

FLORISTIC COMPOSITION OF SINGRAULI COAL MINES AREA

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A B S T R A C T

Singrauli is situated on southern corner between Uttar Pradesh and Madhya Pradesh. It falls under the district Sonbhadra of Uttar Pradesh and Sidhi of Madhya Pradesh. The entire mining area is represented by dry deciduous forests, degraded forests with dominant species of *Madhuca longifolia* var. *latifolia* (Roxb.) Chevalier. About 180 species belonging to 145 genera of 59 families have been collected from the coal mines area. The paper deals with the systematic enumeration of all species collected from the area along with ecological notes. Pollution aspects and conservation measures have been discussed.

INTRODUCTION

The present study was initiated with the objective to have first hand information of the floristic account survey of Singrauli coal mines area. In Singrauli area coal deposits are found more than 50 feet deep. By virtue of that, particular plant species cannot be considered as coal mines indicator. However *Madhuca longifolia* var. *latifolia* (Roxb.) Chev. has been observed as the dominant species in most of the coal mines area.. The present study was continued for 5 years and exploration tours were undertaken in different seasons to the mining areas. Environmental Planning and future prospects were not the part of our study. The observation regarding the pollution resistant plant of the area has also been made. Our work was mainly confined to the floristic survey, vegetation accounts of the area and if possible try to determine indicator plant species. The period of observation and study was short considering the area and various aspects of environmental problems. No definite conclusion could be drawn with small samples and short visits except the complete records of natural and overburden vegetation of the area.

Topography

The district Sonbhadra was a part of Mirzapur district before its division. The topography of the district is represented by parallel ranges of hills (100-400 m) running east to west and western portion of Rihand river is characterised by complicated hilly areas and has hills of considerable heights (250-600 m). These hills have been subjected to great physical distortion and represent a much older rock type and instead of pure sandstone other rock types are visible there in vertical disposition of strata. Folding and bending of the river

Sone and its two important tributaries viz., Rihand and Kanhar have greatly influenced the vegetation of the district. There are many water reservoirs with considerable aquatic vegetation. Break sites of submerged lands in most cases have scrubby vegetation.

Singrauli is situated on southern corner between Uttar Pradesh and Madhya Pradesh. It falls under the district Sonbhadra of U. P. and Sidhi district of M. P. Singrauli coal-fields spread over an area of about 2200 sq. km. Major parts falls in Sidhi district of M.P. and only 300 sq. km of north eastern part of Sonbhadra district of U.P. has been covered in the mining area.

There are 11 mining blocks viz., Kakri, Bina, and Marak located in U. P., Khadia and Dudhichua located partly in U.P. and M. P. Jhingurda, Gorbi, Jayant, Nigahi Amlohri and Moher in M.P. The Singrauli region is fast developing as an important energy center of the country. Besides, three super thermal power stations of NTPC and two of U.P. State Electricity Board, Renu Sagar Power Company in the private sector is also situated in the vicinity of the region. All thermal power stations are fed by above mentioned eleven coal fields. Now a days this area is developing as a new complex Industrial center of Uttar Pradesh as well as Madhya Pradesh. This area had been taken for floristic and vegetation studies during 1988 to 1993. Four exploration tours were undertaken in different seasons and about 300 field numbers have been collected from different localities of the area.

VEGETATION AND FOREST TYPES

The vegetation types of the area can be divided into following four categories viz.,

1. Dry deciduous mixed forests.
2. Degraded forests.
3. Vegetation of overburden area in coal mines.
4. Plantation done by the Forests department, NTPC and Coal mine department.

Dry deciduous mixed forests

In general, the vegetation is sparse except the forests. The permanent vegetation is of tropical dry deciduous mixed type. These forests are found on gentle slopes of hills, valleys and foot hills. The common species are *Anogeissus latifolia*, *Diospyros melanoxylon*, *Sterculia urens*, *Acacia catechu*, *Butea monosperma*, *Aegle marmelos*, *Buchanania lanzan*, *Phyllanthus emblica*, *Madhuca longifolia* var. *latifolia* and *Albizia odoratissima*.

Degraded forests

This type of forests commonly occur along the habitation area. Due to great biotic pressure, protected forests are seen like degraded forests near Singrauli Thermal Power Project and Waidhan tehsil of Sidhi district of M.P. along the coal mines area. The common species are *Butea monosperma*, *Anogeissus latifolia*, *Lagerstroemia parviflora*, *Acacia nilotica* ssp. *indica*, *Calotropis procera*, *Lantana camara*, *Carissa congesta* and *Saccharum spontaneum* and bushes of *Ziziphus* species.

Vegetation of overburden area in coal mines:

The overburdened area simply results because of the removal of soil and rocks including natural vegetation and dumping it at another place in search of coal. Sometimes the digging is more than 60 feet deep and when it is removed the upper soil and vegetation form the lowest layer and the underground rocks from the upper layer of the overburdened sites. It appears like an artificial hill. After a few years some species naturally come up on these rocks and soil formation begins. This may be called primary succession. None of the planted species have been able to establish on these sites. After one to three years of plantation most of the species dry off. The common species found in this area are: *Polycarpaea corymbosa*, *Acanthospermum hispidum*, *Sebastiania chamaelea*, *Aristida adscensionis*, *Cenchrus ciliaris*, *Tragus roxburghii*, *Eragrostiella brachyphylla*, *Heteropogon contortus*, *Ziziphus nummularia*, *Z. mauritiana* var. *fruticosa*, *Trema orientalis*, *T. politoria*, *Hyptis suaveolens*, *Phyllanthus maderaspatensis*, *Evolvulus alsinoides*, *Melanocenthris jacquemontii* and *Butea monosperma*.

Plantation done by Forests department, NTPC and Coal mine department

The Forests department, NTPC and Coal mines people have planted some species near ash water reservoir of Renu Sagar. viz., *Cassia siamea* and *Eucalyptus umbellata* have been planted along the reservoir of thermal power project and at some places they have planted *Casuarina equisetifolia*. All the above mentioned species are also planted near office complex and residential areas, besides some of the residents in the colony have developed their own garden in the premises which also include fruit trees viz., *Annona squamosa*, *Psidium guajava*, *Mangifera indica* and *Carica papaya*.

Pollution resistant plants

Pollution is an undesirable change in air, water and soil, which may be harmful to human beings, animals and plants. In Singrauli coal - mines area various kinds of pollution are man made. Environmental pollution from a power generating station occurs due to solid, liquid, gaseous discharge and noise. Following types of pollution are found in the study area.

