212.

3. **Mangifera L.**

*Mangifera indica* L. *Sp. Pl. 200, 1753*; *FBI 2:13*; *FUGP 1:176*.

A large or moderate sized, glabrous, deciduous tree. Leaves 8.5-25 x 3.5-8 cm, simple, alternate, dark green, shining, coriaceous, crowded at the end of branches, oblong lanceolate, entire or wavy, acute or acuminate, base acute. Flowers yellow-green, fragrant, in terminal, pubescent panicles. Drupe 4-15 cm long, fleshy, yellowish when ripe. Seed 1, hard, fibrous, white.

Extensively cultivated throughout the area. The wood is used as fuel and furniture. ‘Panna’ a preparation of unripe fruit pulp sold in local market working against heat stroke during summer.


4. **Semicarpus L. f.**

*Semicarpus anacardium* L. *f. Suppl. 182, 1781*; *FBI 2:30*; *FUGP 1:176*.

A small or medium sized tree, young part tomentose, leaves 10-40 x 4.5-16 cm, alternate, simple, coriaceous, crowded at the end of branches, obovate, oblong, entire, acute or rounded, base rounded or cuneate, glabrous above, ashy-tomentose beneath. Flower greenish-white, small, dioecious, fascicled in pubescent panicles. Drupe 3 x 1.5 cm, oblique oval or oblong, compressed, shining, black when ripe, seated on an orange coloured fleshy receptacle.
Common in border of Distt. Mirzapur. Juice of fruits used by washermen as marking ink.


5. **Spondias L.**


A small or medium sized, deciduous tree. Leaves 32-64 cm long, alternate, imparipinnate, leaflets 7-11, 1-20 x 3.5-10 cm, opposite, short petioled, oblong or elliptic-oblong, entire, acuminate, base oblique or cuneate, shining green above, pale beneath, glabrous. Flowers greenish-white, small sessile, scented in terminal spreading panicles. Drupes about 4 cm long, ovoid or oblong, fleshy, yellow when ripe, pulamen cavernous, fibrous outside. Seeds 1-3 only 1 perfect.

Common orchard plant in area. The mature leaves turn yellow before falling. The flower appears, the tree is nude. The unripe acidic fruits are used to make pickles and sauce. The bark and pulp of fruit is used in treatment of dysentery.

Local name: Amra; Flowers: March-April; Fruits: May-August; Locality: in orchards. Kasturi Singh, 6213.

36. **MORINGACEAE**


A small or medium sized tree. Bark brown blaze white, branches long, robust. Leaves tripinnate, rachis thickened, articulated at the base, leaflets 6-9 pairs, 1.2-2.5 x 0.6-1.2 cm, the laterals elliptic, the terminal obovate larger.
Description of the Flora

Flowers white in large puberulous, spreading panicles. Capsule 30-45 cm long, trigonous, strongly 9-ribbed. Seeds 3-angled with a wing at each. Common throughout area often planted in villages for its fruits which is used in vegetable. Pouliche of young leaves with leaves of *Vitex negundo*, *Adhatoda vasica*, *Melia azadarach* are used in internal swelling. The gum with milk is taken for the cure of headache.


37. **FABACEAE (PAPILIONACEAE)**

A. Leaves simple

B. Pods jointed ................. 3. *Alysicarpus*

BB. Pods not jointed ............. 17. *Psoralia*

AA. Leaves compound

B. Trees

C. Leaflet 5.3; Flowered

D. Stem and branches armed with pricles, pod many seeded ........................................ 10. *Erythrina*

DD. Stem and branches unarmed, pod 1 seeded ..... 5. *Butea*

CC. Leaflets 5-5

D. Leaflets alternate .......... 8. *Dalbergia*

DD. Leaflets opposite .......... 16. *Pongamia*

BB. Herbs

C. Leaves simple or compound

D. Stamens monadelphous ...... 7. *Crotalaria*
Description of the Flora

DD. Stamens diadelphous
   E. Bract foliaceous .......... 9. Desmodium
   EE. Bract not foliaceous .... 11. Indigofera

CC. Leaves compound
   D. Leaflets 2
      E. Rachis winged ending in
         a tendril .................. 12. Lathyrus
      EE. Rachis not winged and not
           Ending in a tendril ...... 23. Zornia
   DD. Leaflet 3
      E. Leaflet serrate or dentate;
         Erect or prostrate herbs
      F. Pods sub-globose .......... 14. Melilotus
      FF. Pods spirally twisted or
           or reniform ............... 13. Medicago
      EE. Leaflets entire, climber or twinner
         F. Stamens monoadelphous .... 21. Teramnus
         FF. Stamens diadelphous
         G. Pods clothed with
            Irritating hairs... .. 15. Mucuna
         GG. Pods not clothed with
            Irritating hairs
         H. Pods silky hairs ........ 4. Atylosia
Description of the Flora

HH. Pods glabrous … 18.

Rhyncosia

DDD. Leaflets more than 3

E. Leaves paripinnate

F. Pod short, climber…. 1. Abrus

FF. Pod long, shrub

or small tree …………. 19. Sesbania

EE. Leaves imparipinnate

F. Climber ……………. 6. Clitoria

FF. Under shrub or herb

G. Leaf rachis ending

in a tendril …… 22. Vicia

GG. Leaf rachis not ending

in a tendril

H. Leaflets 7-19

….. 20. Tephrosea

HH. Leaflets more than 19

……… 2. Aeschynomene

1. Abrus L.

Abras precatorious L. Syst.:472.1767; FBI 2:175; FUGP 1:241.

A branched, deciduous, nearly glabrous, woody twiners. Leaves 3.9-9 cm long, paripinnate, leaflets 8-20 pairs, 7-16.7 x 2.5 mm, opposite, ligulate-oblong, entire, minutely apiculate, glabrous above, thinly silky beneath. Flowers pin or dull white coloured. Crowded in many flowered racemes.
Pod 2-4 x 0.8-1.5 cm, turgid, oblong, apex truncate with sharp deflexed beak, finely silky, 4-6 seeded. Seeds bright scarlet with black hilum, globose, smooth.

Common, on bushes. The roots are given to relieve cough. Seeds are used as tonic and aphrodisiac. It is also said to be strong pugative and absorbicicient.

Local name: Ratti, Ghumci; Flowers: August-October; Fruits: Winter season; Locality: Aurai. Kasturi Singh, 6616.

2. *Aeschynomene L.*

*Aeschynomene indica* L. sp. Pl. 713.1753; FBi 2:151; FUGP 1:249.

A much branched, glabrous herb. Leaves 1.5-7 cm long, leaflets 3, sessile, sub-opposite, linear-oblong, entire, obtuse, apiculate, thin; flowers yellow in axillary racemes, pods 1.5-4.5 x 0.3-0.5 cm, linear-oblong, jointed, flattened. Seeds 5-9, reniform, yellowish green.

Common, in paddy fields and ditches. The pith is used for making artificial flowers.

Local name: Khukhuri; Flowers & Fruits: July-November; Locality: Suriyava. Kasturi Singh, 6517.


A. Leaves blotched ...................... 2. *A. longifolius*

AA. Leaves not blotched

B. Pods beaded ....................... 3. *A. monilifer*

BB. Pods not beaded

C. Pods exerted, tetragonous ....... 4. *A. tetragonalobus*

CC. Pods included, not tetragonous .. 1. *A. glumaceus*

   An erect, branched, hairy annual herb. Leaves 2.5-8 x 1-2 cm, simple, oblong, obtuse, apiculate, subcordate at the base, slightly puberulous, subcoriaceous. Flower pinkish, in dense terminal spicate racemes. Pod 9-10 mm long, included in calyx, transversely rugose, black.

   Found on moist, sandy places on the margin of puddles along railway track and road sides.


   A short, erect, hairy or glabrous herb upto 1.5 m tall. Leaves 2-6 x 0.4-1 cm, oblong-lanceolate, entire, acuminate base rounded for sub-cordate, glabrous and blotched above, paler and hairy on the nerves beneath, stipules scarious, lanceolate, acuminate. Flower greenish-brown in long densely spicate racemes. Pod 0.4-1.2 cm long, apiculate, moniform, joints 2-6, indehiscent.

   Common in grassland associated with *Crotolaria ferruginea* Grah. *Cassia tora* L.


   A prostrate, much branched, glabrous herb. Leaves 0.5-2 x 0.4-1.2 cm oblong, obtuse, base rounded or sub-cordate, entire, glabrous. Flower pink, usually in pairs on spike-like loose racemes. Pod 0.6-1.6 cm long, distinctly
moniliform, joints 2-6, segment sub-globose, densely clothed with short hooked hairs. Seeds cylindric, yellowish-brown.

Common in grassland associated with *Desmodium triflorum* Wall and *Volvulopsis nummularia* (L.) Roberty.

Local name: Juhighas; Flowers & Fruits: September-November; Locality: Gyanpur. Kasturi Singh, 6712.


A procumbent, slender, sparsely hairy annual herb. Leaves 1-2 x 0.5-0.8 cm, oblong orbicular, obtuse, base cordate, hairy on the nerves beneath. Flower purple in lax racemes. Pods 0.5-1.0 cm long, exserted, quadrangular, moniliform, joints 2-6 transversely plicate, glabrous.

Found in orchard in shady and moist situation.


A slender, copiously branched, pubescent grey-green, twining or trailing annual herb. Leaves 3-foliolate, leaflets 1-4 x 0.7-2 cm, ovate oblong, elliptic ovate, entire, sub-acute or obtuse, base oblique, thinly grey-conescent above, paler and densely pubescent beneath, lateral leaflets small, sessile. Flower yellow in axillary racemes. Pods 1.3-2.5 x 0.5-0.8 cm, oblong, apiculate covered with brown, spreading, silky hairs, deep obliquely-transverse lines between the seeds. Seeds 3-6, grey-brown, 0.3 cm long, strophiolate.

Common, during rainy season in grassland.

5. **Butea** Roxb. nom. cona.


A small or medium sized, deciduous tree, young part tomentose or downy. Leaves 3-foliolate, stipellate, leaflets coriaceous, the terminal 13.5x20x13-14 cm, rhomboid or broadly ovate, the laterals 12-16 x 7-11 cm, obliquely ovet sub-sessile. Flowers bright orange-red fascicled into dense racemes on leaflets branch. Pods 10-16 x 4-5 cm, pendulous silky tomentose, seed 1, oval dark-brown flat.

Frequent throughout the area associated with *Pongamia pinnata* (L.) Pierre and *Streblus asperlour*. Leaves locally used for making plates. Bark is used in snake-bite. Gum is astringent. Seeds are laxative and anthelmintic. Leaves and flowers are tonic, aphrodisiac and diuretic.

Local name: Palas, Tesu, Ihak; Flowers: March-April; Fruits: May-July; Locality: Gopiganj. Kasturi Singh, 6214.

6. **Clitoria** L.

*Clitoria ternatia* L. Sp. Pl. 753, FBI 2:208; FUGP 1:212.

A slender, twinning, annual herb. Leaves imparipinnate, leaflets 5-7, opposite, 1.5-5 x 0.9-2.7 cm, stipulate, flattened, sharply beaked, sparsely appressed hairy. Seeds 6-10, yellowish-brown, smooth.

Common climbing on shrubs and small trees. Fresh root has an acrid, bitter taste and is aperients, laxative and diuretic. Seeds have a powerful cathartic.

Description of the Flora

7. *Crotalaria*

A. Leaves simple

B. Herb

C. Prostrate ......................... 5. *C. prostrate*

CC. Erect

D. Stipules decurrent as a persistant Wing to the branches ....... 1. *C. bialata*

DD. Stipules not as above

E. Calyx leathery, covered with long, dark brown hairs; fruits inclosed; seeds yellow.... 2. *C. calycina*

BB. shrub

C. Pods hairy, leaves elliptic, oblong or linear, Seeds brown. ......................... 3. *C. juncea*

CC. Pods glabrous, leaves obovate

D. Leaves acute at the apex, apiculate; Bracts large, foliaceous, seeds black Shining ......................... 7. *C. spectabilis*

DD. Leaves retuse or emarginated at the apex; bract minute; seed yellowish brown ......................... 6. *C. retusa*

AA. Leaves 3-foliolate

B. Leaflets truncate at the apex, 1-nerved, pod globose seeds-2, dull brown ......................... 4. *C. medicaginia*

   An erect or sub-erect, annual herb. Stem and leaf silky-pubescent. Leaves 5-8 cm long, simple, sub-sessile obovate, ovate-oblong, obtuse, stipules with lanceolate decurrent wings on the whole length of the internodes. Flower pale yellow, 2-3 on elongate racemes. Pods 2.5-3 cm long, glabrous. Seed 30-40.

   Found along bank of river, under shady situation.


2. **Crotalaria calycina** Schrank, Fl. Rar. Mort. Monae. tab. 12, 1819; FBI 2:72; FUGP 1:188.

   An erect or decumbent annual herb, much-branched from the base, clothed with brown selky-hairs. Leaves 2-6 x 0.6-1.5 cm, simple subsessible, oblong, lanceolate, entire, acute or obtuse, glabrous above, obscurely silky beneath, flowers in lax terminal racemes. Calyx covered with long blackish, silky hairs, Pods sessile dark brown linear oblong, glabrous, minutely beaked, enveloped by calyx, seeds about 25, black, shining, reniform.

   Frequent in grass land on dry, sandy soils.


3. **Crotolaria juncea** L. Sp,Pl. 714.1753; FBI2; 79; FVG1 :190.

   A tall, branched, densely hairy, stiff shrub. Leaves 3.5 -7.5 cm long, linear or linear- oblong, entire, obtuse, apiculate, clothed with appressed silky, shining hairs on both sides, stipules absent or very minute. Flowers in terminal or lateral lax racemes. Pods 3-4 cm long, sessile, silky-hairy. Seed-10- 15, black shining.

   Cultivated for its fiber. Seeds are used for purifying the blood.
Local name: Sanai; Flowers and Fruits: October –November; Locality – Suriyava. Kasturi Singh, 6804.


   A small, erect, silky, branched herb with woody base. Leaves 3-foliolate, Sub-sessile, oblanceolate, emerginate, glabrous above, obscurely silky beneath. Flowers many, terminal, axillary or leaf-opposed racemes. Pods 5x5 mm, obliquely sub-globose, sparingly silky. Seeds 2, brown.

   Very frequent, in grassland during rainy season associated with *Cassia tora* L. and *Tephrosia hamiltoni* JR Drumm.

Local name: Gulab; Flowers & Fruits: July-November; Locality: Gyanpur. Kasturi Singh, 6518.


   A prostrate, hairy, annual herb. Leaves 0.9-2.5 x 0.4-1.4 cm, simple, sub-sessile, oblong-ovate, obtuse, hairy on both sides. Flowers 2-4 in terminal or leaf-opposite racemes. Pods 1.2 cm long, linear-oblong, glabrous, shortly stipitate. Seeds 12-20, black, shining, reniform.

   Common in grassland under shade.


   An erect, branched, robust, glabrous or appressedly pubescent, annual under shrub. Leaves 3.5-10x1-2 cm, oblanceolate, obtuse or retuse, entire, glabrous above, silky pubescent beneath. Flowers yellow in many flowered racemes. Pods 2-3.5 cm long, oblong, turgid, black at maturity. Seeds 15-20, yellowish-brown, glabrous, shining.
Description of the Flora

Found along the bank of rivers and in cropfields.


A tall, silky-pubescent, bright green shrub, branches striated. Leaves simple, sub-sessile, 3.5-16.5x0.7-6.5 cm, obovate, obtuse, acute, apiculate, glabrous above, finely silky beneath, lateral nerves 7-18 pairs, stipules large persistent, leafy. Flowers in long terminal racemes, standard tinged with purple. Bracts foliaceous, ovate, acuminate, persistent. Pod 2.5-6x0.5-1.7 cm, oblong, apiculate, stipitate, glabrous. Seeds 20-30, reniform, black.

Found in grassland associated with *Zizyphus oenoplea* Mill., *Acacia fernesiana* Wall.


8. *Dalbergia L.*


A large, deciduous tree. Leaves imparipinnate, leaflets 3-5, alternate, distant, 2-5x1.5-4.5 cm, terminal largest, sub-orbicular, entire, abruptly acuminate, base cuneat, glabrescent, petiolules 0.5-1.5 cm long, glandular at the base, stipules coducous. Flowers yellowish-white in short axillary panicles. Stamens 9, monoadelphous. Pods 3-6x0.7-1 cm, strap-shaped, pale brown, long stalked, apiculate, cuneate at the base, seeds 1-3, dark brown.

Common along road sides. Wood is used for furniture.

Local name: Shisham; Flowers: March-April; Fruits: August; Ripen during winter season. Locality: Bhadohi. Kasturi Singh, 6215.

A. Leaves simple

B. Petioles with broad wing ................. 6. *D. triquatum*

BB. Petioles not winged

C. Leaves elliptic, oblong, rounded or subcordate
   at the base, glabrescent above ..... 1. *D. gangeticum*

CC. Leaves ovate, truncate at the base,
   Scabrous above ....................... 7. *D. velutinum*

AA. Leaves 3-foliolate

B. Prostrate or procumbent herb

C. Leaflets obovate, emarginated at the apex,
   glabrous ............................. 5. *D. triflorum*

CC. Leaflets elliptic, oblong, obtuse at the apex,
   Hairy ................................. 2. *D. heterocaroon*

BB. Erect herb or under shrub

C. Leaflets glabrous, bracts foliaceous concealing
   the flowers .......................... 3. *D. putchellum*

CC. Leaflets white-silky, bracts not
   Foliaceous ............................ 4. *D. triangulare*

1. *Desmodium gangeticum* (L.) DC. Prodr. 2:327, 1825; FBI 2:168;

   An erect or decumbent under shrub. Leaves 2.5-13x1-7 cm, simple,
   ovate or ovate-elliptic, acute, base rounded or sub-cordate, glabrous above,
   thinly clothed with a depressed grey hairs beneath. Flowers white or pink,
fascicled in lax terminal or axillary racemes. Pods 1.5-2.5x0.3 cm, curved, 6-8 jointed, glabrescent or clothed with minute hooked hairs.

Frequent in shady and moist situation associated with *Cassia tora* L., *Crotalaria calycina* Scharank.

Local name: SAlpan; Flowers & Fruits: July-March; Locality: Gyanpur. Kasturi Singh, 6519.


A procumbent under shrub with woody slender slightly angular, tomentose branches. Leaves 3-foliolate; leaflets 3-7x1.6-3.4 cm, terminal in largest, ovate oblong obovate, rounded, obtuse, base cuneate glabrous above, pale-thinly, silky beneath, laterals are smaller; stipules 0.8-1.5 cm long, subulate persistant. Flowers pink in dense, terminal and axillary subsessile racemes; bract ovate-cupidate, small, ciliate with white hairs. Pod 1.25-2.5x0.2-9.5 cm, brown, ciliate on both margins, joints 5-8.

Frequent in moist, sandy-shady places associated with *Moghains prostrate* Mukerjee.

Flowers: August-October; Fruits: September-November; Locality: Gopiganj. Kasturi Singh, 6619.


An erect shrub upto 2 m tall, branches slander, terete, finally grey pubescent. Leaves 3-foliolate; petiole 1-2 cm long, leaflet 2-11x1.2-5 cm, ovate-elliptic, obtuse, coriaceous, glabrous, terminal the largest, margin-unulate, apex obtuse or sub-acute, finally-downy and paler beneath, lateral nerves 7 pairs petiolules 0.2-2 cm long. Flowers small, white or pale yellow, 2-
6 in terminal and axillary clusters, concealed by a pair of orbicular leafy bracts placed to the back, 0.7-1.2 cm across. Pods 3-6 cm long, brown apiculate, joints 1-2.

Found along river bank associated with Desmodium gangeticum (L.) DC.

Local name: Gheopatti; Flowers & Fruits: October-February; Locality: Jangiganj. Kasturi Singh, 6806.


An erects or decumbent shrub upto 2m high; branches triquetrous, zig-zag, white-silky; stipules scabrous, bristles pointed, persistant. Leaflets 3-14x1.5-7.5 cm, elliptic-obleng or elliptic-lanceolate, entire, acuminate, base cuneate, glabrous above, grey-silky beneath, lateral nerves 10-16 pairs, petiolules 0.4-2 cm long, stipules filiform. Flowers dull white or pale yellow in dense axillary short peduncled umbels; bract linear-subulate, ciliate. Pods 0.8-2x0.2-0.4 cm, slightly curved, apiculate, indented on both sutures. Silky; joints 2-6, as long as broad.

Common in moist and shady places.


A slender, much branched, trailing or prostrate perennial herb. Leaves 3-foliolate, stipules linear, persistant. Leaflets 4-7x4-7 mm, the terminal longer, ovate, entire, truncate or emerginate, base cuneate. Flower pink or purple or white 1-3 fascicled in the axil of the leaves. Pods 1-1.5x0.3 cm, curved, flat, joints 3-5, as broad as long. Seeds brown.

Common in grassland.
Local name: Tripatiya; Flowers & Fruits: October-February; Locality: Gyanpur. Kasturi Singh, 6808.


An erect shrub with grooved, triangular, glabrescent branches. Leaves 1-foliolate, 7-20x3-5 cm, narrowly oblong lanceolate, acute, base rounded or subcordate, glabrous, green above, hairy on nerves beneath lateral nerves 15-20 pairs; petiole about 1 cm long, closely parallel veined, persistant. Flowers violet, about 1 cm long, in axillary and terminal racemes. Calyx campanulate slightly hairy. Pods sessile, 2-5 cm long, glabrous or hairy, thin, joints 6-8, nearly quadrangular more or less trigose with adpressed hairs.

Rare, found along ganga rive-bank associated to *Desmodium tringulare* (Retz.) Merr.


An erect under shrub upto 1.5 cm high; branches terete, tough, densely brown-tomentose. Leaves simple, 4.5-8.5x4.5-6.5 cm, ovate, coriceous, margin fulvous-ciliate or repand, apex mucronate, base truncate or subcordate, scabrous above, densely clothed with soft, brown hairs beneath, lateral nerves 6-7 pairs, petioles 1.3-2 cm long, densely hairy. Flowers purple or pink in axillary and terminal spicate racemes; bract minute, linear-subulate, hairy. Pods 1-2.5x0.3 cm, deeply idented on lower suture, joints 3-5, clothed with hooked hairs.

Common in region attached to Mirzapur.

10. **Erythrina**


A moderate sized deciduous tree, branches with black, straight, conical pickles, bark smooth, yellowish or grey-greenish, exfoliating in papery flocks; blez rhomboid-ovate, entire, acute or acuminate, base rounded glabrous above, pubescent beneath, lateral nerves 4-6 pairs. Flower red in dense racemes, 10-20 cm long arranged in few-flowered clusters along the tomentose rachis. Pod thick, 15-30 cm long, black, 6-8 seeded. Seeds large, sub-reniform, dark red.

Planted in garden for ornamental purposes.


11. **Indigofera**

A. Leaves simple

B. Leaves linear-lanceolate; pods globose;

Seed-1, brown ................................. 3. *I. linifolia*

BB. Leaves broadly ovate-cordate; pods cylindric;

Seeds-2, yellow .............................. 1. *I. cordifolia*

AA. Leaves compound

B. Plant prostrate; leaflets alternate or sub-opposite

Seeds-2 ........................................ 4. *I. Lai*

BB. Plant erect, leaflets opposite; Seeds more than 2

C. Pods hairy, 4-angled; seeds 4-6 ....... 2. *I. astragalina*

CC. Pods glabrous, cylindrical

Seeds 8-12 ................................. 5. *I. tinctoria*

   A much branched, diffuse loosely pubescent (with long white hairs) annual herb. Leaves 1-1x0.5-0.7 cm, alternate, sub-sessile, ovate, entire, obtuse, mucromate cordate, obscurely downy above, densely below. Flowers 4-8 in dense nearly sessile head. corolla not exserted. Pod about 5 mm long, oblong, terete, apiculate. Seeds-2, ovate, truncate at the end, yellow.


   An erect or suberect, annual herb upto 1m high. Stem clothed with short, spreading, grey hairs. Leaflets 5-11, opposite, 2-4.5x1-2 cm, obovate, membranous, densely clothed with appressed hairs, subacute or obtuse, apiculate, base acute, grey-green above, glaucous beneath. Flowers many, crowded in peduncled racemes. Pods 0.8-2x0.25-0.4 cm, straight, 4-angular, densely pubescent, deflexed. Seeds 6-8.

   Common in moist places, associated with *Cassia tora* L.


   A prostrate or procumbent, much branched, silvery-hairy, annual herb. Leaves 0.5-2x0.3-0.5 cm, simple, alternate, subsessile, linear or linear-oblout, entire, apex acute, apiculate, silvery racemes. Pods 2x2 mm., globose, apiculate, silvery-white. Seeds 1, shining brown.
Common in grassland in association with *Crotalaria prostrate* Rotti.

Local name: Neel; Flowers & Fruits: July-November; Locality: Suriyava. Kasturi Singh, 6522.


A trailing, much branched, tufted, pubescent, annual or biennial herb. Leaves odd-pinnate, leaflets 5-9, sessile, sub-opposite or alternate, 0.4-1x0.1-0.4 cm, oblanceolate, mucronate, retuse. Flower red, 10-20, in dense, spicate, sessile or shortly peduncled head. Pods 5x2 mm, cylindrical, oblong, thinly hoary, apiculate, seeds-2.

Common in grassland on the slopes of elevated grounds.


An erect, branched, annual, shrub or under shrub, thinly clothed with appressed silvery-hairs. Leaves odd-pinnate; leaflets 7-13, opposite, sub-sessile, 1-2x0.4-1.2 cm, obovate, entire, apiculate, sparsely hairy beneath, turning black when dry. Flowers in axillary spicate racemes. Pods 1.5-3x0.1-0.2 cm, linear, glabrescent, apiculate, brown, deflexed. Seeds 8-10.

Common in waste fields associated with *Tephrosea hemiltoni* J.R. Drum.


12. *Lathyrus*

A. Stem winged; leaflets-2; flowers purple or blue … 2. *L. sativus*

AA. Stem not winged

B. Leaflets absent; flower yellow ………………… 1. *L. aphaca*

BB. Leaflets-2; flower red …………………… 3. *L. sphaercus*

A slender herb with much branched, wingless stem. Stipules modified into a pair of leaves, appressed to the stem, about 3 cm long, hastate, truncate, entire, leaflets abortive. Flowers yellow, 1-2 cm, long peduncle. Pod linear, oblone, wingless & 4-6 seeded.

Common in winter season crop fields.


A glabrous, prostrate, much branched, slender herb with winged stem. Leaves ending in 3-fid tendrils. Stipules broad, entire, foliaceous, auricular at the base. Leaflets 2, opposite, 2-6 cm long, linear-lanceolate, entire, acuminate. Flowers blue, solitary, axillary. Pod glabrous, 2-4x1-1.5 cm with conspicuous wing on either side of dorsal suture. Seeds 2-4, compressed.

Frequent in winter season crop field.


3. *Lathyrus sphaercus*

13. *Medicago*

A. Pods reniform, smooth, black, seeds-1 ………… 1. *M. lupuline*

AA. Pods spirally twisted, covered with two rows of hooked spines, brown, seeds more than 1 ……………………………………… 2. *M. polymorpha*


A trailing or procumbent herb with finely downy stems. Leaves 3-foliate, leaflets 0.3-1x0.3-0.9 cm, obovate, faintly incise crenate, slightly retuse, apiculate, base deltoid. Flowers minute, yellow, 10-20 in dense axillary head. pods 1-3x1-3 mm, subglobose, glabrous, faintly veined longitudinally, indehiscent, turning black when mature. Seed 1.
Common in winter season cropfields.


A prostrate, subglabrous, much-branched herb. Petioles 2-4 cm long. Stipules laciniate. Leaflets 0-2x0.4-1.6 cm, obovate-cuneate, retuse, mucronate. Flowers yellow, 2-6 umbelled. Pod spirally twisted in 2-4 coils with 2 rows of hooked spines along the outer margins. Seeds 4-8, yellowish.

Common in winter season crop fields in association with *Medicago lupulina* L. and *Lathyrus sativus* L.


14. *Melilotus*

A. Flowers yellow, pod 1-seeded .................. 2. *M. indica*

AA. Flowers white, pod 1-2 seeded .................. 1. *M. alba*


Erect annual herb, 30-6 cm high. Leaves pinnately 3-foliolate; leaflets 0.4-1.2 cm long, obovate or oblanceolate, retuse, entire or distantly serrulate. Flowers white in long racemes. Pods about 3 mm long. Seeds 1-2, brown.

Common in winter season crop fields.

Local name : Ban Methi; Flowers & Fruits : December-April; Locality : Gyanpur. Kasturi Singh, 6959.


A slender annual herb, 30-45 cm high, leaves pinnately 3-foliolate; leaflets 1.2-2 cm long, oblanceolate or obovate, rounded, truncate or retuse,
toothed. Flowers yellow in axillary racemes. Pods about 2.5 mm long, glabrous, seed 1.

Common in winter season crop fields associated with *M. alba* Desv.


15. **Mucuna Adans. nom. cons.**


A slender twiner of climbing annual herb, branches with few appressed hairs. Leaves 3-foliolate, stipules lanceolate, petioles about 9 cm long; leaflets 4.5-8.5x2.4 cm, membranous ovate-rhomboid, entire, mucrunate, base cuneate or truncate, green, glabrescent above, finely grey silky beneath. Flowers short peduncled, purple in dense dropping racemes. Pods 3.7x1-1.5 cm, turgid, densely shining, pale-brown, covered with irritating, persistent bristles, black shining.

Frequently climbing on bushes and small trees. The pods are beautifully coloured but the moment they are touched, an irritating sensation begins which lasts for two minutes. The root is useful in paralysis. Seeds along with black pepper are used as vermifuse.

Local name : Kewanch; Flowers & Fruits : September-April; Locality : Suriyava. Kasturi Singh, 6716.

16. **Pongamia Vent. Nom cons.**


A moderate sized, evergreen tree, black grayish green, smooth, blaze yellowish green, aromatic. Leaves 10-20 cm long, imparipinnate; leaflets 5-7, opposite, 5-12x3.5-7.5 cm, ovate or oblong, woody, glabrous, brownish green,
with a short decurved beak. Seeds 1-2, reniform, whitish, marked with brownish lines.

Found along the bank of rivers at the boundary of Mirzapur district. Seed oil is used in treatment of skin diseases and rheumatism. The twigs are largely used as tooth sticks by local inhabitants, specially in bleeding gum.

Local name: Dithore; Flower: February-April; Fruits: May-June; Locality: Jangiganj. Kasturi Singh, 6113.

17. *Psoralea* L.

*Psoralea corylifolia* L. Sp. Pl. 764, 1753; FBI 2:103; FUGP 1:222.

An erect sparsely hairy annual herb, upto 1m high. Leaves 4-6x2-4 cm, alternate, simple, broad ovate or orbicular, repand-toothed, gland dofted. Flowers purple in axillary, long, peduncled heads. Pods oblong or ovoid, closely pitted, black. Seed 1, small.

Common in crop field and in waste field.


*Rhynchosia minima* (L.) DC. Prodr. 2:385, 1825; FBI 2:233; FUGP 1:204.


A twinning, annual herb. Stem slender, angled, glabrescent leaves 3-foliolate, leaflets 0.6-2.5x0.4-2.2 cm, rhomboid-ovate, entire, membranous, obtuse, apiculate, base cuneate or dentoid, nearly of quite glabrescent. Flowers yellow, 6-12, short, peduncled, in axillary racemes. Pod 0.8-1.5x0.5 cm, oblong-lanceolate, glabrescent, turged, marked with very delicate close transverse veins, terminated by hooked base of style, laxypilose. Seeds 2, brown, mottled with black.

Common in grassland and along railway tracts.


A. Branches and rachis prickly; flower yellow ….. 1. *S. bispinosa*

AA. Branches and rachis not prickly;

B. Flowers white or deep red ....................... 2. *S. grandiflora*

BB. Flowers yellow or black ...................... 3. *S. sesban*


A large, erect, annual shrub, branches and rachis muricate. Leaves 15-30 cm long; leaflets 20-52 pairs, 0.4-1.2 cm long, linear-oblong, entire, glabrous, obtuse, mucronate, base acute. Flowers yellow, 3-6 in axillary drooping racemes. Pods 12-25 cm long, straight, falcate, sub-monilifer, beaked, glabrous.

Common during rain in grassland, waste land and sugar cane field.

Local name : Jayanti; Flowers & Fruits : August-October; Locality : Suriyava. Kasturi Singh, 6624.


A soft-wooded under tree with spreading branches. Leaves paripinnate; leaflets 10-30 pairs, 2-2.5 cm long, elliptic, oblong, obtuse and emarginated. Flowers white or deep red in lax 2-4 flowered racemes. Pods 30-50 cm long, slender, twisted or falcate.

Cultivated for its flowers and used as vegetable.

Local name : August; Flowers & Fruits : October-February; Locality : Suriyava. Kasturi Singh, 6807.
Syn. 2:316, 1807; FBI 2:114; FUGP 1:224.

An unarmed, large, annual shrub. Leaves 6-12 cm long; leaflets 10-20 pairs, 1.5-2.5 cm long, linear-oblong, entire, glabrous, apiculate, base cuneate or acute. Flowers yellow, black, purple, 6-10 in axillary, pendulous, racemes. Pods 15-25 cm long, twisted, turulose, beaked. Seeds 20-30.

Common along road sides. Fibers are used for making ropes.


20. *Tephrosea*

A. Pods minutely whitish pubescent .................. *T. hamiltonia*

AA. Pods densely covered with long brown hairs ... *T. villosa*


An erect, much branched, glabrescent perennial herb. Leaflets 7-19, opposite, 1-2x0.4-1 cm, obovate or oblanceolate, obtuse, retuse or mucronate, base cuneate, entire, green, glabrescent above, glaucous, obscurely silky beneath. Flowers red or purple, in leaf-opposed racemes. Pods 2-5x0.3-0.6 cm, flattened, slightly curved, beaked thinly pubescent. Seeds 4-8.

Abundant in grassland and along road sides. A decoction of leaves and pods are said to be useful in relieving fever.

Local name: Srphunka; Flowers & Fruits: July-December; Locality: Gyanpur. Kasturi Singh, 6521.

An erect, much branched, spreading, hirsute annual herb, upto 60 cm high. Leaves imparipinnate; leaflets 13-17, opposite, 0.7-1.3 cm long, obovate-oblong, rounded, mucronate, base cuneate, minutely pubescent on both surfaces. Flowers reddish pink, in terminal and leaf-opposed racemes. Pods 3-5 cm long, flat or slightly cylindrical, curved, densely covered with long brown hairs. Seeds 5-6, orbicular-ovoid, dull brown.

