

## ADDITIONAL NOTES ON THE FLORA OF MUZAFFARNAGAR (U.P.)

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## ABSTRACT

The present paper deals with details of the new plants records from Muzaffarnagar. A list of the plants described by the earlier author (R. K. Gupta, 1961.) and not obtained afterwards is also given. The families have been arranged according to the system of Bentham and Hooker, adopted by Duthie (1903-1929) and Hooker (1872-1897).

## INTRODUCTION

Flora of Muzaffarnagar was studied by R. K. Gupta in 1961. Since then regular collections of plants were being made. It was found that the flora described earlier is quite incomplete. A large number of new plants have been collected. Besides a few plants described by the earlier author were never obtained from the area. It was, therefore, felt necessary to publish a revised account of the flora. The climatic conditions of the area were already described by Gupta (1961).

## NEW PLANT RECORDS

## CRUCIFERAE

**Eruca sativa** Mill.

An annual herb. Leaves lyrate-pinnatifid. Yellow flowers. Weed as well as cultivated in fields. Flowers & fruits: January to March. *T & L* 85.

*Local name*: Tarahai.

**Rorippa indica** (Linn.) Hiern. *Nasturtium indicum* DC.

An erect, annual herb. Leaves pinnatifid. Yellow flowers in long raceme. Pod long. Commonly found in waste lands and moist places. Flowers & fruits: February to April. *T & L* 107.

*Local name*: Taraha.

**R. montana** Small. *Nasturtium montatum* Wall.

An erect, branched herb. Leaves pinnatifid with entire lobes. Yellow flowers. Pod long. Common in damp and moist places under trees. Flowers & fruits: May to June. *T & L* 302.

*Local name*: Taraha.

## CAPPARIDACEAE

**Capparis sepiaria** Linn.

Diffused or climbing shrub. Thorns paired. Flowers white in umbel. Berries purple. Common

and abundant on ridges and drier places. Flowers & fruits: May to July. *T & L* 325.

*Local name*: His.

## POLYGALACEAE

**Polygala chinensis** Linn.

A stout, branched herb. Leaves long linear lanceolate. Flowers pink. Capsule long. Found during rainy season near Kali Nadi, Rajwaha and also in grassy lands. Flowers & fruits: August to October. *T & L* 370.

## PAPILIONACEAE

**Aeschynomene indica** Linn.

A shrubby water loving annual. Leaflet many. Flowers light yellow with purple veins. Pod 4-5 cm long. Found near canals and other moist places. Flowers & fruits: June to October. *T & L* 345, 556.

*Local name*: Phulan.

**Alysicarpus vaginalis** DC.

An erect herb. Leaves one foliate. Flowers small with pinkish tinge. Common all over the open pastures. Flowers and fruits: October to January. *T & L* 485.

**Indigofera linifolia** (Linn.) Retz.

Trailing or procumbent herb. Leaves sessile, acute and silvery. Red flowers in short raceme. Flowers & fruits: May to July. *T & L* 337.

*Local name*: Leel.

**Lathyrus inconspicuus** Linn.

A shrubby herb. Stipule long with tapering apex. Flowers small, red, solitary or in pairs. Rare herb. Present in dry and moist canals. Flowers & fruits: February-March. *T & L* 92.

*Local name*: Jangli Matri.

**Medicago denticulata** Willd.

A prostrate herb. Stipule lanceolate. Leaflet obovate. Flowers few and umbelled. Pod sub-

globose. Found in slopy and waste lands. Flowers & fruits: November to February. *T & L* 421.

*Local name*: Metha.

**Trigonella lupulina** Linn.

A diffused herb with trifoliate leaves, leaflet entire. Yellow flower in dense raceme. Pod one-seeded. Common in dry and slopy places. Flowers and fruits: December to March. *T & L* 440.

*Local name*: Jangli Methi.

**T. polycerata** Linn.

A diffused herb with trifoliate leaves, leaflet dentate. Flowers yellow. Common as winter weed in the field. Flowers & fruits: December to March. *T & L* 431.

*Local name*: Jangli Methi.

**Vicia hirsuta** (Linn.) S. F. Gray

A straggling or twining herb. Leaflets 5-10 pairs. 3-6 flowers in umbellate cyme. Common in cultivated and fallow fields. Flowers & fruits: January to March. *T & L* 74.

*Local name*: Gagela.

**Zornia diphylla** (Linn.) Pers. *Hedysarum diphyllum* Linn.

A diffused herb with zig-zag branching. Leaflets 2 with acute apex. Raceme 2 to 4.5 cm long. Pod 1-6 jointed. Found on ridges. Flowers & fruits: July to September. *T & L* 367.

*Local name*: Jangli matri.