1. Air pollution: Fly ash, Sulphur dioxide, dust and coal dust with small particles.
2. Water pollution: Various chemicals, dissolved ash, coal particles are discharged with water outside the plant.
3. Thermal pollution: Increase of temperature in the area is inevitable. However, plantation of trees in area and lawns will reduce the effect.
4. Noise pollution: The thermal power area has created serious noise pollution which affects the human beings on their nervous systems and hearing organs. Shrubs and bushes may be planted in 2-3 rows around the plant to minimise the noise pollution around the colony.

All four kinds of pollution have a cumulative effect in the area. In our observation most of the plants having large leaves are more sensitive towards pollution. Some of

them are *Mangifera indica*, *Tectona grandis*, *Terminalia catappa*, *Artocarpus heterophyllus* etc. In this regard, it is suggested that plants with small leaves or small leaflets will be more suitable for the plantation in the area.

List of plants resistant to water pollution in the area:

Typha angustata, *Ipomoea carnea* ssp. *fistulosa*, *I. aquatica*, *Marsilea minuta*, *Lemna perpusilla*, *Fimbristylis bisumbellata*, *Cyperus rotundus*, *C. difformis*, *Eragrostis atrovirens*, *Bergia ammannioides*, *Polygonum barbatum*, *Rumex dentatus*, *Eclipta alba* and *Eichhornia crassipes*.

List of plants resistant to air pollution in the area:

Cassia siamea, *Acacia auriculiformis*, *A. nilotica* ssp. *indica*, *Tephrosia purpurea*, *Ficus bengalensis*, *F. religiosa*, *Madhuca longifolia* var. *latifolia*, *Butea monosperma*, *Parkinsonia aculeata*, *Diospyros melanoxylon*, *Woodfordia fruticosa*, *Datura metel*, *Eucalyptus umbellata*, *Heliotropium indicum*, *Croton bonplandianum*, *Calotropis procera*, *Echinops echinatus*, *Solanum virginianum*, *Aristida adscensionis*, *Cynodon dactylon*, *Cenchrus ciliaris*, *Digitaria setigera*, *Prosopis juliflora*, *Tamarindus indica*, *Delonix regia*, *Wrightia tinctoria*, *Moringa oleifera*, and *Trema orientalis*.

To minimise the noise pollution it is suggested that the common bushes and shrubs may be planted in the form of hedges in one or two rows around the coal mines operation areas and thermal power station. This may include *Carissa opaca*, *Lawsonia inermis*, *Ipomoea carnea* and *Pedilanthus tithymaloides*.

FLORISTIC ANALYSIS

The floristic composition of the coal mines area reveals 180 species belonging to 144 genera and 59 families. Out of these, 134 species belonging to 109 genera and 50 families are of dicots and 45 species belonging to 34 genera and 8 families are of monocots. The *Marsilea minuta* is the only pteridophytic species growing in the marshy places of the area.

Groups	Families	Genera	Species
Pteridophytes	1	1	1
Angiosperms:			
Dicots	50	109	134
Monocots	8	34	45
Total :	59	144	180

ENUMERATION

Nymphaeaceae

Nymphaea nouchali Burm. f., Fl. Ind. 120. 1768.

Rare, grows in shallow ponds.

Fl. & Fr. : Oct. Nov. Singrauli : Jayant Project, Roy & Shukla 42873.

Papaveraceae

Argemone mexicana L., Sp.Pl. 508.1753.

Common, grows along the road side.

Fl. & Fr.: Jan. Feb. Singrauli : Charak Pathar Khadan, Roy & Shukla 42294.

Brassicaceae

Brassica juncea (L.) Czern. & Coss. in Czern. Consp. Pl. Chark. 8 n. 5. 1859.

Cultivated for oil seeds and found as escape.

Fl. & Fr. Oct. Mar. Singrauli : Renusagar, Roy & Shukla 42840.

B. napus L. Sp.Pl.666.1753. ssp.campestris (L.) Clapham in Fl. Brit. Isles. ed. 2, 124. 1962.

Cultivated for oil seeds and found as escape.

Fl. & Fr.: Dec. Mar. Singrauli : Renusagar, Roy & Shukla 42857.

Capparaceae

Cleome gynandra L., Sp. Pl. 671. 1753.

Common, grows in waste places along the road sides.

Fl. & Fr. : July Nov. Singrauli : Renusagar, Roy & Shukla 42204.

Caryophyllaceae

Polycarpon prostratum (Forsk.) Asch. & Schweinf., in Oesterr. Bot. Zeitschr. 39: 128. 1889.

Common, grows on overburden and along the railway tract.

Fl. & Fr. : Aug.- Feb. Singrauli : Ranusagar, Roy & Shukla 42855.

Portulacaceae

Portulaca oleracea L., Sp.Pl. 445.1753.

Common, grows on open waste places.

Fl. & Fr. : Throughout the year. Singrauli : Renusagar, Roy & Shukla 42223.

Elatinaceae

Bergia ammannioides Roxb., Hort. Beng. 34. 1814.

Common, grows in moist places along the bank of ponds.

Fl. & Fr. : Aug.-Apr. Singrauli : Renusagar, Roy & Shukla 42227.

Malvaceae

Sida acuta Burm.f., Fl. Ind. 147. 1768.

Common, grows in waste land and bed of cultivated fields.

Fl. & Fr. : Aug.-Jan. Singrauli : Vindhyaachal Project, Roy & Shukla 42887.

Sida cordata (Burm. f.) Borss. in Blumea 14: 182. 1966.

Common, grows along the banks of ponds.

Fl. & Fr. : Aug. Oct. Singrauli : Renusagar, Roy & Shukla 42849.

S. rhombifolia L., Sp. Pl. 684. 1753.

Common, grows along the road side.

Fl. & Fr. Oct. Apr. Singrauli : Anapara, Roy & Shukla 42247.

Urena lobata L., Sp. Pl. 692.1753. ssp. **lobata** Boiss.

Common, grows along the road side and in mixed forest.

Fl. & Fr. : Throughout the year. Singrauli: forest area, Roy & Shukla 42889.

Sterculiaceae

Byttneria herbacea Roxb., Pl. Corom. 1: 28, t. 29. 1795.

Common, grows on rocky crevices in mixed forests.

Fl. & Fr. : May June. Singrauli : Jhigurda, Roy & Shukla 42831.

Helicteres isora L., Sp. Pl. 963.1753.

Common, grows in mixed forest.

Fl. & Fr. : Aug. Nov. Singrauli : Gorbi, Roy & Shukla 42243, 42293.

Sterculia urens Roxb., Pl. Corom. 1: 28, t. 24.1795.

Common, grows on dry hill slopes.

Fl. & Fr. : Feb. April. Singrauli : Jayant project, Roy & Shukla 42233.

Waltheria indica L., Sp. Pl. 673. 1753.