Often found in grassland.


21. *Teramnus*


A slender, spreading, twining or climbing annual herb with few appressed hairs on the stem. Leaves 3-foliolate, leaflets 3-6x1.5-2.5 cm, ovate-oblong, entire, subacute, apiculate, base rounded or acute, green, glabrescent above, grey and more hairy beneath. Flowers pinkish or reddish, small in axillary racemes. Pods 3-7x0.3-0.4 cm, linear, recurved, glabrous. Seeds 8-12, oblong, dark brown.

Common in grassland associated with *Passiflora foetida* L. and *Rhynchosia minima* DC.


22. *Vicia* L.

A. Pods 2-seeded, flower dull-white .......................... 1. *V. hirsute*

AA. Pods more than 2 seeded, flowers reddish blue … 2. *V. sativa*

   Slender, hairy, erect or trailing annual herb. Leaflets 5-8 pairs, 1-2.5x0.2-0.3 cm, sessile, subopposite, linear or linear-oblong, entire, truncate, apiculate. Flowers dull white, 2-6 on a slender, axillary, peduncle. Pods 5-10 mm long, oblong, turgid, hairy, finally black. Seeds 2.

   Common in winter season crop fields.


   A slender, sub-erect, annual herb with glabrous or obscurely downy, angular stem. Leaflets 6-12 pairs, 1-3x0.2-0.4 cm, linear or oblong, apex retuse or truncate. Flowers reddish blue, solitary or in pairs. Pods 2.5-5 cm long, linear, flat. Seeds 8-10, sub-globose.

   Commonly found in winter season crop field.


23. **Zornia** J.P. Gmel.


   A prostrate, branched, glabrous annual herb. Leaves 2-foliolate; glabrous, entire, acute, apiculate, linear-lanceolate, base unequal. Flowers yellow concealed by foliaceous, fringed bracts in axillary spicate racemes. Pods 0.4-1.5 cm long, compressed, brown, minutely prickly. Seeds 2-6, Kidney-shaped, smooth, glabrous, dark-purple.

   Common in grassland associated with *Alysicarps monilifer* DC and *Desmodium triflorum* DC.
Flowers & Fruit: August-October; Locality: Gyanpur. Kasturi Singh, 6626.

38. **CAESALPINIACEAE**

A. Leaves simple, deeply 1-2 lobed

B. Shrubs or trees .......................... 1. *Bauhinia*

AA. Leaves compound

B. Leaves unipinnate

C. Petals absent; calyx petaloid .......... 8. *Saraca*

CC. Petals present; calyx not petaloid

D. Petals-3; fertile stamens 3 ... ... 9. *Tamarindus*

DD. Petals-5; fertile stamens 5-10 ... 3. *Cassia*

BB. Leaves bipinnate

C. Leaves rachis ending into spine;

Rachilla long, flat, bearing numerous small leaflets; fruit moniliform ............ 5. *Parkinsonia*

CC. Leaf rachis and rachill not as above

Fruit not moniliform

D. Planted armed, climbing ........... 2. *Caesalpinia*

DD. Plant not armed, not climbing

E. Shrub, flower orange

Red or yellow ............ 7. *Poinciana*

EE. Tree

F. Flowers yellow ... 6. *Peltophorum*

FF. Flowers orange-

Red, seeds many ... 4. *Delonix*
1. **Bauhinia L.**

A. Leaflets connate to the apex; fertile stamens 3 ..... 2. *B. retusa*

AA. Leaves deeply cleft

B. Calyx spathaceous; fertile stamens 5 ....... 3. *B. variegata*

BB. Calyx not spathaceous;

fertile stamens 3-4 .......................... 1. *B. purpurea*


A medium sized, deciduous tree. Bark dark-brown; blaze reddish brown, fibrous. Leaves 8-15 cm long, broadly ovate-orbicular, cleft to middle; lobes rounded, sinus apiculate, base cordate, entire, minutely pubescent, dark green above, dull-green beneath. Flowers deep rose-coloured, few in terminal and axillary short peduncled corymbose racemes. Pods 15-39x2 cm, linear, flat, pubescent, dark purple, slightly curved, pointed at both the ends. Seeds 12-15, flat, rounded, smooth, dark brown.

   Planted in gardens for ornamental purposes.

Local name : Kachnar; Flowers : September-November; Fruits : December-April; Locality : Bhadohi. Kasturi Singh, 6719.

2. **Bauhinia retusa** Roxb. Fl. Ind. 2:322, 1832; FBI 2:279; FUGP 1:275.

An erect, medium-sized tree. Bark dark brown. Leaves 10-15 cm long, entire, emarginated, cordate or truncate at the base. Flowers pale yellow, spotted with red and veined with pirple, in terminal or corymbose panicles. Pods 10-15 cm long, ob lanceolate, flat, bright brownish red. Seeds 6-8, smooth brown.

   Cultivated for ornamental purposes.

Local name : Kachnar; Flowers : September-November; Fruits : December-April; Locality : Bhadohi. Kasturi Singh, 6721.

A small or medium-sized deciduous tree. Leaves broader than long, usually deep cordate, lobes obtuse. Flowers pink or purple, large, fragrant, arranged in lateral corymbs. Pods 10-25x1.5-2 cm long, flat, glabrous, dark brown or black. Seeds 10-15.

Cultivated in gardens. Flowers appears on leaflets branches.

Local name: Kachnar; Flowers: February-April; Fruits: April-March; Locality: Bhadohi. Kasturi Singh, 6114.

2. *Caesalpinia* L.

A. Pods glabrous, smooth; seeds 4-8,
   mottled-brown or black …………………… 2. *C. decapetala*

AA. pods echinate, seed 2-3, lead coloured ........ 1. *C. crista*


A straggling, pubescent shrub with hooked pricklespinnae 6-8 pairs, leaflets 6-10 pairs, opposite, subsessile, 1-4x0.6-2 cm, elliptic-oblong, entire, obtuse, mucronate. Flowers yellow in axillary or terminal racemes. Pods 5-9x4.5 cm, oblong, densely covered with sharp-wiry prickles, dehiscent, dull brown when dry. Seeds-2, hard, globose, polished, lead-coloured.

Common along the road sides and railway tracts.

Local name: Karanji; Flowers: September-November; Fruits: November-May; Locality: Gopiganj. Kasturi Singh, 6720.

A glabrous, large, climbing shrub with strong, hooked, pale-brown prickles. Pinnae 5-10 pairs, upto 6 cm, long; leaflets 8-12 pairs, opposite, 1-2x0.5-1 cm, oblong, pubescent entire, obtuse. Flowers yellow, in long axillary or terminal racemes. Pods 7-9x2.5 cm, pendulous, obliquely cuspidate, glabrous, dehiscent, dull-brown. Seeds 4-8, smooth, mottled brown or black.

Common along the bank of rivers.

Flowers : November-April; Fruits : June-August; Locality : Gopiganj. Kasturi Singh, 6915.

3. **Cassia L.**

A. **Tree**

   B. Leaflet 3.5 cm long, elliptic or oblong

      C. Leaflets hairy beneath, glabrous above; flowers pink or red .................. 3. *C. nodosa*

      CC. leaflets glabrous on both surfaces;

      flowers yellow .............................. 7. *C. siamea*

   BB. Leaflets 5-10 cm long, ovate;

      Flowers yellow .............................. 2. *C. fistula*

A. **Shrub or annual herb**

   B. Plant prostrate ......................... 6. *C. pumila*

   BB. Plant erect

      C. Stipules auricled .................... 1. *C. auriculata*

      CC. Stipules not as above

      D. Glands at the base at petiole .... 5. *C. occidentalis*

      DD. Glands just above the base of petiole ........................ 8. *C. sophora*
DDD. Glands on the rachis

E. Gland 1 in between the lower pair of leaflet …… 4. *C. obtusifolia*

EE. Gland-2, one in between the two lowest pair of leaflets ………………. 9. *C. tora*


A finely downy shrub with spreading branches. Leaves 7-15 cm long, rachis grooved with single gland between the each pair of leaflets; stipules broad leafy auricular, persistant, base with filiform points. Leaflets 3-12 pairs, 2x1 cm, elliptic, slightly overlapping, emarginated, mucronate, glabrous or pubescent, green above, pale beneath. Pods flat at about 1.3 cm long, thin brown. Seeds flattened, yellowish brown.

Cultivated in garden for its show flowers.

Flowers 7 Fruits : Throughout the year; Locality : Gyanpur. Kasturi Signh, 6309.


A deciduous tree upto 3 m high. Bark pale or greenish grey, smooth usually with horizontal wrinkles; blaze yellow. Leaflets 4-8 pairs, sub-opposite, 7-13x3.5-6.5 cm, ovate or elliptic-oblong, entire, acute, glabrous, green above, pale beneath. Pods 30-50x2-2.5 cm, cylindrical, peduncloous, smooth, dark-brown, indehiscent. Seeds numerous, separated by septa, flat, yellowish-brown, shining, embedded in black pulp.

Cultivated along road-side for shade and beautiful flowers and also cultivated in gardens for ornamental purposes.


A small or medium-sized evergreen tree. Bark ash-brown or grey; blaze whitish yellow. Leaves paripinnate, leaflets 2.5-8 cm long, 10-14 oblong, mucronate or obtuse, base oblique, glabrous above, velvety beneath. Flower pink, fading to dull white, showy in racemes. Pods 30-45 cm long, cylindrical.

Planted in garden for ornamental foliage and flowers.


An erect, glabrous annual herb or under shrub. Leaflets 3 pairs, bright green, opposite, subsessile, 1.5-5x0.8-2.5 cm, obovate, obtuse or sometimes retuse. Rachis grooved with single gland and in between the lowest pairs of leaflets. Flowers yellow, solitary, axillary or paired. Pods 6-20x0.3-0.6 cm, linear, cylindric or sub-tetragonales, obliquely septate. Seeds 25-30, rhombo-rectangular, oblique at both the ends, brown.

Common in grassland associated with *Cassia tora* L.
Local Name : Chakwar; Flowers & Fruits : August-November; Locality : Gyanpur. Kasturi Singh, 6627.


An erect, annual, undershrub upto 2 m high, with single-shining black gland at the base of petioles. Leaflets 3-6 pairs, opposite, 2.5-8x1.2-3.5 cm, ovate-lanceolate, entire, acuminate, base rounded or acute. Flowers yellow. Pods 6-13x0.7-1 cm, flat, glabrous, transversely septate. Seeds 20-30, ovoid, compressed, pale brown.

Abundant in waste places associated with *Cassia sophora* L.
Description of the Flora


A prostrate or procumbent, much branched, finely downy annual herb, with a single orange stipitate gland at the base. Leaflets 5-20 pairs, opposite. Seeds 5-8x1-2 mm, linear-oblong, apex apiculate. Flower small, yellow, solitary or 2-3, supra-axillary. Pods 2-4x0-5 cm, linear, flat, torulose. Seeds 6-12, obovoid, brown.

Common in grassland and along slopes of railway tracts.


A moderate sized or large tree. Bark grayish brown with brown striations, rough, blaze cream. Leaves paripinnate, base rounded or subcordate. Flowers yellow in corymbose racemes clustered in axillary and terminal panicles. Pods 30-50 cm long, nearly straight, flat with thickened suture.

Planted along road sides as avenew tree.

Flowers: July-October; Fruits: November-February; Locality: Bhadohi. Kasturi Singh, 6523.


A glabrous, perennial, under shrub, upto 2 m high, with a simple conical gland about 3 mm away from the base of foliola. Leaflets 6-12 pairs, opposite, 2-7x1.2-2.2 cm, ovate-lanceolate, acuminate, entire, glabrous, green above, pale beneath. Flowers shining yellow, in few flowered axillary racemes. Pods 5-10 cm long, sub-terete, glabrous. Seeds 20-30 or more, compressed, shining, dark brown.

Common in waste field associated with *Cassia occidentalis* L.
Local name : Kasundi; Flowers & Fruits : July-February; Locality : Aurai. Kasturi Singh, 6525.

9. *C. tora* L. *Sp. Pl. 376, 1753; FBI 2:263; FUGP 1:

An erect, glabrous, annual, foetid, herb, upto 90 cm high. Leaflets 3 pairs, opposite, sub-sessile, 1.5-5x0.8-2.5 cm, single-linear, yellowish gland in between the two lowest pairs of leaflets (one gland in each pair). Flowers yellow, axillary, solitary or paired. Pods 6-20x0.3-0.6 cm, linear, sub-tetragenous, obliquely septate. Seeds 25-30, rhombohedral, brown, oblique at both ends.

Abundant along the road-sides and in open places in association with *C. obtusifolia* L. and *Tephrosea hamiltonia* G.R. Drumm.

Local name : Chakwar; Flowers & Fruits : August-November; Locality : Gyanpur. Kasturi Singh, 6628.

4. *Delonix Ref.*


A medium sized, deciduous tree. Bark grayish brown, blaze yellowish. Leaves bipinnate, leaflets 1.2x0.5 cm, elliptic, oblong, acute. Flowers red or orange-red. Pods 30-60x5 cm, flat, flown. Seeds numerous, oblong.

Planted in garden.


5. *Parkinsonea L.*

*Parkinsonia aculeate* L. *Sp. Pl. 375, 1753; FBI 2:260; FUGP 1:303.*

An armed, glabrous, shrub or small tree with large woody spines representing the primary rachises of a bipinnate leaf. Leaflets very minute, caduceus, oblanceolate, on a much flattened rachis. Flowers yellow. Pods
6.3x0.7 cm, turgid, monilifer, finelly dehiscing with 3-8 seeded straw-coloured. Seeds 9-10x4.5-5.5 mm, oblong or ellipsoidal, grey with brownish blotches.

Found on the road side and planted in gardens.


6. **Peltophorum Walp.**


A medium sized tree. Bark dark grey to almost black with numerous lenticles, blaze cream. Leaves peripinnate, leaflets 16-30, sessile, obtuse, acute, base unequal. Flowers yellow in axillary and terminal panicled racemes. Pods 5-10 cm long, narrowed to both ends, reddish brown. Seeds 1-4.

Planted in gardens for ornamental purposes.


7. **Poinciana L.**


Cultivated in gardens as ornamental purposes.

8. **Saraca L.**

*Saraca indica* L. Mant. 98, 1767; FBI 2:271. *Jonesia asoca* Roxb. in As. Res. 4:355, 1795.

A small, evergreen tree. Bark dark grey, somewhat rough. Leaves paripinnate, leaflets 6-12, oblong, lanceolate, 7.5-22 mm long, drooping. Flowers orange or orange-yellow, fragrant in dense corymbs. Pods 10-20 cm long, tapering to both ends.

Planted in gardens.

Local name: Ashok; Flowers: March-April; Fruits: May-August; Locality: Aurai. Kasturi Singh, 6218.

9. **Tamarindus L.**

*Tamarindus indica* L. Sp. Pl. 34, 1753; FBI 2:273; FUGP 1:301.

A large tree with dense crown. Leaflets 10-20 pairs, oblong, 1.5x0.5 cm, closely set, glabrous. Flowers yellow with red stripes in few flowered racemoses. Pod 7-20x2-2.5 cm, scurfy, slightly curved, compressed, falcate, pulpy inside. Seeds 15x7 mm, ovate-oblong, compressed, dark brown, shining.

Common along road sides and in gardens for its ornamental foliage and edible fruits.

Local name: Imli; Flowers: July-August; Fruits: November-March; Locality: Bhadohi. Kasturi Singh, 6526.

39. **MIMOSACEAE**

A. Aquatic herb ......................................... 5. *Neptunia*

AA. Terrestrial

B. Unarmed trees

C. Leaflets 6-10 pairs ................. 2. *Albizia*

CC. Leaflets 10-15 pairs .............. 3. *Leucaena*
BB. Armed trees or shrubs
   C. Leaflets 2 ............................... 6. *Pithecellobia*

CC. Leaflets many
   D. Flowers in cylindrical spike .. 7. *Prosopis*
   DD. Flowers in globose head
      E. Flowers pink .......... 4. *Mimosa*
      EE. Flowers yellow ........ 1. *Acacia*

1. *Acacia* Mill.
   A. Climbing shrub; pod succulent thick ........... 3. *A. sinuate*
      AA. Erect shrub or tree; pods not succulent
         B. Pod moniliform....................... ...... 2. *A. nilotica*
         BB. Pod not moniliform .................... 1. *A. farnesiana*


   An erect spinous shrub with slender zig-zag branches; spine white, divaricate. Bark brown, smooth. Leaves bipinnate, 2-5 cm long, downy; leaflets 4-8 pairs, 2-2.5 cm long, linear-oblong; rachis with a very small gland in the middle. Flowers bright yellow in axillary globose head, fragrant. Pods 3-7 cm long, thick, cylindrical, dull brown, hooked at the tip, pulpy inside. Seeds 2, seriate, oblong, oblique.

   Found along road sides and railway-line.

   Local name : Vilayati babul; Flowers : January-April; Fruits : April-May; Locality : Suriyava. Kasturi Singh, 6009.


A moderate sized evergreen tree, bark dark brown. Leaves bipinnate, leaflets 3-6 pairs, 3-5x1 cm, linear, oblong, rachis downy with several glands. Flowers yellow, fascicled in axillary long stalked globose heads. Pods 7-15x1.2-1.5 cm, moniliform, compressed, constricted at sutures between the seeds, densely grayish- downy. Seeds 8-12, smooth, sub-orbicular, 7-8 mm in diam., compressed, black brown.

Frequent along road sides.

Local name : Babul; Flowers : August-October; Fruits : November-April; Locality : Gyanpur. Kasturi Singh, 6629.


A large, woody, climber. Branchlets, petioles and peduncles finely grey-tomentose. Leaf rachis puberulous, with large gland near the base and one between the uppermost pinnae, armed on back with recurved prickles. Leaves bipinnate, leaflets linear, obtuse very unequal at the base pale-green above, glaucous beneath. Flower yellowish-white, in facscicled, pedunculate or sessile globose heads, pinkish in bud. Pods 5-12.5x2.4 cm, linear oblong, thick, fleshy, smooth and turgid, wrinkled when dry, indehiscent. Seeds 6-10, compressed, black.

Found along the bank of rivers. The pods are saponaceous being used for clothes and hairs by local inhabitants.

Local name : Sikaki; Flowers : January-March; Fruits : November-February; Locality : Bhadohi. Kasturi Singh, 6010.

2. *Albizia Durazz.*

A large, deciduous tree. Bark yellowish or greenish white, blaze pink. Leaves bipinnate, with a large gland about the middle of petiole, pinnae 2-6 pairs with the glands between the upper 1-2 pairs of leaflets, leaflets 6-10 pairs, 3-4.5x1.5-2 cm, obliquely-ovate or ovate-oblong, entire or rounded, base oblique, green above, pale beneath. Flowers yellowish-green, in fascicles or 2-5, forming large terminal fanicles. Pods 10-15x2 cm, strap shaped, reddish-brown, shining beaked. Seeds 6-12, ovate, pale brown.

Found along road sides.

Local name: Siris; Flowers: May-July; Fruits: September-March; Locality: jangoganj. Kasturi Singh, 6408.

3. **Leucaena Benth.**


A shrub or small tree with large bipinnate leaves, pinnae 4-8 pairs, leaflets 10-15 pairs; leaflets linear, acute, membranous, peduncle axillary. Flowers in globose head. corolla whitish, stamens twice as long as corolla, anthers versatile. Pod flat, many seeded.

Very common along road sides.

Local name: Vilayati babul; flowers & Fruits: June to August; Locality: Gopiganj. Kasturi Singh, 6409.

4. **Mimosa L.**

A. Diffuse herb or under shrub;

Leaves sensitive to touch, stamens 4 ............ 2. *M. pudica*

AA. Erect or straggling shrub;

Leaves not sensitive to touch, stamens 8 ........ 1. *M. himalayana*


An erect or straggling shrub. Bark reddish brown. Leaves bipinnate, 10-15 cm long; pinnae 5-10 pairs, opposite with a bristle-like gland between each
pair; leaflets 5-14 pairs, 2.7 mm long, linear-oblong, mucronate, base unequal sides. Flowers pinkish in axillary solitary or fascicled dense globose heads. Pods 4-9x1 cm, oblong linear, beaked, curved, glabrous. Seeds 3-8.

Frequently found along railway lines.

Local name : Siali – Kanta; Flowers : July-September; Fruits : December-March; Locality : Surioyava. Kasturi Singh, 6527.


A diffuse, prickly, annual herb or under shrub. Leaves sensitive to touch, pinnae 4; leaflets 12-20 pairs, 6-8 mm long, oblong. Flower purplish in globose heads. Pods 3-5 cm long, flat, 3-5 seeded, margin spinose bristly.

Frequent in moist situations.

Local name : Chui-mui; Flowers & Fruits : July-November; Locality : P.G. College, Gyanpur. Kasturi Singh, 6530.

5. **Neptunia Lour.**


A prostrate, marshy or floating aquatic perennial herb or under shrub. Leaves bipinnate, leaflets 15-25 pairs, 5-8x1-2 mm, sessile, entire, obtuse, base oblique, glabrous on both surfaces. Flowers yellow, aggregated into globose head on long axillary peduncles. Pods 1-2.5 cm long, flat, membranous, compressed, oblong, bivalve. Seeds transversely compressed, with filiform funicles, brown.

Common floating in ponds, ‘nullah’ and puddles. The zig-zag branches of stem bears fibrous roots at the nodes and spongy bladder like swelling or floats on the internodes. The plant is refrigerant and astringent.
6. **Pithecellobium** Mart. nom. cons.


A moderate-sized, deciduous, spiny tree with grey-white bark. Leaves with one pair of pinnae; leaflets 2.5-5 cm long, asymmetrically elliptic to ovate-elliptic, glabrous, rounded or emarginated to subacute apex. Petiole glandular near the apex. Flowers white in globose axillary heads. Pod spirally twisted, reddish brown, 6-8 seeded. Seeds black, enveloped in a pulpy white or red edible aril.

Cultivated in garden for ornamental purposes. Most often used as a hedge plant.

Local name : Jungal-jalebee; Flowers : march-May; Fruits : june-August; Locality : Gyanpur. Kasturi Singh, 6218.

7. **Prosopis** L.


A middle sized, armed, glabrous tree. Bark grey. Pinnae usually 2 pairs with a gland between each pair. Leaflets 8-12 pairs, 0.6-1.2x0.5 cm, obliquely oblong, glabrous, obliquely rounded and mucronate at the apex, base rounded, very oblique. Flowers in axillary, 7-11 cm long slender, pendulous spikes. Pods 8-20x0.5-1 cm, pendulous, cylindric, torulose, glabrous, 10-15 seeded. Seeds 3-8 mm long, dull brown, oblong, embedded in brown pulp.

Rare, found along road side and waste fields.

Local name : Shami; Flowers & Fruits : December-June. Kasturi Singh, 6962.
40. **ROSACEAE**

A. Tree

B. Leaves 10-20 cm long, woolly beneath …… 1. *Eriobotrya*

BB. Leaves 5-10 cm long, glabrous on both surfaces ……… 2. *Potentilla*


A medium-sized, evergreen tree with dull-black bark. Flowers dull-white, fragrant. Fruits a pome, pyriform, globose, yellow or orange.

Cultivated in gardens for its fruits.

Local name : Lukat; Flowers : November-December; Fruits : March-April; Locality : Aurai. Kasturi Singh, 6917.

2. *Potentilla* L.

*Potentilla supina* L. Sp. Pl. 497, 1753; FBI : 259; FUGP 1:301.

A prostrate, much branched, hairy, annual herb herb. Leaves pinnately 3 to 9-foliolate, leaflets 3-lobulate or insised serrate, small, obcuneate, hairy on both surfaces. Flowers yellow, small, solitary, axillary. Receptacle globose, villous. Achene, numerous, small, smooth.

Common in moist sandy soil along the river bank and in crop-field.


41. **COMBRETACEAE**

A. Tree or shrub; flowers in spike …………………. 3. *Terminalia*

AA. Scandent or climbing shrub

B. Bracts large, leaf-like, creamy white,
Flowers minute, greenish-white ............ 1. **Combretum**

BB. Bracts minute, not leaf-like, green;

Flowers large, white and pink or red .... 2. **Quisqualis**

1. **Combretum** L.


A large, scandent shrub. Leaves opposite, 5.5-15x2.5-7 cm, elliptic or elliptic-oblong, acuminate, glabrous and shining green above, hairy and pale beneath. Flower greenish white, numerous, in dense villous racemes. Bracts large, leaf-like, creamy white. Fruits oblong or elliptic, 2.5-5x1.2 cm, with 5 papery wings.

Found along the river-bank climbing on large trees.


2. **Quisqualis** L.


A climbing shrub. Leaves opposite or sub-opposite, elliptic or elliptic-oblong. Flowers white-pink in terminal and axillary spikes.

Cultivated in gardens for ornamental purposes.

Local name : Madhawi-Lata; Flowers & Fruits : Most of the parts of the year; Locality : Gyanpur. Kasturi Singh, 6011.

3. **Terminalia** L.

A. Fruits not winged

B. Leaves obovate; spike solitary, some times

Extra axillary, fruit pyriform ................. 2. **T. bellerica**

BB. Leaves ovate or elliptic; spikes in Terminal panicles; fruits ellipsoid, 5-ribbed ................. 3. **T. chebula**
AA. Fruits winged; flowers in terminal and
Axillary paniculate ............................................. 1. *T. arjuna*


A large, deciduous tree. Bark whitish or grey; blaze pinkish. Leaves sub-opposite, oblong or elliptic, with 1-2 glands at the base. Flowers pale yellow in pendulous, short axillary or terminal panicles. Fruits 2-5 cm long, brown, ovoid or abovoid-oblong, fibrous, woody, 5-7 winged.

Planted along road-sides and found in small forests. Bark is used in heart disease as a cardiac tonic. Ashes of bark are prescribed in scorpion-sting. Juice of fresh leaves is used for ear-ache.

Local name : Arjun; Flowers : April-May; Fruits : Winter season; Locality : Gyanpur. Kasturi Singh, 6312.


A large, deciduous tree. Bark ashy-grey. Leaves opposite, 6-20x3.5-8 cm, ovate-elliptic. Flowers greenish-white, numerous, foetid, smelling in slender interrupted spikes; spikes bisexual, in the lower part and male in upper part. Fruit drupe, 2-4 cm in diam., ovoid or globose, tomentose grey, nut hard, grey-velvety.

Cultivated for its fruits. Fruit is astringent, tonic, laxative, used in piles, diarrhoea, leprosy and headache. Half ripe fruit is purgative and fully ripe is astringent.

Local name : Baherra; Flowers : March-May; Fruits : January-February; Locality : Jangiganj. Kasturi Singh, 6219.

A moderate-sized, deciduous tree. Bark dark-brown or black, furrowed; blaze reddish-brown. Leaves 6.5-16.5x3.5-8.5 cm, sub-opposite or alternate, elliptic or ovate-oblong, entire, acuminate. Flowers dull-white in terminal or axillary penciled spikes. Drupes 2-4x1-1.5 cm, ovoid or ellipsoid, black and 5 ribbed when dry, nut is diuretic and hard.

Cultivated for its fruits. Bark is diuretic and cardio-tonic. Fruit is astringent, laxative, used externally as a local application to cronic ulcers and wounds and as a gargle in stomatitis; finelly powdered fruit is used as a dentifrice and considered useful in carious teeth, bleeding and ulceration of gums.

Local name: Harra; Flowers: April-May; Fruits: November-February; Locality: Gopiganj. Kasturi Singh, 6312.

42. MYRTACEAE

A. Shrub upto 4 m high

B. Branches pendulous, bark fissured; flower

Red in brush spike …………………………….. 1. *Callistemon*

BB. Branches erect; bark smooth; flowers

White, solitary axillary ……………………….. 2. *Psidium*

AA. Tree upto 20 m high; fruit berry, black at

Maturity, seed one, bark purplish …………… 3. *Syzygium*

1. *Callistemon* R. Br.


An evergreen shrub or small tree with twisted trunk and dropping branches. Bark dark grey, rugged, blaze pinkish-white. Leaves 3-8 cm long,
linear-lanceolate or lanceolate, acute, rigid. Flowers red in terminal pendulous spikes. Capsules with a truncate apex.

Planted in garden as ornamental plant.


2. **Psidium L.**

*Psidium guajava* L. *Sp. Pl. 470, 153.*

A small tree. Bark scaly, smooth, reddish brown, blaze cream coloured. Leaves 3-14x2-6 cm, elliptic-oblong, acute or rounded at the apex, coriaceous. Flower white in axillary panicles. Fruits globose, or pyriform, yellowish at maturity. Seeds many embedded in creamy or pink pulp.

Cultivated in orchards for its edible value. A large number of varieties have been introduced by fruit research station, Basti.

Local name : Amrood; Flowers : September-December; Locality : Gyanpur. Kasturi Singh, 6723.

3. **Syzygium Gaertn.**

A. Leaves broadly ovate or oblong; blaze red or

Reddish brown ........................................ 1. *S. cumini*

AA. Leaves narrowly lanceolate; blaze

Pale-yellow ........................................... 2. *S. heyneanum*


A large or medium sized tree. Bark smooth, grey, blaze red or reddish brown, fibrous. Leaves 4.5-14x2.5-7 cm, elliptic-lanceolate, acuminate,
shining, glabrous, dark green above and yellowish beneath. Fruit pink and black at maturity, ovoid-oblong or sub-globose. Seed one, white.

Commonly cultivated for its fruits.

Local name: Jamun; Flowers: May – June; Fruits: June-July; Locality: throughout the area. Kasturi Singh, 6410.


A medium-sized, evergreen tree. Bark light-grey, smooth; blaze pale yellow. Leaves 6.5-11.5x1.5-2.5 cm, oblong, lanceolate, shining, glabrous. Flowers greenish-white, subsessile at the end of branches or in lateral cymes. Fruits 12x6 mm, oblong, black. Seed one, white.

Commonly found along the bank of rivers, nullah, and ‘tals’. The plant is supposed to be an indicator of moist habitat. Fruits are eaten by villagers.

Local name: Kath jamun; Flowers: March-June; Fruits: July-August; Locality: Jangiganj. Kasturi Singh, 6220.

43. **LYTHRACEAE**

A. Herb ......................................................... 1. *Ammannia*

AA. Shrub or tree

B. Shrub

C. Unarmed, flower red, tubular;

Capsule ellipsoid ......................... 4. *Woodfordia*

CC. Armed, flower white;

Capsules globular ...................... 3. *Lawsonia*

BB. Tree; capsules seated on woody calyx;

Seeds winged .............................. 2. *Largerstroemia*

1. *Ammannia*

A. Leaves are cuneate base; flower sessile ..........2. *A. baccifera*
AA. Leaves with sub-auriculate or sub-hastate
   Base; flower stalked .................................. 1. *A. auriculata*


   A erect, glabrous annual herb, upto 30 cm high, branches 4 angled. Leaves 0.7-7 cm long, sessile, base auriculate or sub-hastate, entire, shining green above, pale beneath, glabrous. Flower bright pink in axillary, compound, peduncled cymes. Capsules 2-3 mm in diam., globose, red. Seeds minute, numerous, black.

   Common along margin of lakes, ponds and ‘nullah’.


   An erect, glabrous, annual herb upto 60 cm high. Stems and branches quadrangular, purplish. Leaves 1.5-5x0.2-0.8 cm, oblanceolate or elliptic-lanceolate, entire, acute, narrowed at the base, shining green above, pale and minutely glandular, punctuate beneath. Flowers greenish, minute in dense pedicelled, sessile or sub sessile, axillary cymes. Capsules 1-2 mm in diam, globose, red. Seeds munerous, sub-hemispherical, black.

   Abundant in marshy habitats.


2. *Largerstromia* L.

A. Tree; leaves elliptic-oblong .......................... 2. *L. speciosa*

AA. Shrubs; leaves orbicular .......................... 1. *L. indica*
1. **Largerstromia indica** L. Syst. 1076, 1759; Blatt. & Mill. Beaut. Ind. Tr. 105.

A deciduous glabrous, shrub upto 3 m tall. Bark smooth, brown. Leaves 3-5x2-4 cm, elliptic or oblong. Flower pink, white or purple. Capsules woody.

Cultivated in garden for ornamental purpose.

Local name: Sawani; Flowers: March-july; Locality: Gyanpur. Kasturi Singh, 6221.


A small, medium sized tree. Bark smooth, grey or pale brown, peeling off in irregular flakes; blaze cream coloured with violet tinge. Leaves elliptic or ovate-lanceolate, dark green above, light green beneath. Flowers purple, large, in terminal panicles. Capsules 1.8-2.8x1-2 cm, sub-globose. Seeds 1-1.4 cm long, winged.

Cultivated in gardens.

Local name: Gul-chaman; Flowers: April-August; Fruits: October-March; locality: Bhadohi. Kasturi Singh, 6313.

3. **Lawsonia** L.


A shrub with thorny branchlets. Bark thin, greenish-brown, peeling off in fibres; blaze vream coloured. Leaves 1-4x0.4-1.5 cm, nearly sessile, elliptic, entire, acute, glabrous. Flowers whitish-yellow, pungent, scented in large corymbosely branched, terminal panicles. Capsule 6x8 mm, globose, red. Seeds angular or sub-hemispheric, brown.
Description of the Flora

Found along road-sides and also cultivated in gardens for its fragrant flowers. Leaves are applied locally on boils, burn and skin disease. Leaves are also used for colouring palms and nails.

Local name: Mehadi; Flowers: April-August; Fruits: September-November; Locality: Throughout the area. Kasturi Singh, 6314.

4. **Woodfordia** L.


A much branched shrub. Bark smooth, reddish-brown, peeling off in thin fibers; blaze pink. Leaves 3.5-10x1.5-4 cm, opposite, decussate, sessile, ovate-lanceolate, entire, acute or acuminate, base cordate or rounded, green and puberulous above, grey-pubescent and black-dotted beneath. Flowers scorlate in fascicled cyme. Capsule 1.5-0.5 cm, ellipsoid, enclosed in persistant calyx-tube. Seeds numerous, brown.

Common along bank of rivers. Leaves turning into red at maturity. A red coloured dye is obtained from flowers.

Local name: Dhauth; Flowers: February-April; Fruits: April-June; locality: Gopiganj. Kasturi Singh, 6115.

44. **ONAGRACEAE**

*Ludwigia* L.