#### CAESALPINIACEAE

**Saraca indica** Linn. (Ashok) and **Tamarindus indica** Linn. (Emli)

Commonly planted in the area.

#### MIMOSACEAE

**Acacia leucophloea** (Roxb.) Willd. (Desi Babool), **Mimosa pudica** Linn. (Chui Mui) and **Albizia lebbeck** (Linn.) Benth.

Commonly planted or self grown trees along roadsides.

#### ROSACEAE

**Pyrus pyrifolia** Nakai (Nashpati), **Prunus persica** (Linn.) Stokes. (Aru), **P. domestica** Linn. (Alucha) and **P. armeniaca** Linn. (Khumani)

Cultivated in gardens.

#### ONAGRACEAE

**Jussiaea repens** Linn.

A floating herb with spongy roots. Leaves obovate. Flowers white with yellowish veins. Capsule cylindric. Common in pools and ponds. Flowers & fruits: July to October. *T & L* 375.

*Local name*: Pani ki Ghas.

#### CACTACEAE

**Opuntia dillenii** Haw.

A thorny bush. Phylloclades green. Flowers with red tinge. Common in dry and waste places. Flowers & fruits: End of winter season. *T & L* 504.

*Local name*: Nagphani.

**O. elatior** Mill.

A tall cactus. Phylloclade pale green. Flowers bright yellow fading to pink. Common on dry and waste ridges. Flowers & fruits: May to July. *T & L* 304.

*Local name*: Nagphani.

#### MOLLUGINACEAE

**Glinus lotoides** Linn.

A prostrate annual herb. Leaves opposite or in whorls. Flowers green. Seeds dark brown. Common in clayey soil near dry ditches, pools, ponds and puddles. Flowers & fruits: End of winter season. *T & L* 510.

**Mollugo pentaphylla** Linn.

It is a prostrate or sub-erect herb, lower leaves in whorls and upper opposite. Flowers small, pink-white. Found on waste land of fields. Flowers & fruits: April to July. *T & L* 286.

#### UMBELLIFERAE (APIACEAE)

**Oenanthe javanica** Linn. *O. stolonifera* DC.

A stoloniferous herb. Stem hollow. Leaves with serrate margin. Inflorescence compound umbel with bright white flowers. Common in moist places along channels. Flowers & fruits: April to May. *T & L* 277.

#### RUBIACEAE

**Oldenlandia corymbosa** Linn.

A prostrate herb. Stipule bristly. Flowers small, white. Capsule didymous. Common on ridges and dry places. Flowers & fruits: October to January. *T & L* 478.

#### COMPOSITAE

**Blumea wightiana** DC. *B. mollis* (D. Don) Merr.

A villous herb. Leaves irregularly dentate. Heads many. Achene ribbed and hairy. Common in fallow fields and unused grounds. Flowers & fruits: February to May. *T & L* 124.

**Cnicus arvensis** Hoffm.

An erect leafy herb. Leaves with spiny margin. Heads purplish, corymbose, homozygous. Found along the fields and unused places. Flowers & fruits: March to June. *T & L* 223.

*Local name*: Russa.

**Gnaphalium luteoalbum** Linn. var. **jacquemontii**

An erect, white-woolly herb. Leaves linear. Golden yellow heads in dense corymbose clusters. Achenes brown. Common along river banks and in fields. Flowers & fruits: March to April. *T & L* 243.

**G. purpureum** Linn.

An erect herb, wooly. Leaves spatulate. Shining heads. Achene minute and hairy. Common in waste places and gregarious in habit. Flowers & fruits: February to April. *T & L* 115.

*Local name:* Gucuchandi.

**Grangea maderaspatana** Poir. *Artemisia maderaspatana* Linn.

A prostrate tufted herb. Leaves sinuately pinatifid, thick. Heads yellow. Heterogamous. Found on sandy-clayey soil. Rare herb of this area. Flowers & fruits: May to July. *T & L* 290.

**Sphaeranthus sanigalensis** DC.

A prostrate or suberect herb. Leaves opposite and wooly. Heads purple, densely packed. Achenes smooth. Flowers & fruits: April to July. *T & L* 266.

*Local name:* Dhundhi.

## BORAGINACEAE

**Arnebia hispidissima** (Lehm.) DC. *Lithospermum hispidissimum* Lehm.

A diffused, prostrate herb. Stem and branches are rough due to presence of hairs. Flowers pale-white. A xerophytic herb found in dry places. Flowers & fruits: December to January. *T & L* 546.

**Heliotropium supinum** Linn.

A prostrate herb. Leaves small elliptical. Flowers small white, in short spikes. Commonly grow in dry and waste grounds. Flowers & fruits: June to July. *T & L* 316.

**H. eichwaldi** Steud. ex DC.

An erect herb. Leaves clothed with hair. Flowers in short helicoid spike, white. Nutlets four. Rare herb found on waste places. Flowers & fruits: March to June. *T & L* 280.