Common, grows in mixed forest.

Fl. & Fr. : June Oct. Singrauli : Nigahi, Roy & Shukla 42843.

Tiliaceae

Corchorus aestuans L., Syst. Nat. ed. 10.1079. 1759.

Common, grows along the banks of ponds.

Fl. & Fr. : Sept. Feb. Singrauli : Ranusagar, Roy & Shukla 42852.

C. fascicularis Lamk., Encycl. 2: 104. 1786.

Common, grows in moist waste places.

Fl. & Fr. : Oct. - April. Singrauli : Ranukut, Roy & Shukla 42249.

Triumfetta pentandra A. Rich.in Guill. & Perr., Fl. Seneg. Tent. 93.t.19. 1831.

Common, grows in mixed forest.

Fl. & Fr. : Sept. Jan. Singrauli : Jayant project, Roy & Shukla 42248.

Zygophyllaceae

Tribulus terrestris L., Sp. Pl. 387. 1753.

Common, grows in rocky crevices and waste land.

Fl. & Fr. : May June. Singrauli : Bina. Roy & Shukla 42289.

Oxalidaceae

Biophytum sensitivum (L.) DC., Prodr. 1: 690.1824.

Common, grows on sandy soil.

Fl. & Fr. : May Oct. Singrauli : Jayant project, Roy & Shukla 42885.

Rutaceae

Aegle marmelos (L.) Correa in Trans. Linn. Soc. 5: 223. 1800.

Common, grows in mixed forest.

Fl. & Fr. : April June. Singrauli : Forest area, Roy & Shukla 42228.

Limonia elephantum (Corr.) Panigrahi, Taxon 26: 577. 1977.

Common, grows in mixed forest near habitation.

Fl. & Fr. : Mar. May. Singrauli : Forest area, Roy & Shukla 42235.

Celastraceae

Cassine glauca (Rottb.) O. Kuntze, Rev. Gen. Pl. 1: 114. 1891.

Common, grows in mixed forest.

Fl. & Fr. : March May. Singrauli : Jayant project, Roy & Shukla 42877.

Rhamnaceae

Ziziphus mauritiana Lamk., Encycl. 3: 319. 1789.

Common, grows in mixed forest.

Fl. & Fr. : Sept. - Dec. Singrauli : Audhimod, Roy & Shukla 42283.

Z. nummularia (Burm. f.) Wight & Arn., Prodr. 162. 1834.

Common, grows on overburden area.

Fl. & Fr. : Sept. Dec. Singrauli : Jayant project, Roy & Shukla 42864.

Z. oenoplia (L.) Mill., Gard. Dict. ed. 8, 3: 1768.

Common, grows in mixed forest.

Fl. & Fr. : August Oct. Singrauli : Forest area, Roy & Shukla 42881.

Z. xylopyrus (Retz.) Willd., Sp. Pl. 1: 1104. 1797.

Common, grows in mixed forest.

Fl. & Fr. : June August. Singrauli : Forest area, Roy & Shukla 42897.

Vitaceae

Ampelocissus latifolia (Roxb.) Planch. in J. Vigne Am. 8: 374. 1884.

Common, Climber on *Lantana* sp. in mixed forest.

Fl. & Fr. Aug. Nov. Singrauli : Audhimod, Roy & Shukla 42282.

Sapindaceae

Dodonaea angustifolia L. f., Suppl. Pl. 18: 1782.

Common, grows in foothills in mixed forest.

Fl. & Fr. : Jan. Apr. Singrauli : Charak Pathar Khadan, Roy & Shukla 42292.

Anacardiaceae

Buchanania lanzan Spreng. in J. Bot. (Schrader) 2: 234. 1800.

Common, grows in mixed forest.

Fl. & Fr. : Jan. June. Singrauli : Jayant project, Roy & Shukla 42230.

Mangifera indica L., Sp. Pl. 200. 1753.

Common, planted along the road side for edible fruits.

Fl. & Fr. : Feb. July. Singrauli : Jhigurda, Roy & Shukla 42216.

Moringaceae

Moringa oleifera Lamk., Encycl. 1:398. 1785.

Common, planted along the road side and near habitation.

Fl. & Fr. Jan.-April. Singrauli : Jhigurda, Roy & Shukla 42260.

Fabaceae

Butea monosperma (Lamk.) Taub. in Engler. & Prantl. Pflanzenfam. 3(3): 366. 1894.

Common, grows in degraded forest and mixed forests.

Fl. & Fr. : Mar. May. Singrauli : Forest area, Roy & Shukla 38093.

Crotalaria albida Heyne ex Roth., Nov. Sp. Pl. 333. 1821.

Common, grows on rocky crevices in mixed forests.

Fl. & Fr. : Aug. Apr. Singrauli : Jayant, Roy & Shukla 42884.

C. linifolia L.f. Suppl. 322.1781.

Common, grows in waste land.

Fl. & Fr. : Aug. Mar. Singrauli : Renukut, Roy & Shukla 42240.

Dalbergia sissoo Roxb., Fl. Ind. 3:223. 1832.

Common, grows along the road sides.

Fl. & Fr. : Feb. - July. Singrauli : Anapara Road side, Roy & Shukla 42239.

Desmodium gangeticum (L.) DC., Prodr. 2: 327. 1825.

Common, grows in sal forest.

Fl. & Fr. : July -Apr. Singrauli : Bina, Roy & Shukla 42246.

Indigofera trita L.f., Suppl. Pl. 335. 1781.

Common, grows along the road side and waste places.

Fl. & Fr. : July Mar. Singrauli : Bina, Roy & Shukla 42236.

Rhynchosia minima (L.) DC., Prodr.2:385.1825.

Common, grows on sandy soil in mixed forests.

Fl. & Fr. : Aug. Apr. Singrauli : Nigahi, Roy & Shukla 42259.

Tephrosia purpurea (L.) Pers., Syn.Pl.2:329.1807

Common, grows along the road side.

Fl. & Fr. : Sept. Mar. Singrauli : Jayant, Roy & Shukla 42242.

Caesalpinaceae

Bauhinia racemosa Lamk., Encycl. 1: 390. 1785.

Common, grows in mixed forests.

Fl. & Fr. : Apr. Aug. Singrauli : Forest area, Roy & Shukla 42238.

Delonix regia (Bojer ex Hook.) Rafin., Fl. Tellur 2:92.1836.

Common, planted along the road side.

Fl. & Fr. : Mar. July. Singrauli : Jhigurda, Roy & Shukla 42225.

Cassia tora L., Sp. Pl. 376. 1753.

Common, grows in waste places and along the road side.

Fl. & Fr. : Aug. Dec. Singrauli : Jhingurda, Roy & Shukla 42244.