A. Plants with pneumatophores; flowers white ……. 1. *L. adscendens*

AA. Plants without pneumatophores; flowers yellow

B. Prostrate or decumbent herb;

Capsule filiform ………………………………… 4. *L. prostrate*

BB. Erect or sub-erect herb or under shrub,

Capsule not filiform
C. Capsules 0.7-1 cm long, inflated, Obscurely 4-angled; seeds yellowish brown ........................ 3. *L. perennis*

CC. Capsules 2.5-5 cm long, cylindrical 8-ribbed; seeds brown or reddish ........ 2. *L. octavalis*


An aquatic, floating herb. Stem rooting at the nodes with numerous, spongy white, pneumatophores in aquatic habitat. Leaves 1.25-5x0.7-1.5 cm, obovate, oblanceolate, obtuse, narrowed into short petioles. Flowers white or pale yellow, solitary, aerial, pedicellate. Capsules 1.5-4.5 cm long, cylindric. Seeds quadrate with a white corky, reticulate testa.

Common along bank of river and ‘nullah’.


An erect, much branched annual herb or under shrub. Leaves 3.8x0.5-1.3 cm, linear-lanceolate or lanceolate, acute, base cuneate. Flowers yellow. Capsule 2.5-5 cm long, cylindric, glabrous, 8-ribbed. Dehiscing between the ribs. Seeds hemispheric, polished, brown or reddish-brown.

Common along ‘tals’ and ‘nullah’. In old stage stem and leaves are reddish.


An erect, branched, glabrous annual herb up to 20 cm high. Leaves 2.6x0.5-1 cm, lanceolate, narrowed at both ends. Flowers small, yellow, solitary, axillary. Capsule 7-10x2-5 cm, smooth, 4-angled, crowned by the calyx lobes. Seeds numerous, yellowish-brown, polished.

Common along ‘nullah’ and puddles.


A prostrate or procumbent herb up to 15 cm high. Leaves 3-6x0.5-2.3 cm, elliptic-lanceolate, glabrous, acute, base narrowed into slender petiole. Flowers yellow, axillary. Capsule 10-20x1 mm, filiform, curved, 4-angled. Seeds many, minute, pink.

Frequent along margins of ‘tals’.


45. **SAMYDACEAE**

*Casearia* Jacq.


A small deciduous tree. Bark ash-coloured, blaze reddish-brown with white astreaks. Leaves 6-18 x 2-5.5 cm, alternate, oblong-lanceolate, serrate-crenate or entire, acute, obliquely rounded or acute at the base, glabrescent above, pubescent or tomentose beneath. Flowers greenish-yellow, small,
fascicled in leaf-axils. Capsule 1-2.5 x 0.7-1.5 cm, broadly-ellipsoid, fleshy, yellow when ripe. Seeds embedded in red pulp.

Found along road side. Fruit in fish poison, pulpis diuretic.

Local name : Chorcho; Flowers : March-May; Fruits : April-May; Locality : Jangiganj. Kasturi Singh, 6222.

46. PASSIFLORACEAE

*Passiflora* L.


A slender, fetid, climbing herb with simple tendril. Leaves 2.5-6 x 2.3-6.5 cm, alternate, palmately 3-lobed, ciliate and denticulate with gland-tipped setaceous hairs. Stipule laciniate with gland-tipped segments. Flower greenish-white, solitary axillary with an involucres of finely pinnatified bracteole; segment capillary, glandular. Capsule 2.5-3 cm in diam., globose, greenish. Seeds numerous, ellipsoid, warted, yellowish.

Frequent climbing on bushes. Decoction of leaves is used in biliousness and asthma.


47. CARICACEAE

*Carica* L.


A herbaceous tree with milky juice. Stem succulent, weak, marked with leafscars, terminated by a tuft of leaves. Leaves palmatified, large, nearly orbicular in outlines; petiole long and hollow. Flower greenish-yellow, deciduous, male in long drooping panicles, female in short clusters. Fruit ovoid-oblong or oblong, fleshy. Seeds many within an outer sappy and an inner hard testa.
Cultivated throughout the area for its delicious fruits, often met as an escape. Milk juice of unripe fruit is used as a cosmetic to remove freckles and other blemishes from skin.

Local name: Papita; Flowers & Fruits: Greater part of the year; locality: Throughout the area. Kasturi Singh, 6012.

48. **CUCURBITACEAE**

A. **Tendrils simple**

B. Flower white ........................................ 1. *Coccinia*

BB. Flower yellow

C. Fruits muricate; bracts present …… 5. *Momorfica*

CC. Fruits not muricate, bracts absent

D. Seeds reddish brown ............ 6. *Mukia*

DD. Seeds white

E. Leaves sub-orbicular, 5-lobed, flowers large …… 2. *Cucumis*

EE. Leaves ovate, 3-lobed, Flowers small .............. 7. *Solena*

AA. **Tendrils branched (2-3fid)**

B. Flower white, seed dark brown or grey black

C. petals fimbriate; fruits glabrous …. 8. *Trichosanthes*

CC. Petals entire; fruits covered with Ciliate bristles ........................................ 4. *Luffa*

BB. Flowers yellow, seeds yellowish-brown … 3. *Diplocyclos*

1. **Coccinia** Wt. & Arn.

Description of the Flora


A slender, climbing, perennial herb with tuberous roots. Leaves 2.5-8x2.5-8 cm, 5-angled, base cordate, shining green above, paler beneath, margin distantly glandular, tipped. Flowers white, deciduous, solitary axillary; peduncle jointed below the flowers. Fruits 1.5-5x0.5-2.5 cm, fusiform-ellipsoid, slightly beaked, marked with white streaks when immature, bright scarlet when ripe. Seeds yellowish-grey, embedded in red pulp.

Common throughout the area on walls, trees and bushes.

Local name; kundru; Flowers: June-october; Fruits: July-November. Kasturi Singh; 6462.

2. *Cucumis L.*


Rigid hairy, trailing, perennial herb with simple tendrils. Leaves 2.5-5 cm in diam. Suborbicular, hispid, cordate, 5-angled. Flowers yellow, solitary, axillary. Fruits 3.5-4 cm long, obovoid, longitudinally variegated with 10 green strips, pale yellow when ripe. Seeds ellipsoid, oblong, thick, white.

Common during rainy season climbing on bushes, walls and trees.


3. *Diplocyclos* (Endl.) Von Post & Kuntze


A climbing, foetid, annual herb with bifid tendrils. Leaves 3.5-10x3.5-11.5 cm, deeply 5-lobed, scabrous, margin sinuate and distantly denticulate. Flowers yellowish clustered in axils. Fruits 6-18 mm across, globose, smooth,
green with white vertical streaks when young, red when ripe. Seeds yellowish brown, ovoid, margin corrugated, embedded in blue green pulp.

Common along road side climbing on bushed and small trees.

Local name ; kauwa jour; Flowers & Fruits : August-November; Locality : Gyanpur. Kasturi Singh, 6633.


*Luffa echinata* Roxb. (Hort. Beng. 104, 1814 nom nud.); Fl. Ind. 3:316, 1832; FBI 2:615; FUGP 1:337.

A slender, climbing annual herb, stem 5-angled, tendrils bifid. Leaves 2.5-5 cm in diam., ovate, reniform or suborbicular, cordate, palmately 5-lobed, hispid or hairy. Flowers white, small, in few flowered racemes. Fruits 2-3.5 cm long, ellipsoid, densely clothed with ciliate bristles. Seeds many, compressed, oval, grey-black, scabrous.

Common climbing on small trees and bushes. Fruits are eaten as vegetable by local inhabitants.

Local name : Kheksi; Flowers & Fruits : September-January; Locality : Jangiganj. Kasturi Singh, 6725.

5.  *Momordica* L.


A spreading or climbing, scabrous, annual herb. Roots tuberosus. Tendril simple. Leaves 2.5-5x1.5-3.5 cm, ovate, 3-5 lobed, acute, cordate. Flowers yellow. Fruits 2-6 cm long, ovoid, ellipsoid, clothed with soft, blunt spines, yellow at maturity. Seeds compressed, wrurrugated on margins, embedded in red pulp.

Common spreading over bushes and small trees.

Local name : Jangali karela; Flowers & Fruits : August-October; Locality : Suriyava. Kasturi Singh, 6634.
6. **Mukia Arn.**


A scabrous, climbing, annual herb. Tendrils simple. Leaves 3.5-8x3.2-7.5 cm, deltoid-ovate, 5-angled or lobed, acute, cordate. Flowers yellow. Fruits 0.5-1 cm across, globose, small, bright-red when ripe. Seeds ellipsoid, compressed, turgid, dark-brown.

Common along road side and in grassland, climbing on shrubs and small trees.


7. **Solena Lour.**


A scabrous, climbing annual herb. Roots tuberous, tendrils simple. Leaves 2.5-8 cm long, ovate, 3-5 angled or lobed, acute, cordate, hastate or sagittate, coriaceous. Flowers pale yellow. Fruits oblong, slightly angled, yellowish. Seed smooth, white.

Common spreading on bushes and small trees.


8. **Trichosanthes L.**

A. Leaves coriaceous; pulp of fruits dark green ……… 1. *T. cordata*
Description of the Flora

AA. Leaves not coriaceous; pulp of fruits red .......... 2. T. cucumerina


    Found along river bank.


A scabrous, spreading or climbing, slender annual herb. Tendrils 2-3-fid. Leaves 5-10 cm in diam. 5-7 lobed, orbicular, base cordate. Flowers white, male paired, female solitary. Fruits 2.5-8 cm long, ovoid, fusiform, tapering on both the ends with sharp beak, green with white streak when young, scarlets at maturity. Seeds compressed, regular, ellipsoid, dark brown, embedded in red pulp.

    Common climbing on bushes along road sides and ‘nullah’.

    Local name : Jangali chichinda; Flowers & Fruits : August-December; Locality : Gyanpur. Kasturi Singh, 6638.

49. **CACTACEAE**

A. Stem columbar; 6-ridged or angled; flower white ... 1. *Cereus*

AA. Stem with jointed obovate phylloclades;

    Flowers yellow .......................................... 2. *Opuntia*


An erect, tall, thorny, xerophytic shrub. Stem columnar, 6-ridged or angled. Leaves reduced to scales, often poorly developed, only in the earlier stage. Flowers white, large, solitary. Berries succulent, smooth or tubercled.

Rare, on waste places.


2. **Opuntia Mill.**


A large, succulent, thorny shrub. Phylloclade, obovate-oblong, faintly marked with lines joining the areoles. Areoles with 2-5 spines. Flowers yellow soon turning rose-pink. Berries red, bristles and spines deciduous.

Common on waste-lands and walls. Fruit is useful in gonorrhea; baked and given in whooping cough in form of syrup, given to control spasmodic cough and expectoration.

Local name : nagphani; Flowers & Fruits : March-july; Locality : Gyanpur. Kasturi Singh, 6223.

50. **MOLLUGINACEAE**

*Mollugo L.*


An erect, glabrous, annual herb upto 30 cm high. Stem quadrangular, dichotomously branched. Leaves 1.5-6x0.2-1.5 cm, 2-7 in whorls, linear-lanceolate, acute base narrowed into obscurc petioles. Flowers white, numerous in lax corymbose cymes. Capsule globose, thin walled. Seeds chestnut colour, many, reniform, granulate.

Common on moist, sandy soil under shady situations.

51. **Aizoaceae**

*Trianthema* L.


A prostrate, glabrous or puberulous, succulent, annual herb. Stem green and purplish. Leaves 1-4x0.8-3 cm, opposite, unequally paired, orbicular or broadly obovate, margin undulate, apex rounded. Flowers white or pink, sessile, solitary in pouch like petiolar sheath. Capsule 3-5x2-3 mm, breaking transversely into a ceriaceous lid and lower membranous cup. Seeds black, muriculate.

Abundant, found in moist sandy soil. Leaves are diuretic.


52. **Apiaceae** (UMBELLIFERAE non. Alt.)

A. Slender, creeping herb; leaves simple ............. 2. *Centella*

AA. Erect herb

B. Ultimate segment of leaves filiform ....... 1. *Apium*

BB. Ultimate segment of leaves not filiform

............................................. 3. *Seseli*

1. *Apium* L.

An erect or diffuse, glabrous annual herb upto 40 cm high. Leaves ternately divided into numerous filiform segments. Flowers whitish in pedunculate umbels at the riodes. Carpels ovoid with 8 prominent, thick, corky ribs.

Common in damp places.


2. **Centella L.**


A creeping, glabrous, annual herb, rooting at the nodes. Leaves 1.5-5.5 cm in diam, simple, 1-3 at each node, orbicular-reniform, base deeply cordate on long petiole. Flowers small, pink, sub-sessile in umbellate clusters. Fruits laterally compressed, indehiscent, 2-seeded. Seeds brown, oblong, laterally compressed.

Gregarious, on moist, shady, sandy and clayey soil along the walls and margin of ‘tals’ and ‘nullah’.


3. **Seseli L.**


An erect or diffuse, hairy, annual herb, 8-30 cm high. Leaves pinnatisect with lobulate, obtuse, apiculate segments. Flowers pinkish-white in dense leaf-opposed compound umbels. Fruits 2x2 mm, subglobose, glabrous, hispid. Seeds semiterets.
Common on moist, sandy soils along river banks.


53. **ALANGIACEAE**


A deciduous shrub or small tree. Bark thick, grayish with white specks; blaze cream-coloured. Leaves 5-13x2.5-5 cm, alternate, oblong-lanceolate or elliptic, entire, acuminate, base acute, glabrous above, slightly pubescent on the nerves beneath. Flowers white, fragrant, solitary or in fascicles from the axils. Fruits 2.5-1.4 cm, ellipsoid or subglobose, crowned by the persistant calyx. Seeds brown.

Common along the road sides. The bark is used in the treatment of jauncice. The powdered root bark with black pepper is said to be useful in piles.

Local name: Akol; Flowers: March-May; Fruits: June-August; Locality: Bhadohi. Kasturi Singh, 6225.

54. **RUBIACEAE**

A. Tree, shrub or climbers

B. Tree or shrubs

C. Flowers in globose heads

D. Blaze pink; seeds winged

E. Leaves cordate;

   stigma clavate .............. 1. *Adina*

EE. leaves noncordate;
Description of the Flora

stigma mitriform ……. 9. Mitragyana

DD. Blaze yellow; seeds not winged
   E. Ovules numerous in each cell; fruits a large fleshy, pseudocarp, orange, globose …….. 2. Anthocephalus

EE. Ovules one in each cell; pseudocarp whitish green, not globose …… 10. Morinda

CC. Flowers not as above
   D. Armed ……………………… 16. Xeromphis

DD. Unarmed
   E. One calyx lobe expanded
      Into a coloured leaf …… 11. Mussaenda

EE. Calyx lobe not expanded
   F. Leaves verticillate;
      G. Flowers in helicoids cymes …6. Homelia

GG. Flowers solitary
      Axillary …….. 4. Gardenia

FF. Leaves opposite
   G. Flowers in trichotomously branched panicles … 7. Ixora

GG. Flowers in terminal panicles ……. 15. Wendlandia

BB. Climbing shrub …………………………… 13. Paederia
AA. Herbs

B. Flowers 4-merous

C. Plants grasslike .............................. 8. Kohoutia

CC. Plants not grass like

D. Flowers in fascicles;
   Sepals contiguous ....................... 5. Hedyotis

DD. Flowers not in fasicles;
   Sepals remote ............................ 12. Oldenlandia

BB. Flowers 5-merous ............................ 3. Dentella

BBB. Flowers 6-merous ........................... 14. Richardia

1. Adina Salisb.


A large, deciduous tree, often buttressed at the base. Bark brownish-grey, gough; blaze pink. Leaves 12.5-22x13-20 cm, opposite, orbicular-cordate, acuminate, glabrous above, pubescent beneath. Flowers yellow in globose heads, 1.5-2.8 cm in diam. Fruits with numerous, small capsules, each splitting into 2 dehiscent cocci. Seeds many, minute, oblong, winged.

   Common along road side. The wood is durable, used for agricultural and constructional purpose.

Local name : Haldu, karmal; Flowers : June-july; Fruits : December-March; Locality : Bhadohi. Kasturi Singh, 6463.


A large tree. Bark dark brown, furrowed, blaze yellow. Leaves 10-22x3.5-8 cm, opposite-decussate, elliptic-oblong, acuminate, base rounded, glabrous and shining above, pale, pubescent beneath, stipule lanceolate. Flowers orange in solitary, glacular heads, fragrant. Fruits 5 cm across, yellow.

Common along road sides. Fruits are eaten and the wood is used for beam and packing cases.

Local name: kadamb; Flowers June-July; Fruits: August-September; Locality: Gyanpur. Kasturi Singh, 3.

3. **Dentella** J.R. & Forest.


A slender, prostrate, annual herb, rooting at nodes. Leaves 6-8x1-2.5 mm, sessile, obovate, spathulate; stipules scarious. Flower white, solitary, axillary. Capsules 2x1 mm, densely covered with setae. Seeds dark-brown, many.

Common on moist sandy-clayed soils.


4. **Gardenia** Ellis. nom. cons.

A. Shrub; leaves elliptic or oblong .......................... 1. **G. jasminoides**

AA. Tree; leaves obovate or bicular .......................... 2. **G. latifolia**


A large shrub with stout branches. Leaves opposite or ternate, obovate, elliptic, coriaceous. Flowers creamy-white, fragrant, large, solitary or pair.
Cultivated in garden as ornamental plant.


A deciduous tree. Bark greenish-ash; blaze grayish-yellow. Leaves 10-30x5-20 cm, obovate or orbicular, acute or obtuse. Flowers white, large, axillary. Fruits globose.

Planted in garden as ornamental plant.

Flowers: March-June; Fruits: July-September; Locality: Bhadohi. Kasturi Singh, 6226.

5. *Hedyotis* L.

A. Plants hispid; leaves verticillate, lanceolate,

Flowers sessile in axillary clusters ................. 2. *H. verticillata*

AA. Plant glabrous, leaves opposite, linear,

Flowers peduncled in umbels ....................... 1. *H. umbellata*


A diffuse, somewhat erect herb, branching from base, with a very long yellowish-red taproot. Stem angular, densely pubescent. Leaves 0.7-2.6x0.2-0.5 cm, linear, acute, stipules membranous. Flowers white, 2-10 in axillary, extra axillary, sometimes terminal, peduncled umbels. Capsules not protruding beyond the caly-teeth, transversely dehiscent. Seeds many, brown, ellipsoid.

Common among grasses and bushes.


A diffuse, pubescent, annual herb. Stem angular, rough. Leaves 3-6x0.6-1.5 cm, sessile, elliptic-lanceolate, acute, green scabrous above, pale, hispid beneath; stipules ciliate. Flowers white, small, 2-6, in axillary clusters. Capsules 2 mm across, ovoid, crustaceous, hispid, loculicidal, 2-valved. Seeds many, angular.

Found in grasslands.


6. **Hamelia Jacq.**

**Hamelia patens** Jacq. Enum. Pl. Carib. 16, 1760 and Select Am. 72.

An evergreen, handsome, woody shrub. Leaves 7-20 cm long, whorled, elliptic, obovate. Stipules interpetiolar. Flowers red in helicoid cymes. Berries ovoid or globose.

Cultivated in garden for ornamental purpose.


7. **Ixora L.**


A evergreen, large shrub. Leaves 7-15 cm long, oblong or elliptic, obtuse or rounded apex, cordate or rounded base. Flowers white, sub-sessile, in very compact panicles. Fruits depressed, globose, shining black.


A grass-like, glabrous, slender, erect, annual herb upto 40 cm high. Leaves 2.5-9x0.1-0.4 cm, linear, acuminate, stipules truncate. Flowers whitish or purple in tax terminal panicled cymes. Capsule 3-8 mm long, ellipsoid.

Common in grasslands and along river banks.


A large or medium sized deciduous tree. Bark light grey, smooth, blaze pink. Leaves 4-12x3.5-7.5 cm, oval, obovate, shortly cuspidate, base cuneate or acute, glabrous, dark-green above, pale beneath. Flowers white or light-yellow in globose 2-3x2-3 cm. capsule 2 mm long, ellipsoid, verrucose. Seeds numerous, winged.

Common along road side.

Local name: Tikui; Flowers: May-June; Fruits: August-December; Locality: Bhadohi. Kasturi Singh, 6413.

10. *Morinda* L.


A shrub or small tree. Bark yellowish-brown, blaze yellowish. Leaves 7-15x2-6 cm, elliptic or oblong, entire, obtuse or acute, tomentose. Flowers
white, in axillary and terminal globose head. fruit syncarpium. Seeds oblong, not winged.

Common along road sides.

Local name: Achhi; Flowers: March-June; Fruits: July-November; Locality: Aurai. Kasturi Singh, 6228.

11. **Mussaenda L.**


A rambling shrub. Leaves 7-13 cm long, broadly elliptic, acuminate, pubescent above, glabrous beneath. Flowers golden-yellow or orange in terminal cymes. One segment of calyx enlarged, yellow, persistant, obovate, acuminate. Berries sub-globose, obovoid.

Cultivated in gardens for ornamental purpose.


12. **Oldenlandia L.**

A. Branching dichotomous; corolla tube much longer than the sepals ................................. 1. *O. affinis*

AA. Branching not as above

B. Flowers solitary, nearly sessile or shortly peduncled ................................. 3. *O. diffusa*

BB. Flowers 2-4 in corymbs (nearly 1),

Long peduncled ................................. 2. *O. corymbosa*


A dichotomously branched, glabrous or hairy annual herb. Leaves 2-5x0.2-0.5 cm, linear-lanceolate or narrowly lanceolate, acute; stipules small, truncate, bristly. Flowers bluish-white, minute, solitary on long axillary peduncles. Capsule 1-2 mm, in diam., globose-oblong, granulate not projecting beyond calyx.

Common in grassland under moist situations.


A slender, branched, erect or decumbent, glabrous annual herb. Leaves 1-3.5x0.1-0.3 cm, linear-lanceolate, acute, narrowed to base in petiole, margin revolute, stipule membranous, dentate or bristly. Flowers white, minute, 2-4 on axillary peduncles. Capsule 1-2 mm in diam., globose, not projecting beyond calyx. Seeds pale brown.

Common in moist shady places.


A diffuse, glabrous, annual herb, stem rooting at the nodes. Leaves 1.5-3.5x0.2-0.4 cm, linear, acute, margin revolute. Flowers white, solitary, axillary. Capsules sub-globose, smooth.

Common in rice field.

13. **Paederia L. nom. cons.**


A slender, glabrous, foetid climber. Leaves 5-9x2.5-7 cm, ovate-lanceolate, entire, acuminate, base cordate. Stipules deciduous. Flowers purple, axillary and terminal, 2-3 dichotomously branched panicled cymes. Pyrenes black with broad pale wing.

Rare, along river bank. The leaves are used to cure rheumatism by local inhabitants.


14. **Richardia**


A densely hispid or hirsute, perennial or annual, prostrate, procumbent herb with white tap root. Stem quadrangular. Leaves sub-sessile, ovate to oblong, lanceolate, acute, narrowed at the base, covered with short stiff hairs on both sides; stipules 2 mm long, copular with seliferous appendages, ciliate. Flowers white, 30 or less in terminal, sessile, congested, capitates, clusters subtended by 2-4 leaflike, ovate, reniform bract. Capsule 3-celled densely papillose hairy, light brown. Seeds 3, oblong, obovate, minutely hispid or smooth, yellowish.

Rare in garlic crop field.


15. **Wendlandia Bart.**

A medium sized, deciduous, pubescent tree. Bark brown, rough, exfoliating in long strips; blaze pink. Leaves 6-17x2-5 cm, ovate-lanceolate, acuminate, glabrous above, whitish in large, conical panicled cymes. Capsules 2-3x2-3 mm, globose, white-tomentose. Seeds minute, black.

Found along road-sides. The wood is used for agricultural implements and fuels.


A. Spines short, terminal; flowers large, Corolla
   glabrous outside; calyx limb persistant ............. 2. *X. uliginosa*  

AA. Spines long, axillary; flowers small; corolla
   Hairy outside; calyx limb deciduous ................. 1. *X. spinosa*  


An armed small tree or shrub, spine straight, axillary opposite-decussate upto 3 cm long. Bark brown, rough; blaze pink. Leaves 2.5-9x1.5-4 cm, obovate, shortly acuminate, base cuneate. Stipules 0.5 cm long, ovate, acuminate. Flowers greenish-white, sessile, 1-3 at the end of short lateral leafy branchlets. Berries 4.5-2.5 cm, globose, glabrous, yellow when ripe. Seeds numerous, embedded in gelatinous brown pulp.

Common along railway lines and bank of rivers. The pulp of unripe fruits are used as fish poison.

Local name : Mainphal; Flowers : April-June; Fruits : July-February; Locality : Gopiganj. Kasturi Singh, 6316.

An armed small tree of shrub. Bark dark brown or black; blaze pink. Leaves 5-16x2-6.5 cm, crowned towards the end of branchlets, ovate-oblong, obtuse, base narrowed into short petioles, dark-green above, paler beneath. Stipules triangular. Flowers white, fragrant, solitary. Berries 5 cm long, ovoid or ellipsoid, yellowish, smooth crowned by persistent calyx lobes. Seeds numerous, compressed, closely packed in thick hard, dry pulp.

Common along the railway lines. Unripe fruit is roasted in wood ashes used as a remedy in dysentery and diarrhoea.

Local name: Pindar; Flowers May-June; Fruits: September-December; Locality: Jangiganj. Kasturi Singh, 6415.

55. **ASTERACEAE (COMPOSITAE nom. Alt.)**

A. Leaves opposite

B. Leaves simple or pinnatisect

C. Receptacles paleaceous

D. Pappus present

E. Pappus 2, persistant, awned

F. Leaves pinnatisect,
   Flowers terminal;
   Achenes smooth;
   Beaked, black …….. 10. *Cosmos*

FF. Leaves simple,
   Flowers axillary;
Achenes prickly, with
two horn like spine at
the apex, not
beaked ............ 1. *Acanthospermum*

EE. pappus more than 2,
Feathery, not awned ... 28. *Tridex*

DD. Pappus absent

E. Head white or bluish
Achene verrucose, black ... 11. *Eclipta*

EE. Headly yellow, achene

not verrucose ............... 26. *Spilanthes*

CC. Receptacles not paleaceous ............ 2. *Ageratum*

BB. Leaves compound

Pappus of 2 retrosexely hispid, appreading
awnes .............................................. 4. *Bidens*

AA. Leaves alternate

B. Plant with milky or coloured latex

C. Head blue, turning purple, axillary;
Stem fistular; pappus short of
Reddish or greenish scales ............. 9. *Cichorium*

CC. Head yellow, terminal

D. Leaf base amplexicaul

J. Plant erect, leaves simple;
Flowers purple or violet;
Pappus feathery;
Achenes glabrous

......... 29. *Vernonia*

JJ. Plant prostrate, leaves
   pinnate, flowers yellow;
   pappus copular; achenes
glandular, hairy

......... 15. *Grangea*

HH. Head heterogamous

I. Shrubs

J. Leaves 3-5 lobed, cordate,
   Peduncles clavate above;
   Bracts Paleaceous,
   spiny tipped Pappus of
   scales ............ 27. *Tithonia*

JJ. Leaves and peduncles not
   above; paleaceous bracts
   absent, pappus feathery

K. Flowers pink in terminal
   Compound corymbs

......... 20. *Pluchea*

KK. Flowers yellow,
   unilateral, Crowded in
   long, leafy Pendulous
   panicles ..... 23. *Solidago*

II. Herbs
Description of the Flora

J. Leaf base amplexicaul
   K. pappus biseriate, outer
      forming a paciniate cup;
      achenes ribbed,
      glabrous … 21. Pulicaria

E. Stem fistular, leaves spinulose,

   Serrate ………………………………… 24. Sonchus

F. Achenes 3-ribbed, reddish
   brown, not corky …………………. 16. Lactuca

EE. Stem solid, leaves not spinulose

   Serrate ………………………….. 18. Launaea

DD. Leaves base not amplexicaul

BB. plant without milky or coloured latex

   C. Flowers unisexual, involucre of
      Female hard and covered with hooked
      Bristles and terminating in two
      Strong hooked beaks ………………… 31. Xanthium

CC. Flowers bisexual, involucre

   Bracts not as above ………………….. 7. Carthamus

DD. Leaves and involucre bracts not spinescent

   E. Pappus present

      F. Stem winged …………….. 17. Laggera

      FF. Stem not winged ……….. 12. Elephantopus

      GG. Leaves cauline

      H. Head homogamous
I. Leaves white, cottony beneath, head pink or white
       ………………… 22. Saussurea

II. Leaves not white, cottony beneath, head pink, purple or white
    KK. pappus not as above, Achenes hardly ribbed, hairy
    …… 30. Vicoa

J.J. Leaf base not amplexicaul

I. Achenes glabrous, papillose
    …… 14. Gnapalium

J. Plant aromatic; anther base tailed ..... 5. Blumea

LL. Plant not aromatic; anther base not tailed
    …… 13. Erigeron

EE. Pappus absent

F. Receptacles scaly, Paleaceous nor densely bristly

G. Stem winged, head purplish, leaf-opposed ………… 25. Sphaeranthus

GG. Stem not winged, heads yellow
    …………8. Chrysanthemum

FF. Receptacles neither scaly, paleaceous nor densely bristly
G. Head white

H. heads axillary, plants amphibious,
Achenes winged, not crowned
corolla appendages and style

.......... 6. Caesulía

HH. Heads terminal corymbose
Like cymes, plant terrestrial,
Achene not winged, crowned
by persistant rement of
corolla appendages and style

............ 19. Parthenium

GG. Heads yellow, greenish or purple

..... 3. Artemisa

1. Acanthospermum Schrank


An erect, hispid, annual herb, upto 40 cm in high. Stem dichotomously branched. Leaves 1.5-4x1-2.5 cm, sessile, ovate, acute base, narrowed. Head heterogamous, solitary in fork of stem, many flowered, rey florets uniseriate, discflorets tubular, yellow, outer palae armed externally with hooked prickles. Achene 4-5 radiating from center, compressed, obconic, prickly, with a pair of horn like spines at the top. Pappus absent.

Found in shade along ponds.

2. **Ageratum L.**

A. Leaves ovate, rhomboid-ovate; involucres glabrous;

  Corolla 1-1.5 mm long, style branch slightly exceeding the corolla .......................... 1. *A. conyzoides*

AA. Leaves dentoid, involucral hirsute; corolla

  2-3 mm long, exerting the corolla ..................... 2. *A. houstonianum*


   An erect softly hairy annual herb up to 1m tall. Leaves 2.5-10.5x1.2-5.5 cm, ovate or ovate-lanceolate, crenate, acute, base cuneate, rounded, truncate, cordate. Head homogamous, white blue or purplish in dense or lax terminal corymbs. Involucral bract linear ribbed. Pappus scales 5, owned and often scabrid. Achenes 1.5-3 mm long, sharply 5-angled, black.

   Found abundantly throughout the area.

   Flowers & Fruits : December-June; locality : throughout the area. Kasturi Singh,


   An erect hairy annual herb, up to 1 m tall. Leaves 2-10x1.5-5.5 cm, deltoid, upper ones ovate, crenateserrate, acute, base truncate, cordate. Head violet, biseriate, glandular, grayish, hirsute, pappus scales 5, serrate,awn tipped. Achenes 1.7x3.2 cm long, 5-angled, hairy, black.

   Common in moist and shady places associated with *Ageratum conyzoides* L.
Flowers & Fruits : December-June; Locality : throughout the area. Kasturi Singh, 6967.

3. **Artemisa L.**


A tall, aromatic, pubescent or tomentose herb. Leaves 1-2-pinnatisect, pubescent above, sha grey or white tomentose beneath. Head brownish-yellow, shortly pedicelled or sessile in panicked racemes. Involucral bract wolly, biseriate. Achenes minute, brown.

Frequently found along nullah.


4. **Bidens L.**


An erect much branched, annual herb. Stem 4-angled. Leaves 4-20 cm long, 2-pinnatipartite or pinnate; segments ovate-lanceolate, acutttte or acuminate, incised-serrate or lobulate, thinly hairy. Head yellow, 0.5-0.8 cm across. Involucral bract biseriate, outer spathulate, inner ovate-lanceolate, longer than outer. Pappus setae 2-4, retrosely bristly, 0.25-0.3 cm long. Achenes 0.2-0.6 cm long, 4-angled, tapering towards the apex, glabrous or shortly hispid.

Found along road sides.

Description of the Flora

5. Blumea DC nom cons.
   A. Prostrate or decumbent head .................. 3. B. oxyodonata
   AA. Erect herb
      B. head solitary .................................. 1. B. bifoliata
      BB. head in group ............................... 2. B. membranacea


   An erect branched, hairy herb upto 25 cm high. Leaves 4.5-7.5x2.2-3.5 cm, upper elliptic, serrate, acute, pubescent, lower oblong. Head axillary, solitary, heterogamous, yellow. Involucral bract many seriate, linear, acute, membranous. Pappus white. Achenes narrow, oblong, 5-angled, hairy.

   Common in crop field.


   An erect, pubescent, annual herb upto 2 m high. Leaves thinly membranous, the lower petiolet, obovate, lyrate, coarsely or deeply serrate, finely pubescent on both surfaces, upper peduncles. Involucral bracts lanceolate, pubescent. Receptacle glabrous. Pappus white. Achenes 8-10 ribbed, hairy.

   Common throughout the area in moist shady places and in the crevices of walls.


3. *Blumea oxyodonata* DC in Wight Contrib. 15, 1834; FBI 3:266; FUGP 1:413.

   A small prostrate or decumbent, pubescent or glabrous annual herb, 10-30 cm high. Branches slender, simple or dichotomously branched. Leaves
spinous-toothed, pubescent on both surfaces; lower 6-8x3-4 cm, obovate-oblong; upper 1-2.5x0.5-1 cm, sub-sessile, ovate or elliptic. Heads yellow, solitary or corymbose on slender peduncles. Involucral bracts linear-lanceolate, acute, margin scarious usually wolly. Receptacle glabrous. Achenes 8-10 ribbed, slightly hairy.

Common along railway line and sides of the walls.


*Caesulia axillaris* Roxb. Pl. Cor. 1:64, t, 93, 1795; FBI 3:291; FUGP 1:422.

An erect or decumbent, glabrous annual herb, upto 50 cm high. Leaves 6-13x0.3-0.8 cm, alternate, sessile, lanceolate, serrulate, acuminate, tapering in an auricled base. Head white or light purple, axillary, sessile. Involucral bracts two, fleshy, opposite, crenulate, keeled and winged at the back. Pappus absent. Achenes minute, flat, 1-ribbed, on each side.

Abundant in paddy fields.

Flowers & Fruits: September-January; Locality: Gyanpur. Kasturi Singh,

7. *Carthamus* L.

A. Heads yellow; plant spiny, achene brown …….. 1. *C. oxyacantha*

AA. Heads orange-red; plant less spiny;

Achene white ....................................................... 2. *C. tinctorius*


An erect, thistle like, annual herb upto 60 cm high. Stem and branches white. Leaves 5-10x2.5-5 cm, oblong or oblong-lanceolate, margin spinescent, upper sessile or sub-sessile, lower half amplexicual. Head orange-yellow spines. Pappus absent. Achenes obovate, 4-angled, smooth, shining.
Common in cultivated field after harvesting on dry sandy soil.