## SOLANACEAE

**Petunia nyctangiflora** Juss.

An erect herb. Lower leaves larger than upper ones. Flowers pink-white, tubular. Common on moist and muddy places. Flowers & fruits: Almost alround the year. *T & L* 15.

## SCROPHULARIACEAE

**Bonnaya veronicaefolia** Spreng.

A decumbent herb. Leaves distantly serrate.

Flowers violet in racemes. Common on the slopy and moist places. Flowers & fruits: August to September. *T & L* 388, 609.

**Lindernia ciliata** (Colsm.) Pennell! *Bonnaya brachiatata* Link & Otto.

A glabrous herb. Leaves sharply spinosus, serrate. Flowers pink or white. Found on damp and moist places near canals, ponds etc. Flowers & fruits: Rainy season. *T & L* 354.

## ACANTHACEAE

**Asteracantha longifolia** Nees

An erect shrubby herb. Stem with large spines at each node. Leaves and pink flowers are also in whorls at each node. Common along water channels. Flowers & fruits: January to March. *T & L* 25.

*Local name:* Kanto wala ghuma.

**Rungia elegans** Dalz. & Gibs.

An erect or sub-erect herb. Leaves opposite, lanceolate. Flowers blue in dense spike. Common in small patches on moist places. Flowers & fruits: November to January. *T & L* 404.

## VERBENACEAE

**Lippia nodiflora** Rich.

A creeping much branched herb. Leaves subsessile. Sharply serrate. Flowers in axillary heads. Common on moist and shady places. Flowers & fruits: April-May. *T & L* 135.

## LABIATAE

**Salvia plebeia** R. Br.

An erect herb. Leaves lanceolate. Flowers lilac or white in panicle or compact spicate racemes. A common weed around the fields, along the water channels and ridges. Flowers & fruits: April to June. *T & L* 158.

*Local name:* Jangli Tulsi.

## PIPERACEAE

**Piperomia pellucida** H. B. & K.

A succulent herb. Leaves cordate, shining. Flowers green inconspicuous. Fruit globose. It is commonly found as a weed in gardens, under trees etc. Flowers & fruits: October to December. *T & L* 565.

## EUPHORBIACEAE

**Phyllanthus simplex** Retz.

A glabrous, perennial herb. Leaves sub-sessile. Female flower larger than males. Flowers solitary. An occasional weed in gardens. Flowers & fruits: August to September. *T & L* 381.

## COMMELINACEAE

**Cyanotis axillaris** Schult. f. *Tradescantia axillaris* Linn.

An annual herb. Leaves sessile. Flowers violet-blue, clustered in the inflated sheaths. Found in marshy and shady places. Flowers & fruits: September to November. *T & L* 410.

## CYPERACEAE

**Cyperus iria** Linn.

An erect herb. Variable in size and shape. Umbels are compound. Flowers red-brown or yellow-brown. Common all over the area. Flowers & fruits: August to October. *T & L* 376.

*Local name*: Motha.

**C. compressus** Linn.

An erect herb with fine tufted roots. Leaf-blade tapering. Inflorescence umbellate. Glumes green. Common on ridges, along streams and road-sides. Flowers & fruits: July to October. *T & L* 373.

**C. kyllingia** Endl. *Kyllingia monocephala* Rottb.

An erect herb with creeping rhizomes. Spikes sub-globose, white and solitary. Common in gardens orchards etc. Flowers & fruits: July to October. *T & L* 382.

**Fimbristylis dichotoma** (Linn.) Vahl. *Scirpus dichotomus* Linn.

An erect herb with dense roots. Spikelets many present in compound umbels. Common in moist and sandy places. Flowers & fruits: May to June. *T & L* 269.

**Pycneus globosus** Reich.

It is an erect or sub-erect herb. Heads may be terminal or sub-terminal. Nut is yellow to brown in colour. More frequent in gardens. Flowers & fruits: Rainy season. *T & L* 298.

## GRAMINEAE

## (POACEAE)

**Agrostis stolonifera** Linn. *A. alba* Linn.

A perennial grass. Panicles spreading at least in flower branches. Spikelets shining green or purple. It is common on waste places, under trees. Flowers & fruits: Winter season. *T & L* 433.

*Local name*: Berta.

**Brachiaria ramosa** (Linn.) Stapf

An annual grass. Spikelets alternate, lower floret neuter. Common throughout the moist localities. Flowers & fruits: May to October. *T & L* 669.

*Local name*: Mukra ghas.

**Dichanthium annulatum** (Forsk.) Stapf

An erect or ascending perennial grass. Racemes subdigitately fascicled, green or purple. Sessile spikelets. Very common throughout the area. Flowers & fruits: December to March. *T & L* 21.