C. siamea Lamk., Encycl. 684. 1785.

Common, planted along the road side.

Fl. & Fr. : Sept. - May. Singrauli : Jhingurda, Roy & Shukla 42284.

Parkinsonia aculeata L., Sp. Pl. 375. 1753.

Common, planted along the road side.

Fl. & Fr. : Sept. Apr. Singrauli : Bina, Roy & Shukla 42286.

Tamarindus indica L., Sp. Pl. 34. 1753.

Common, planted along road side.

Fl. & Fr. : May July & Jan. Feb. Singrauli : Anapara, Roy & Shukla 42214.

Mimosaceae

Acacia auriculiformis A. Cunn. ex Benth. in Hook f., Lond. J. Bot 1:377. 1842.

Common, planted on overburden coal mines area.

Fl. & Fr. : Aug. - Jan. Singrauli : Bina, Roy & Shukla 42211.

A. catechu (L. f.) Willd., Sp. Pl. 4:1079. 1806.

Common, grows in mixed forest.

Fl. & Fr. : July - Mar. Singrauli : Forest area, Roy & Shukla 42245.

A. nilotica (L.) Willd. ssp. **nilotica** (Benth.) Brenan in Kew Bull. 12:84. 1957.

Common, in open land and along the road side.

Fl. & Fr. : Mar. - Apr. Singrauli : Pathar ki khadan, Roy & Shukla 42299.

Albizia odoratissima (L. f.) Benth. in Hook. Lond. J. Bot. 3:88. 1844.

Common, grows in mixed forest.

Fl. & Fr. : Apr. - Oct. Singrauli : Forest area, Roy & Shukla 42231.

Prosopis juliflora (Swartz.) DC., Prodr. 2:447. 1825.

Common, planted along the road side and waste places.

Fl. & Fr. : Feb. - July. Singrauli : Renusagar, Roy & Shukla 42254(B).

Combretaceae

Anogeissus latifolia (Roxb. ex DC.) Wall. ex Guill. & Perr. Fl. Seneg. Tent. 7:280. 1832.

Common, grows in mixed forest.

Fl. & Fr. : Aug. Mar. Singrauli : Nighahi, Roy & Shukla 42253.

Terminalia alata Heyne ex Roth, Nov. Pl. Sp. 379. 1821.

Common, grows in mixed forest.

Fl. & Fr. : Apr. - June. Singrauli : Forest area, Roy & Shukla 42234.

T. catappa L., Syst. Nat. ed. 12.2:674. 1767.

Common, planted in habitation area.

Fl. & Fr. : Apr. - Dec. Singrauli : Jhingurda, Roy & Shukla 42203.

T. arjuna (Roxb. ex DC.) Wight & Arn., Prodr. 314. 1834.

Common, grows along the river bank.

Fl. & Fr. : Mar. - July. Singrauli : Forest area, Roy & Shukla 42226.

T. bellirica (Gaertn.) Roxb., Pl. Corom. t.198.1805.

Common, grows in mixed forest.

Fl. & Fr. : Apr. May. Singrauli : Forest area, Roy & Shukla 42237.

Myrtaceae

Eucalyptus umbellata Dum., Cours. Bot. Cult. ed.2,7:279.1814.

Common, planted along the road side and waste land.

Fl. & Fr. : Apr. Sept. Singrauli : Jhingurda, Roy & Shukla 42252.

Lythraceae

Ammannia baccifera L., Sp. Pl. 120. 1753.

Common, grows along the streams, ponds and ditches.

Fl. & Fr. : Nov. - Apr. Singrauli : Renukut, Roy & Shukla 42867.

Lagerstroemia parviflora Roxb., Pl. Corom. 1:48. 1796.

Common, grows in mixed forest.

Fl. & Fr. : Apr. Oct. Singrauli : Pathar ki khadhan, Roy & Shukla 42295.

Lawsonia inermis L., Sp. Pl. 349. 1753.

Common, planted as a hedge.

Fl. & Fr. : Apr. - Sept. Singrauli : Anapara, Roy & Shukla 42296(A).

Woodfordia fruticosa (L.) Kurz in J. Asiat. Soc. Beng. 40:56.1871.

Common, grows in mixed forest.

Fl. & Fr. : Jan. May. Singrauli : Nigahi, Roy & Shukla 42255.

Onagraceae

Ludwigia hyssopifolia (G. Don) Exell, Garcia de Orta 5: 471. 1957.

Common, grows along the road side in dry ditches.

Fl. & Fr. : Throughout the year. Singrauli : Renusagar, Roy & Shukla 42844.

Cucurbitaceae

Momordica dioica Roxb.ex Willd., Sp. Pl. 4: 605. 1805.

Common, grows along field edges in waste land.

Fl. & Fr. : June Oct. Singrauli : Pathar ki khadhan, Roy & Shukla 42298.

Melothria maderaspatana (L.) Cogn. in DC., Monogr. Phan. 3: 623. 1881.

Common, grows in waste land in mixed forest.

Fl. & Fr. : Oct. Dec. Singrauli : Jhingurda, Roy & Shukla 42218.

Rubiaceae

Haldina cordifolia (Roxb.) Ridsd. in Blumea 24: 361. 1978.

Common, grows in mixed forest.

Fl. & Fr. : Aug. Nov. & Jan.-June. Singrauli: Pathar ki khadhan, Roy & Shukla 42270.

Dentella repens (L.) J. R. & G. Forst. Char. Gen. Plant. Ins. Mar. Austr. 26, t.13. 1776.

Common, grows on river beds and ditches.

Fl. & Fr. : Jan. June. Singrauli : Bina coal mines. Roy & Shukla 42287.

Mitragyna parvifolia (Roxb.) Korth., Obs. Naocl. Ind. 19. 1839.

Common, grows along the road and in mixed forest.

Fl. & Fr. : Aug. - Sept. Singrauli : Jayant project. Roy & Shukla 42268.

Oldenlandia corymbosa L., Sp. Pl. 119. 1753.

Common, grows in paddy fields.

Fl. & Fr. : Sept. Apr. Singrauli : Bina. Roy & Shukla 42261.

Asteraceae

Acanthospermum hispidum DC., Prodr. 5: 522. 1836.

Common, grows in waste lands.

Fl. & Fr. : July Nov. Singrauli : Jayant project. Roy & Shukla 42300.

Ageratum conyzoides L., Sp. Pl. 1: 839. 1753.

Common, grows in waste places.

Fl. & Fr. : Sept.-March. Singrauli : Jhigurda, Roy & Shukla 38094.

Caesulia axillaris Roxb., Pl. Corom. 1: 64. 1778.