A glabrous, annual herb. Leaves 6-12x3-5.5 cm, oblong, lanceolate, spinose-toothed. Head terminal orange yellow. Achene white, shining.

Cultivated for its seed oil.

Local name: barre; Flowers & Frutis: March-May; locality: Suriyava. Kasturi Singh, 6232.


A small prostrate or procumbent, glabrous, annual herb. Branches spreading from the root. Leaves alternate, bipinnatifid, deltoid in outline, segments oblong or linear. Head golden-yellow. Involucral bracts widely spreading oblong as long as the achene. Achene 3x1.5 mm, cuneate-oblong, compressed, grooved.

Common in grassland on wet, sandy places.


9. *Cichorium* L.


An erect or decumbent, hispid, annual herb with milky latex. Leaves oblanceolate or broad-lanceolate, stem clasping; basal leaves pinnately divided;
upper ones simple or lobed. Head bright blue, axillary and terminal sessile. Pappus short, scaly. Achene glabrous.

Common in crop fields.


10. **Cosmos**


An erect, much branched aromatic, annual herb. Stem ribbed, glabrous. Leaves 2-3 pinnatifid, entire, glabrous, foliaceous. Head golden-yellow, 5.8 cm in diam., solitary on 10-15 cm long peduncles. Pappus absent. Achenes 1.5 cm long, fusiform, 4-angled, hispidulous, beaked with 2-opical retrorsely bristly awns.

Cultivated in garden for ornamental purposes. Often met with as an escape.


11. **Eclipta L. nom. cons.**


A prostrate or procumbent or suberect, branched, hairy, annual herb. Hairs white, apressed. Leaves 2-8x0.5-2 to 3 cm, oblong-lanceolate, entire or toothed, acute or acuminate, base cuneate, dark green above, pale beneath. Head white, 0.5-1 cm in diam., solitary or two on unequal peduncles in axils. Papus absent. Achene minute, triquetrous, truncate, compressed, angles winged, verucose, dark brown or black.

Abundant throughout the area on the clavey soils.
Local name : Bhangariga; Flowers & Fruits : July-April; Locality : Throughout the area. Kasturi Singh, 6535.

12. *Elephantopus* L.  


An erect, rigid, hairy, annual herb, upto 40 cm high with fasciculated roots. Stem dichotomously branched; hairs white and appressed. Leaves 10-20x4-7 cm, radical, sessile, oblanceolate, obovate, crenulate, obtuse, dark green above pale beneath. Head violet or purple, terminal, sessile, 2 cm in diam., inclosed by 3 large, cordate, leaf like bracts. Involucral bracts in two rows, linear. Pappus fo 4-5 rigid bristles. Achenes slightly pubescent, 10 ribbed, brown.

Common in orchard, during rainy season. Roots are used for healing of wounds and to cure filarial conditions.

Local name : Hathi Chinghar; Flowers and Fruits : September-December; Locality : Gyanpur. Kasturi Singh, 6734.

13. *Erigeron* L.  

*Erigeron Canadensis* Sp. Pl. 863, 1753; FBI 3:254; FUGP 1:408.

An erect, slender, much branched, hirsute, annual herb upto 1m high. Leaves 4-10.5x0.6-2 cm, narrowly linear or linear-lanceolate, entire or toothed, acute, base cuneate. Head yellowish white 4-6 mm in diam., in branched panicles. Involucral bract narrow, acuminate, glabrous. Pappus dirty white. Achenes 1.5-1.7 mm long, narrow, flat, glabrous.

Common along road side and in waste fields in moist shady places.


14. *Gnaphalium*

A. Head in leafy spike; flower white .................. 2. *G. polycaulon*  
AA. Head in leafless corymb ......................... 1. *G. leuto-album*

   An erect, ascending or decumbent, white-woolly, annual herb upto 40 cm high. Leaves 2.5-9x0.5-1.5 cm, alternate, sessile, spathulate or linear-oblong, entire, obtuse, terminal corymbose clusters. Involucral bract oblong, obtuse, hyaline. Pappus brown or white. Achene oblong, papilose brown.

   Common in moist low lying areas and along river bank.


   A slender, erect or decumbent, wolly annual herb. Stem spreading from the base. Leaves 1.2-5.4x0.2-0.5 cm, linear-lanceolate, entire, appiculate, wolly on both surfaces. Heads brown in simple or branched leafy spikes. Pappus small, white. Achene ovoid, minutely papilose.

   Common on moist sandy soil along river banks and in crop fields.


15. **Grangea** Aans.


   A prostrate, procumbent, villous, annual herb. Leaves alternate, sessile, sinuate-pinnatifid or lobulate. Head yellow, 0.62 cm in diam., globose, solitary
or rarely two on short leaf, pubescent. Pappus a short tube with fimbricate mouth. Achene 2-3 mm long, stipitate, glandular, brown.

Abundant on moist sandy soils along the banks of rivers and margin of ditches.

Flowers and Fruits; December-june; locality: Gopiganj. Kasturi Singh, 6968.

16. *Lactuca* L.

*Lactuca sativa* L. Sp. Pl. 795, 1753; FBI

An erect, glabrous, annual herb with milky latex. Radical leaves variable; cauline, auricled. Flowers yellow, in long irregular panicles. Achenes flattened, brown with long beak.

Cultivated for its leaves used as ‘salad’ also met as an escape.

Local name: Salad; Flowers & Fruits: March-July; Locality: Gyanpur. Kasturi Singh, 6234.

17. *Laggera* Sch. –Bip. ex Hochst

A. Stem not winged; heads yellow ………………. 2. *L. falcate*

AA. Stem winged; heads purple ………………… 1. *L. aurita*


An erect, viscidly pubescent or villeus annual herb up to 70 cm high. Leaves 3-7x1-2 cm, alternate, sessile, toothed, lobed or half-pinnatifed, shortly decurrent, sub-acute. Heads pink 2-3 cm in diam., arranged in terminal, panicled corymb. Involucral bract biseriate, linear, acute, shortiy willous. Pappus white. Receptacle glabrous. Achene dark red.

Common on dry, sandy soil in waste fields also in harvested wheat fields.

2. *Laggera falcata*

18. *Launnea*

A. Plant with yellow latex ............................... 2. *L. asplenifolia*

AA. Plant with white latex .............................. 1. *L. acoulis*


An erect or decumbent, glabrous, annual herb. Leaves 3-6 cm long, linear or linear-lanceolate, sparsely dentate. Flowers yellow, solitary or few in terminal racemes. Pappus white. Achene oblong brown.

Found along river banks.


A prostrate or procumbent, glabrous, annual herb with white or grayish latex. Leaves 7-15x0.7-2.5 cm, all radical, sessile, oblong, ob lanceolate, sinuate-lobed or pinnatifid, lobes minutely toothed with white spinecent ends. Head yellow, terminal on long, naked, paniculately branched floral shoot. Involucral bract linear, glabrous, margin scarious. Receptacle glabrous. Pappus hairs united at their base. Achene columnner, angled and thickly ribbed. Yellowish-white.

Common on dry soil.


19. *Parthenium L.*

An erect, tufted, profusely branched, glaucous herb upto 1 m high. Stem hairy, scabrid, angular, longitudinally grooved. Leaves 2-15x1-8 cm, alternate, pinnately or bipinnately dissected, segments linear, entire, acute. Head cream colour, 4-5 mm in diam, in axillary or terminal, leafy, corymb like cymes. Pappus absent. Achenes 2x1 mm, obovate, crowned by persistant remunants of corolla and style.

Frequent along road sides.

Local name; Gazar ghas; Flowers & Fruits: April-December; Locality: Throughout the area. Kasturi Singh, 6319.


*Pluchea lanceolata* Cl. Comp. Ind. 94, 1876; FBI 3:272; FUGP 1:458. Pl-VII

An erect, stout, hoary-pubescent, perennial herb upto 1.5 m high. Leaves 4-7x1-1.5 cm, oblong or oblanceolate, entire or sparsely dentate, obtuse. Head pink or purple, 4 mm in diam, in compound corymbs. Involucral bract mant, seriate. Pappus white. Achene brown minute.

Found on dry, sandy soil.


21. *Pulicaria* Gaertn

A. Plant white-cottony, leaves crisped and toothed,

Ray-flowers ligulate, achene glabrous ............. 1. *P. crispa*

AA. Plant green with yellowish glands, leaves

entire, achenes hairy ..................................... 2. *P. foliolosa*


An erect, white-cottony, annual herb, 15-70 cm high. Leaves 1-4x0.5-0.8 cm, linear or linear-oblong, crisped and toothed, amplexicaul. Head yellow
on terminal short peduncles. Pappus hairs connate at the base with the outer
ring of minute scales, white. Achenes minute, glabrate, oblong.

Common in crop field and along river banks.

Flowers & Fruits: January-April; Locality: Suriyava. Kasturi Singh,


An erect, branched annual herb, 15-60 cm high, glandular-pubescent or
tomentose above, sub-glabrous below. Leaves 3-6x0.7-1 cm, linear-oblong or
oblanceolate, entire, amplexicaul, acute. Head orange-yellow on terminal
slender peduncles. Pappus few, white. Achenes minute, sparsely hairy.

Common on sand and moist soil along the bank of rivers.


22. *Saussurea* DC nom cons.

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

An erect, glabrous or puberulous, annual herb, 15-100 cm high. Leaves
3-7.5x1.5-3 cm, tyrate-pinnatified, glabrous or puberulous above, white-cottony
beneath, segments sub-entire or dentate, terminal one largest, broadly-
triangular ovate, acute, radical leaves cauline, petioled, sessile. Head pink or
purple, 2 or 3 on long, slender, striated, terminal peduncles. Pappus long,
white. Achenes 2-3 mm long, oblongobovoid, brown, glabrous, 10 ribbed.

Common in moist shady places.


23. *Solidago* L.

*Solidago canadensis* L. Sp. Pl. 878, 1753.

A large, scabrous shrub. Leaves 5-12x0.8-1.5 cm, alternate, linear or
oblong-lanceolate, dentate, acabrous, acute. Heads bright yellow in dense,
unilateral, recurred, axillary racemes. Pappus brown. Achene minute, brown.
Cultivated for ornamental purposes.


24. *Sonchus* L.

A. Leaf-auricles acute, spreading, achenes

Muricate .................................................. 2. *S. oleraceus*

AA. Leaf-auricles rounded, appressed to stem,

Achenes not muricate ................................. 1. *S. asper*


An erect, robust, annual herb, 15-60 cm high, with milky latex. Leaves 5-18x2-7 cm, elliptic-oblong, runcinate or pinnatifid, margin spinous-toothed, radical leaves alternate at the base, cauline leaves with large, rounded, appressed, auricles. Heads yellow, 1.5-2.5 mm in diam., in umbel like cymes. Involucral bracts glabrous. Pappus copious, white. Achenes comprised, ribbed.

Frequently found on moist sandy places.


An erect, glabrous, annual herb. Leaves thin, half-amplexicaule, entire or runcinate-pinnatifid, sharply dentate. Flower yellow in irregular, umbellate cymes. Achene narrowly obovate, compressed, longitudinally ribbed, muricate between the ribs.

Common along road sides and waste places.


25. *Sphaeranthus* L.

A prostrate or procumbent, hairy, annual herb. Stem winged. Leaves 1-5x0.2-1.5 cm, alternate, sessile, obovate-oblong or linear-oblong, dentate, obtuse. Head pink or purple, 0.5-1.5 cm in diam., globose, ovoid on solitary, terminal peduncles with goothed wings. Pappus absent. Achenes minute, glabrous, stipitate.

Abundant on moist clayey soil chiefly in paddy crop field after harvesting.

Local Name: Gundi; Flowers & Fruits: October-February; Locality: Suriyava.

Kasturi Singh,

26. *Spilanthes* L.

*Spilanthes paniculata* Wall. ex DC Prodr. 5:625, 1835. *S. acmella* Clarke Comp. Ind. 138, 1876; FBI 3:307; FUGP 1:429.

A prostrate or procumbent, hairy, annual herb, 5-40 cm high. Stem purplish. Leaves 2-5x1-2.5 cm, opposite, ovate-lanceolate, irregularly crenate-serrate or sometimes entire, acute or sub-obtuse, cuneate at the base, glabrous on both surfaces. Head yellow, solitary or panicked on long peduncles. Achene glabrous or scabrid.

Commonly found in moist and shady places. Flower bitter in taste, when chewed removes bad smell from the mouth and cleans the teeth.


A large, hairy shrub, 2-3 m high, with spreading branching. Leaves 10-20x5-10 cm, alternate, ovate or orbicular, entire or 3-5 lobed, crenate, acute, base cuneate or decurrent. Head yellow, radiate, 10-15 cm in diam, solitary,
axillary and terminal. Pappus of scales with 1 or 8 bristles. Achenes 5x2 mm, compressed, quadrangular, hairy, brown.

It is mostly cultivated as ornamental plant, also found in waste-lands as escape.


28. **Tridex L.**


A procumbent or prostrate, hispid, perennial herb. Leaves 2.5-5x1-2 cm, opposite, ovate-lanceolate, dentate, acute. Head yellow, 0.7-1.5 cm in diam., solitary or slender, long peduncles. Pappus of many shining feathery bristles. Achene oblong, densely silky-hairy, brown or black.

Common on dry, sandy soil along road side and railway tracts.


29. **Vernonia** Schreb. nom. cons.

A. Head large, violet, achenes black ............... 1. *V. anthelmentica*

AA. Head small, pink, achenes brown ............ 2. *V. patula*


An erect, branched, hirsute, annual herb upto 90 cm high. Leaves 6-15x3-6 cm, alternate, obovate-lanceolate, serrate, acute, pubescent. Head purple in terminal leafy panicles. Involucral bracts many, seriate, linear, obtuse, margin paleaceous, pubescent. Pappus paleaceous, rigid, purplish-red. Achene obtuse, 8-ribbed.

Cultivated in garden for ornamental purpose. A preparation of the achene is used as a remedy for skin disease and scorpion sting.


An erect or decumbent, branched, pubescent, annual herb, 3 cm-1.5 m high. Leaves 1-7.5x0.4-5 cm, alternate, elliptic-lanceolate or ovate-lanceolate, entire or toothed, acute or obtuse, cuneate or acute at the base. Head blue or purple, 0.5-1 cm in diam., in lax divaricate terminal corymbose panicles. Pappus white, biseriate. Achenes oblong, terete, hairy, brown.

Abundant on dry and moist soil with variation in size (1-5 cm long in grassland, 5 cm to 2 m in other places) and flower colour ranging from blue, violet, purple, pink and pure white.

Local name: Sahdeyia; Flowers & Fruits: December-May; Locality: Throughout the area. Kasturi Singh, 6970.

A. plant and involucral-bract white, villous  
   to tomentose ........................................ 2. *V. vestita*  
AA. plant and involucral-bract hispidly hairy … 1. *V. indica*  

A small, erect, scabrous, rigid, annual herb upto 40 cm high. Leaves 1.5-4x0.3-1 cm, lanceolate or oblong-lanceolate, serrulate, acute, auricles rounded or hastate. Head orange-yellow, 0.5-1.5 cm in diam., solitary on spreading, terminal panicles. Pappus of ray floret absent, few in disc, slender. Achenes sparsely hairy, terete pale.
Common on dry sandy soil in grassland.


An erect, wooly annual herb, 15-60 cm high. Leaves 2-10x0.7-2.5 cm, sessile, oblong or lanceolate, sub-cordate lobes. Head yellow, 0.7-2.5 cm in diam.m in axillary or terminal corymbose panicles. Pappus white. Achenes oblong-cylindric, sub-silky, yellowish.

Common in sugar cane field and Arhar field.


31. *Xanthium* L.


An erect, scabrous, annual herb upto 1m high. Stem fustular, hispidulous and black dotted. Leaves 5-10x4.5-9.5 cm, broadly triangular-cordate-ovate, coarsely dentate, acute or acuminate. Heads yellowish-green, unisexual in terminal and axillary racemes. Pappus absent. Fruiting involucles with 2 erect beaks and covered with hooked prickles. Achenes obovoid, thick, glabrous.

Abundant in moist and sandy places.

Local name : lapetua; Flowers & Fruits : September-June; Locality : Throughout the area. Kasturi Singh, 6737.

56. **PLUMBAGINACEAE**

*Plumbago* L.

A. Flowers white, calyx wholly covered with
stalked glands ................................. 2. *P. zeylanica*

AA. Flowers blue, calyx glandular in

upper part only ............................... 1. *P. auriculata*


A scandent shrub, upto 1.5 m high. Leaves 4-7.5x1-3 cm, alternate, oblong, entire, obtuse or acute, marrow at the base, glabrous, dark green above, pale beneath. Flowers blue, in terminal racemes. Capsules oblong, clavate.

Cultivated in garden for ornamental purpose.


An erect or diffused perennial under shrub. Branches seriate. Leaves 3-10x2-5 cm, ovate or oblong-ovate, entire. Flowers white, sub-sessile in bracteates, glandular-pubescent, spike form raceme. Capsule oblong, apiculatem enclosed with in the calyx. Seeds oblong.

Frequent along road side. Roots are appetized, used in skin disease, diarrhoea and piles.

Local name: Chiri; Flowers and Fruits: September-April; Locality: Gyanpur. Kasturi Singh, 6738.

57. **PRIMULACEAE**

*Anagallis* L.


An erect or procumbent, glabrous, annual herb, upto 30 cm high, branches quadrangular. Leaves 1.5-3x1-1.7 cm, opposite, sessile, ovate, entire, acute, base cordate. Flowers blue, solitary, axillary, on long slender peduncles. Decurred in fruits. Capsules 5x5 mm, dehiscing transversely. Seeds numerous, minute, trigonous.
Common in agricultural fields and in moist locations.

Flowers & Fruits : November-April; Locality : Throughout the area. Kasturi Singh, 6923.

58. SAPOTACEAE

A. Calyx-lobe 4-5, staminodes absent .................. 1. Madhuca

AA. Calyx-lobe 6-8, staminodes present

B. Flowers tetramerous, stamens 8,
   fruits orange yellow ............................. 3. Mimusops.

BB. Flowers trimerous, stamens 6,
   fruits Reddish-yellow. ............................ 2. Manilkara


A large, crowned, deciduous tree, young branches pubescent or tomentose. Bark blackish grey with vertical cracks, blaze pink, red. Leaves 10-20x6-8 cm, clustered at the ends of branches, oblong, elliptic, entire, shortly acuminate, base rounded or acute, rusty tomentose or copper coloured when young. Flowers cream coloured, fleshy in dense fascicles near the ends of leafless branches, panicles dropping, rusty tomentose. Berries 2-5 mm in diam, ovoid, fleshy, cream-coloured when ripe. Seed one, rarely more than one, dark brown, shining.

Common throughout the area, the succulent corollas are eaten raw or cooked. They are extensively used for preparation of distilled liquors and raw material for production of alcohol and vinegar by fermentation. The seed yield edible oil and used in manufacture of soap. The oil cake make good manure.

Local name : Mahua; Flowers : March-May; Fruits : June-August; Locality : Gyanpur. Kasturi Singh, 6237.
2. *Mimusops* L.


A medium sized evergreen tree. Bark dark-grey to almost black, blaze cream coloured. Leaves 6-10x3-5 cm, oblanceolate, oblong, elliptic-ovate, coriaceous. Flowers dull-white, star-shaped, solitary or in clusters. Berries narrowly ovoid, orange or yellow when ripe. One seeded.

Cultivated in garden for its fragrant flower.

Local name: Maulshri; Flowers: April-May; Fruits: May-August; Locality: Gyanpur. Kasturi Singh, 6322.

59. **EBENACEAE**

*Diospyros* L.

A. Bark dark grey, exfoliating into

rectangular scales ............................... 1. *D. tomentosa*

AA. Bark blackish, exfoliating into

transversely cracks .............................. 2. *D. cordifolia*


A medium sized tree, young part tomentose. Leaves broadly ovate, base cordate. Flower white, calyx funnel shaped. Fruit globose, yellow when ripe. Pods can be used.

Common in forest areas.

Flowers: April-May; Fruits: July-September; locality: Gopiganj. Kasturi Singh, 6323.


A large shrub or small tree. Leaves ovate-oblong, ovate-lanceolate, acute, base cordate or rounded hirsute on both surfaces. Male flowers pale white in axillary cymes. Fruits globose, yellow at maturity.
Common on waste lands and along road-sides and in forest.

Flowers: March-May; Fruits: June-September; Locality: Jangiganj. Kasturi Singh, 6238.

60. **OLEACEAE**

A. Large shrub or small tree, branches quadrangular, corolla tube orange ................ 2. *Nyctanthes*

AA. Scandent shrub, branches cylindrical,
corolla tube green or white ....................... 1. *Jasminum*

1. *Jasminum L.*

A. Leaves simple, flower white

B. Flower single .............................. 4. *J. multiflorum*

BB. Flower double ............................. 5. *J. sambac*

AA. Leaves compound, flowers yellow or white

B. leaflets less than 3, minute .................. 2. *J. grandiflorum*

BB. leaflet 3-7

C. Flowers yellow ............................. 3. *J. humile*

CC. Flowers white .............................. 1. *J. auriculatus*


A bushy or climbing shrub. Leaves 2-4x1-2 cm, simple or with a pair of minute leaflets, acute, glabrous. Flower white or terminal umbel, star-shaped, fragrant.

Cultivated in garden for its fragrant flowers.

Local name: Juhi; Flowers: June-September; Locality: Gyanpur. Kasturi Singh, 6465.


A climbing shrub. Leaves imparipinnate, leaflets 5-7, elliptic, ovate, ovate-lanceolate, glabrous. Flowers white, star-shaped, fragrant.
Cultivated in gardens.

Local name: Chameli; Flowers: Summer and rainy season; Locality: Gyanpur. Kasturi Singh, 6536.


A diffuse or climbing evergreen shrub. Leaflets 3-7 variable in shape, ovate, linear, ovate-lanceolate. Flowers bright-yellow, fragrant, in open clusters.

Cultivated in garden.

Local name: Pili Chameli; Flowers: Rainy season; Locality: Bhadohi. Kasturi Singh, 6645.


A scandent or diffuse, densely pubescent shrub. Leaves 4-8x3-6 cm, oblong, acute, base cordate. Flowers white, scented in terminal, many-flowered umbels. Fruits globose, black when ripe.

Cultivated in garden.

Local name: Chameli; Flowers: October-February; Locality: Gyanpur. Kasturi Singh, 6816.


An erect or subscandent, bushy shrub. Leaves 4-9x3-7 cm, elliptic, broadly-ovate, flowers fragrant in few to many-flowered clusters.

Cultivated in gardens.

Local name: Bela; Flowers: Summer season; Locality: Gyanpur. Kasturi Singh, 6324.
2. *Nyctenthes* L.

*Nyctenthes arbortristis* L. Sp. Pl. 6, 1753, Roxb. Fl. Ind. 1:85, 1832; FBI 3:603; FUGP 1:477.

A shrub or small tree with 4-angled branches. Leaves 7-15x4-7 cm, ovate, acute or acuminate, base rounded or cuneate, scabrous with bulbous-based hairs above, pubescent beneath. Flowers white with yellow or orange corolla tube. Capsules 1-1.5 cm long, orbicular, compressed, glabrous, emarginated at the apex.

Cultivated in garden.

Local name: harsingar; Flowers & Fruits: September-November; Locality: Bhadohi. Kasturi Singh, 6739.

61. **APOCYNACEAE**

A. Erect herb or climbing shrub

B. Erect herb

C. Flowers solitary or paired,

fruits follicle .................... 4. *Catharanthus*

CC. Flowers in cyme, fruits drupe ... 9. *Rauwolfia*

BB. Climbing shrub

C. Anthers exserted .................... 12. *Vallaris*

CC. Anthers included .................... 6. *Ichnocarpus*

AA. Shrub or tree

B. Planted armed ......................... 3. *Carissa*

BB. Plant unarmed

C. Leaves alternate

D. Leaves narrow, linear,

Flower funnel shaped .......... 11. *Thevetia*
DD. leaves oblong, flowers
   salver – shaped .................. 8. Plumeria

CC. Leaves opposite or whorled

D. Tree

E. Leaves opposite

F. Mouth of corolla
   without a coroma
   of scales ............ 5. Holarrhena

FF. Mouth of corolla
   with a coroma
   of scales ............ 13. Wrightia

EE. Leaves whorled .......... 2. Alstonia

DD. Shrub

E. Leaves linear, narrow ..... 7. Nerium

EE. Leaves oblong or elliptic

F. Plant erect,
   flowers white ... 10.
   Tabernaemontana

FF. Plant scandent,
   flower yellow ..... 1. Allamanda

1. Allamanda L.

Allamanda cathartica L. Mant. 2:214, 1771.

A scandent shrub. Leaves 4-10 cm long, whorled, oblong-ovate or
oblanceolate, acuminate. Flowers yellow, large, in few flowered terminal and
axillary cymes.

Cultivated for ornamental purpose in gardens.

2. **Alstonia R. Br. nom. cons.**


A small or medium-sized, evergreen tree with dense crown. Bark dark grey dotted with white lenticles, blaze cream, lateciferous. Leaves 10-20x4.5-5.5 cm, crowded at the end of branches, oblong, lanceolate, ovate, obtuse or shortly acuminate, bright green and shining above, pale beneath. Flowers greenish-yellow in compact umbellate cymes, fragrant. Follicles 25-60 cm long, terete, pendulous.

Planted in garden and along road sides. Bark is used in diarrhoea, dysentery and snake bite. Milky latex applied to ulcers by local inhabitants.

Flowers: December-March; Fruits: March-June; Locality: Gopiganj. Kasturi Singh, 6972

3. **Carissa L. nom. cons.**

A. Cells of ovary 2-ovuled …………………… 2. *C. opaca*

AA. Cells of ovary 4-celled …………………… 1. *C. carandas*

1. **Carissa carandas** L. Mant. 52, 1767; FBI 3:630; FUGP 1:483.

A large, erect, evergreen shrub. Spines paired, straight. Leaves 2.5-8x1.5-4.5 cm, broadly elliptic or oblong, corymbose cymes. Berries ellipsoid, smooth at first green, later purple.

Cultivated in gardens for its fruits.

Local name: Karaunda; Flowers: April-May; Fruits: June-july; Locality: Suriyava. Kasturi Singh, 6325.


An evergreen, thorny, shrub/ bark pale brown, blaze yellowish-brown. Leaves 1.2-4x0.6-2 cm, ovate, elliptic or sub-orbicular, acute, mucronate,
apiculate, glabrous, dark green shining above, pale peneath. Flowers white, tinged with pink, scented, in few-flowers terminal, corymbose cymes. Berries 5-6x5-8 mm, ellipsoid, black-shining, filled with purple pulp when ripe.

Common along railway lines and road side. The ripe berries are eaten by local people.

Local name : Jangali karaunda; Flowers : April-June; Fruits : October-January; Locality : Jangiganj. Kasturi Singh, 6326.

4. *Catharanthus* G. Don.

A. Leaves lanceolate, follicles curved .................. 1. *C. pusillus*

AA. leaves oblong, spatulate, follicles straight … 2. *C. roseus*


An erect, much branched, glabrous, annual herb. Stem and branches 4-angled. Leaves 4-8x1.5-2.5 cm, lanceolate, acuminate, margin minutely scabrid. Flowers white, solitary or paired. Follicles 4-5x0.2 cm, slender, straight, striate, glabrous. Seed 2-4 mm long, cylindric, rounded at the ends, muricately ribbed, black when ripe.

Common in field of sugar cane.

Flowers & Fruits : August-October; Locality : Suriyava. Kasturi Singh,


A small, glabrous, perennial herb. Leaves 3-5x1.5-2.5 cm, oblong or oblong ovate, obtuse, obtuse or rounded, apiculate, base acute, dark green, polished above, petiole 2-9, glandular. Flower white with yellow center or pink
with dark-red center, sessile or paired in axils. Follicles 2-3 cm long, narrowly cylindric, patent-hairy.

Planted in gardens for its flowers.

Local name: Sadabaher; Flowers and Fruits: Throughout the year; Locality: All along the area. Kasturi Singh, 6120.

5. **Holarrhena R. Br.**


A small or medium-sized, deciduous tree. Bark brownish-grey, blaze brownish. Leaves 10-30x5-10 cm, subsessile, ovate, elliptic-oblong. Flowers creamy-white in terminal cymes. Follicle 15-40x0.6-0.8 cm, paired, narrow. Seeds 1.25 cm long, linear-obalong with a tuft or hairs.

Common along railway lines. Juice of bark is taken in dysentery by local people.

Local name: Koriya; Flowers: May-July; Fruits: December-February; Locality: Bhadohi. Kasturi Singh, 6416.

6. **Ichnocarpus R. Br. Nom. cons.**


An evergreen, much branched, extensively climbing, shrub. Young parts rusty tomentose. Leaves 4-8x2-3.5 cm, elliptic-oblong or ovate-lanceolate, acute or acuminate, dark green, glabrous, shining above, pale, pubescent beneath. Flowers white, fragrant. Follicles 7-16 cm long, linear. Seeds 1.2-2 cm long, slender.

Abundant climbing on trees and hedges. Root is tonic used in fever, skin disease, as blood purifier, sypnitis, rheumatism and snake bite.

Flowers: September-December; Fruits: January-April; Locality: Gyanpur. Kasturi Singh, 6740.
7.  *Nerium* L.


A large evergreen shrub. Leaves 5-15 cm long, linear-lanceolate, acuminate, dark green above, pale beneath, coriaceous. Flower white, red or pink, fragrant in terminal cyme. Follicles 15-25 cm long.

Cultivated for ornamental purpose.

Local name : Kaner; Flowers & Fruits : throughout the year; Locality : Gyanpur. Kasturi Singh, 6015.

8.  *Plumeria* L.


A small tree. Leaves 20-30 cm long, obovate, oblong, acute. Flower golden yellow, fragrant, in terminal corymbose cymes. Follicles 30-15 c, long.

Planted in garden.

Local name : Gulachin; Flowers : June-September; Fruits : October-December; Locality : P.G. College, Gyanpur. Kasturi Singh.

9.  *Rauwolfia* L.

A.  Flower large, corolla tube red, fruits single … ….. 1. *R. serpentina*

AA.  Flower small, corolla tube white, fruit 2, fused .. 2. *R. tetraphylla*


An erect small, glabrous shrub. Leaves 5-18x2-7 cm, oblong-lanceolate, entire or wavy, acute or acuminate, dark green above, pale beneath. Flowers pink or white in terminal or axillary corymbose cymes. Drupe 8 mm in diam, single or paired, polished green, becoming red and finally black.
Found in moist shady situation. Root powder is a good remedy for insomniga, nervous break down and high blood pressure. The root juice is given internally in snake bite. The decoction of leaf is variably used in typhoid, malaria and other fever.


An erect, dichotomously branched. Dwarf, woody shrub, upto 1m high. Leaves 8-12x1.8-3.5 cm, 3-4 at a node with two unequal pairs, elliptic, acute, cuneate at the base, puberlous above, tomentose below, margin ciliolate. Flowers very small, white in terminal and lateral umbellate cymes. Drupe 5-6 mm in diam, globular, green becoming deep-red to black when ripe.

Rare, in waste field and in garden.


10. *Tabernaemontana* L.


An evergreen shrub. Bark silvery-grey. Leaves 8-12x2-4 cm, elliptic oblong, acuminate. Flowers white, in terminal corymbose cymes. Fruits 2.5-5x1-1.5 cm, with recurved beaks, deep red or orange inside. Seeds 3-6, embedded in red pulpy aril.

Frequent along river bank and railway lines.

Local name: Tengara; Flowers: July-August; Fruits: winter season; Locality: Gopiganj. Kasturi Singh, 6537.


An evergreen shrub or small tree. Bark grey, blaze light-yellow. Leaves 7-15x0.8 cm, linear, revolute, tapering at both the ends, dark green and polished above, pale beneath. Flowers white, yellow or orange, fragrant in sub-terminal cymes. Drupes euglobose, green, angular.

Cultivated in garden and also near temples.

Local name: Peela kaner; Flowers & Fruits: Throughout the year; Locality: P.G. College, Gyanpur campus. Kasturi Singh, 6016.


A large, woody climber. Bark light grey. Leaves 4.5-10x2-3 cm, elliptic, oblong, acute or acuminate. Flowers white in axillary, dichotomously branched cymes. Follicles 2, green, 10-15x4 cm, divaricate, spreading and incurved with white specks. Seeds many, 2 cm long, with tuft of white coma.

Common climbing on large trees and on the shrubs. Milky juice applied on old wounds.

Flowers: March-June; Fruits: Cold season; Locality: Bhadohi. Kasturi Singh, 6016.


A large shrub or moderate sized tree. Bark grayish white. Leaves 6-13x4-8 cm, elliptic, elliptic-oblong or obovate acute or acuminate, base
rounded. Flowers white, fragrant in lax, terminal, dichotomous cymes. Follicles deep green, 10-30x1 cm, pendent, joined. Seeds linear.

Rarely found in area. Bark is used in dysentery.

Flowers: May-September; Fruits: Most of the year; Locality: Suriyava. Kasturi Singh, 6417.

62. ASCLEPIADACEAE

A. Shrubs or small tree ...................... 1. Calotropis

AA. Twinners

   B. Flowers greenish yellow

      C. Follicles paired, spreading ....... 4. Gymnema

      CC. Follicles not spreading ........... 3. Dregia

   BB. Flowers pink or purple

      C. Follicles linear ..................... 5. Hemidesmus

      CC. Follicles ovate lanceolate ...... 2. Cryptostegia

1. Calotropis R. Br.

A. Corolla lobes ovoid, reflexed .............. 1. C. gigantean

AA. Corolla lobes hemispherical .............. 2. C. procera


A large, stout, hoary-tomentose shrub. Bark ash coloured, wrinkled, blaze yellow. Leaves 8-20x4-8 cm, elliptic or ovate-oblong, acute or shortly acuminate, base cordate, often amplexicaul. Flowers reddish, light purple or lilac or nearly blue, in terminal or axillary corymbose cymes. Follicles 7-10 cm long, recurved, turgid, smooth. Seeds brown, broadly ovate, flat, minutely tomentose, with a silky white coma.