*Local name*: Jarga ghas.

**Eleusine indica** (Linn.) Gaertn.

An erect herb. Culm glabrous. Spikes elongated digitate with one or two below the umbel. Common along the edges of fields, on pastures and road-sides. Flowers & fruits: July to October. *T & L* 378.

**Eragrostiella bifaria** (Vahl) Bor. *E. bifaria* Wt. ex Steud.

An erect tuft annual grass. Variable in height. Panicles plumose, loose or open, green or purplish. Common in rocky places of this area. Flowers & fruits: August to Nov. *T & L* 408.

**Eragrostis poaeoides** Beauv. *E. minor* Host.

An annual tufted grass. Leaf margin definitely glandular. Panicles green or purple or yellow. Common throughout the area. Flowers & fruits: July to October. *T & L* 242.

**E. tremula** Hochst.

An erect or ascending herb. Panicle diffused. Spikelets narrow. White hair in axis of panicle. Common grass of cultivated and fallow fields. Flowers & fruits: August to November. *T & L* 328.

*Local name*: Dholphulia.

**Hemarthria compressa** (Linn. f.) R. Br.

A small erect annual. Flowers are in terminal spikelets. Anthers yellow, shining. Abundant in fields as winter weed. Flowers & fruits: November to January. *T & L* 574.

**Imperata cylindrica** (Linn.) Beauv. *E. arundinacea* Cyll.

An erect slender grass with creeping stoloniferous root. Panicles silvery. It is common in cultivated and fallow fields. Flowers & fruits: June to October. *T & L* 362.

*Local name*: Pani Ghas or Silver grass.

**Paspalum distichum** Linn.

Perennial rhizomatous grass. Raceme 2 to many. Spikelets solitary. Common in moist places. Flowers & fruits: June to September. *T & L* 361.

**P. scrobiculatum** Linn.

An erect tall annual herb. Inflorescence is panicle, spikelets closed. It is frequent in fields, along the channels and gardens. Flowers & fruits: September to November. *T & L* 515.

**Setaria tomentosa** (Roxb.) Kunth *Panicum tomentosum* Roxb.

A weak erect herb. Inflorescence is an erect oblong spike green in colour. Found occasionally on marshy places. Flowers & fruits: October to February. *T & L* 665.

*List of plants described by earlier authors but not collected afterwards.*

1. *Sisymbrium thalianum* Gay & Monn. (Cruciferae)
2. *Abutilon polyandrum* W. & A. (Malvaceae)
3. *Medicago lupulina* Linn. (Papilionaceae)
4. *Alysicarpus bupleurifolius* DC. (Papilionaceae)
5. *Teramnus labialis* Spreng. (Papilionaceae)
6. *Atylosia scarabaeoides* Benth. (Papilionaceae)
7. *Cassia jayana* Linn. (Caesalpiniaceae)
8. *Wendlandia exserta* DC. (Rubiaceae)
9. *Leptodermis lanceolata* Wall. (Rubiaceae)
10. *Erigeron canadensis* Linn. (Compositae)
11. *Blumea aromatica* DC. (Compositae)
12. *Gnaphalium indicum* Linn. (Compositae)
13. *Caesulia axillaris* Roxb. (Compositae)
14. *Leptadenia pyrotechnica* Decne. (Asclepiadaceae)
15. *Cryptolepis buchanani* R. & S. (Asclepiadaceae)
16. *Lindernia nummularifolia* (Roxb.) Wett. (Scrophulariaceae)

17. *Leucas cephalotes* Spreng. (Labiatae)
18. *L. urticaefolia* R. Br. (Labiatae)
19. *Deeringia amaranthoides* (Lamk) Merrill (Amarantaceae)
20. *Nothosarya brachiata* Wight (Amarantaceae)
21. *Eleocharis spiralis* R. Br. (Cyperaceae)
22. *Scirpus lacustris* Linn. (Cyperaceae)
23. *Sporobolus commutatus* Kunth (Gramineae)
24. *Themeda triandra* Forsk. (Gramineae)
25. *Eragrostis major* Host (Gramineae)
26. *Chloris incompleta* Roth (Gramineae)
27. *Thysanolaena maxima* Kuntze (Gramineae)
28. *Tragus biflorus* (Roxb.) Schult. (Gramineae)

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#### REFERENCES

- DUTHIE, J. F. *Flora of Upper Gangetic plain and of the adjacent Siwalik and sub-himalayan tracts*. Calcutta, 1903-1929.
- GUPTA R. K. *Flora of Distt. Muzaffarnagar in the Doab of river Ganga and Yamuna*. *J. Bombay nat. Hist. Soc.* 58 (3): 749-775, 1961.
- HOOKE, J. D. *Flora of British India*. London, 1872-1897.