Common, grows in moist places and along the ponds and puddles.

Fl. & Fr. : Sept.- Nov. Singrauli : Nigahi, Roy & Shukla 42842.

Echinops echinatus Roxb., Fl. Ind. ed. 2. 3: 447. 1832.

Common, grows in dry waste land and along the road side.

Fl. & Fr. : Mar. - Apr. Singrauli : Renukut. Roy & Shukla 42215.

Eclipta prostrata (L.) L., Mant. Pl. 2: 206. 1771.

Common, grows in moist and waste places.

Fl. & Fr. : Through out the year. Singrauli: Jhingurda. Roy & Shukla 42811.

Launaea procumbens (Roxb.) Ramayya & Rajagopal in Kew Bull. 23. 465. 1969.

Common, grows on slopes of overburden area.

Fl. & Fr. : Dec. Feb. Singrauli : Jayant project. Roy & Shukla 42867.

Parthenium hysterophorus L., Sp. Pl. 988. 1753.

Common, grows on moist waste places.

Fl. & Fr. : Sept. Oct. Singrauli : Dam side. Roy & Shukla 42264.

Tridax procumbens L., Sp. Pl. 900. 1753.

Common, grows in waste places.

Fl. & Fr. : Throughout the year. Singrauli: Nigahi. Roy & Shukla 42261(A).

Sapotaceae

Madhuca longifolia (J.Koenig) Macbr. var. **latifolia** (Roxb.) Chevalier in Rev. Int. Bot.

Appl. 23. 149. 1943.

Common, grows along the road side and in mixed forest.

Fl. & Fr. : Mar. July. Singrauli : Jayant project. Roy & Shukla 42664.

Ebenaceae

Diospyros melanoxylon Roxb., Pl. Corom. 1: 36. t. 46. 1795.

Common, grows in mixed forest.

Fl. & Fr. : Mar. - Aug. Singrauli : Jayant project. Roy & Shukla 42879.

Apocynaceae

Carissa congesta Wight, Icon. Pl. Ind. Orient. 1284. 1848.

Common, grows in mixed forest.

Fl. & Fr. : May Oct. Singrauli : Dam site. Roy & Shukla 42817.

C. opaca Stapf ex Haines in Indian for. 47: 378.1921.

Common, grows in mixed forest.

Fl. & Fr. : May Oct. Singrauli : Jayant project Roy & Shukla 42229.

Holarrhena pubescens (Buch. Ham.) Wallich ex G. Don, Gen. Hist. 4: 78. 1837 1838.

Common, grows in mixed forest.

Fl. & Fr. : Feb. June. Singrauli : Nigahi. Roy & Shukla 42254.

Ichnocarpus frutescens (L.) R. Br. in Mem. Werner. Soc. 1: 62. 1811.

Common, grows in mixed forest.

Fl. & Fr. : Aug. Feb. Singrauli : Renusagar. Roy & Shukla 42894.

Wrightia tinctoria R.Br.in Mem. Werner. Soc. 1: 73. 1811.

Common, grows in mixed forest.

Fl. & Fr. : Mar. Oct. Singrauli : Anapara. Roy & Shukla 42892.

Asclepiadaceae

Calotropis procera (Aiton) R. Br. in W.T. Aiton, Hortus Kew. ed. 2. 2: 78. 1811.

Common, grows in waste land.

Fl. & Fr. : Mar. May. Singrauli : Anpara. Roy & Shukla 42205.

Pergularia daemia (Forssk.) Chiov. In Result. Sc. Miss. Stefam- Paoli, Somal. Ital. 1: 115. 1916.

Common, grows along the road side and field hedges.

Fl. & Fr. : May July. Singrauli : Pathar khadan. Roy & Shukla 42269.

Menyanthaceae

Nymphoides indica (L.) Kuntze, Revis. Gen. Pl. 2 : 429. 1891.

Common, grows in ponds.

Fl. & Fr. : June Sept. Singrauli : Renusagar. Roy & Shukla 42251.

Boraginaceae

Ehretia laevis Roxb., Pl. Corom. 1: 42. t. 56. 1796.

Common, grows in mixed forest.

Fl. & Fr. : Mar. May. Singrauli : Forest area. Roy & Shukla 42250.

Heliotropium strigosum Willd. subsp. **brevifolium** (Wallich) Kazmi, in J. Arnold Arb. 51: 153. 1970.

Common, grows in waste and moist places.

Fl. & Fr. : Apr. Dec. Singrauli : Nigahi. Roy & Shukla 42257.

Rotula aquatica Lour., Fl. Cochinch. 121. 1790.

Common, grows on river beds.

Fl. & Fr. : Oct. Feb. Singrauli : Coal mines area. Roy & Shukla 42232.

Convolvulaceae

Evolvulus alsinoides (L.) L., Sp. Pl. ed. 2. 392.1762.

Common, grows on waste places and along the road side.

Fl. & Fr. : Aug. - Mar. Singrauli : Nigahi. Roy & Shukla 42260.

E. nummularius (L.) L., Sp. Pl. ed. 2. 391. 1762.

Common, grows on sloppy places.

Fl. & Fr. : Aug. Feb. Singrauli : Jhingurda. Roy & Shukla 42834.

Ipomoea aquatica Forssk., Fl. Aegypt.- Arab. 44. 1775.

Common, grows in ponds and marshy places.

Fl. & Fr. : Throughout the year. Singrauli: Renusagar. Roy & Shukla 42874.

I. carnea Jacq. ssp. **fistulosa** (Mant. ex Choisy) Austin in Taxon 26: 237. 1977.

Common, grows along the road side in moist places.

Fl. & Fr. : Throughout the year. Singrauli: Jhingurda. Roy & Shukla 42206.

Cuscutaceae

Cuscuta reflexa Roxb., Pl. Corom. 2: 3. t. 104. 1799.

Common, parasites on the road side shrubs.

Fl. & Fr. : Nov. - Mar. Singrauli : Gorbi. Roy & Shukla 42210.

Solanaceae

Datura innoxia Mill., Gard. Dict. ed. 8. n. 5. 1768.

Common, grows along the road sides and waste places.

Fl. & Fr. : July - Jan. Singrauli : Charak pathar khadan. Roy & Shukla 42271.

D. metel L., Sp. Pl. 179. 1753.

Common, grows along the road sides and waste lands.

Fl. & Fr. : July Sept. Singrauli : Jayant project. Roy & Shukla 42215.

Physalis minima L., Sp. Pl. 183. 1753.

Common, grows in waste lands.

Fl. & Fr. : Aug. - Jan. Singrauli : Audhimor. Roy & Shukla 42207.

Solanum incanum L., Sp. Pl. 188. 1753.