Found in waste field, along road side. The coma of the seeds are used for atuffing purposes. The leaves are used as poultice on swelling. Preparation of flowers used in stomach trouble.
Local name: Madar; Flower: December-June; Fruits: March-August; Locality: Gyanpur. Kasturi Singh,


An erect or decumbent shrub. Leaves 8-18x6-12 cm, ovate-oblong, elliptic, acute or sub-nucronate, subamplexicaul. Flowers purple-red, pale silvery outside, fragrant, in terminal or axillary corymbose cymes. Follicles 5-8 cm long, recurved, smooth. Seeds brown, obovate, flat with silky-white coma. Common in open waste sandy dry places.


2. *Cryptostegia*


A large, evergreen, glabrous shrub. Leaves 5-10x3-5 cm, elliptic or oblong, entire, acute or acuminate, glossy, coriaceous. Flower large, pale purple or roasy in terminal, di or trichotomous cymes. Follicles 10-13 cm long, 2-3 mm broad, woody, angled or winged, divaricate. Seeds 7 mm long, oblong, compressed.

Found climbing over bushes along bank of rivers.

Flowers & Fruits: August-February; Locality: Gopiganj. Kasturi Singh,


*Dregia volobolis* (L. f.) Benth. ex Book f. in FBI 4:46, 1883. *Asclepias volubilis* L. f. Suppl. 170, 1781.

A twining shrub. Leaves 7.5-12.5x5-9 cm, oblong or elliptic, entire, glabrous, acute or acuminate, base rounded, truncate or cuneate. Flowers
yellow-green in axillary and interpetiolar umbelliform cymes. Follicles solitary or double, lanceolate, longitudinally ribbed.

Frequent in area of dense population of plants.


4. **Gymnema R. Br.**


A large, climbing shrub with soft, glabrous branches. Leaves 5-15x2.5-8 cm, membranous, broadly ovate, acute or caudate-acuminate, base cordate, glabrous or both surfaces, bright-green above, pale beneath. Flowers greenish-white or pale – yellow, in axillary or terminal corymbose racemes. Follicles 8-10 cm long, spreading, smooth, acute at both ends.

Rare, climbing on the trees along road-side.


5. **Hemidesmus**


A slender, Evergreen, twinning hairy shrub. Leaves 3-8x1.5-3.5 cm, elliptic-oblong, acute or obtuse, apiculate, base rounded, dark green above, pale beneath. Flowers greenish-purple in axillary clustered cymes. Follicles 10-15x0.5 cm, slender, divaricate, smooth.

Common in the area. Root is used as tonic, in fever, skin disease, as blood purifier, syphilis, rheumatism and snake-bite.

Local name: Anant mul; Flowers & Fruits: August-December; Locality: Suriyava. Kasturi Singh,

63. **GENTIANACEAE**

A. Free floating herb ........................................ 5. *Nymphoides*

AA. Terrestrial herb
B. Flowers white, ovary 1-celled

C. Flowers regular

D. Stamens 1 .................. 4. Hopea

DD. Stamens 5 .................. 2. Centaurium

CC. Flowers irregular .............. 1. Canscora

BB. Flowers blue, ovary 2 celled .......... 3. Exacum

1. Canscora Lamk.

A. Flower white, tinged with purple;
   calyx winged .................................. 1. C. decussate

AA. Flower pink, calyx not winged ............. 2. C. diffusa


An erect, dichotomously branched, glabrous annual herb upto 40 cm high. Leaves 1.5-4x0.5-1.5 cm, opposite, sessile, ovate lanceolate, acute, base rounded. Flowers in lax terminal or axillary cymes. Capsule oblong.

Abundant in maize and sugar cane field.


   C. lawii Wight icon t, 1327, 1848 (nom Clarke).

   A slender, repeatedly, dichotomously-branched glabrous annual herb, upto 60 cm high. Leaves 2-4x1-2 cm, membranous, broadly-ovate or elliptic-lanceolate, acute, apiculate, base rounded, upper sessile, lower petiolate. Flowers many in lax diffuse paniculate cymes. Capsules narrowly-oblong, membranous.

   Flowers & Fruits : September-march; Locality : Aurai. Kasturi Singh,
2. **Centaurium Hill.**


A small, erect, glabrous, annual herb, upto 20 cm high. Leaves 1-2×0.3-1 cm, sessile, radical rosulate, obovate or oblong, obtuse, cauleine, opposite-decussate. Flowers bright-pink in axillary or terminal lax dichasial cymes. Capsule oblong. Seeds many, minute, ovoid, black, reticulate.

Frequent in low lying areas.


3. **Exacum L.**


Rare, in sugarcane fields and near waste place in low condition.


4. **Hopea Willd.**

A small, glabrous, dichotomously branched from the base, yellowish-green, annual herb, 2-15 cm high. Stem 4-angled, more or less winged. Leaves 5-15x2-6 cm, sessile, ovate, entire, acute. Flowers yellowish or pale yellow, sessile or shortly peduncled, 2-3 cymose, terminal cymes. Capsules globose or ellipsoid. Seeds obscurely reticulate, black.

Common along river banks and margins of agricultural fields.

Flowers and fruits: December-march; Locality: Gyanpur. Kasturi Singh,

4. **Nymphoides Medic.**


Abundant in ponds, lakes and margin of paddy fields.


64. **HYDROPHYLLACEAE**

*Hydrolea L.*


An erect, glabrous, annual herb. Leaves 2-5x0.5-1.5 cm, lanceolate or oblong-lanceolate, narrowed at both ends. Flowers blue in short terminal racemes. Capsules small, ovoid-oblong, enclosed in the enlarged persistent calyx. Seeds many, minute.

Frequent, throughout the area mostly in marshy places. Leaves are used as poultice for callous ulcer.

Local name: Langali; Flowers & Fruits: September-November; Locality: Jangiganj. Kasturi Singh,
65. BORAGINACEAE

A. Style bifid ......................................................... 1. Coldenia

AA. Style simple

B. Style terminal

C. Ovary deeply 4-lobed ............. 4. Trichodesma

CC. Ovary entire of slightly lobed ..... 3. Heliotropium

BB. Style Gynobasic ......................... 2. Cynoglossum

1. Coldenia L.

*Coldenia procumbens* L. Sp. Pl. 125, 1753; FBI 4:144; FUGP 1:532.

A prostrate or procumbent, deep rooted, hairy, annual herb. Leaves 1.5-4x0.6-1.5 cm, crisped, ovate-oblong, coarsely serrate or subpinnatifided, scabrous. Flower white, small, solitary, axillary. Drupe pyramidal, 4-lobed, pyrenes 1-seeded.

Frequent in drying up ditches and elevated mounds associated with *Glinus lotoides* L. Fresh leaves are applied to rheumatic swellings.


2. Cynoglossum L.


An erect, hispid, annual herb, 30-90 cm high. Radical leaves 10-15x2.5-5 cm, oblong-ovate, serrate or dentate, acute, cauline, smaller in upper part, shortly petioled or sessile, lanceolate. Flowers white with blueish purple throat in terminal straigose, unequal raceme-like branches with curved tips. Nutlets ovate, densely glochidiate.

Common along road side, railway line and in orchards.

3. Heliotropium L.

A. Prostrate or procumbent herb .................. 3. H. strigossium

AA. Erect herb

B. Leaves upto 9.5 cm long; flowers pale blue, fruits 4-beaked ..................... 1. H. indicum

BB. Leaves upto 4 cm long, flowers white, fruits not beaked ..................... 2. H. ovalifolium


Pl-XVIII

An erect, hairy, annual herb, upto 75 cm high. Leaves 2.5-10x1.4-5 cm, ovate, ovate-lanceolate, undulate or sub-serrate, acuminate, base rounded, cordate or truncate, shortly decurrent, rugosa above, pilose beneath. Flowers pale violet, sessile, in simple or rarely forked, terminal and axillary bristly curved spikes. Fruits deeply two lobed, each lobe 4-ribbnd containing 2-angular beak. Pyrenes 1-seeded.

Common along road sides and ‘nullah’. Leaves applied to boils, ulcers, wounds and in stings of insects and reptiles.


Pl-XLV

An erect or sub erect, hairy, annual herb upto 40 cm high. Leaves 0.6-2.5x0.3-1 cm, elliptic, obovate, entire, obtuse, mucronate, tapering to the base. Flowers white in slender, hairy spikes. Nutlet 4, 1x1mm, one seeded, densely hairy on the back.
Frequent along river benks.


A small, prostrate or procumbent, much branched, perennial herb with long appressed, white hairs. Leaves 0.5-1.5x0.1-0.2 cm, alternate, linear, linear-lanceolate, entire, acute. Flowers white, small, simple spikes. Nutlets minute, dark-grey or brown, glabrous or minutely pubescent.

Common in grassland.


An erect or decumbent, branched, hispid, annual herb. Leaves 2.5-10x1.2-2.5 cm, opposite, sessile, oblong-lanceolate, ovate-oblong, entire, obtuse, base amplexicaul, scabrous with distinct stiff tubercle-based white hairs, more white, hispid beneath. Flowers pink, violet, blue or white, solitary and leaf-opposed or in terminal few flowered cymes. Nutlets 4, ovoid, 5 mm long, smooth, ash coloured.

Common in waste lands and in crevices of walls. The paste of root is helpful in reducing the swellings particularly of joints. It is also helpful in curing dysentery.

66. **EHRETIACEAE**

A. style dichotomously twice branched;

Drupe yellow when ripe, seed 1 .................. 1. **Cordia**

AA. Style once branched, dupe

black, seeds 1-4 ..................................... 2. **Ehretia**

1. **Cordia** L.


A medium sized, small, deciduous tree. Bark grey, blaze pale yellow, turning bluish on exposure, sticky. Leaves 7-8x5.5-9.5 cm, elliptic-oblong, suborbicular or ovate, entire, toothed or wavy, obtuse, base rounded or cuneate, shining green. Flowers white, fragrant in lax terminal and axillary cymes. Drupes ovoid, yellowish or pinkish at maturity with viscous pulp. Seed one, brown.

Common in the area. The fruits and leaves are used in cold, cough and influenza. The bark is astringent being used as gargle in throat trouble. Juice mixed with coconut milk is given to relieve colic pain.

Local name : Lasora; flowers : march-May; Fruits : July-September; Locality : gyanpur. Kasturi Singh,

2. **Ehretia** L.

*Ehretia laevis* Roxb. Pl. Corom. 1:42, t, 56, 1795; FBI 4:141; FUGP 1:531.

A small, deciduous tree. Bark smooth, greenish-yellow or ash-grey; base pale-white turning yellowish brown on exposure. Leaves 5-17x8.5-9 cm, alternate, elliptic or acute, dark green above, pale beneath. Flowers white, small, sessile, in terminal or axillary dichotomously branched cymes. Drupe 5 mm, globose, bilobed red becoming black with 1-4 seeded pyrenes.
Common throughout the area especially along road sides and railway lines.

Local name : Datranga; Flowers : January-March; Fruits : April-May; Locality : Bhadohi. Kasturi Singh, 6019.

67. CONVOLVULACEAE

A. Fruits 1-seeded; Flowers minute in panicles;

Fruits indehiscent .................................................. 5. Porana

AA. Fruits more than 1-seeded

B. Leaves silvery-silky beneath ......................... 1. Argyreia

BB. Leaves not as above

C. Styles 2, each 2-fid

D. Leaves orbicular, glabrous,

Flowers white ................................. 6. Volvulopsis

DD. Leaves elliptic, hairy;

Flowers blue ................................. 3. Evolvulus

CC. Styles 1, not divided

D. Stigma linear;

Ovary two celled ....................... 2. Convolvulus

DD. Stigma globose or elliptic ........... 4. Ipomea

1. Argyreia


A large-climber, branches silky-pubescent. Leaves 7-15x3-10 cm, broadly-ovate, entire, acuminate, base cordate, strigose above, silky-pubescent beneath. Flowers pink in capitates or sub-capitate peduncled cymes, bracts large, foliaceous. Berries 0.5-1 cm in diam. Baccate, orange coloured. Seeds 4.
Cultivated in garden for ornamental purposes. Leaves are applied as bandage on wounds by local people.


3. *Convolvulus* L.

A. Creeping or twinning herb, leaves hastate or auriculate, glabrous, flowers pedicilled ........... 1. *C. arvensis*

AA. Suberect or diffuse herb. Leaves elliptic or oblong, hairy. Flowers sessile or subsessile ...... 2. *C. microphyllus*


Pl-XXI

A twinning or creeping glabrous, annual herb. leaves 2-5.5 cm long, ovate, oblong or oblong-lanceolate, obtuse, apiculate, base auriculate or hastate. Flowers pink or white, solitary axillary. Capsules 6-8 mm in diam., globose, glabrous. Seeds 4, sub-trigonous, dark, reddish brown.

Common in wheat field.

Flowers and Fruits : October-February; locality : Throughout the area. Kasturi Singh, 6819.


A diffuse, sub-erect, annual herb. leaves 1.5-3x0.2-0.3 cm, linear-oblong, linear-lanceolate, obtuse, mucronate, base tapering villous on both surfaces. Flowers white or pinkish, solitary or paired in axils. Capsule ovoid, glabrous. Seeds 4, minutely puberulous, brown.

Frequent along road sides and railway tracts also found in grasslands.

4. **Evolvulus L.**

*Evolvulus alsinoides* (L.) Sp. Pl. (ed. 2), 1762; FBi 4:220; FUGP 1:546.  
*Convolvulus alsinoides* L. Sp. Pl. 157, 1753.

A diffuse, densely hairy annual herb. Branches spreading from a short woody root stock. Leaves 0.3-2.5x0.3-0.8 cm, elliptic, obtuse, acute, apiculate, base acute, densely clothed with appressed white hairs. Flowers blue, 1-3 on axillary long slender peduncles. Capsules globose, hairy. Seeds 4, glabrous.

Common in grassland under dry and shady situations. Plants are used as tonic and in dysentery.


4. **Ipomoea**

A. Erect or straggling shrubs ......................... 4. *I. fistulosa*

AA. Climbing or trailing herb or shrubs

B. Stem rooting at nodes ......................... 1. *I. aquatica*

BB. Stem not rooting at nodes

C. Leaves ovate

D. Flowers pink or purple .......... 8. *I. purpurea*

DD. Flowers white ....................... 2. *I. alba*

CC. Leaves variable in shape

D. Leaves pinnately divided ....... 9. *I. quomoclit*

DD. Leaves not as above

E. Leaves trilobed

F. Flowers red,

Seeds brown ........... 5. *I. hederifolia*

FF. Flowers pink,
Seeds black .......... 6. *I. nil*

**EE.** Leaves palmate

**F.** Plant glabrous ...... 3. *I. carica*

**FF.** Plant hairy ........ 7. *I. pesti-gridis*


*Convolvulus reptans* L. 1753; FUGP 1:555. Pl-XIX

An amphibious, glabrous, annual herb, stem- hollow, rooting at nodes. Leaves 4-12x1.5-5.5 cm, ovate-oblong, acuminate, base hastate or sagittate. Flowers pink, solitary or 2-5 together in a long peduncled cyme.

Common in muddy soil along the margin of ponds, ditches and ‘nullah’. The young shoots and leaves are eaten as vegetable. The milk juice is said to useful in stomach disorders.

Local name : Karmua; Flowers and Fruits : july-november; locality ; Jangiganj. Kasturi Singh, 6539.


A slender twinning herb. Stem smooth or sometimes municate. Leaves 7-20x4-11 cm, broadly-ovate, acute or acuminate, base deeply cordate with rounded auricles. Flowers large, white, on long peduncles, axillary. Capsules 2-3 cm in diam., ovoid-oblong, narrowed upward. Seeds irregularly trigonous, 1-1.5 cm long, glabrous, polished yellow.

Frequent near villages and houses. Flowers and fragrant, which open in evening and wither before noon, next day. Fruits are eaten as vegetable by local people.

Flowers and Fruits : October-March; Locality ; Suriyava. Kasturi Singh, 6820.

A glabrous climber. Leaves 4-6 cm in diam., deeply 5-7 lobed, lobes oblanceolate, obtuse. Flower purple violet or blue, solitary. Capsule subglobose, 2-celled, glabrous. Seeds pubescent.

Common climbing over bushes and small trees.


An erect or straggling shrub. Stem fistular. Leaves 7.5-23x5-10.5 cm, ovate, entire, acuminate, base cordate, the base of midrib has a gland on each side. Flower pink, large, in axillary or terminal, dichotomous, peduncled cymes. Capsules 2 cm long, ovate. Seeds densely covered with long, black, silky hairs.

Common throughout the area. The dried stem are used as fuel. The leaves are applied on swellings.

Local name: Behaya; Flowers and Fruits: August-May; locality: Throughout the area. Kasturi Singh,

A pretty, twinning, glabrous, annual herb. Leaves 5-11x2.5-7 cm, broadly ovate, 3-lobed, entire, acute, base cordate, glabrous. Flowers red in few-flowered, long-peduncled cymes. Capsules ovoid, apiculate, glabrous. Seeds trigonous, 5 mm long, covered with reddish brown hairs.

Found along road sides climbing on trees and shrubs.


A twinning, annual herb. Leaves 5-9x2-4 cm, ovate, cordate, more or less deeply 3-lobed; lobes ovate or oblong, entire, acuminate, thinly hairy. Flowers pale-blue, often tinged with pink, pedicelled, in 1-3 axillary clusters. Capsules 1 cm in dam. Sub-globose, glabrous, 3-celled. Seeds dark-brown, glabrous.

Common climbing on shrub, trees and walls.


A slender, hairy, twinning annual herb. Leaves 4-10x4-10 cm, deeply 5-7 lobed, hirsute on both surfaces, lobes ovate or elliptic, entire, acute or acuminate. Flowers pinkish-white, 1-3 in a head. capsule ovoid, glabrous, concealed in calyx. Seed minute, grey-velvety.

Common spreading on ground or twinning on shrubs. Flowers open after noon. Roots are purgative also used in dog-bite.

Flowers and Fruits: September-December; locality: Throughout the area. Kasturi Singh, 6744.

A hairy, climbing annual herb. Leaves 5-8x2.5-4 cm, broadly ovate, entire, acute, base cordate, bristly hairy on both surfaces. Flowers pink or pale-blue, on long axillary 1-few flowered peduncles. Capsule glabrous, 1 cm in diam.

Common along margin of ponds and ‘nullah’.


A slender, glabrous, twining annual herb. Leaves pinnately divided into filiform segments. Flowers red 1-3 on long axillary peduncles. Capsule ovoid, ovate, beaked, brown or black. Seeds black.

Common climbing on trees and bushes near villages.

Flowers and Fruits: August-December; locality: Throughout the area. Kasturi Singh,.

5. *Porana* Burm. f.

*Porana paniculata* Roxb. Pl. Cor. 3:31, 1819; FBI 4:222; FUGP 1:545.

An evergreen softly pubescent twinner. Leaves 2.5-10x2-6 cm, ovate, acuminate, base cordate. Flowers white, small, numerous in terminal axillary panicles. Capsules 5-6x5-6 mm, ovoid, membranous, pubescent. Seed one.

Common on trees and shrubs.

Flowers and Fruits: October-march; locality: Gyanpur. Kasturi Singh,
6. **Volvulopsis**


A prostrate, glabrescent herb, rooting at nodes. Leaves 0.8-3.5x0.7-3 cm, sessile or subsessile, alternate, orbicular, apex rounded or emarginated, base truncate, rounded or sub-cordate. Flowers white, 1 or 2, axillary. Capsules globular, glabrous or hairy. Seeds 2-3 black or brown.

Abundant in grassland, along road sides, railway tracts and in orchards.

Local name: Safed Sankhpushpi; Flowers and Fruits: March-August; locality: Throughout the area. Kasturi Singh, 6247.

68. **CUSCUTACEAE**

*Cuscuta* L.

*Cuscuta reflexa* Roxb. pl. Cor. 2:3. T. 104, 1798; FBI 4:225; FUGP 1:543.

*C. macrantha* G. Don. Gen. Syst. 4:305, 1838.

A leafless, glabrous, yellowish, twining, parasite. Flowers pale white, fragrant, solitary or in few-flowered racemes. Capsules depressed-globose, circumscissile near the base. Seeds 2-4.

Common on *Vitex negundo* L. and *Streblus asper* Lour. Plant is extremely used as remedy for cronic piles by local inhabitant.


69. **SOLANACEAE**

A. Fruit capsule

B. Capsule globose ........................................ 2. *Datura*

BB. Capsule ovate ......................................... 3. *Nicotiana*
AA. Fruit berry

B. Calyx reticulately veined, forming a bladdery husk round the fruits

C. Flowers peduncled, solitary, axillary,

Fruiuts yellow .............................. 4. Physalis

CC. Flowers sessile or subsessile,

In axillary clusters ......................... 6. Withania

BB. Calyx not reticulately veined,

Not forming bladdery husk around the fruits

C. Corolla bell shaped ....................... 5. Solanum

CC. Corolla tubular .......................... 1. Cestrum


A shrub. Leaves 5-10x2-5 cm, oblong or elliptic, acute or obtuse, glabrous and glossy above, pale, pubescent beneath, short clusters on axillary peduncles. Fruits 0.5-1 cm in diam, globose, dark violet or black when mature.

Flound along the road sides.

Local name : Din ka Raja; Flowers and Fruits : August-January; locality : Gyanpur. Kasturi Singh, 6654.


A shrub, Leaves 5-15 cm long, oblong, ovate to elliptic, tapering at the ends, shining. Flowers yellowish white in axillary and terminal umbelli form racanes. Fruits 5mm in deam. White at maturity.

Cultivated in gardeuns for ornamental purpose

Local name : Rat ki Rani; Flowers and Fruits : June – July; Locality : Gyanpur, Kasturi Singh. 6467
2. *Datura L.*

*Description* from *Datura metal L.* Sp, Pl. 175; *D. fastuosa L.* Syst. Nat. (ed.10) 2:932, 1759. FBI 4:243; FVGP2:9. – *D. alba* Nees in TLS 17:73 1837; FVGP2:9-D. *fastuosa* var. *alba* Cl. in FBI 4:243. Pl-XXII

A glabrous, annual shrub upto 1.5m hegh. Leaves 8-20x5-12 cm, ovate, sinuate, acute unequal seded at the base. Flower dull white. Capsules 3.5x3.5an, globose, covered with short conical tubercles seeds 4mm in diam, kidney shaped finely patted on the surfaces, light brown.

Common in waste fields. The seeds in form of paste along with seeds of *Brassica compestris* L. are applied in skin disease. The seeds are also used as narcotic.

Local name: Dhatura, Flowers and Fnts: April- October. Locality: Gyanpur, Kasturi Singh6328.

3. *Nicotiana L.*


An erect, viscidly pubescent, annual herb Radicl leaves 7.8-18x3-3-14cm, Sessile, elliptic oblong, entire, usually wavy, acute base narrowed, sub-amplexiaual, cauline leaves sessile, lanceolate, flowers gremishor pinkush white in destant lax racemes capsule 10x6mm, oroid, glabrous. Seeds minutely rugose.

Common, on moist, sandy soils, along the “nullahs” and walls

Local name: jungle tobacco flowers and fruits March - October : locality : Suriyavan Kasturi Singh6248

4. *Physalis*

*Description* from *Physalis peruviana* L. sp. Pl. 1760.1763 FBI 4: 238 raizada in supply FUGP 172.1976

An erect annual herb. Lwawes 3-6cm long, ovate, sinuate, angular or scarcely lobed. Flowers yellow, axillary, solitary, nodding. Verries 2-2.5 cm in diam. Globose, yellow when ripe, enclosed with in 5- angled, 4-5 long calyx.
Found in waste field and also cultivated for its fruits, juice of leaves are given in worms and bowel complaint.

Local name : Rasbhari, makoi ; flower and fruits ; December – march ; Gyanpur, Kasturi Singh, 6975

5. *Solanum* L.

A. unarmed………………………………………..1. *S. nigram*

AA. armed ;

B. diffuse or prostrate herb ……………….2. *S. surrattense*

BB. erect herb ………………………………3. *S. toryum*


An erect or sub erect, branched, glabrous annual herb upto 60 cm high. Leaves 2.8x1.5-5 cm, acute or acuminate, bose oblique. Flowers white in drooping sub-umbellate, extra axillary cymes. berries 5-8 mm in diam, black at maturity seeds yellow

Common in moist sandy and shady places. Berries are used in fever, diarrhhoa, eyes disease and hydrophobia. Young shoots are given skin disease. Decoctune of leaces are diuretic and laxative.

Local name: Makoe , flowers and fruits, November –june : locality P.G. college campus gyanpur, Kasturi Singh6924.


A prostrate, deep rooted, prickly annual herb leaves 5-15x2-8 cw, elliptic or oblong-ovate, sunuate, or sub –pinnatifed, prickely on both sides roots are ecxctorent used in cough, astema, fever and puin in chest. Decoctwn of plant used in gonorrhoea. Leaves are applied locality to relieve pain their juice given with black pepper in rheumatism
Local name: Bhat katayia : flower and fruits : june – January; Locality : Gopiganj, Kasturi Singh 6468


A wolly – tomentose, sparsely pricklu shrub upto 2 mm high. Leaves 5-18x4-10cm ovate, sunuate or coarsely lobed, acute base cordate rounded or unequal sided flowers white in extra axillary dense dichotomous cymes. Berries 1.5cm in diam, yellow at maturity seeds many brown.

Found along the bank of revers

Flowers and fruits: December-june, locality: Gopiganj kastui Singh 6967

6. **Withania pauq nom cons**


An erect stellately tomentose, annual herb upto 1.5cm high. Leaves 5-10x2.56-5cm, ovate entire sub-obtuse base cuneate, mimitely stellately pubescent on both surfaces. Flowers greenish or yellowish in subsessile axillary fascicles. Berries 2-5 cm in diam. globose, scarlet when ripe enclosed in membranous calux. Seeds minute, pale brown.

Found, on dry paces along the road sides. Ripe fruits are useful in liver complaints. Roots are tonic, narcotic, and abortive also used in rheumatism. Bruised leaves and ground roots used as local application to painful swellings and ulars. Seeds are used for coagulating milk.

Local name: Aswagandha : flowers and fruits : November – May; Locality : Jangigang, Kasturi Singh, 6925.

70. **SCROPHULARIACEAE**

A. Leaves usually alternate or the lower Sub- opposite or opposite:

B. Leaves linear – lanceolate, Flower pink or white
C. Corolla nor saccate at the base ..........1. *Antirrhinum*

CC. Corolla saccate at the base ..........2. *Striga*

BB. Leaves hastate or trilobed,

Flowers yellow, corolla supurred
at the base .................................................3. *Kickxia*

AA. Leaves opposite or verticillate:

B. aquatic or semiaquate herb :

C. Prostrate or ascending herb, 
rooting at nods .................................2. *Bacopa*

CC. erect herb:

D. stem fistular, flower regular;
tetramerous .................................9. *veronica*

DD. stem solid flowers irregular
pentamerous .................................4. *lunnioguka*

BB. Terrestrial herb:

C. Leaves verticillae, flowers regular,
tetramerous .................................7. *scoparia*

CC. Leaves opposite, flowers 
irregular, pentamerous, blipped:

D. flowers yellow ......................5. *lindenpergia*

DD. flowers not yellow .............. 6. *lindernia*

1. *Antirrhinum L.*


An erect, slender, glandular hairy annual herb 30-45 cm high. Leaves 2.5-5x0.2-0.3 cm Sub-sessile, upper alternate lower opposite narrowly oblong or linear. Flower white or pink sessile, solitary axillary. Capsule 5-10 mm long, ovoid, pubescent. Seeds many, compressed, keeled.

Common weed of cultivated fields and gardens.

Flowers and fruits : February – April; Locality : Bhadohi , Kasturi Singh.
2. **Bocopa Aubi. Nom. Cons.**

A. flowers pink or white……………………………1. *B. monniera*

AA. flowers yellow ………………………………………2. *B. procumbens*


An erect, sub-succulent, glabrous annual herb, rooting at the nodes. Leaves 0.4-2x0.2-0.7cm, opposite, sessile or sub sessile spathulate, entire, obtuse , base cuneate.

Flowers bluish – purple or white with purple veins, solitary axillary. Caosules 4-5x3-4 mm ovoid, glabrous, seeds many

Abundant in marshy and wet places near ponds , lakes and paddles, plants are nerve tonic also used in asthma stem and leaves are useful in snake bite

Local name : Nir-Brahmni, flowers and fruits : July-December; Locality: Aurai, Kasturi Singh, 6540


A diffuse, decumbent, glabrous, annual herb. Stem 4- angled. Leaves 1-1.5x0.3-0.5 opposite decussate. Sessile. Ovate-lanceolate or rounded, crenate-serrate, sub-acute. Or obtuse base rounded. Flowers yellow solitary axillary. Capsule oblong. Seeds numerous, minute, brown.
Found in garden as weeds.

Flowers and fruits : November-April . locality: Bhadohi. Kasturi Singh, 6926

3.  **Kickxia Dumort.**

*Kickxea ramsissima* (wall.) Janchen in Oesterr. Bot zeitschr 82:152.1933 –

A much branched, perennial climbing herb. Branches slender, pubescent with spreading hairs or glabrous. Leaves 1-3.5cm long, very variable in shape and size, lower 5-7 angled or lobed, triangular – hastate, upper lanceolate, acute, base sagittate. Flowers yellow, sohtary axillary. Capsules 3.5 mm in diameter, sparsely pubesent at the afex. Seeds minute, echinate, brown.

Common in crevices of walls and slopy margin of andulation formed by rivers plant is used as a remedy for diabetes.

Flowers and fruits : September – February; Locality: Suriyava Kasturi Singh, 6750.

4.  **Limnophila R. Br.**


A small, erect or prostrate annual herb 10-20 cm high. Leaves sessite, whorled, pinnatifid, lobes fteshy, sessile, acute, serrate. Flowers white or pale-white or pinkish, solitary, axillary, axillary and terminal racemes. Capsule subgbose, ellipsoid. Seeds many black, truncate or rounded.

Common on marshy places along the margin of lakes, and ‘mullah’. Plant is cousidered to be antiseptic Juce of plant rubbed over the body in pestilent fever and given internally in dysentery.
Flowers and fruits: September – February, Locality: Bhadohi, Katuri Singh 6751

5. **Linenbergia Lehm.**


An erect or decumbent – ascending, glandular – hauy, branched annual herb. Stem purplish tinged. Leaves 1.5-10x1-6cm long, ovate – elliptic, toothed, obtuse or subacute, base acute or runded, glandular – haery on both surfaces. Flowers yellow in axillary, glandular – haery panicles. Fruit globose, haery at the top. Seeds many brown.

Rare, in crevices of wall and rocks. Juice of plant is mixed with coriander applied in skin eruption.


6. **Lindernia Allioni**

A. Capsule ovate subglobose ................. 2. *L. Crustacea*

AA. Capsule linear oblong ...................... 1. *L. Ciliata*


A small diffusely broneched erect or decumbent glabrous annual herb. Leaves 1-4x0.5-1.5 cm, oblong, spinousus serrate, subacute or obtuse at both the ends. Flowers white or pink in lax terminal racemes. Capsules 1-1.5 long, lenear- oblong twice as long as calyx. Seeds brown. Common. In moist situation in grase lands associated with *Lindernia crustacea* (L.) F. Mueller.
Flowers and Fruits: July – December Locality Gyanpur, Kasturi Singh, 6542


A small, erect or diffuse glabrous or subglobrous annual herb leaves 0.5 -1.5x0.4-1cm ovate, crenate or serrate or sub-entire subs acute or btuse base rounded or obtuse. Flowers purple- blue, or white axillary and terminal capsules ovoid oblong, equaling or shorter than calyx. Seeds pale yellow, granulate with minute tail.

Common in grass lands road-sides and garden under moist situations

Flowers and fruits: July - December, locality: gyanpur Kasturi Singh, 6543

7. *Scoparia* L.

*Scoparia dulcis* L. sp. Pl. 166.1753, FBI 4:289 FUGP 2:27 Pl-XXIII

A erect much branched glabrous or subglabrous herb upto 70cm high. Stem 4-6 angled. Leaves 1-5x0.8-1.5cm opposite or 3.nately whorled elliptic or ehomboid or elliptic –lanceolate serrate obtuse base tapering. Flowers many white in terminal panicles capsules 3mm in diam globrous seeds minute many.

Common on sandy moist soils in the gardens vacant lots fields and along road sides. Leaf and stem is used in dysentery.

Flowers and fruits: August to March, locality: gyanpur Kasturi Singh, 6655

8. *Striga* Lour.

*Striga desiflora* benth in Hook Comp. Bot. Mag. 1:363.1836 FBI 4:299 FUGP 2:30 *Buchnera densiflora* Benth Scrop. Ind. 41.1835

An erect, scabrid, annual herb, leaves,1-3cm long, sessile linear-lanceolate, acute. Flowers white in densely –flowered spike. Capsules 3-5cm long, oblong ovoid.

Found in waste field and grasslands

Flowers and fruits: September – January; Suriyava. Kasturi Singh, 4752

An erect glabtois more or loss succulent annual herb upto 60cm high stem fistular, leaves 5-15x1.5-3 sessile or semi amplexcaual oblong lanceolate or linear oblong entire or or serratw acute base cordate . flowers white or pale purple in lax.axillary bracteate cymes. Capsules 3x2cm orbicular, orbicular oblong emarginated glabrous

Common in swampy areas along the margin of ‘tals’ ditches and nullah. Plant is used blood purification skin disease bruised and applied externally for healing the burns, ulcers and mitigation of swollen piles

Flowers and fruit: November – April; locality: Gyanpur. Kasturi Singh

71. **OROBANCHACEAE**

*Orobanchae*

*Orobanchae aegy ptiaca* pers. Syn, 2.181.1806 FUGP 2:37 *O. indica* Buch Ham .ex Roch. Fl. Ind. 3:37.1832 FBI 4:326, 1886

An erect pubescent annual root parasite upto 30cm high stem yellow . leaves scaly few lancuelate, slightly hairy . flowers bulish or violet in tax spike capsules 1-1.5cm long , oblong acuminate glabrous 2- valved seeds minutes many,

Common in field of mustard and wheat. Plant is used as cure for boils in throat of cattle also to stop diarrhea

Flowers and fruit: January – April; Locality: Aurai Kasturi Singh, 6020

72. **LENTIBULARIACEA**

*Untricularia*

*Untricularia aurea* Lour .Fl cochinch.1:26 1780 hara Fl. East ham 299.1966

*U Flexuosa* Val, enum 1: 198 1804 FBI 4:329l; FUGP 2:36

An erect flatuing aquatic ensectivorous, annual herb. Stolen much branched leaves whorled, pillarently divided intp numerous filiform segments.
Each penna usually with a small sub globose bladder at the base. Flower yellow in erect 3-8 flowered racanes. Capsule sub-globose, seed discoid, 4-6 angled with scarcely winged margins.

Common in stagnate water of ditches and ‘tals’ associated with hygrohiza aristate (Retz) needs.