Common, grows on rocky places.

Fl. & Fr. : Jan. June. Singrauli : Pathar khadan. Roy & Shukla 42272.

S. nigrum L., Sp. Pl. 186. 1753.

Common, grows in waste places.

Fl. & Fr. : Sept. Feb. Singrauli : Pathar khadan. Roy & Shukla 42269.

S. virginianum L., Sp. Pl. 187. 1753.

Common, grows on sandy sloppy places.

Fl. & Fr. : Dec. June. Singrauli : Nigahi. Roy & Shukla 42262.

Scrophulariaceae

Bacopa monnieri (L.) Wettst., in Engl. & Prantl, Nat. Pflanzenfam. IV. 36:77. 1891.

Common, grows on moist places.

Fl. & Fr. : July Sept. Singrauli : Jhingurda. Roy & Shukla 38095.

Bignoniaceae

Stereospermum chelonoides (L. f.) DC., in Bibl. Univ. Geneve II. 17: 124. 1838.

Common, grows in mixed forest and coal mines area.

Fl. & Fr. : Apr. Jan. Singrauli : Nighahi. Roy & Shukla 42256.

Pedaliaceae

Martynia annua L., Sp. Pl. 618. 1753.

Common, grows along the road sides.

Fl. & Fr. : Aug. Nov. Singrauli : Vindhyachal. Roy & Shukla 42208.

Acanthaceae

Justicia simplex D. Don, Prodr. Fl. Nepal. 118. 1825.

Common, grows in waste places.

Fl. & Fr. : Aug. Apr. Singrauli : Road side. Roy & Shukla 42209.

Peristrophe paniculata (Forssk.) Brummitt in Kew Bull. 38: 451. 1983.

Common, grows in mixed forest.

Fl. & Fr. : Sept. Apr. Singrauli : Vindhyachal. Roy & Shukla 42891.

Verbenaceae

Lantana camara L. var. **aculeata** (L.) Moldenke in Torreya 34:9.1934.

Common, grows along the road sides and in mixed forest.

Fl. & Fr. Apr. June. Singrauli : Audhimor. Roy & Shukla 42281.

Tectona grandis L.f., Suppl. Pl. 151. 1782.

Common, grows in mixed forest.

Fl. & Fr. : Sept. Mar. Singrauli : Renukut. Roy & Shukla 42202.

Lamiaceae

Hyptis suaveolens (L.) Poit., in Ann. Mus. Hist. Nat. 7: 472. t.29. f. 2. 1806.

Common, grows in waste places along the road sides.

Fl. & Fr. : Throughout the year. Singrauli : Jayant project. Roy & Shukla 42866.

Leucas cephalotes (Koenig ex Roth) Spreng., Syst. Veg. 2: 743. 1825.

Common, grows along road sides.

Fl. & Fr. : Aug. Apr. Singrauli : Jhingurda. Roy & Shukla 38003.

Ocimum basilicum L., Sp. Pl. 597. 1753.

Common, grows in moist places.

Fl. & Fr. : July Apr. Singrauli : Renusagar. Roy & Shukla 42851.

O. tenuiflorum L., Sp. Pl. 597. 1753.

Common, grows near habitation area.

Fl. & Fr. : Throughout the year. Singrauli: Renusagar. Roy & Shukla 42845.

Salvia plebeia R. Br., Prodr. 501. 1810.

Common, grows on sandy soil and sloppy places.

Fl. & Fr. : Sept. Apr. Singrauli : Renusagar. Roy & Shukla 42212.

Nyctaginaceae

Boerhavia diffusa L., Sp. Pl. 3. 1753.

Common, grows along footpaths and rocky places.

Fl. & Fr. : Oct.-Apr. Singrauli : Pathar khadan. Roy & Shukla 42274.

Amaranthaceae

Achyranthes aspera L., Sp. Pl. 204. 1753.

Common, grows along road sides and waste places.

Fl. & Fr. Aug. Feb. Singrauli : Renusagar. Roy & Shukla 42270.

Aerva lanata (L.) Juss. ex Schult., Syst. Veg. 5 : 564. 1819.

Common, grows in moist places.

Fl. & Fr. : July Apr. Singrauli : Bina coal mines. Roy & Shukla 42285.

Alternanthera sessilis (L.) R. Br. ex DC., Cat. Pl. Horti. Monsp. 4: 77. 1813.

Common, grows in moist places.

Fl. & Fr. : Throughout the year. Singrauli : Jhingurda. Roy & Shukla 42835.

Amaranthus hybridus L. subsp. **incurvatus** (Gren. & Gogr.) Brenan var. **paniculatus** (L.) Mansf. in Die Kulturpfl. Beih 2: 54. 1959.

Common, cultivated for vegetable purposes.

Fl. & Fr. : Aug. Oct. Singrauli : Renusagar. Roy & Shukla 42853.

A. spinosus L., Sp. Pl. 991. 1753.

Common, grows moist and waste places.

Fl. & Fr. : Throughout the year. Singrauli : Audhimor. Roy & Shukla 42241.

Gomphrena celosioides Mart., Beitr. Amarantac. 93. 1825.

Common, grows on sloppy places.

Fl. & Fr. : July- Apr. Singrauli : Bina Coal Field. Roy & Shukla 42288.

Polygonaceae

Polygonum barbatum L., Sp. Pl. 362. 1753. subsp. **barbatum**

Common, grows along the bank of streams & ponds.

Fl. & Fr. : Oct. Mar. Singrauli : Renusagar. Roy & Shukla 42830.

Rumex dentatus L. subsp. **klotzschianus** (Meisn.) Reichb. f., Beih. Bot. Centralb. 49: 19. 1932.

Common, grows on dried ponds and moist places.

Fl. & Fr. : Jan.-Mar. Singrauli : Vindhyachal. Roy & Shukla 42826.

Loranthaceae

Viscum articulatum Burm. f., Fl. Ind. 311. 1768.

Common, parasite on *Madhuca longifolia* var. *latifolia*.

Fl. & Fr. : Oct.- Feb. Singrauli : Jhingurda. Roy & Shukla 38010.

Euphorbiaceae

Acalypha ciliata Forssk., Fl. Aegypt.-Aranb. 162. 1775.

Common, grows in wastelands.

Fl. & Fr. : Aug.- Sep. Singrauli : Pathar Khadan. Roy & Shukla 42213.

Croton bonplandianum Baill. in Adansonia 4: 339. 1863.

Common, grows in waste lands along the road sides.

Fl. & Fr. Mar.- Apr. Singrauli : Pathar Khadan. Roy & Shukla 42297.

Euphorbia thymifolia L., Sp. Pl. 454. 1753.

Common, grows on sandy soils.