Flower and fruits: October-January: Locality: Suriyava, Kasturi Singh, 6824.

73. **BIGNONIACEAE**

A Shurbs:

Flower yellow; Leaves unipinnate………………4 **Tecoma**

AA Tree:

B Leaves 2-3 pinnate:

Flower white, fragrant……………………………..3 **Millingtonia**

BB. Leaves unipennate:

C. Calyx glabrous; Flower scarlet in

pendulous raceme, fruits oblong

woody, straight…………………………………2 **Kigelia**

CC. Flower yellowish brown in terminal panicles: fruits
cylindric, twisted……………………………..1 **Haplophragma**

1. **Haplophragma P. Dop.**


A large tree Bark grey; blaze whitish leaves imparipinnate, crowded near the ends of branches; leaflets 5-7-168x4.5-10 cm, opposite sessile, elliptic, entire or undulate, abtuse, sometimes acuminate, base oboulouse rounds. Flowers yellowish brown large rusty wolly tomentose in dense terminal twisted. Seeds winged
planted along the road side as avenue tree.


2. **Kingelia D.C.**

*Kigelia Pinnata* DC prodr 9:247.1845

A medium sized spreading tree leaves imparipinnate leaflets 7-9, 7.5-18x4-7.5 cm, oblong ovate coriaceous, obtuse or acute. Flower scarlet coloure lax in hanging racanes. fruits 30-45x12, woody, ground like, hanging in several in long stalks.

Planted in gardens for ornamental foliage and flower.

Local name: Balam Khira, Jhar Phanus; Flower: May-July; Fruits: August-January; Locality: Gyanpur, Kasturi Singh, 6419.

3. **Millingtonia L. f.**

*Millingtonia hortensis* L. f. suppl.229.1781; Blatt & Mill. Beaut Ind Tr. 106, t.22 (Plate 29)

A tall tree Bark grayish black, corky blaze, creamy, acuminate, crenate. Flower white fragrant numerous in pendulous, terminal panicles.

Planted along road sides and gardens.

Flower: November-December; Locality: Bhadohi: Kasturi Singh, 6928.

4. **Tecoma Juss.**


A shrubs or small tree. Leaves 3-5 pinnate, leaflets 4-10x3-4 cm lanceolate or ovate lanceolate. Sharply serrate, acuminate. Flower bright yellow. Capsules 12-20 cm long leanear seeds thin winged.

Planted in gardens for ornamental purpose.
Flower: July- January; Fruits: February-July; Locality: Aurai, Kasturi Singh, 6544.

74. PEDILIACEAE

A  Flower yellow; fruits drupaceous, ......................1. Pedalium

AA  Flower pink, rosy or white; fruits capsule,
    beaked, not spinous.................................2 Sesamum.

1. Pedalium

Pedalium murex L. Syn. 1123.1759; Roxb. Fl. Ind. 3:114.1832; FBI 4:386; P. murioatum Saliab Prodr 104.1796.

A much branched erect or prostrate annual succulent herb. Leaves 4-6 cm long opposite, elliptic-ovate, coarsely crenate-seerate or sub-lobulate, obtuse or truncate, base acute glabrous above lower surface covered with minute, shining scales. Flower pale – yellow, solitary, axillary. Fruits 1.5-2 cm long glandular pyramidal – avoid above, bluntly 4 angled with sharp conical horizontal spines at base of each. Seeds 6x1.5 mm, 2 each cell, pendulous elongated- elliptic, 3 angled at the apex.

Found along river banks and marshy places along mullah and puddles. Flowers and Fruits: August- December; Locality Gopiganj, Kasturi Singh, 6656.

2. Sesamum L.


An erect, glandular pubescent aromatic annual herbs. Leaves 3-15x0.5-0.9 cm, ovate lanceolate, linear oblong entire or toothed acute. Flowered pink, solitary, axillary with two extra floral, yellow glands at the base penduncles. Capsules 2-3 cm long, oblong, erect, 4 angled seeds black or white, glabrous.
Common, on the waste land and on the road sides and gardens. Seeds are tonic and diurectic also useful in piles, poulice applied to ulcer. Seeds yield a fixed oils.

Local name: Til; Flower and fruits: August – November; Locality: Gyanpur, Kasturi Singh. 6657.

75. MARTYNIACEAE


An erect, densely-glandular hairy, branched annual herbs. Leaves opposite deltoid – ovate, sinuate- dentate base cordata, densely covered with hour on both sides. Flower pink or purple in terminal erect racemes. Fruits large woody beaked by two strong curved spins.

Commonly along road sides, railways tracks and in grasslands.

Flower anf fruits: August – November; Locality Gyanpur Kasturi Singh, 6658.

76. ACANTHACEAE

A. Shrubs:

B. Stamens 2, Sepals 5;.......................1 Adhatode

BB. Stamens 4, Sepals 4;.....................2 Barleria.

AA. Under shrub or herbs:

B. Corolla bilabiate

C. Sepals margin spinulose upper

lip of corolla obsolete, lower lip

spreading and 3lobed......................4 Blepharis

CC. Sepals margins not spinulouse,

Upper lip of corolla distinct

D. Plant procumbent or diffuse:.......8 Rungia

DD. Plant erect:
E. Flowers white…………2. *Andrographis*

EE. Flower white……….5 *hygrophilla*.

BB. Corolla sub-equally 5-lobed:

C. Ovules 3-12 in each cells;

   Calyx-segment acute, Stamens 4:……7 *Ruellia*

CC. Capsules 0.8 cm long,

Glabrous; seeds 4…………………..9 *Strobilanthes*.

1 *Adhathoda Nees.*


An evergreen, globose, foetid-smelling shrub leaves 6-20x3-8 cm, elliptic-lanceolate, entire acuminate base tapering shining green above, pale green beneath. Flower white, sub sessile in dense, peduncled, axillary, spikes at the ends of branches. Capsules 2.5-3x0.8-1 cm, clavate, pubescent seeds 4, sub-orbicular, rugose or tuberculate. Common in waste land and along road sides, leaves are used in cough, asthma and rheumatism.

Local name : Arusa; Flower and fruits :February – April; Locality : Jangiganj, Kasturi Singh.6125.

2. *Andrographis Nees*


An erect, globose, annual herb upto 1m high Stem 4 angled, Leaves4-10x1-2 cm sub sessile lanceolate linear lanceolate entire acute base acute dark green above pale in terminal and axillary panicles. Capsules 1.5-2.5x0.3-0.5 cm tapering to the ends glabrous. Seeds 6-18 oblong or rounded. Common on the waste land along the road sides and railways lines. Infusion of plant is used in fever.
Local name: Kalmegh; Flower and Fruits: September-December. Locality-Kasturi Singh, 6754.

3. **Barleria** L.

A. Plant, spinous, flower yellow, capsule, 2-seeded…………2. **B. prionitis**

AA. Plants not spinous, flower blue,

Capsule 4, seeded……………………………………………………1. **B. cristata**


   An erect or diffuse, pubescent, perennial under-shrub. Leaves 4-12x1-3.5 cm, ovate-lanceolate, entire, acute, base or pinkish on axillary and terminal short dense spikes. Bracts absent, Capsule 1-5 cm long ellipsoid, Seed four or bicular, compresses, silky-hairy.

   Found along the margin of ponds in village.

Flower and Fruits: July-December; Locality: Bhadohi, Kasturi Singh6545.


   A muh branched, pickly, glabrous shrub, upto 1.5 m high, leaves 3-5x1-2 cm , elliptic, ovate, lanceolate, entire, acute. Flower orange or yellow, axillary solitary passing onto terminal spikes. Bracks foliar capsules ovoid, seeds 2 compressed, silky-hairy.

   Found in the margin of orchards.

Flowers and fruits: January–June; Locality: Gyanpur, Kasturi Singh.6021.

4. **Blepharis**.


   A prostrate hispid, annual herb. Leaves 1-2.5x0.4-0.7 cm, sub sessile whoeled, unequal, oblong-ovate or elliptic, entire, obtuse mucronate, hairy, pale beneath. Flower blue, sessile solitary axillary. Capsule 0.4-0.7cm, long,
ellipsoid, compressed, glabrous, enclosed in persistant sepals seeds. Found in grassland especially on rocky places.

Flower and Fruits: July-December; Locality: Jangiganj, Kasturi Singh6546.

5. **Hygrophila R.Br**

*Hygrophila auriculata* (Schumach) Heine in Kew Bull 10:173:1962-

*Barleria auriculata* Schumach in schm.8c. Thorn Besker Guin. Pl.285.1827- *B. longifolia* L. Pl. 2:122. 1755; 8c Amaon. Acad 4:320:1759-


An erect, hispid on the nodes, spinous, annual herb, branched from the base. Leaves 5-15x0.8-1.5 cm sessile whorled, 2 outer ones longer, lanceolate, ciliate, acute base tapering each leaves with a sharp, straight, yellow spine. Flower bright-blue to blue-purple, in sessile axillary whorls, capsule 6mm long, linear-oblong. Seeds 4-8, hairy. Common in marshy places along the margin of lakes ditches and puddles. Leaves roots and seeds are used in faundice, rheumatism and disease of urinogenital tracts.

Local name: Talmakhana; Flower and Fruits: September – December; Locality: Gopiganj, Kasturi Singh, 6755.

6. **Peristrophe Nees**


An erect much branched annual herb upto 1.5m tall stem 6 angled hairy at the nodes. Leaves 3x10x1.2-4.5 cm ovate entire acuminate base rounded. Flower pink or purple in trichotomously branched, lax panicles. Capsules 6-8mm long, beaked narrow into a stalk pubescent. Seeds or bicular, papillose, slightly rugose.
Common in shades of tree also also found in old monuments.


7. **Ruellia L.**


An erect, much branched glabrous, annual herb, upto 40cm high. Root tuberous, leaves 5-10x2- 4.5cm Elliptic obovate, entire sub-undulate, shining, obtise base cuneate. Flower blue, paired in axillary or terminal cymes. Capsules 1-1.5 cm long linear-oblong, mucronate black. Seeds sub-bicular, compressed, dull brown. Common in moist, shady places along road sides and in orchads.

Flower and Fruits : July-October; Locality: Gyanpur, Kasturi Singh6547.

8. **Rungia Nees**

A. Bracts diamorphic, flower small,
   blue, seeds yellow............................1. *R. pectinata*

AA. Bracts unimorphic, flower large,
   blue or pale pink ; Seeds pale brown.......2. *R. repens.*


   A prostrate or subsets, glabrous much branched annual herb. Leaves 2.5-7x1-2.5 cm, ovate lanceolate, oblong-lanceolate entire, acute, obtuse . base cuneate. Flower blue in terminal and axillary spikes. Capsule 3x1 mm ellipsoid, pubescent at the tip. Seed 2-4, orbicular, minutely enchinulate, yellow. Common in most shady places along road-sides and railway tracks. Juice is helpful is small pox.

Local name: karmauria ; Flower and Fruits: November-April, Locality:Gyanpur, Kasturi Singh, 6929.

A diffuse, procumbent, branched annual herb. Leaves 2.5-5x0.8-1.5 cm, elliptic, lanceolate, oblong-lanceolate, acute, base tapering, unequal sided. Flower bluish or pale pink in terminal pubescent spikes. Capsules 5-7 mm long, ovoid-oblong, pubescent. Seeds 4 sub-orbicular, rugose, pale-brown. Common in waste places especially on the sloppy ground. Dried plant is useful in fever, cough and also considered to be vermifuge.

Flower and fruits: October-February; locality: Bhadohi; Kasturi Singh 6826.

9. **Strobilanthes** Blume.

*Strobilanthes auriculatus* Nees in wall. Pl. As. Rar. 3, 1832; FBI 4:453; FUGP 2:64.

An erect shrub up to 1.5m high, leaves 4-21x2.5-6 cm opposite, sessile, ovate-lanceolate, renate or serrate, acuminate, base cuneate, thinly hairy, above and puberulous on the nerves beneath. Flower blue in axillary linear oblong spikes. Capsules 5-8 mm long glabrous seeds 4. Flower in shady situation among the bushes along mullah and river banks.

Flower: November-February; Fruits: March-April; Locality: Suriyawan, Kasturi Singh, 6930.

77. **VERBENACEAE**

A. **Flower in spikes:**

B. **Flower in capitate spikes**

C. **Plant armed, Fruits succulent**

   4. **Lantana**

   CC. **Plants unarmed, fruits dry**.

   D. **prostrate herb mot aromatic**

   rooting at nodes

   6. **Phyla**

   DD. **Erect or straggling shrubs**
aromatic, not rooting at the
nodes............................... 5. *Lippia*

BB. Flower in elongated spikes:

Fruits dry with one pyrenes............. 8. *Verbena*

AA. Flower not in spikes:

B. Shrubs:

C. Leaves compound......................9. *Vitex*

CC. Leaves simple:

D. Plants armed:

E. Flower yellow, pendulous...3. *Gmelina*

EE. Flowers blue, not pendulous .......... 2. *Duranta*

BB. Trees ...................................... 7. *Tectona*

1. *Clerodendrum* L.

A. Climbing shrub, flowers red ................. 4. *C. Splendens*

AA Erect Shrub :

B. Stem fistular, leaves linear-lanceolate,
   verticellate ..................................... 1. *C. indicum*

BB. Stem soled. Leaves ovate, opposite :

C. Leaves entire, flowers white
   stigma lobed ................................. 2 *C. inerme*

CC. Leaves serrate, flowers white orpenk.

D. Corolla glandular haery,
   Stigma capitate .................. 3 *C. phlomoides*

DD. Corolla glabrous,
   Stigma bifid .................... 5 *C. viscosum*
1. *Clerodendrum indicum* (L.) o. Kountze Rev.Gen.Pl. 586.1891-
siphonanths indica L.Sp.Pl.109.1753-clerodendrum siphonanths

An erect glabrous shrub upto 45cm high stem fistular. Leaves 7-22x1-4
cm, 3-5 in a whorl, sub-sessile, linear lanceolate, sub entire. Flower white or
yellowish in axillary cymes, forming a large, pendulous, terminal panicle.
Drupe 1.2 cm in diameter, avoid dark blue. Seed1.

Found as shrub by under growth in orchards Root is useful in asthma
and cough. Leaves are said to vermifuge and bitter tonic.

Local name: Agaiya, Flower: June-September; Fruits: October-December :
Locality: Gyanpur, Kasturi Singh, 6548.

2. *Clerodendrum inerme* (L.), gaertn Fruct. 1:271,1788. raizada in

An erect subscandent, glabrous shrub. Leaves 3-7x1-2.5 cm ,ovote,
elliptic, elliptic-oblong, obtuse,shinning green above. Flower white in 3
flowered axillary cymes. Drups ovoid.

Cultivated in garden as hedge plant. Leaves in the form of poutice used
to resolved buboses.

Flower and fruits : July-November: Locality: Bhadohi; Kasturi Singh,6549.

3. *Clerodendrum phlomidis* L. f. Suppl. 292.1781; FBI 4:590; FUGP
2:92.

A large shrub or small tree with pendulous branches. Dark light brown,
leaves 3-7x1.5-3.0cm ovate or subrhomboid, crenate, way or entire, acute, base
truncate, hairy on both surface. Flower white in terminal and axillary
dichotomous cyme. Drupe black, wrinkled, seeds oblong white. Found along
railway tracks. Plant is given to cattle as a cure for diarrhoes and worms.


A climbing shrub. Leaves 7-15x3.5-10.5 cm, oblong, orbicular, entire, acuminate, base cordate, dark green above, pale beneath, coriaceous. Flowers scarlet in dense, many flowered, terminal cymes. Drupe black.

Cultivated in gardens for ornamental purposes.


An erect, densely fulvous hairy shrub up to 3 m high. Leaves 6-15x4-12 cm, broadly ovate, denticulate, acute or acuminate base rounded or cordate, thinly hairy on both the surfaces. Flowers white, tinged with pink, fragrant in large lax terminal panicles. Drupe fleshy, bluish-black. Seed 1.

Gregarious as shrubby under growth in orchards. Leaves and roots are employed externally for tumours and certain skin disease. Fresh juice of leaves are vermifuge, used as a Vitter tonic in malaria especially of children.

Local name: Bhatesh; Flowers and Fruits: February-June; locality: Gopiganj. Kasturi Singh, 6126.

2. *Duranta* L.


An erect, armed, glabrous, shrub, up to 2 m high. Leaves 2-6x1.5-3 cm, ovate, opbovate, entire or coarsely serrate, acuminate, base cuneate. Flowers blue in axillary and terminal racemes forming dropping panicles. Berries 5-7x5-7mm, globose, orange or yellow at maturity.
Common along road sides also plantes as hedge plant around the garden., plant is believed to be poisonous. Leaves contain saponin and fruit contain alkaloid.

Local name: Neel-Kanta; Flowers and Fruits: July-January; locality: Gyanpur. Kasturi Singh, 6550.

3. *Gmelina* L.


A spinescent, glabrous, shrub or small tree. Leaves 2-5x1.5-3 cm, ovate, elliptic, irregularly lobulate, obtuse, glabrous. Flowers yellow in terminal densely pubescent pendulous racemes or panicles. Drupe ovoid, yellow when ripe.

Cultivated in garden for ornamental purpose.


4. *Lantana* L.

*Lantana indica* Roxb. Fl. Ind. 3:89, 1832; FBI 4:562; FUGP 2:83.

A scandent, armed shrub with scattered hooked prickles. Leaves 3-8.5x1.5-5 cm, ovate, ovate-oblanceolate, crenate-serrate, acute, base cuneate, rounded or truncate. Flowers multi coloured, crowded in axillary heads or spikes. Drupes 3-5x3-5 mm, globose, smooth, purple at maturity. Seeds one.

Frequent along road sides and waste places. Leaves are used as a cure for snake bite.

Flowers and Fruits: Throughout the year; locality: Gyanpur. Kasturi Singh, 6420.

5. *Lippia* L.

A straggling, aromatic, hairy, shrub with spreading branches. Leaves 2.5-7x1-3 cm, ovate, crenate-serrate, acute or sub-obtuse, base obtuse. Flowers pink in dense cylindrical paired spikes. Fruits small, dry. Seed one.

Common along the bank of rivers, lakes and also along the railway tracks.


A prostrate, creeping, much-branched perennial herb, rooting at the nodes. Leaves 1.5-4x0.3-1.4 cm, obovate or spatulate, serrate, rounded or obtuse, base cuneate. Flowers pale-pink or white, small, sessile in dense axillary, oblong-ovoid or globose heads. Fruits 2.5x2.5 mm. seeds one.

Abundant in moist places along the streams, ‘nullah’ and river banks. Poultice of plant is used as maturant for boils. Infusion of leaves and tender stalks are given to children in indigestion and to women after delivery.

Local name: Bukkan; Flowers and Fruits: Throughout the year; locality: Jangiganj. Kasturi Singh, 6421.

7. *Tectona* L. f. nom cons

*Tectona grandis* L. f. Suppl. 151, 1781; FBI 4:570; FUGP 2:87.

Planted along road sides. Wood is used as timber. Ash of wood is applied to swollen eyelids. Oil from nuts promotes growth of hairs.

Local name : Sagon; Flowers : July-September; Fruits : October-December; locality ; Suriyava. Kasturi Singh, 6551.

8. **Verbena L.**


An erect, hispidly pubescent, herb upto 1.5 m high. Leaves 2.3-8x0.5-1.5 cm, ovate or oblong, coarsely toothed or pinnatifid. Flowers pink-minute in long slender spikes. Fruits smooth, 3-ribed.

Common along the margins of crop fields and waste places. Leaves are useful in rheumatism and diarrhoea.

Flowers and Fruits : September-April; locality ; Gyanpur. Kasturi Singh, 6756.

9. **Vitex L.**

*Vitex negundo* L. Sp. Pl. 638, 1753; FBI 4:583; FUGP 2:90.

A white, tomentose shrub or small tree, leaves 3-5 foliolate, leaflets 3.5-12x0.5-3.5 cm, unequal, linear-lanceolate, lanceolate, acuminate, base acute, dark green, glabrous above, densely white-tomentose beneath. Flower bluish in opposite lateral cymes. Drupes 5x5 mm, black when ripe. Seed one.

Common along road sides and railway tracts.

Local name : Meuri; Flowers June-October; Fruits : November-march; Locality: Bhadohi. Kasturi singh, 6469.

78. **LAMIACEAE (Labiatae nom alt.)**

A. **Corolla lips villous**

B. Leaves deeply lobed; calyx 5 toothed………..4. Leonurus

BB. Leaves not lobed calyx 8-10 toothed:
C. Flowers red.................................................3. Leonotis

CC. Flowers white.............................................5. Leucas

AA. Corolla lips not villous:

B. Anthers – celled confluent; flowers blue........2. Hypits

BB. Anthers 1 or 2 celled, divergent; flowers red.......1.

Anisomeles

1. **Anisomeles** R. Br.


An erect, softly pubescent annual herb, upto 2 m high. Leaves 5-10x3-7 cm, ovate, crenate-serrate, acute or acuminate, base rounded or sub-cordate, pubescent on both surfaces. Flowers pink or purple and white in many flowered terminal and axillary spikes. Nutlets 2.5 mm long, ovoid, black, shining.

Common in moist places in association with *Peristrophe bicalyculata* (Retz.) Nees, along road sides. Oil from plant is useful in uterine affections.


1. **Hypits** Jacq.


An erect, branched, hairy, annual herb or shrub upto 2 m high. Leaves 2-10x1.5-6 cm, ovate or sub-orbicular, sinuate or denticulate, acute, base obtuse or sub cordate, sparsely hairy above, tomentose beneath. Flowers blue, small, 2-4 in axillary cymes. Nutlets ovoid, ribbed, compressed.
Frequently along the road sides and in grasslands. Plant yield essential oils.


2. **Leonotis R. Br.**


An erect, stout, glabrous or pubescent, herb or undershrub upto 3 m high. Leaves 7-15x3.5-10 cm, ovate, crenate-serrate, acute, base truncate or cuneate, finely pubescent on both the surfaces. Flowers orange-scarlet in dense globose axillary whorls. Nutlets 4 mm long, linear-oblong, truncate.

Frequent in grasslands and along road sides. Ashes of flower –heads applied to burn, mixed with curd applied to ring worm and itchy skin disease. Roots crushed and rubbed on the breast when it swells and milk does not pass through the nipples.


3. **Leonurus L.**


An erect, glabrous or pubescent, annual herb. Leaves 3-15 cm long, palmatipartite, segment linear, incised, green above, pale beneath. Flowers purple in axillary clusters. Nutlets ovoid. Smooth.

Common along road sides.


4. **Leucas R. Br.**

A. Trailing or straggling herb

B. Leaves hairy on the nerves; flowers 1-2

in axillary whorls .................. 2. *L. biflora var procumbens*
BB. Leaves hirsute; flowers more than 2 in axillary whorls ............... 4. *L. mollissima* var *pilosa*

AA. Erect herb

B. Whorls terminal, large, mouth of calyx hairy
   within .... 3. *L. cephatotes*

BB. Whorls terminal and axillary, small, mouth
   Of calyx glabrous within; calyx teeth short .......... 1. *L. aspera*


An erect, branched, hairy annual herb upto 50 cm high. Leaves 3-7x.5-3 cm, elliptic-oblong, linear-lanceolate, crenate, acute, base tapering, thinly pubescent on both surfaces. Flowers white in terminal and axillary whorls. Nutlets oblong, smooth, brown.

Common in grassland, waste places and along road sides. Plant is said to be insecticide. Leaves are considered to be useful in rheumatism.

82. **CHENOPODIACEAE**

*Chenopodium* L.

A. Plants aromatic; stigma5;
   Ovary and fruits studed with
   Yellow glands ................................. 2. *C. ambrosioides*

AA. Plants not aromatic, stigma2;
   Ovary and fruits not glandular ............... 1. *C. album*


An erect, much branched, annual herb, upto 1m high. Leaves 1-5 x 0.2-1.5cm, oblong-lanceolate, ovate-rhomboid, irregularly or coarsely dentate-
serrate, acute at both ends. Flowers green in dense axillary and terminal panicled clusters. Utricles globose, papillose, membranous, seeds minute, lenticular, smooth, blackish-brown, shinning.

Common, in cultivated fields, waste field and along road sides. Leaves are used as vagatable. Plant yield essential oil.

Local name: Bahua; Flowers and fruits: February-June; Locality: Gyanpur, Kasturi singh, 6128.


An erect, much branched, pubescent, strong aromatic herb upto 1.5m. high. Leaves 3-8.5x0.5-2.5cm, oblong-lanceolate, oblong ovate, sinuate-dentate, obtuse or acute base cuneate, Flowers green, minute small clusters of axillary and terminal spikes. Urticles ovoid, membranous, seed brown, polished, smooth.

Common, in moist and low-lying areas and roadside associated with Rumex dentatus L. Plant yield assential oil.

Flowers and Fruits: March-October; Locality: Gyanpur, Kasturi Singh, 6250.

83. **BASELLACEAE**

*Basella* L.

*Basella alba* L. Sp. Pl. 272, 1753; Van Steenis in Fl. Males. 5(3): 300. 1957.-


A much-branched, succulent, glabrous, twine. Leaves 4-10x2-6cm, broadly-ovate, orbicular, entire, acute, base cordate or truncate. Flowers pink, sessile in pedunculate spikes. Utrides ovoid, deep purple ate mat urity, juice purple.

Frequently found climbing over small trees and pushes. It is also cultivated in kitchen-garden for its leaves which in eaten as vegetable. Juice is given in constipation to children.
Local name: Poe, Flowers and Fruits: October-April, Locality: Gyanpur, Kasturi Singh, 6835.

84. POLYGONACEAE.

A. Climbing shrubs ........................................ 1. Antigonon.

AA. Erect herbs or undershrub:

B. Perianths 4 or 5 merous in
   One whorl; stigma capitate ............... 2. Polygonum

BB. Perianths 3 merous in two
   Whorls; stigma fibrate ..................... 3. Rumex

1. Antigonon Endl.


A climbing shrub. Leaves 3.7cm long, simple, ovate, undulate. Acute cordate or sagittate, flowers pink or white in terminal sub-capitate gymes. Nut 3-angled, Nutlets trigonous; opaque, gramulate and shining.

Commoun, in waste fields climbing on bushes and large frees. Leaves are pungent in taste.


2. Polygonum L.

A. Nut trigonous.

B. Creeping herb ......................... 3. P. plebejum

BB. Erect herb .............................. 1. P. Barbatium

AA. Nut biconvex................................. 2. P. Glabrum


A stout, erect or ascending, pubescent, annual herb, upto. 60 cm. high. Leaves 3-10x0.5-1.8cm, Lanceolate or linear-lanceolate, entire, acuminate, base cuneate, Flowers white or ping in dencse racemes. Nut lets trigonous.
Frequent, in moist and marshy places. Roots are astringent and cooling.

Flowers and Fruits: September-January: Locality: Throughout the area, Gyanpur, Kasturi Singh, 6761.


An erect, glabrous, stout annual herb. Upto 1.5 m high. Leaves 5-20 x 0.8-3.5 cm, lanceolate or linear-lanceolate, entire, acuminate. Base tapering. Flower pink or white in erect slender terminal panicles. Nutlets 2x2 mm. suborbicular, biconvex, dark-browns, shining.

Common, along the bank of rivers and on the margin of ponds, lakes and nullahs. Infusion of leasf is used in colic pains.

Local name: Bauka; Flowers and Fruits: September-April, Locality: Bhadohi, Kasturi Singh, 6762.


An erect, glabrous, stout annual herb, up to 1.5 m high. Leaves 5-20x0.8-3.5 cm, lanceolate or linear-lanceolate, entire, acuminate, base tapering. Flower pink or white in erect slender terminal panicles. Nutlets 2x2 mm, suborbicular, biconvex, dark-brown, shining.

Common along the bank of rivers and on the margin of ponds, lakes and ‘nullahs’. Infusion of leaf is used in colic pains.

Local name: Bauka; Flowers and Fruits: September-April, Locality: Bhadohi. Kasturi Singh, 6762.


A prostrate, branched, glabrous, reddish herb, leaves 1-2x0.1-0.3 cm, sessile, linear, oblong, ablong-aborvate, abtuse. Flowers pink or white, solitary axillary or 2-3 together. Nutlets trigonous, black, shining.

Abundant, in moist situation in drying up ditches and puddles.

3. **Rumex L.**

A. Leaves oblong, lanceolate, margin.

   Undulate, pedicels jounted a tittle.

   Above the base …………………………… 1. *R. dentatus*

AA. Leaves triangular, hastate, Margin

   entire, pedicels not jointed. ................... 2. *R. Hastatus*

1. **Rumex Dentatus L.** Mant. 2:226, 1771, FBI 5:59, FUGP 2:158


   Commoun in daddy fields, in watersides and marsgy localities. Roots are astringent. Leaves are eaten as vegetable by local in habitants.


2. **Rumex Hastatus D. Don Prodr. 74. 1825; FBI 5:60, FUGP 2:159.**

   An erect, much branched, perennial, suffruticose herbs with woody base, Leaves 1.5-5cm long, triangular-hastate, upper ones linear. Lanceolate to oblong. Flower pinkish in whorls combined inot panicles. Nut Triquantrous, Narrowly winged, angles acute.

   Rare, on rocky place, along the bank of river and river beds.

Flowers and Fruits: December-April, Locality: Gopiganj, Kasturi Singh, 6980.

85. **ARISTOLOCHIACEAE**

*Aristolochia L.*


   A slender, glabrous, twining shrub with woody root. Stock. Leaves 4-10x2-5cm, oborate, ovate-ablong, entire, slightly triangled, abtuse base cordate. Flower greenish-white in axillary racemes. Capsules 5-7x2-3cm, oblong,
dehiscing from base. Seeds 5-7mm long, ovate, flat, winged, brown or brownish-black.

Climbing on bushes or trees along the ‘nullah’. Roots are tonic used in fever in powder form given in honey for leucoderma. Juice of leafe is used in snake bite.


86. **PIPERACEAE**

A. Succulent herb; flowers bisexual; Anther cells confluent; stigma
   Penicillate .................................................. 1. *Peperomia*

AA. No succulent herb, Flowers unisexual, Anther cells distinct, stigma 3-5, Confluent .................................................. 2. *Piper*

1. *Peperomia Ruiz & Pav.*


An erect or decumbent – ascending, simple or branched flaccid, fleshy annual herb. Leaves 7-4x6-3.5cm, Ovate, cordate, obtuse or acuminate, fleshy, shining above pale beneath, glabrous on both surfaces. Flowers greenish in spikes. Fruit globose, marked with 10 vertical ridges and minut transverse very fine raised tines. Seeds warty.

Common, on walls, tree trunks under shady and moist situation. Plant yield essential oils having antifungal property.


2. *Piper (L.)*


A slender creeping herb. Leaves 3-10x1.5-4cm, ovate. Or ovate-obleng, entire, shortly acuminate. Base cardate, glabrous. Flowers greenish, in
axillary and terminal spikes. Berries minute, crowded in cymbiform spike, red at maturity.

Frequent in moist and shady places among bushes along the margin of Mullah’ and bank of rivers. The powdered root and fruits are given with milk to women after delivery to augment location and development of prest. It is used in fever and cough and also said to be effective in inducing sound sleep when taken with ‘gur;

Local name: Piper; Flowers and Fruits: September-November, Locality: Gopiganj, Kasturi Singh, 6763.

87. LORANTHACEAE

Dendrophthoe L.


A semiparasite glabrous shrub. Bark grey, fissured. Leaves 5-15x1.5-8cm. opposite or alternate, elliptic. Oblong. Broad-ovate. Or rounded. Entire or undulate, obtuse or not cched, base acute, rounded or unequal, coniaceous. Flowers deep orange or yellowish in stout spreading axillary or extra-axillary unilateral racemes. Fruits 1-1.5cm long, ellipsoid, crowned by cap-shaped calyx, black at maturity.

Common, epiphytic shrub of the area found on a wide range of host like Adina cordifolia (Roxb.) Hook. F. ex Brandis, Bombax ceiba L. Butea monspora (Lank.) Taub. And Mangifera indica. L. The bark is used for treatment of wounds. It is also used for tanning of leather.

Local name: Banda; Flowers and Fruits: October-March, Locality: Gyanpur, Kasturi Singh, 6837.
88. EUPHOR BIACEAE

A. Flowers in cyathia juice always milky ............7. Euphorbia

AA. Flowers not in cyathia, juice milky or wat cry:

B. Leaves palmately lobed or Pan duriform:

C. Capsule echinate: stamens indefinite.
   Filament branched, connote in boundle ......1. Ricinus

CC. Capsule not echinate:

D. Leaves with 2- glands at the base.
   Stamens 15-20 .................. 2. Baliospermum

BB. Leaves not palmately lobed or panduriform:

C. Petals present:

D. Satemens 5; fruit a berry ........ 3. Bridelia

DD. Stamenss more than 5; fruit capsule;

E. Stamens many: Seeds
   Without curcuncles ........4. Chrozophora

EE. Stamens many; Seeds
   With curcuncles ............5. Croton.

DDD. Petals absent:

E. Tree:

F. Stamens-3 .......... 6. Emblica

FF. Stamens more then 3. .... 9. Mallotus.

EE. Shrub or Herb:

F. Herb:

G. Bracks foliaceous
   Stamens 8 ............1. Acalypha

GG. Bracts not foliaceous
   Stamens 3 ...10. Phyllanthus
FF. Shrubs:

G. Erect habit; fruits
   Indehiscent;
H. Stamens 5 anthers
   Free, Disc present
   In female and often
   Male flowers ..8. Kirganelia

1. *Acalypha* L.

   A. Leaves Orate-lanceolate; bracts. Fimbriate ……1. *A. ciliate*.

   AA. Leaves rhomboid-ovate; bracts
      Shortly dentate truncate ...................... 2. *A. indica*


   Found in moist shady places along road-sides and railway tracks.

   Flowers and Fruits: August-December, Locality: Gyanpur, Kasturi Singh, 6671.


   An erect, branched, glabrous or finely pubescent annual herb, Leaves 2-8x1.5-4.5cm, rhomboid-ovate, crenate-serrate, abtuse or acute, base cuneate, flowers white, minute, in lax axillary spikes. Capsule hispid, concealed by persistant bracts. Seed one, ovoid, brown shining.

   Common along road side and in grassland. Plant is useful in pneumonia and asthama. Leaves are used in snake-bite.

   Flowers and Fruits: August-December, Locality: Throughout the area, Kasturi Singh, 6672.
2. **Baliospermum Bl.**


An erect, robust, glabrous, undershrub. Upto 1.5m high. Leaves 5-20x2-11cm, variable ovate or oborate-ablong, sinuate-ttothed, acute or acuminate, base obtuse or cuneate. Flower yellowish-white, minute in axillary fascicles or in axillary branched racemes. Capsules 1-1.5cm long, obovoid pubescent. Seeds ellipsoid, smooth, mottled.