Fl. & Fr. : Throughout the year. Singrauli : Nigahi. Roy & Shukla 42263.

Phyllanthus emblica L., Sp. Pl. 982. 1753.

Common, grows in mixed forest.

Fl. & Fr. : Mar.- Dec. Singrauli : Jayant. Roy & Shukla 42214.

P. maderaspatensis L., Sp. Pl. 982. 1753.

Common, grows in moist places.

Fl. & Fr. : July- Sept. Singrauli : Bina Coal field. Roy & Shukla 42284.

Sebastiania chamaelea (L.) Muell.-Arg. in DC., Prodr. 15(2.2): 1175. 1866.

Common, grows in moist places.

Fl. & Fr. : Aug.- Nov. Singrauli : Ranu Sagar Roy & Shukla 42859.

Ulmaceae

T. orientalis (L.) Blume, Mus. Bot. 2: 62. 1856.

Rare, grows on overburden area.

Fl. & Fr. : Sept.- Oct. Singrauli : Jayant Project. Roy & Shukla 42865.

Trema politoria Planch. in Ann. Sci. Nat. Bot. Ser. III. 10: 326. 1848.

Rare, grows on overburden areas.

Fl. & Fr. : Apr.- Sept. Singrauli : Jayant Project. Roy & Shukla 42807.

Moraceae

Artocarpus heterophyllus Lamk., Encycl. 3:209. 1789.

Common, planted in private houses.

Fl. & Fr. : Feb. July. Singrauli : Jhigurda. Roy & Shukla 42221.

Ficus bengalensis L., Sp. Pl. 1059. 1753.

Common, grows along the road sides.

Fl. & Fr. : April- Sept. Singrauli : Jhigurda. Roy & Shukla 42834.

F. religiosa L., Sp. Pl. 1059. 1753.

Common, grows along the road sides.

Fl. & Fr. Apr.- Sept. Singrauli : Jhigurda. Roy & Shukla 38096.

Hypoxidaceae

Curculigo orchiodes Gaertn. Fruct. Sem. Pl. 1: 63. t. 16. 1788.

Common, grows in sal forests in rocky crevices.

Fl. & Fr. : July- Oct. Singrauli : Jhigurda. Roy & Shukla 42830.

Liliaceae

Chlorophytum tuberosum (Roxb.) Baker in J. Linn. Soc. (Bot.) 15: 332. 1876.

Common, grows in rocky slopes in sal forests.

Fl. & Fr. : July- Oct. Singrauli : Jhigurda. Roy & Shukla 4238008.

Pontederiaceae

Eichhornia crassipes (Mart.) Solms. in DC., Monogr. Phan. 4: 527. 1883.

Common, grows in ponds.

Fl. & Fr. : Apr.- Oct. Singrauli : Anpara. Roy & Shukla 42812.

Typhaceae

Typha angustata Bory & Chaub. in Bory., Exp. Sci. Moree. Bot. 2, 1: 338. 1832.

Common, grows on marshy places.

Fl. & Fr. : Aug.- Oct. Singrauli : Ranu Sagar Roy & Shukla 42846.

Lemnaceae

Lemna perpusilla Torr., Fl. New York 1: 245. 1845.

Common, floating in ponds.

Fl. & Fr. : Rainy seasons. Singrauli : Ranu Sagar. Roy & Shukla 42847.

Aponogetonaceae

Aponogeton natans (L.) Engl. & Krause, Nat. Pflanzenfam. 24:11. 1906.

Common, grows on ponds.

Fl. & Fr. : Aug.- Oct. Singrauli : Jayant. Roy & Shukla 42872.

Cyperaceae

Cyperus difformis L. Cent. Pl. 2: 6. 1756.

Common, grows in moist places.

Fl. & Fr. : Aug.- Mar. Singrauli : Ranu Sagar. Roy & Shukla 42820.

C. niveus Retz., Obs. Bot. 5: 12. 1788.

Rare, grows in rocky slopes.

Fl. & Fr. : Aug.- Nov. Singrauli : Jhigurda. Roy & Shukla 42826.

C. rotundus L., Sp. Pl. 45. 1753. subsp. **rotundus**

Common, grows on moist places.

Fl. & Fr. : Sept. Dec. Singrauli : Paddy fields. Roy & Shukla 42824.

C. squarrosus L., Cent. Pl. 2: 6. 1756.

Common, grows in moist places.

Fl. & Fr. : Aug. Sept. Singrauli : Pathar khadan. Roy & Shukla 42291.

Fimbristylis bisumbellata (Forssk.) Bubani, Dodecanthea 30. 1850.

Common, grows in moist places.

Fl. & Fr. : Throughout the year. Singrauli : Jhingurda. Roy & Shukla 42825.

Scirpus lateriflorus Gmelin, Syst. Veg. ed. 13. 1: 127. 1719.

Common, grows in moist and marshy places.

Fl. & Fr. : Aug. - Sept. Singrauli : Jhingurda. Roy & Shukla 38097.

Poaceae

- Alloteropsis cimicina** (L.) Stapf, Fl. Trop. Africa 9 : 487. 1917.
Common, grows in mixed forest.
Fl. & Fr. : Aug. Nov. Singrauli : Jhingurda. Roy & Shukla 42823.
- Aristida adscensionis** L., Sp. Pl. 82. 1753.
Common, grows on dry slopes.
Fl. & Fr. : Sept. Dec. Singrauli : Jhingurda. Roy & Shukla 38001.
- A. redacta** Stapf, in Kew Bull. 1892: 85. 1892.
Rare, grows on overburden area.
Fl. & Fr. : Oct. Dec. Singrauli : Jayant. Roy & Shukla-42873.
- Arthraxon lancifolius** (Trin.) Hochst. in Fl. 39: 188. 1856.
Common, grows in sal forest.
Fl. & Fr. : July Nov. Singrauli : Jayant project. Roy & Shukla 42875.
- Bothriochloa pertusa** (L.) A. Camus in Ann. Lyon. ser. 2.76 : 164. 1831.
Common, grows on overburden coal mines area.
Fl. & Fr. : Aug. Feb. Singrauli : Jayant project. Roy & Shukla 42808.
- Brachiaria ramosa** (L.) Stapf in Prain Fl. Trop. Africa 9:542.1919.
Common, grows on sloppy places.
Fl. & Fr. : Aug. Dec. Singrauli : Pathar khadan. Roy & Shukla 42274.
- Cenchrus ciliaris** L., Mant. Ait. 302. 1771.
Common, grows on hill slopes.
Fl. & Fr. : Sept. Dec. Singrauli : Renusagar. Roy & Shukla 42862.
- Chloris dolichostachya** Lag., Gen. Sp. Pl..5.1816.
Common, grows in scrub vegetation.
Fl. & Fr. : Oct. - Dec. Singrauli : Renusagar. Roy & Shukla 42900.
- C. virgata** Sw., Fl. Ind.Occ.1:203.1797.
Common, grows in cultivated fields.
Fl. & Fr. : Aug. Nov. Singrauli : Jhingurda. Roy & Shukla 42837.
- Chrysopogon aciculatus** (Retz.) Trin. Fund. Agrost. 188. 1820.
Common, grows in mixed forest.
Fl. & Fr. : Sept. Dec. Singrauli : Renusagar. Roy & Shukla 42883.
- C. fulvus** (Spreng.) Chiov., Fl. Somala 1:327.1929.
Common, grows on rocky crevices.
Fl. & Fr. : July Nov. Singrauli : Nigahi. Roy & Shukla 42258.
- Cynodon dactylon** (L.) Pers., Syn. Pl. 1:85.1805.
Common, grows along the road sides.
Fl. & Fr.: Throughout the year. Singrauli : Pathar khadan. Roy & Shukla 42277.
- Dichanthium annulatum** (Forsk.) Stapf in Prain Fl. Trop. Afr. 9:178. 1917.
Common, grows in open grasslands and field edges
Fl. & Fr. : July Oct. Singrauli : Jhingurda. Roy & Shukla 42270.
- Digitaria abludens** (Roem. & Scult.) Veldk., Blumea 21: 53. 1973.
Common, grows on sloppy places.
Fl. & Fr. : Aug. Oct. Singrauli : Forest area. Roy & Shukla 42814.

- Digitaria setigera** Roth ex Roem. & Schult., Syst. Veg. 2: 474. 1817.
Common, grows along the road sides.
Fl. & Fr. : Aug. Nov. Singrauli : Pathar khadan. Roy & Shukla 42276.
- D. stricta** Roth ex Roem. & Schult. var. **denudata** (Link.) Henr. Monogr. Dig. 175. 1950.
Common, grows in mixed forest.
Fl. & Fr. : Aug. Nov. Singrauli : Jhingurda. Roy & Shukla 42245.
- Echinochloa colona** (L.) Link. Hort. Berol. 2: 209. 1833.
Common, grows along the road sides in puddles and streams.
Fl. & Fr. : Aug. - Feb. Singrauli : Pathar khadan. Roy & Shukla 42275.
- E. stagnina** (Retz.) P. Beauv., Ess. Agrost. 53. 1812.
Rare, grows in ponds and along the nalas.
Fl. & Fr. : Oct. Dec. Singrauli : Jhingurda. Roy & Shukla 38007.
- Eragrostiella bifaria** (Vahl) Bor in Indian For. 66: 270. 1940.
Common, grows on sloppy soil and mixed forest.
Fl. & Fr. : Sept. Dec. Singrauli : Jhingurda. Roy & Shukla 42818.
- E. brachyphylla** (Stapf) Bor in Indian For. 66: 270. 1940.
Common, grows on sloppy soil and mixed forest.
Fl. & Fr. : Aug. Nov. Singrauli : Jhingurda. Roy & Shukla 42819, 42265.
- Eragrostis atrovirens** (Desf.) Trin. ex Steud., Nom. Bot. 1: 562. 1840.
Common, grows along the puddles.
Fl. & Fr. : Sept. Feb. Singrauli : Renusagar. Roy & Shukla 42895.
- E. gangetica** (Roxb.) Steud. Syn. Pl. Glum. 1: 266. 1854.
Rare, grows along the puddles.
Fl. & Fr. : Sept. - Feb. Singrauli : Nigahi. Roy & Shukla 42876.
- Heteropogon contortus** (L.) P. Beauv. ex Roem. & Schult. Syst. 2: 836. 1817.
Common, grows in mixed forest.
Fl. & Fr. : Aug. Dec. Singrauli : Jhingurda. Roy & Shukla 42863.
- Melanocenchris jacquemontii** Jaub. & Spach., III. Pl. Or. 4: 36. 1851.
Common, grows on top of the overburden in coal mines area.
Fl. & Fr. : Sept. - Nov. Singrauli : Jayant. Roy & Shukla 42869.
- Opismenus burmannii** (Retz.) P. Beauv., Ess. Agrost. 54: 168-169. 1812.
Common, grows on moist and shady places.
Fl. & Fr. : July - Sept. Singrauli : Jhingurda. Roy & Shukla 38009.
- Oropetium thomaeum** (L. f.) Trin., Fund. Agrost. 98. t. 3. 1820.
Common, grows on hill slopes.
Fl. & Fr. : July - Sept. Singrauli : Jhingurda. Roy & Shukla 42820.
- Paspalidium flavidum** (Retz.) A. Camus, Lecomte. Fl. Indo-China 7: 419. 1922.
Common, grows on sandy soil.
Fl. & Fr. : Aug. - Nov. Singrauli : Jhingurda. Roy & Shukla 42825.
- Schizachyrium exile** (Hochst.) Pilger in Engl. Bot. Jahrb. 54: 284. 1917.
Common, grows on overburden along the railway tract.
Fl. & Fr. : Sept. - Nov. Singrauli : Renusagar. Roy & Shukla 42860.

Setaria pallide-fusca (Schum.) Stapf & C. E. Hubb. in Kew Bull. 1930: 259. 1930.

Common, grows along the forest road sides.

Fl. & Fr. : Aug. Nov. Singrauli : Pathar khadan. Roy & Shukla 42274.

Schoenefeldia gracilis Kunth., Rev. Gram. 1: 283. t. 53. 1830.

Common, grows on hill slopes.

Fl. & Fr. : Aug. Nov. Singrauli : Jhingurda. Roy & Shukla 38002.

Sorghum halepense (L.) Pers., Syn. Pl. 1: 101. 1805.

Common, grows in cultivated fields.

Fl. & Fr. : July Nov. Singrauli : Jhingurda. Roy & Shukla 42825(A).

Sporobolus diander (Retz.) P. Beauv. Ess. Agrost. 26, 147, 178, 1812.

Common, grows on slopes and in mixed forest.

Fl. & Fr. : Aug. Nov. Singrauli : Jhingurda. Roy & Shukla 42833.

Tragus roxburghii Panigrahi in Kew Bull. 29: 496. 1974.

Common, grows on rocky crevices.

Fl. & Fr. : Aug. Sept. Singrauli : Nigahi. Roy & Shukla 42267,42837.

PTERIDOPHYTES

Marsileaceae

Marsilea minuta L., Mant. Pl. 308. 1771.

Common, grows in marshy places.

Singrauli: Renu sagar. Roy & Shukla 42810.

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