Found along the margin of ‘nullah’ seeds are purgative used externally in snake-bite. Root is used in Jaundice. Oil from seeds is used in rheumatism.


3. **Bridelia Willd.**


A medium sised, deciduous, tree, armed with strong horizontal thorns, in young stage. Bark rough, black with rectangular peeling blaze crimson, axuding red spa. Leaves 7-20x3.5-12cm, elliptic-oblong- lanceolate, entire or crenulate, acute or obtuse, base rounded, bright green, glabrous above, glaucous and finely pubescent beneath. Flowers yellowith in axillary or terminal pendulous spikes. Drupes 5-10 mm. in diam. Globose, purplish black. Seed one.

Found along road sides. The bark is used for tanning. The leaves are used as fodder. The Fruits are eaten by local in habilants. Roots and barks are astringent.


4. **Chrozophora Neck.**

A. Erect herb; leaves with 2 glands
At the base .............................................. 2. *C. rottleri*.

AA. Prostrate Herb; Leaves without

Gland at the base ........................................ 1. *C. prostrata*.


A prostrate, stellate-tomentose, branched, annual herb. Leaves 0.7-2.5x0.5cm, orbicular, broadly-ovate, undulate or crenate, obtuse base acute or rounded. Flowers yellowish, few in short axillary recemes, capsule 3mm in diam., stellate- tomentose, seed ovoid.

Frequent in sandy soils along the bank of rivers.


An erect, stellate-tomentose, branched, annual herb, upto 1m. high. Leaves 4-10x3-8cm, ovate, orbicular, margin irregularly toothed, undulate, obtuse or rounded, base truncate or cordate with two glands. Flower yellowish in axillary racemes. Capsule 1cm in diam. Stellate- tomentose, reddish-purple when ripe.

Common, on dry, sandy soils along road sides and waste field.


5. *Croton L*.

A. Erect herb or under shrub; Leaves with 3 basal nerves

................. 1. *C. boplandianum*

AA. Small or medium sized free;

Leaves with 9-14 pairs of Lateral nerves ...........1. *C. roxburghii*.

An erect, much branched, stellate-pubescent herb or under shrub, upto 75cm. high. Leaves 2-7x1.3-5cm, crowned towards the ends of branches, ovate-lanceolate, ovate, serrate, acuminate or acute, base acute, with two lemial glands. Flower whitesh, in terminal erect spike, male flower above, female below. Capsule 5-8x3.5cm, trigonous, stellate-hairy, Seeds white.

Abundant in grasslands, along road-sides and railway tracks. Plant is heavily infected by virus.

Flowers and Fruits: July-October, Locality: Throughout the area, Kasturi Singh, 6554.


A Medium sized, deciduous tree. Bark ash-grey. Smooth; plase thuck, ping or white. Leaves 8-35x6-13cm, oblong- lanceolate or elliptic-ovate, coarsely crenate-serrate, or dentate, Sub-acute or abtuse, bas acute or rounded, glabrous, coriaceous. Flowers yellowish green, solitary or clusted in the exils of minute bracks on long terminal racemes. Capsule.1-1.2x1-1.2cm, sub-globose, 3.grooved, covered with scales, seeds ellipsoid, smooth, brown.

Found in sitamarhi, Jangiganj area, Leaves turn red before falling. Bark, root, fruit and seeds are purgative used in snake-bite. Bark is usefull in liver sisease. Seeds contain fatty oil.

Local name : Lapcoo; Flowers and Fruits : February-May; Locality : Jangiganj. Kasturi Singh, 6131.
6. **Emblica Gaertn.**


A moderate sized, deciduous tree, bark whitish-grey, blaze pink or red. Leaves 1-1.8x0.3-0.4 cm, linear-oblong, entire, distichous, obtuse, apiculate, base acute. Flowers greenish-white in axillary fascicles usually towards the lower portion of branches. Fruit 1-3 cm in diam. greenish yellow, globose, with 6 vertical faint furrows. Seeds 6, trigonous.

Planted along road sides and gardens. The wood is used for building purposes, well work furniture, gun-stock. The dried fruit is one the ingredients of “Triphala” which is largely used in gastric troubles and as a tonic for general debility, when soaked in water used as shampoo to check hair fall and graying of hairs. The fruits are also preserved.

Local name : Aoula; Flowers : February-May; Fruits : October-February; Locality : Suriyava. Kasturi Singh, 6132.

7. **Euphorbia L.**

A. Plants armed ........................................ 5. *E. nerifolia*

AA. Plants unarmed

B. leaves alternate

C. Internode fistular

D. Leaves heterophyllus .......... 2. *E. heterophylla*

DD. Leaves nit heterophyllus ..... 6. *E. pulcherrima*

CC. Internode solid ................. 1. *E. dracunculoides*

BB. Leaves opposite

C. Erect or ascending herb

D. Plant glabrous ................. 4. *E. hypercifolia*

DD. Plant hirsute ................. 3. *E. hirta*

CC. Prostrate herb ................. 7. *E. thymifolia*

   An erect, dichotomously branched, glabrous, annual herb upto 40 cm high. Leaves 2-3 cm long, linear-lanceolate, linear, entire, obtuse or acuminate, base acute. Flowers pale-yellow, solitary, axillary and in terminal umbellate or dichasial cymes. Capsule 3 mm in diam., smooth. Seed elliptic, tubercled, whitish, brown.

   Common in pulses and sugarcane fields. Fruits are used to remove worts.


   An erect, glabrous, annual herb. Leaves 5-10x2-4 cm, ovate-oblong, pinnatifid, acute base cuneate. Involucers 5-lobed, glands with a fissure-like apex. Seeds verrucose brown.

   Common in gardens as a weed and also found in crevices of old walls.

   Flowers and Fruits : July-October; Locality : Gyanpur. Kasturi Singh, 6555.


   An erect or procumbent, hispid, annual herb. Leaves 1.5-5x9.8-2 cm, oblong, sub-rhomboid or elliptic-ovate, serrulate, acute, base acute or rounded. Flowers greenish in axillary and terminal, peduncled, globose cymes. Capsule 0.1 cm in diam., green, pubescent. Seeds trigonous, reddish-brown.

   Common throughout the area in moist and shady places in grassland, waste places, garden and along road-sides. Juice of the plant is given in dysentery. Decoction of plant is used in bronchial affection and asthma. Latex of plants is used to remove warts.

   Local name : Duddhi; Flowers and Fruits : November-April; Locality : Throughout the area. Kasturi Singh.

An erect or procumbent, slender, glabrous, annual herb, upto 40 cm high. Leaves 1.5-4x0.5-1.8 cm, broadly-oblong, elliptic, minutely serrulate, obtuse or rounded, base oblique, glabrous above, pale, pubescent beneath. Flowers pink in axillary and terminal clustered cymes. Capsule 2 mm long, subglobose, pubescent. Seeds ellipsoid, 4-angled, slightly transversely rugose, reddish-brown or grey.

Found in wheat fields, along road-sides and railway tracts. Infusion of leaves is astringent used in dysentery and diarrhea. It contains essential oil.


An erect, succulent shrub or small tree. Branches terete with spirally twisted ribs. Flowers yellowish.

Found in village area of Gyanpur and along road sides. Root is used in scorpion sting and snake bite. The latex is used in tooth trouble.

Flower: March-May; Locality: Gyanpur. Kasturi Singh, 6251.


An unarmed shrub. Leaves 5-15 cm long, ovate-elliptic or lanceolate, sparsely toothed or simuately lobed. Bracts bright vermilion – red, leafy. Cyathia greenish in cymes.
Planted in garden for ornamental purposes. Leaves are purgative. Bark is used for abortion. Infusion of flower is used in bronchitis, asthma and malarial fever.


7. **Euphorbia thymiflora** L. *Sp. Pl.* 454, 1753; *FBI* 5:2152; *FUGP* 1:188; **E. prostrate** Graham. *Cat.* 179, 1839 (non Ait.).

A prostrate, pubescent, branched herb. Leaves 0.5-0.1x0.3-0.5 cm, elliptic-oblong or oblique-oblong, crenulate, obtuse, base rounded. Flowers greenish, minute, axillary. Capsule hairy, obtusely keeled. Seeds transversely furrowed.

Common in grassland, gardens, agricultural fields, along road-sides. Dried leaves and seeds are astringent given to children in bowel complaints. Juice of plant is used for ring-worm, in snake-bite and skin disease. Plant yield essential oil.

Local name: Chhoti Duddhi; Flowers and Fruits: February-July; Locality: Throughout the area. Kasturi Singh, 6134.

8. **Kirganelia** Baill.


An erect, much branched, glabrous shrub, with reddish druping branches. Bark thin, grayish-brown. Leaves 1-3.5x0.8-1.5 cm, elliptic or elliptic-ovate, entire, obtuse base acute or rounded. Flowers purplish, axillary. Berries 0.4-0.7x0.4-0.6 cm, globose, smooth, dark-purple at maturity. Seeds 10, trigonous, granulate, brown.

Common along the ‘nullahs’, road sides, railway tracts and waste places. Leaves are diuretic and cooling. Juice of leaves made into pills with camphor and cubeds and allowed to dissolved in mouth acts as remedy for bleeding gums and also used in diarrhea.
Local name: Srrkat; Flowers and Fruits: February-October; Locality: Bhadohi. Kasturi Singh, 6135.


A small evergreen tree; Young part rusty-tomentose. Bark dark-grey, blaze pink with orange or yellowish streaks. Leaves 5-10x3.5-12cm, alternate, ovate, entire or slightly toothes, acutre or acuminate, base rounded, glabrous above, pubescent and red gland dotled beneath. Flowers yellowish-white, diocious; male clustered in the axils of minute bracts on erect spiciform recemes; female in short spikes. Capsules 0.5-1.5cm in diam; globose, covered with brick-red resinous glands. Seeds sub-globose, black.

Found in the field associated with croton rox burghlii Bal. and steblus asper Lour. The brick-red powder which covers the ripe fruit’ is used as dye and tender twigs as tooth sticks, by local inhabitants.


10. *Phyllanthus* L.

A. Leaf apex acute .................................................. 1. *P. debilis*

AA. Leaf apex obtuse .................................................. 2. *P. fraternus*


An erect, glabrous, annual herb with woody base. Leaves 0.5-2.5x0.2-0.5cm, ovate-elliptic, entire, acute base ceneate, dark green above, glabrous beneath, Male flowers in fasicles, female solitary, Fruits oblate 1.2-1.3cm across. Seeds brown, longitudinally ribbed with transverse striate between the ribs on the back side.
Common on the sandy soils along the bank of river.

Flowers and Fruits: September-November; Locality: Gopiganj, Kasturi Singh, 6765.


An erect, glabrous, annual herb upto 60cm. high. Leaves 0.5-1.5x0.4-0.6cm, memerous, subsessile, elliptic-oblong, obtuse or sub-acute, base rounded, gloucous beneath, Flowers yeallowish, Numerous, axillary, Males 1-3; females solitary. Capsules depressed-globose, smooth, seeds trigonus with parallel ribs.

Common, in moist, shady places in the orchad, gardens, grasslands, plant is diuretic used in gonorrhoea and other troubles of genitor-urinary tracts. Infusion of young shoot is given in dysentery. Fresh root is used as remedy for jaundice.

Flowers and Fruits: June-November; Locality: Gyanpur, Kasturi Singh, 6470.

11. **Rcinus L.**


An evergreen, soft-wooded shrub orsmall tree. Stems fistular. Leaves 10-40x10-40cm, pmately lobed, pettate; lobes 5-7 or more, serrate, acute or acuminate. Flowers, yellowish, monoecious in terminal sub-panicled racemes;males upper, female lower. Capsule ovoid, 3-lobed, echinuate. Seeds 3, oblong or elliptic, grey or brown, mottled, shining, arillate.

Common, in the waste lands near the villages and along road side. The leaves coated with oil and warmed are bandaged over rheumatic swelling and over the abdomen of women to promote menstrual flow and other abdominal ailments. The seed oils is used as a lubricant and purgative. Seed is used in
scorpion-sting and fish-poison. Leaf is applied to the head to relieve headache and as poultice for bilis.

Local name : Rend; Flowers and Fruits : December-May; Locality : Gyanpur. Kasturi Singh, 6983.

89. **ULMACEAE**

*Holoptelea* Planch.


A large, deciduous tree, buttressed at the base. Bark greyish-white; blaze yellow. Leaves 5-10x3.5-6cm, alternate, elliptic, ovate or ovate-oblong, entire, acuminate, base rounded or sub-cordate, glabrescent. Flowers green in numerous fascicles or abbreviated racemes on the leafless branches. Samara 2.7cm in diam, oral or orbicular, vengs reticulately veined. Seeds 0.5-0.7cm long, ellipsoids, apex curved, brown, smooth.

Planted along road sides as avenue tree. The wood is strong and suitable for building purposes. Juice of boiled bark is applied to rheumatism and swellings. Fruits are eaten by locals.

Local name : Chilbil; Flowers : March-April; Fruits : April-June; Locality : Suriyawan, Kasturi Singh, 6252.

90. **CANNABINACEAE**

*Cannabis sativa* L. Sp. Pl. 1027.1753; FBI 5:487; FUGP 2: 220. **Pl-LV**

An erect, much-branched, pubescent, aromatic annual herb. Upto 2m high. Leaves alternate, palmately 3-8 foliolate, leaflets 5-12x0.7-2cm, lanceolate, serrate, acuminate, base cuneate, dark green above pale beneath,
glaebrescent. Flowers greenish white; male in short cymose panicles; female crossed in leaf-axils. Fruit closely invested by persistant perianth and bracts.

Common, in moist place along road-sides, nullah and river-banks. The plant is used as narcotic ‘ganga’ bhang, and charas. Plant is used as tonic, intoxicant and analgesic.

Local name : Bhang; Flowers and Fruits : September-January; Locality : Gyanpur, Kasturi Singh, 6766.

91. MORACEAE

A. Fruits a fig like hyanthodium;
   Flowers on the inner wall of the
   Closed receptacles ................................. 2. Ficus

AA. Fruits a syncarpium;
   B. Anther in bud reversed
      Style … 2.fid:
   C. Flowers in spike;
      Fruits resulting from
      Whole in florescence ....................... 3. Morus

CC. Flower is Solitary or in globose head.
   Fruits resulting from one flower … 4. Strebulus
   BB. Anther in bud erect, style simple ............ 1. Artocarpus.

1. Artocarpus

A. Leaves glabrous above, softly.
   Pubescent beneath, fruit smooth.
   Sub globose, irregularly lo bed,
   Organe-red ......................................... 2. A. lakoocha

AA. Leaves glabrous on both surfaces:
   Fruits tubercled, very large.
Cylindric, dark brown ………………1. *A. heterophyllus*


A medium. Sized or large evergreen tree. Brak grayish-black, pealeng off in irregular clips; Blaze cream-coloured, laticifrous. Leaves 10-20x8-13cm, elliptic or obovate, entire, cuspidate, base cuenate, glabrous, coriaceous, dark green and glossy above, paler beneath. Flowers at first eclosed with two very large, leathery stipules usually on special branchlets from the trunk or branches. Syncarpium very large, dark brown on thick short peduncles hanging on the trunk and old branches. Seeds 2.5x2cm, oblong. Enclosed in the enlarged, flesh perianth.

Commonly, cultivated throughout the area for its edible fruits. A yellow dye is extracted from the wood chips, leaves used in skin disease and snake bite.

Local name: Katahal; Flowers: February- March; Fruits: June- September; Locality: Gyanpur, Kasturi Singh, 6136.

2. *Artocarpus lakoocha* Roxb. Fl. Ind. 3:524, 1832; FBI 5:543. (Proparte); FUGP 2:234,

A large deciduous tree. Bark rough, reddish-brown, exfoliating in woody plates, blazed with milky latex. Leaves 10-25x5-15cm, elliptic, obovate or oblong, entire, acute or obtuse, vae truncate or rounded, subcoriaceous. Scabrous, dark-green and shining above, softly tomentose beneath. Flowers yellow in axillary sub-sessile heads; male receptacles ovoid, spongy; female irregularly lobulate, orange-red at maturity. Achenes embedded in fleshy orange-red receptacles.

Cultivated throughout the area for its edible fruits. The wood is hard and durable. It is an excellent timber neither attacked by white ants nor by teredo.
The ripe female receptacles are largely eaten and male ones used for preparation of pickles. The roadted seeds are also eaten by villagers. Seeds are purgative. The infusion of bark is used as remedy for pimples and cracked skin.

Local name : Barhal; Flowers : December-March, Fruits : May-October; Locality : Jangiganj, Kasturi Singh, 6984.

2. *Ficus* L.

A. Petioles jointed:
   B. Leaves broadly ovate with
      Long acumen ; ripe
      Receptacle dark-purple ..................... 5. *F. religiosa*
   BB. Leaves oblong, narrow,
      Abruptly acuminate; ripe
      Receptacles white ......................... 6. *F. virens*

AA. Petioles not jointed:
   B. Receptacles on leafless
      Racemose branches ....................... 4. *F. recemosa*
   BB. Receptacles axillary:
      C. Receptacles sessile,
         Paired or solitary:
      D. A tree with stilt roots;
         Leaves ntle ............ 1. *F. benghalensis*
      DD. Root, leaf serrate ............... 2. *F. carica*

CC. Receptacles peduncled, solitary:
   Scandent or prostrate shrub; Leaves
closely toothed or lobed ....... 3. *F. Heterophylla*


A large evergreen tree with numerous aerial roots. Bark greyish-white, smooth, exfoliating in irregular flakes, blaze yellow with orange streaks and milky latex. Leaves 11-18x7-12cm, alternate, ovate or elliptic-ovate, entire, obtuse or rounded, base rounded or sub-cordate, leathery, dark green and glossy above, thinly pubescent beneath. Receptacles 1-2cm in diam., globose in axillary pairs, sessile, supported by 3-rounded coriaceous, spreading bracts, red at maturity.

Frequent, throughout the area near villages and temples Bark infusion is said to be useful in diabetes. Milky latex and young buds are used in diarrhea and dysentery.

Local name: Bargad; Receptacles: March to July; Locality: Gyanpur, Kasturi Singh, 6253.

2. *Ficus carica* L. Sp. Pl 1059. 1763; FUGP 2:250

A shrub or small trees. Bark smooth, grey or dull white. Leaves 20x10cm, broad ovate to nearly orbicular or 3-5 lobed, crenate-serate, cordate. Receptacles 2.5x2.2cm, solitary or paired, axillary, globose or pear-shaped, yellowish purple at maturity.

Found among the bushes along the river, also cultivated in gardens for its edible figs.

Local name: Anjir; Receptacles: January-June; Locality: Gopiganj, Kasturi Singh, 6025.


An erect straggling, creeping or climbing shrub. Leaves 4-14x1.5-4cm, ovate, polymorphous, lanceolate or orbicular-ovate, acute, coarsely-toothed, lobed or repandentate base rounded or sub cordate. Receptacles 1-2cm in diam., pedunculate, solitary, axillary, spherical or pyriform, warty and shittish when young, smooth, dark orange when ripe.
Abundant in moist marshy places. Along the margin of ‘Nullah’. The twigs are used as tooth-sticks by local inhabitants. Juice of leaves mixed with milk is used in treatment of dysentery. The pulverized root bark mixed with coriander seeds used as remedy of cough and asthma.

Receptacles: May-October; Locality: Bhadohi, Kashturi Singh 6422.


A large deciduous tree, buttressed at the base. Bark smooth reddish-brown; blaze pink, fibrous with white latex turning yellow on exposing. Leaves 5-15x2.5-6.5cm, alternate, ovate or elliptic-lanceolate, entire, sub-acute, base rounded or acute, glabrous above, minutely dotted beneath.

Receptacles 2-3.2x2-3.5cm, clustered on leafless branches. Smooth or pubescent, red or ping at maturity.

Frequent, through out the area near the villages and along road-side as an evergreen tree. The receptacles supposed to be carminative and stomachic being used in alimentary troubles and also as remedy for cough.

Local name: Gular; Receptacles: April-July; Locality: Bhadohi, Kasturi Singh, 6331.


A large deciduous tree. Bark smooth, ash grey, exfoliating in irregular flakes; blaze redish with milky latex. Leaves 6-20x5-11cm, alternate, ovate-rounded, entire or undulate, caudate-acuminate, base truncate or rounded, dark green and shining. Receptacle 1cm in diam. Paired, sessile, sub-globose, depressed at the apex, dark-purple when ripe.

Frequent, through out the area near the villages, temples along road sides and railway tracks. The plant is believed to be highly scared by hindus and Buddhists and hence the name religiosa is given. The dark is said to be useful in rheumatic-swellings and gonorrhea.
Local name : Pepal ; Receptacles : May- June ; Locality : Gyanpur, Kasturi Singh, 6423.


A medium. Size or large deciduous tree with few aerial roots. Bark smooth, greenish-grey, blaze yellow. Leaves 6-15x3.5-7cm, alternate. Ovate or oblong-ovate, entire or sub-undulate, abruptly acuminate, base acute, rounded or sub-cardate, receptacles 0.5-1cm in diam. sessile, globose in axillary pairs tubercled, white and dotted at maturity.

Common, throughout the area near the villages and along the margin of nullah. The young leaves are eaten as vegetable by villagers.

Local name : Pakar ; Receptacles : July-October ; Locality : Aurai, Kasturi Singh, 6556.

3. **Morus L.**

**Morus alba** L. Sp. Pl. 986.1753; FBI 5:492; FUGP 2:231.

A small, deciduous, tree. Bark rough, grayish brown blase greenish-yellow milky latex. Leaves 5-10x3-6.5cm, alternate, ovate, dentate, often lobed, acuminate, base cordate or truncate. Flowers greenish, monoecious on short ovoid spike; male spikes catkin like; female spike ovoid, purplish black at maturity.

Common, throughout the area near the villages, along road-sides and railway-tracks. Fruits are edible; refrigerant and given in fever.

Local name : Sahtut ; Flowers: February-March, Fruits: April-June ; Locality : Gyanpur, Kasturi Singh, 6137.
4. **Streblus Lour.**


A small rigid, much-branched, evergreen tree. Bark smooth grayish-white; blâché cream-coloured with milky latex, turning yellow on exposure. Leaves 2-8.5x1-3.5cm, Alternate, elliptic, rhomboid or obovate, obscurely toothed, acute or acuminate, base cuneate, sub-criaceeous, scarbed on both surfaces. Flower yellowish-green, dioecious; male in shortly pedunculate sub-capitate heats; female fascicled or solitary in leaf-axils. Berries 5x5mm. globose, loosely enclosed by the accrescent peranth, yellow when ripe. Seed 1.

Common, In Jangiganj sitamrih area associated with mallotus phillippensis (Lamk.) Muell. – Arg. Decoction of Bark is given in fever desentery and diarrohoea.  
Local name : Singhore ; Flowers: February-April, Locality : Jangiganjr, Kasturi Singh, 6138.

92. **CERATOPHYLLACEAE**


Common, in ponds, ditches and tals mixed with Hydrilla verticillate Royle. The achenes are eaten by ducks. The Plant is used as a cooling agent for biliousness and scorpion sting.

Flowers and Fruits: September-November ; Locality : Along Road Side, Kasturi Singh, 6767.
93. HYDROCHARITACEAE

A. Plant with stems; spathes

Short, sessile : ............................................. 1. Hydrilla

AA. Plant with out stems and spathes

Large, peduncled

B. Leaves sessile, gress-like;

Spathes not winged ......................... 3. Vallisneria

BB. Leaves petiolate, Broad.

Not gress-like; spathes

With crisped wings. ......................... 2. Ottelia

1. Hydrilla Rich


A delicate, Much branched, submerged aquatic. Leaves. 0.5-2.5x0.1-0.3cm, Sessile, opposite or verticillate, Linear or linear – oblong or elliptic-oblong, entire, Flowers minute, Deciduous, white, dioecious, sessile or subsessile in leaf axils. Fruit 5x1.2cm, subulate, smooth or muricate, sees 2-3, oblong.

Abundant, in lake, ponds, ditches and ‘nullah’.

Local name : Sewar ; Flowers and Fruits: July-December ; Locality : Bhadohi, Kasturi Singh, 6557.

2. Ottelia L.


A submerged root anchord aquatic herb. Leaves Variable, 5-15x3.10cm, Broad-ovate, ovate-Lanceolate, or suborbicular, entire or undulate acute or
short-acuminate, base acute, cuneate or sub-cordate, memberanous; petiole trigonous. Flowers white, sessile with in tubular green long. Pedunculate, 5-10 winged spathe. Fruit 2-4 c., long. Ellipsoid rostrate, crowned by the withered peranth.

Common, ‘tals’ and ‘nullah’ in stagnant water.

Flowers and Fruits: September-December; Locality: Bhadohi, Kasturi Singh, 6768.

3. **Vallisneria L.**


A submerged tufted, stoloniferus herb. Leaves radical, 0.5-10x0.2-0.8cm, linear or linear-lanceolate, entire or serrulate, acute, translucent, sheathing ate the base, Flowers greenish. White, minute, dioecious; male several in a ovoid, 3. lobed, short, peduncled spathe, female solitary on very long spiral filiform scape. Fruits linear, included in spathe. Seeds many.

Common in shallow, stagnant wateres in the tals, ditches and lake.

Flowers and Fruits: January-April; Locality: Bhadohi, Kasturi Singh, 6026.

94. **ZINGIBERACEAE**

A. Leaves spirally arranged;

Sheath tubular; bracks

Bright red ........................................ 1. *Costus*.

AA. Leaves distichously arranged

Sheath not tubular, bracts green .............. 2. *Zingiber*.

1. *Costus L.*

*Costus speciosus* (Koenig) Smith in trans. L. Soc. 1:249.1800; FBI6:310.-

*Bankxia speciosa* Koeng ed Rets. Obs. 3:75. 1783.

An erect, annual herb with tuberous roots. Leaves 10-25x3.5-8cm, alternate, spirally arranged, sub-sessile, elliptic-oblong or oblanceolate-oblong,
Description of the Flora

entire, cuspsidate, or shortly acuminate, base acute or rounded, glabrous. Above, silty-pubescent beneath. Flowers white large in danse terminal spike. Capsule 2x2 cm, glabose, trigonous, red. Seed black with white aril.

Found along the margin of ‘nullah’ bank of rivers and in orchards. Rhizome are eaten by villagers as vegetables. Root are astringent purgative, tonic and used as snake-bite.

Flowers and Fruits: August-October; Locality: Gyanpur, Kasturi Singh, 6674.

2. Zingiber Adans


An erect herb with horizontal tuberous root stock. Leaves 7.5-30x3-7.5cm, oblong, lanceolate, entire, acute, base tapering into amplexicaul sheaths. Green and glabrous above, pale and pubescent beneath. Flowers yellowish-white or pinkish in dense globose spike. Capsule oblong. Seeds large, globose, arillate.

Found in the moist and shady places near the villages, along road sides and in or chards.

Local name: Ban-Kachoor; Flowers and Fruits: February-June; Locality: Suriyawan, Kasturi Singh, 6139.

95. AMARYLLEDACEAE

*Crinum* L.


A Stout, glabrous, perennial herb with globose or ovoide bulbs, clothed with leaf-bases. Leaves 60-90x2-3cm, all redical, spreading, fleshy, ensiform or lanceolate, acute, base amplexicaul. Scapes 30-75 cm long, from the axils of
onter leaves, compressed, Flowers white in an umble. Fruits 2.5-35cm, in diam., sub-globose, shortly pedicelled, beacked with the long perianth tube. Seeds 1-2 or more rugose.

Found in swampy and marshy places along bank of ‘nullah’. Bulb is used for treatment of burns and toxic to Cattle. Leaf sap is used in pain of ear. Local name : Sudarsan; Flowers and Fruits: August-November; Locality: Gyanpur, Kasturi Singh, 6675.

96. AGAVACEAE


A stemless perennial plant. Leaves 90-180x15-20 cm, radical, thick, smooth, prickly on the edge. Flowers yellowish-green on about 11 cm tall escape.

Planted in garden and also used as border plant in villages. Fibers are obtained from its leaves. Roots are diuretic and antisyphilis. Flowers: December-March; Locality: Gyanpur. Kasturi Singh, 6985.

97. DIOSCOREACEAE

*Dioscorea* L.


A large, glabrous climber with axillary globose worked bulbils. Leaves 6-25x3-15 cm, alternate, broadly-ovate or sub-orbicular, entire, acuminate or cuspidate, base deeply cordate with rounded lobes. Flowers greenish white in axillary solitary or fascicled pendulous spike, s-25 cm long. Capsules 2x1 cm, quadrangular, oblong, reflexed. Seeds winged at the base.

Common climber over *Mallotus philippensis* (Lamk.) Muell. Arg. Associated with *Aristolochia indica* L. tubers are used as vegetables. It is used in piles, dysentery, syphilis and ulcers.

Local name: Ratalu; Flowers and Fruits: September-December; Locality: Bhadohi. Kasturi Singh, 6769.
98. LILIACEAE

A. Erect herb

B. leaves succulent, margin spinulose …………… 1. Aloe

BB. Leaves not succulent, margin entire ……… 3. Asphodelus

AA. Climbing shrub

B. Armed, leaves modified into cladodes,

Flowers small white …………………………….. 2. Asparagus

BB. Unarmed, leaves vell developed,

Flowers large, scarlet ………………………………… 4. Gloriosa

1. Aloe L.


A much-branched, straggling or climbing, armed shrub. Roots tuberous. Spines 2-5mm long, sub-erect or recurved. Cladodes 2.6 together, 1-2.5cm long, acicular, curved. Flowers white, solitary fragrant, small in fascicled simple or branched racemes. Berries 3-5mm in diam., globose. Scarlet at maturity. Seeds black.


A Stoloniferous, scauliscent, shrub. Leaves 40-60cm long, radicals, thick, glaucous green, long-acuminate, edge thorny, Flowers vermilion coloured, in simple, erect racemes.

Found in the moist, shad places near villages and along the margin of ‘nullha’. Leaves ae used externally as medicisie in paiw; dried leaf jice is given in constipation and fresh juice is useful in fever. Plant is purgative used to remove piles and rectal fissures. Plup is given for menstrual suppressions.

Found along the bank of reivers and ‘nullah’ and among the bushes along railway tracks. Roots are largely given to mothers after birth for increasing loctation.

Local Name: Satawar; Flowers: September-November; Fruits: December-March, Locality : Gopiganj, Kasturi Singh, 6770.

3. **Asphodelus L.**


Common on moist, sandy soil in the wheat-fields and crop-fields. Seeds are diuretic applied externally to ulcers and inflamed part.

Local Name: Ban-Piyaj; Flowers and Fruits : December-June; Locality : Suriyawan, Kasturi Singh, 6986.

4. **Gloriosa L.**


A handsome, glabrous, herbaceous clumber with white tuberous roots. Leaves 8-15x1.5-4 cm. sessile or sub-sessile, alternate, or sub.opposite or whorled, ovate- lanceolate, entire, sharply acuminate encing in circinate tendrils; base acute or rounded. Flower scarlet large, axillary solitary or sub-corymbose towards the ends of the branches. Capsules 2-4x1-2cm, oblong. Seeds 2mm in diam., Sub-globose, brown.

Common, in moist, shady places on the bushes along the margin of nullhas and or chards. Roots are purgative used in leprosy and parasitical in fection of skin. Tubers are supposed to be poisonous. It is applied externally in the form of paste over supra-pubic regions for promoting labour pain.
Local name; Agni shikha; Flowers and Fruits : August-November ; Locality : Jangiganj. Kasturi Singh, 6676.

99. SMILACACEAE

*Smilax L.*


A prickly, large, clumber. Leaves 10-15x4-10cm, ovate or sub-or bicular, acuminate or suspidate, base rounded, above the base, Flowers white, dioecious, in axillary, many-flowered pedunculate umbels. Berries 5-8mm in diam., globose, red at mat ury.

Frequent, elimming on the bushes along the bank of rivers and margins of ‘nullah’. Roots are used in treatment of vernereal disease; applied for rheumatism and pains in lower extremities; also used in bloodless dysentery.

Flowers and Fruits : February-November; Locality : Gyanpur, Kasturi Singh, 6140.

100. PONTEDERIACEAE


A profusely rooting at the node, perennial floating herb. Leaves 5-10cm, in diam., spathulate in rosettes from the joints of rhizomen; petioles swollen into spongy bladders. Flowers violet-Blue, Many on spicate sheathed scape. Capsule included, in marcescent peranth, ovoid, oblong or linear, very thin.

Abundant, in tals, ponds, diatches and lakes. The flowers are regarde as medicine for the skin of horses.
Local Name: jal-Kubhi; Flowers and Fruits: May-October; Locality: Throughout the area, Kasturi Singh, 6769.

101. COMMELINACEAE

A. Fertile stamens 3; leaf sheaths
   Not inflated.
   B. Inflorescence a cyme; bracts
      Spathaceous ...........................................  2. Commelina
   BB. Inflorescence a panicle,
      Bracts not spathaceous ..............................  3. Murdania

AA. Fertile stamens 6, leaf-sheaths
   In flated .................................................  1. Amischophacelus

1. *Amischophacelus rolla* Rao et Kammathy


A trailing or sub. Erect, glabrous, fibrous-rooted, slender, sub-succulent annual herb. Leaves 4-12x0.3-1cm, sissile, linear, linear, lanceolate, acuminate, sheathes inflated, ochreate. Flowers pinkish-blue or white in axillary clustered cymes covered with the leaf sheaths. Capsule 6x2mm oblong- ellipsoid, beaked. Seeds dark brown, bitted.

Abundant in moist situation along the margin of ‘Tals’

Flowers and Fruits: August-October; Locality: Suriyawan, Kasturi Singh, 6677.

2. *Commelina L.*
   A. Peduncle of spathe long; sputhe
Folded in the middle …………………… 2. *C. diffusa*

AA. Peduncle of spathe short or none;

Spathe funnel shaped …………………… 1. *C. benghalensis*

   
   A slender, diffuse, annual herb. Leaves 2-8x1-4 cm, sessile or subsessile, ovate or elliptic-ovate, acute or obtuse, base unequal, rounded, cordate or cuneate, sheaths ochreate, pubescent. Flower blue, axillary, spathes 1-3, funnel shaped or turbinate. Capsules 6x3 mm, pyriform, membranous. Seeds 5, oblong, closely pitted.

   Common, in wet places associated with *Cyperus brevifolius* (Rottb.) Hassk along the bank of river.

Local name : kankaua; Flowers and Fruits : July-November; Locality : Gopiganj. Kasturi Singh, 6658.


   A creeping, sub-succulent annual herb often rooting at nodes. Leaves 7-11x0.6-2.5 cm, lanceolate or ovate-lanceolate, acute or acuminate, base tapering into sheath. Spathe peduncled. Flowers blue, 1-3, much exerted from the spathe. Capsules 3-5 mm long, broadly oblong, acuminate. Seeds cylindric, reticulate.

   Common in moist shady places along the margin of ‘tl’ or pond.

   Flowers and Fruits : August-October; Locality : Jangiganj. Kasturi Singh,


An erect, prostrate or procumbent slender, annual herb upto 40 cm high, rooting at the nodes. Leaves 4-9x0.4-1 cm, sessile, linear-oblong or lanceolate, acute or acuminate, base rounded or narrowed into hairy sheaths. Flowers bluish or purplish in terminal or leaf opposed globose or sub-corymbose paniculate cymes. Capsules 2-3 mm long, ellipsoid, 3-celled with 3 seeds in each cell. Seeds dark-brown, rugose, pitted.

Common in moist as well as in dry situations in association with *IOxalis corniculata* L. and *Phyla nodiflora* (L.) Greene.


102. **ARECACEAE (Palmae)**

A. leaves fan-like ........................................... 1. *Borassus*

AA. Leaves not fan-like ................................. 2. *Phoenix*

1. *Borassus*

*Borassus flabellifer* L. Sp. Pl. 1187, 1753; FBI 6:482; excel *B. aethiopum*)

A very large palm 20-40 m tall. Trunk cylindrical, unbranched with balck scars of pelile-bases. Leaves 0.2-2 m in diam., fan-shaped, segments 60-80, linear-lanceolate, spreading, folded along the midrib, petiole long. Flowers yellowish, dioecious, male in branched dropping spadix, female in unbranched spadix. Drupes 10-15 cm in diam., subglobose, dark brown with 1-3 pyrenes and pulpy fibrous mesocarp, pulp yellowish.

Common in the waste land. The tree is largely tapped for ‘toddy’ the sap, obtained from cut spadices. It is taken as beverage and cheap drink y local inhabitant. The leaves are used for making fans.
Local name : Tarr; Flowers : March- April; Fruits : June-August; Locality : Bhadohi. Kasturi Singh, 6255.

2. *Phoenix* L.


An unbranched, medium sized, palm upto 15 m high. Trunk rough, covered with the persistant petiole bases. Leaves large, bipinnate, leaflets numerous, 15-45x1-2.5 cm, alternate or subopposite, sessile, linear or ensiform, spinous tipped, vase amplexicaul, petiole short, compressed, with few long spines at the vase. Flowers white, male spike compact towards the apex of peduncle; female spike arranged in distinct groups. Drupes 2-4 cm long, oblong, ellipsoid, orange-yellow. Seed one, pale-brown.

Common in waste field. The tree is largely tapped for sweetish juice, used as drink by local inhabitant. The leaves are used for making mats, baskets and brooms, etc.

Local name : Khajoor; Flowers : January-March; Fruits : April-June; Locality : throughout the area. Kasturi Singh, 6027.

103. PANDANACEAE

*Pandanus* L. f. nom cons. Prop.


A much branched, bushy, shrub or small tree with many thick terate aerial and still-roots. Leaves 80-150 cm long, closely-spirally, 3-fariously imbricate, erect then drooping. Flowers white, fragrant.

Planted in gardens for its sweer fragrant.

Local name : Kewara; Flowers : March-May; Locality : Gyanpur. Kasturi Singh, 6256.
104. **TYPHACEAE.**

*Typha* L.


An erect, rhizomatous, perennial herb, upto 3.5m high. Leaves 1.0-2.0m, long and 1.0-2.0m, broad, radical, bayonet-shaped, planoconvex, acute, spongy. Flowers yellow, lower female and upper male, in densely-flowered in terrupted spikes.

Commone in grygarios masses in marshy places and in tals. The leaves are used for plaiting mats and sceens.

105. **ARACEAE**

A. Floating aquatic with flabellate,

**Pubescents leaves** ……………………………… 2. *Pisatia*

AA. Terastrial plants with glabrous leaves:

B. Leaves pellate ………………………………..1. *Colocasia*

BB. Leaves not pellate:

C. Climbing shrub, rooting at

  The nodes; leaves elliptic.

Ovate; flower bisexual ……………3. *Scindapsus*

CC. Rect herb; leaves hastate

Flowers unisexual ………………. 4. *Typhonium*

1. *Colocasia* Schott.


An erect rhizomatous herb. Leaves peltate. Large, entire, acute, base cordate, shathe pale yellow, spadix yellowish shorter than spathe.
Cultivated in kitchen gardens and fields, often met as an escape, Leaves and rhizome are eaten as vegetable.

Local Name: Arui. Flowers: September, Locality: Gyanpur, Kasturi Singh, 6771.

2. **Pistia L.**


A stemless, floating aquatic, herb. Leaves 5-10cm, long, obovate, or bicurcular, undulate, pubescent on both surfaces. Spathe white, obliquely compaanulate, gibbous, below. Spadix adanate to the back of spathe. Fruits ovoid, membranous. Seeds many, albuminous.

Abundant in ponds, ditches and tals.


3. **Scindapsus schott.**


A robust, succulent, climbing shrub, rooting at the nodes, Leaves 10-22x6-10cm, broadly ovate or elliptic, - ovate, entire, caudate- acuminate, base obliquely rounded or sub-cordate, pelile venged, sheathing. Flowers yellowinsh, dioecious. Berries ob. Pyramidal. Seeds reniform. Arrillate at the base.

Flound along road side climbing on mangifara indica L. Fruits are said to be useful in rheumatism.


4. **Typhonium Schott.**


An erect , gloprous , herb upto 50 am high with sub-glopose tubers. Leawes 12-25 am in diam . radical, hastately 3-lobed or sub- threepartile; lobes ovate, acute, entire, petioles 30-40 am long , slender with sheathing base.
Peduncles radical 4-11 am long, spothes 8-17 am long, avate, red-purple, narrowed in to long slender point. Spadix exerfled, male and female infiorescences distant with neuters above the female and sometimes below the made, appendages elongated sinooth. Berries ovoid seeds 1-2 globose, albuminons.

Abundant, in moist shady situations along road sides and on waste lands. Roots are used for pipiles, eaten with bananas cures stomach complaints, applied externally to the bite of venomous snake and at the same time given internally.


106. LEMNACEAE

A. Fronds with 1 root ................. ............... 1. Lemma

AA. Fronds with manyroots. ................. 2. Spirodel a

1. Lemma L.


A minute, fwating aquatic, Frands solitary or in groups of 2-5, assymmetric, oblong, obvate-oblong or abovid, rather then, entire. spathe membranous with 2 male and one femal flower, ovule solitary.

Common in ponds, puddles and stagnant water along road- sides and raies and railway tracks.

Flowers: October December, Locality: Bhadohi Kasturi singh 6838.


A minute floating grearious aquatic with numerous roots, Frond 1-3 mm in diam, ovate or obicular, green above, purplish beneath. Spath2 lipped, stamens, 2.
A bundant in ponds, ditches and ‘tals’ sometemes covering large area. Of water surface.

Flowers: September – October, Locality: Gyanpur, Kasturi singh 6772.

107. **ALISMATACEAE.**

A. Flowers unisexual or polygamous, Stamens many; receptacle globose or oblong …………. 2. *Sagittaria*

AA. Flowers bisexual, stamens few

6-9, receptacle flat …………………………….. 1. *Alisma*

1. *Alisma L.*

1. *Alisma plantago* Lamn .SP.PL. 342.1753;FBI 6;559;FUGP 2;370.

An erect emergent hydrophyte with fleshy swollen root stock 5-10 2-3am ,ovate, oblong . entire obtuse base truncate or sub – cordate , petiales 15-30 am long, base shedthing and spongy . scape 30-120 am long , swollen and fleshy below. Flowers white in panicaled whorls. Carpels free 3 in number . Achenes 20-30 in a single whorl, membranous, compresed, green coloured.

Found in the sandy soils along the bank of rivers.

Flowers and frutes : March – may ;Locality; Gopigang , kasturi sing 6257.

2. *Sagittaria L.*

*Sagittaria sagittifolia* L. SP. Pl. 2:93, 1753,FBI 6;559; FUGP 2;371 , Subram , Agv , Ang ,86-87.

An erect , febrous marshy herb . Leawes 8-30 am long radical , hastate or sagittate, acuminate , basal lobes diverging up to 60 am long trigonous , spongy, scapes up to 50 am long . Flowers white, lower female qupermale , Achenes abli quely obate with , broad enfire or sub – crenate , wengs.common , in shollow water , water along the margin of Millah ponds ,and bank of rivers, ploants are uesd in skin disease .Tuber contains starche and sugar.
Flowers and Fruts ; October – March , Locality suriyava  Kasturi singh 6839.

108  APONOGITONCEAE

Aponogeton L.


A floating aquatic plant . Leaves 7-15  0.9-2,5 am lam ceolate or linear-oblong , undulate or crisped, acute,base rounded or acute . Flowers white in solitary crowded spike . Follocles 3, &smooth, keaked. Seeds 1-2 smooth.

Abundantly found in ponds and ditches.


109 . POTAMOGETONACEAE

*Potamogeton* L.

*Potamogeton crispus* L. SP. Pl . 126. 1753; FBI 6:566, FUCP2:375.

A slender submerged a quatic . Leues 4-12  0.4-1 am , alternate or rarely opposite, sessile, half – amplexicaul, linear – oblong , optuse, crisped , serrulate , base cuneate . Flowers menute, greenish in short dense spikes . Deupelets obliquely ovoid, beaked.


110. CYPERACEAE

A  Nut enclosed in am ut ricle :………..  2. *Carex*.

AA.  Nut not enclosed in an utricle:

B.  Glumes dicholomous……………..3. *Gyanpur*

BB.  Glumes spirally arranged.

C.  Bristles present:
D. Style base constricted .............. 4. *Eleocharis*

DD. Style base not constricted ............ 6. *Scirpus*

CC. Bristles absent:

D. Style linear ......................... 1. *Bulbostylis*

DD. Style flat ......................... 5. *Fimbristylis*


*Bulbostylis barbate* (Rott b.) Kunth, Enum. 2:208.1837; FBI 6:651; FUGP 2:408; Kern is Reinwardtia 6:51.1961.- *Scirpus barbatus* Rott b. Descr. & Icon. 52, t. 17 f. 4. 1753.

A tufted, filiform annual sedged, Root fibrous. Leaves half the length of stem, margin involute, acuminate. Spikelets dark brown, in small dense terminal head, Glumes ovate-lanceolate margin minutely ciliate. Nut brown, shining.

Common in wet sandy soils.


2. *Carex L.*


Aboundant, along the margins or ‘ nullahs.’


3. *Cyperus L.*

A. Rachilla deciduous ....................... 1. *C. cyperoides*

AA. Rachilla persistant
B. Spike short .............................. 4. *C. rotundus*.
BB. Spike long ............................... 3. *C. exultatus*.
BBB. Spekelets clustered ..................... 2. *C. difformis*


An erect splender, annual sadge upto 75cm high, with short creeping rhizome. Leaves often aslong as the stem or exceeding. Bracts 5-10, overtopping the infloresce. Spikelets green spiraly arranged in cylidric peduclerd. Spike in simple terminal umbel. Nut Obllong, Curved, brown.

Frequent only in the orchard under moist situations.


An erect, slender, caespitose, glabrous annual sedge upto 50 cm high. Root fibrous. Leaves few, shorter than the stem. Spikelets many clustered in 3-6 globose, compact, lateral head, green or black. Rachilla winged., Glume inbricate, ovate,, truncate. Stamens 1 or rarely 2. Nut obovoid, pale brown, as long as glume.

Common in swampy places.


An erect, tall, glabrous, annual sedge up to 1 m high. Leaves longer or shorter than stem. Umbel compound. Bract overtappling the inflorensence. Spikleets chest nut-brown, distant, narrowly elliptic, lancerlate. Rachilla with

Common, along the margin of ponds, ditches and ‘nullahs’.

**Flowers and Fruits**: August- November; **Locality**: Through out the area. Kasturin Singh 6681.


Abundant, on dry and most places in crop field.

**Local Name**: Motha; **Flowers and fruits**: July-october

**Locality**: Through out the area, Kasturi Singh, 6663.

4. **Eleocharis R.Br.**


A rusk-like, caespitose, annual sedge. 30-90 cm. his. Rhizome stoloniferous. Stem tough, terete, triquetrous at the top, glabrous. Spikelets terminal, acute dusky green. Glumes oborate, much-striated. Bristles 6, brown. Nuts 1.5 mm long, ovoid, faintly striate, tipped with persistent style base, pale or dark-brown.

Common, in paddy field and along the margin of lakes, ponds and puddles.

**Flowers and Fruits**: August-January; **Locality**: Gyanpur, Kasturi Singh, 6682.

5. **Fimbristyliis Vabl. non.cons.**

**Fimbristyliis** tenera Roem & Schult, Syst. 2. Mant. 57.1824; FBI 6:642; FUGP 2:406.
A slender, tufted annual sedge up to 30 cm high. Leaves about half the length of stem. Spikelets light-brown, narrowly obovoid in lax sub-compound umbel. Glumes broadly-ovate, acuminate. Nuts trigonous, obovoid, minutely verrucose, dirty-white.

Frequent, along the bank of rivers and margins of ponds.

**Flowers and Fruits**: September-November; 6776.

6. **Scirpus Lenn.**


An erect, stout, sedge with horizonble rhizome, 30-90 an high. Stem triquatrocus, Leaves 2-5 mm broad, as long as the stem. Spikelets 1-2mm long, ovate-oblong, terminal, solitary reddish-brown. Glumes ovate, bifid at the apex, owned. Hypogynous bristles 3-6. Nuts obovoid, compressed, plano-conves, stav-coloured.

Common, along the bank of river and margin of ponds, ditches and ‘nullah’.

**Flowers and Fruits**: February-June; **Locality**: Gyanpur, Kasturi Singh 6142.

111. **POACEAE (Graminae nom.alt.)**

A. Aquatic or marshy plants:

B. Inflorescence loose panicked:

C. Shubs, leaves lanceolate .......................... 27. **Phragmites**.

CC. Herbs, leaves linear .............................. 21. **Oryza**

BB. Inflorescence of terminal digitate

Spike or panicles .................................. 24. **Paspalum**

AA Terrestrial plants:
B. Internode hollow:

C. Stem woody ........................................... 5. Bambusa

CC. Stem not woody

D. Inflorescence loose panicles:

E. Spikelets owned ....................................... 4. Avena

EE. Spikelets not owned

F. Shrubs ................................................... 3. Arundo

FF. Herbs:

G. Lower glumes towards

rachis ............................................................. 7. Brachiaria

GG. Lower glumes never
towards rachis ............................................. 22. Panicum

DD. Inflorescence simple spike ....................... 19. Imperata

BB. Internode solid:

C. Culm woody ........................................... 12. Dendracalamus

CC. Culm not woody

D. Under shrub:

E. Inflorescence pyramidal panicles:

F. Panicles spathaceous:

G. Spike involute ......................................... 30. Themeda

GG. spike not involute ............................... 1. Apluda

FF. Panicles not spathaceous:

G. Panicles whorled:

H. Lower glumes muricate .......... 31. Vetiveria
Description of the Flora

HH. Lower glumes not as above …. 13. **Desmostachya**

GG. Panicules not whorled:

H. Lower glumes lanceolate … 28. **Saccharum**

HH. Lower glumes ovate ….. 29. **Sorghum**

DD. Herb:

E. Inflorescence a single terminal dense raceme or panicles:

F. Spikelet awaned .................. 18. **Heteropogon**

FF. Spikelet not awaned:

G. Spikelets subtended by bristles:

H. Bristles forming acup .......... 8. **Cenchrus**

HH. not as above………..25. **Pennisetum**

GG. Spikelets not subtended by bristles…26. **Phalaris**

EE. Inflorescences of terminal digitate spike:

F. Spikelets owned:

G. Glumes pitted .................... 6. **Bothriochloa**

GG. Glumes without pits:

H. Leaf margin glabrous

I. Nodes with annular rings of hairs .... 14. **Dichanthium**

II. Nodes without annular rings of hairs:

J. Spikelets awned .... 9. **Chloris**

JJ. Spikelets unawed …10. **Cynodon**

FF. Spikelets not owned:

G. Spikelets 2- flowered … 15. **Digitaria**
GG. Spikelets more than 2- flowered … 16. **Eleusine**

GGG. Spikelets compressd ……… 11. **Dactyloctenium**

EEE. Inflorescence loose panicled:

F. Spikelets one sided:

G. Glumes not owned ……………… 23. **Paspalidium**

GG. Glumes owned ……………….20. **Oplasmanus**

FF. Spikelets arrange in loose panicles:

G. Spikelets owned ……………………2. **Aristida**

GG. Spikelets not owned …………… 17. **Eragrostis**

1. **Apluda Lunn.**


An erect, slender, annual herb, upto 1.5 m. high. Leaves 10.30cm long. liner-lanceslate, acuminate. Scabrous above and at the margin, glancous beneath. schath long, smoot; ligule shor, rounded, membranous. Panicles consisting numerous solitary, simple racemes or spikes, each enclosed in a membranous spathe. Spikelets in three, one sessile, two peduncled in which one is male.

Common in grasslands and also found on walls.

**Flowers and Fruits :**   September-December;   **Locality:** Gyanpur Kasturi Singh. 6777.

2. **Aristida Lenn**

**Aristida hystricula** Edgow, in J.Lenn. Soc. (Bot.) 6:208. 1862; FBI 7:227; Bor. Gr. Ind. 410.
A densely caespitose, dwarf, annual herb. Leaves subulate, curved, acuminate; sheath glabrous; ligule a small line of hairs. Spikelets erect, lower glume shorter than, upper, ovate-lanceolate, apiculate, scarious, upper glume linear with a slender own of with two subulate lobes.

Found in dry sandy soils in grass lands.

**Flowers and Fruits**: October-February; **Locality**: Orai, Kasturi Singh 6840.

### 3. **Arundo Lenn.**

**Arundo donax Lenn.** Sp.pl. 81. 1753; FBI 7:302; Bor. Gr. U.P. 79 8<Gr. Ind. 413.

A tall, perennial, shrub. Gulms fistular, creeping below. Leaves 30-60X2.5-5cm, ensiform, acuminate base amplexicaul, ligule a narrow membrane with dense hairs behind. Panicles 30-60cm long, decompounds, erect or dropping, thyrsi-form with scabrulous branches spikelets hight brown, laterally compressed. Glumes sub-equal, lanceolate, acuminate, glabrous, Keeled. Lemmas as long as glume, ovate or ovate-lanceolate, acuminate, toothed or entire. Caryopsis oblong.

Found along road-sides and on sides of nullahs.

**Local name**: Narkat, **Flowers and Fruits**: September-November; **Locality**: Bhadohi, Kasturi Singh 6778.

### 4. **Avena Lenn.**

**Avena Sativa** ex sterilis Bor., Gr. Ind. 435.

An erect, annual grass. Culum fistular. Leaves flat; ligules prominent. Spikelets pendulous in terminal open panicles. Caryopsis tightly enclosed by the floral glume and pales, free, silky.

Cultivated for fodder and some time met as an escape.

**Local name**: Jai, **Flowers and Fruits**: January-March; **Locality**: Orai, Kasturi Singh 6028.
5. **Bambusa Schreb. non. cons.**


A large, caespitose thorny bamboo. Culum 10-18cm in diam; culm-sheath 20-35X15-25cm, Covered with yellow hairs when youn. Leaves 10-20X2-2.25cm, leaf sheath with a thick callus; ligule short. Panicles often consisting of whole culm. Spikelets sessile, usually 5 in a cluster, lanceolate with few male flowers above and bisexual below. Caryopsis 5-8X2mm, oblong.

Found along the margin of orchads in the villages.

**Local name :** Baans, **Flowers and Fruits :** April-June; **Locality :** Through out the area, Kasturi Singh 6332.

6. **Bothriochaloa O. Kuntze.**


An erect or ascending, perennial grass. Leaves 5-15X0.2-0.5cm, linear, acuminate glabrescent, sheath compressed, ligule short, membranous, truncate. Racemes 3-8-3-6cm long, digitate silky, pale-greenish or dull-purplish. Spiklets paired, oblong, lanceolate. Lower glume with deep pit at the base.

Common, on noist and dry soil in grasslands.

**Flowers and Fruits :** September-December; **Locality :** Through out the area, Kasturi Singh 6779.
7. **Brachiaria Griseb.**


An ascending glabrous or pubescent annual grass. Leaves 4-12 X 0.7-2cm, ovate-lanceolate, linear, lanceolate, margin alidate, acuminate, base rounded or cordate, amplexicaual, sheath glabrous or pubescent, month ciliolate, ligule of a short hairs, Racemes numerous in sub-phyrami-dal panicles. Spikelets paired, sessile, ovoid, turgil, glabrous or pubescent. Caryopsis broadly-ellipsoid.

Common in wet and shady places.

**Flowers and Fruits:** July-October; **Locality:** Gopigang, Kasturi Singh 6664.

8. **Cenchrus Lenn.**


A erect or documbent, branched, perennial grass. upto 40cm high. Leaves 10-25 X 0.3-0.6cm, narrowly-linear, acuminate, glabrous or hairy: sheath striate, glabrous or often wolly, ligule a narrow ciliate membance, Raceness 20-10 an long, cylindric, pale green or purple-green. Lower glume empty, upper bisexual.

Common on dry soils along road-sides and railway tracks.

**Flowers and Fruits:** August-February; **Locality:** Bhadohi, Kasturi Singh 6683.

9. **Chloris Sn.**

A erect or ascending, tufted, annual grass up to 1m high. Leaves 15-45 cm long narrowly-linear, acuminate, sheath keeled and compressed, mouth ciliate, ligule a very narrow membrane. Spke 4-20, -5-10cm long, terminal, digitate, yellow’sh or greenish-purple. Lemma two, small, turgid, oborate, awned, barren.

Found on walls.

**Flowers and Fruits :** July-November; **Locality :** Gyanpur, Kasturi Singh 6665.


A prostrate, creeping, glabrous, perennial grass. Rooting at the nodes. Leaves 3-8cm long, linear, lanceolate, acuminate, ligule of a narrow ciliate ren, spikes terminal, digitate, green. Spikelets awnless, laterally compressed. Glumes shorter than lemma. Lodicules 2, caryopsis ablong.

**Local name :** Dooba, **Flowers and Fruits :** July-October; **Locality :** Throughout the area, Kasturi Singh 6666.

11. **Dactyloctenium Willd.**


An erect or decumbent, glabrous, annual grass 30-50 an. high. Leaves 5-15 cm long, linear or subulate-lanceolate, acute or acuminate, base rounded or sub-cordate, glabrous or ciliate towards the base; sheath compressed, smooth; ligule absent or rudimentary, spike compressed, smooth; ligule absent or rudimentary. Spike digitate terminal, Spikelets speading at right angle to the rachis, lower glume cuspidate, upper mucronate or awned-Lemma mucronate or shortly owned. Caryopsis obovoid-globose, rugosa.
Common in grass land and also in sugarcane field.

**Flowers and Fruits**: August-November; **Locality**: Bhadohi, Kasturi Singh 6684.

### 12. Dendro calmus Nees.


A Shrub or small tree. Culms fistular or solid, with spinescen branches at nodes. Leaves hairy on both surfaces, ligule narrow.

Common, in the area, used for making shafts, mats and baskets.

**Flowers and Fruits**: March-May; **Locality**: Suriyava, Kasturi Singh 6258.

### 13. Desmostachya Stapf.


An erect, tufted stout, perennial, grass up to 1.5m. high. Root stock creeping. Leaves 15-40X0.4-1cm, linear or linear. lanceolate, acuminate; sheath leathery, hairy at the mouth; ligule a ciliolate membranous ridge. Panicles 15-45am, long, often interrupted, grey-green or pale-brown, Spiklets 2, seriate, crowned or deflexed. Glumes unequal. Caryopsis 0.5mm long, obliquely-ovoid, laterally compressed.

Common in grasslands.

**Local name**: Kush, **Flowers and Fruits**: June-November; **Locality**: Gyanpur, Kasturi Singh 6471.

### 14. Dichanthium Willemet

An erect or geniculately ascending, perennial grass. Nodes bearded. Leaves 6-20X0.2-0.5cm, narrowly linear, acuminate, base rounded; sheath loose compressed, kelled; ligule short, truncate, membranous, glabrous or ciliate. Caryopsis obovate-oblong, compressed, plano-convex.

Common in grass land.

**Flowers and Fruits:** October-May; **Locality:** Gyanpur, Kasturi Singh 6841.

15. **Digitaria Heist. ex Fabr.**

A. Spike 1-3 ......................................................... 2. D. biformis

AA Spike more than 3 ................................. 1. D. adscendens


An erect or decumbent annual grass up to 1m high. Leaves 3-10X0.2-0.5cm, linear or linear-lanceolate. Spiklets in par, upper involucral glume ciliate, floral glume densely bearded with spreading haris.

Common in moist and shady places.

**Flowers and Fruits:** July-October; **Locality:** Bhadohi, Kasturi Singh 6667.


An erect ascending annual grass, up to 30cm high. Leaves 3-10X0.2-0.6cm, linear-lanceolate, acuminate, sheath slightly hairy near the mouth. Spikes digitate, flexible. Glumes often silky hairy along, the margin and nerves. Lower lemma with prominent nerves and hairs.
Common in moist places.

Flowers and Fruits: July-November; Locality: Gopigang, Kasturi Singh 6668.


Eleusine coracana (Linn.) Gaertn. Fruct 1:8, t. 1. f. 11, 1789; FBI 7:294; Bor. Gr. Ind. 492-Cynosurus Coracanus Linn. Syst. Nat. (ed.10) 2:875. 1759.

An erect, stout, annual grass. Leaves often over topping the stem; heaths compressed, Loose. Spike 4-7 sub-erect, in curved. Spikelets own less. Caryopsis globose, dark brown.

Some times cultivated for it grain, often met as an escape.

Local name: Namun, Flowers and Fruits: September-October; Locality: Gyanpur, Kasturi Singh 6780.


A. Rachis fragile ......................... 2.E. tenella.

AA. Rachis tough

B. Spikelets fascicled ....................... 1.E. gangetica

BB. Spikelets not fascicled ................... 3E. uniolodes


An erect, stout, perennial grass, up to 50 cm. high. Leaves 10-15cm long, narrow, rigid, glaucous; sheath glabrous, mouth bearded, ligule ciliate rimed. Spikelets linear-oblong Lemma broadly-ovate, sub-acute. Caryopsis oblong, brown, smooth.

Found along margin of paddy fields.
Flowers and Fruits: January-July; Locality: Gyanpur, Kasturi Singh 6029.


   An erect or ascending. Slender, annual grass. Leaves 2-12×0.1-0.3 mm, narrowly-linear, aminate, sheath loose, bearded at the mouth with soft spreading hairs, ligule reduced to a fringe of short hairs. Spikets oblong, Caryopsis broadly-ovoid, pale brown, polished.

   Abundant in grass lands.

Flowers and Fruits: May-October; Locality: Gyanpur, Kasturi Singh 6425.


   An erect or ascending slender, annual grass. Leaves 3-10×0.2-0.5 cm, linear, margin rough, acuminate, sheath sparsely hairy at the mouth, ligule reduce to very narrow rem. Spikelets ovate-elliptic or oblong, compressed, white or purplish. Caryopsis obovoid or ellipsoid, laterally compressed.

   Common in grass land under moist and shady situation.

Flowers and Fruits: August-November; Locality: Gyanpur, Kasturi Singh 6685.

18. **Heteropogon Pers.**


   An erect or decumbent, annual grass up to 1m high. Leaves 7-23×0.3-0.7 cm, linear, acute, margin cartilaginous, rough, sheath compressed, Keeled,
glabrous, mouth hairy with bulbous based hairs; ligules short, truncate, ciliolate. Spikelets enbricate, the lower one male, ownless, the upper female. Lemma long owned, stift, dark-brown or grayish. Caryopsis 3-3.5 mm long, semi-terete, whitish.

Abundant, in grass lands.

**Flowers and Fruits :** September-January; **Locality :** Gyanpur, Kasturi Singh 6781.

19.  **Imperata Cyrill.**


An erect, slender, caespitase, perennial gras upto 1 m hih. Rhizome creeping. Leaves 10-70x1-2 cm, linear, acuminate, margin scabrid; sheath loose, ligule membranous, ciliate, erose. Spikelets lanceolate, in pair, one sessile, the other pedicelled. Caryopsis small, oblong.

Common in grasslands and along railway tracts.


20.  **Oplismenus P. Beauv.**


A prostrate or procumbent, diffusely branched annual grass. Leaves 2-5x0.6-1.2 cm, ovate-lanceolate, acuminate, base rounded, sparsely hairy on both surfaces; sheath loose, straite, margin ciliate; ligule short, truncate. Spikelets 1-2 on short pedicels furnished with slender hairs. Caryopsis lanceolate-oblong, convex on the back.
Abundant in grassland and orchards especially in shady places.

Flowers and Fruits: June-December; Locality: Throughout the area. Kasturi Singh, 6472.

21. *Oryza L.*


An erect, annual grass, upto 1.5 m high. Leaves 30-60x0.6-0.8 cm, linear-lanceolate, caudate-acuminate, margin scabrid with minute bristles; sheath glabrous, many nerved, inflated. Spikelets loosely arranged on the branches, caducous, long awned, yellow. Caryopsis oblong, brownish.

Frequent in swampy places and in ditches.

Flowers and Fruits: July-November; Locality: Throughout the area. Kasturi Singh, 6669.

22. *Panicum L.*

*Panicum maximum* Jacq. Coll. 1:76; Bor. Gr. Ind. 327.

An erect or ascending, densely tufted perennial grass. Leaves linear or linear-lanceolate, margin scabrous or spinosely scabrid, glabrous or coarsely hirsute with tubercled based hairs. Panicles erect. Spikelets oblong.

Common in moist and shady places.


23. *Paspalidium Stapf.*


An erect or geniculately ascending glabrous, branched, annual grass upto 1 m high. Leaves 5-13x0.3-0.6 cm, linear-lanceolate, obtuse or acuminate;
sheath inflated, compressed, striate, ligule absent or replaced by rim of hairs. Spikelets ovate-oblong, pale-green. Caryopsis oblong.

Common in grassland and along road side in moist shady places.


24. *Paspalum* L.

*Paspalum distichum* L. *Syst. Nat.* (ed. 10) 2:855, 1759; FBI 7:12; *Bor. Gr. Ind.* 338.

An erect or ascending, perennial grass. Leaves 5-10 cm, long, linear-lanceolate, acuminate, sheath thin, mouth bearded; ligules very short, truncate. Spikelets sub-sessile, solitary, distichous, elliptic, acute, glabrous. Caryopsis elliptic, depressed.

Common in paddy field.


A tall, erect, stout, annual grass upto 2.5 m high. Leaves 15-60x1-4 cm, linear or linear-lanceolate. Panicles cylindric, very dense. Spikelets deciduous, oblong. Caryopsis obovoid or obovoid-ellipsoid, smooth, free.

Cultivated for its grains.

Local name: Bajra; Flowers and Fruits: September-October; Locality: Gopiganj. Kasturi Singh, 6782.

26. *Phalaris* L.


An erect or decumbent, branched, annual grass upto 50 cm high. Leaves 10-20x0.5-0.8 cm, linear-lanceolate, apex pointed base amplexicaul, glabrous,
sheath smooth; ligule oblong, scabrous. Spikelets shortly stalked, flattened, shining. Caryopsis ovate, acute.

Common in wheat field.


An erect or decumbent, perennial grass up to 5 m high. Leaves 30-60x2.5-4 cm, linear-lanceolate, acuminate, coriaceous; sheath loose, glabrous; ligule very short, hairy, spikelets grey-brown, many-flowered.

Common in lakes, ‘tals’ and ‘nullah’.


28. *Saccharum* L.

A. Peduncle hairy below the panicle; rachis very fragile ....2. *S. spontaneum*

AA. Peduncle not hairy, rachis less fragile ....................... 1. *S. bengalense*


An erect, tufted, perennial grass, up to 4 m high. Leaves 1-1.5 m long, narrow-linear, acuminate, glabrous, margin scarious, sheath long, ligule densely villous. Spikelets paired, one pedicellate, the other sessile. Caryopsis globose or ovoid, minute.
Local name: Munj; Flowers and Fruits: October-December; Locality: Bhadohi. Kasturi Singh, 6842.

2. *Saccharum spontaneaeum* L. Mant. 183, 1771; fbi 7:118; Bor. Gr. U.P. 185 & Gr. Ind. 214.

An erect, tufted perennial grass, upto 3.5 m high. Leaves upto 1 m long, narrow-linear, acuminate, margin convolute, sheath long, spotted withered or purple, glabrous or sparsely hairy; ligule ovate, membranous. Spikelets paired, one pedicelled, the other sessile. Caryopsis minute, globose or ovoid.

Common in grassland and cultivated along road sides.

Local name: Kaas; Flowers and Fruits: September-December; Locality: Gyanpur. Kasturi Singh, 6784.

29. *Sorghum*

*Sorghum Halepense* (Linn) pers. Syn., 1;10.1815, Bor. Gr. U.p. 200 8 Gr. Ind .222;-- *Holcus halepnes linn*. sp.pl. 1047. 1753.- *Andropopgon holepensis brot*. Fl Lus 1;89. 1804,FBI17; 182.

An erect, annual grass upto 2m. high, Nodes finely silky pubescent. Leaves 30-60 am long, linear lanceolate, acumenate base rounded or sub – amplexicaul, margin rough, sheath loose, glabrous, striate, ligule short. Membranous, strigose. Spekelete oroid –lameolate. Caryopsis elliptic- orate, brownish .

Common, in wheat and sugarcane fields. Flowers and fruits; Jaun – December, Locality: Throughout the area, Kasturi sungh, 6474.

*Themeda Forsk.*


A stiout, perennial grass. Leaues up to 30 am long , linear – lanceolate , ending in to filiform tep, sheath loose, polished, Keeled, ligule a narrow ciliate
membrane. Panicles very. compound with long slender upright branches. Caryopsis menute, brown.

Frequent on dry, sandy, soils along railway frocks and road sides.


31 Vetiveria Thou.


An erect, stout, tufted, globrous, perennial grass up to 2m, high. Roots spongy and aromatic. Leaves 30-60 am long, morrow – linear, acute, margin scabrid, sheath globrous, ligule short. spekelets sessile, linear or lanceolate, yellowish, violet-brown, purolish or black. Caryopsis ellipsoid.

Found along bank of river.

Local name: Khus, Flowers and Fruits: August – January

Locality: Jangigang, Kasturi Singh, 6687.