

SUPPLEMENT TO THE SYNOPTIC FLORA OF KOTA DIVISION
(S. E. RAJASTHAN)—II

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A B S T R A C T

The present paper includes the second supplementary list of 89 indigenous species belonging to 66 genera and 28 families, in continuation of earlier published works on the vegetation of Kota division. The specific names are followed by their field numbers, frequency and abundance in the area, habitat with exact locality of occurrence and flowering and fruiting times.

INTRODUCTION

The vegetation of Kota division has drawn the attention of many botanists during recent years (Gupta, 1965, 66; Jain and Kotwal, 1960; Maheshwari and Singh, 1974, 76; Majumdar, 1971, 76; Singh, 1975, 77; Verma, 1965 etc.). A perusal of literature revealed that 89 species belonging to 66 genera and 28 families have not been previously recorded from this area. The present paper is a supplement to the second part of Majumdar's (1976) "Synoptic Flora of Kota division" and is in continuation of Maheshwari and Singh's (1976) publication. As soon as the remaining part of Majumdar's (1971, 76) work is published, the authors will be able to throw more light on the vegetation for better understanding of the flora of this region.

The herbarium specimens have been collected by the senior author and deposited in the herbarium of National Botanical Research Institute, Lucknow (LWG) and in the enumeration, the species name is followed by field numbers, its frequency, habitat, locality, flowering and fruiting time.

ENUMERATION

HYDROPHYLLACEAE

Hydrolea zeylanica (Linn.) Vahl (83721).

Common in the rice-fields and other marshy habitats near Jhalawar and Atru.

Fl. & Fr.: Sept.-Oct.

EHRETIACEAE

Cordia macleodii (Griff.) Hook. f. & Thoms. (83669, 91063).

Occasionally found in the forests; rarely planted in the gardens. The fruits are larger than those of *C. dichotoma* Forst. f.

Fl.: Feb.-March; *Fr.*: April-June.

Ehretia laevis Roxb. (90372, 91039).

Common in scrub forests; often cultivated in the gardens. Flowers appear before leaf renewal.

Fl.: Jan.-April; *Fr.*: May-July.

BORAGINACEAE

Cynoglossum lanceolatum Forssk. (74468).

Occasionally found in dry sandy soils near Manoharthana. It is an attractive herb.

Fl. & Fr.: July-Sept.

Heliotropium eichwaldii Steud. (*syn. H. elipticum* Ledeb.) (90481).

Common in dry sandy soils in wastelands, cultivated fields and in the gardens near Baran.

Fl.: Nov.-Jan.; *Fr.*: April-June.

Heliotropium indicum Linn. (90408).

Native of America ; imperfectly naturalized in the wastelands near Chhabra.

Fl. & Fr.: Sept.-Dec.

Trichodesma zeylanicum (Burm. f.) R. Br. (90550).

Fairly common throughout the area in dry, open, waste, stony and sandy grounds.

Fl. & Fr.: Aug.-Nov.

CONVOLVULACEAE

Cressa cretica Linn. (90486).

Occasionally found in wastelands, along railway lines and as a weed of cultivation near Baran.

Fl. & Fr.: Dec.-May.

Volvu'opsis nummularius (Linn.) Roberty (syn. *Evolvulus nummularius* Linn.) (74021).

Native of tropical America. Occasionally found in open, dry undisturbed grounds near Chhabra.

Fl. & Fr.: Jan.-April.

Ipomoea angulata Lamk. (83807, 90692, 90373).

Common twiner along the boundaries of fields and gardens near Chhabra.

Fl. & Fr.: Sept.-Nov.

I. cairica (Linn.) Sweet (90622).

Perfectly naturalized in waste places near Kota.

Fl. & Fr.: Aug.-Nov.

I. sepiaria Koen. ex Roxb. var. **stipulacea** Clarke (83775).

Rare ; found in wastelands as a climber near Atru.

Fl. & Fr.: Aug.-Oct.

I. sindica Stapf (90189).

Commonly found in sandy soils in open grasslands near Kota.

Fl. & Fr.: Aug.-Oct.

I. triloba Linn. (74692).

Native of tropical America. Rarely found along the boundaries of gardens near Bundi.

Fl. & Fr.: Aug.-Nov.

I. violacea Linn. (83699).

Native of Mexico ; naturalized in wastelands near Eklara.

Fl. & Fr.: Oct.-Jan.

Merremia tridentata (Linn.) Hallier f. (90552, 83730).

Occasionally found in alkaline soils near Devari and Jhalawar.

Fl. & Fr.: Sept.-Dec.

Operculina turpethum (Linn.) S. Manso (90879, 91089, 83698).

Often found as an escape near gardens at Kota and Eklara.

Fl.: April-July ; *Fr.*: Aug.-Oct.

CUSCUTACEAE

Cuscuta chinensis Lamk. (90400).

A common stem parasite near Chhabra. It is capable of parasitizing almost any herb or grass but more usually it is found on the bushes and shrubs like *Ziziphus nummularia* (Burm. f.) Wt. & Arn. and *Ehretia laevis* Roxb.

Fl. & Fr.: Nov.-April.

C. hyalina Roth (83616).

A common rainy season stem parasite on *Cassia tora* Linn., *Corchorus* sp., *Euphorbia hypericifolia* Linn., *Triumfetta* sp., *Ipomoea* sp. and several species of grasses.

Fl. & Fr.: July-Oct.

SOLANACEAE

Physalis minima Linn. var. **indica** Clarke (90376).

Rare ; found as a weed in gardens and cultivated fields near Chhabra.

Fl. & Fr.: Sept.-Jan.

P. peruviana Linn. (90544).

Native of tropical America ; naturalized in wastelands near Kathoon.

Fl. & Fr.: Aug.-Nov.

Solanum torvum Swartz (90294, 90884).

Common in and around the Bara-bagh at Kota.

Fl.: Sept.-Dec. ; *Fr.*: Jan.-Feb.

S. triquetrum Cav. (90806).

Native of America ; few plants were seen

in a bare, unploughed fields near Devari village.

Fl.: Sept.-Jan.; *Fr.*: Dec.-Feb.

SCROPHULARIACEAE

Antirrhinum orontium Linn. (90616, 90801).

Occasional weed in the gardens and cultivated fields near Kota.

Fl. & Fr.: Jan.-March.

Limnophila heterophylla (Roxb.) Benth.

Gupta (in Trop. Eco. 7: 153-163, 1966) reported this species from the vicinity of Kota. Authors could not see the plant in the field.

Lindernia anagallis (Burm. f.) Pennell (83742).

Rare; found in open wetlands near Atru.

Fl. & Fr.: Aug.-Nov.

L. multiflora (Roxb.) Mukerj. (74774, 83726).

Occasionally found on the marshy banks of water streams and in rice-fields near Jhalawar.

Fl. & Fr.: Aug.-Oct.

L. parviflora (Roxb.) Haines (90459, 83734).

Common in wet and marshy places, especially in rice-fields near Jhalawar.

Fl. & Fr.: Aug.-Oct.

L. pyxidaria All. (90638).

Occasionally found in aquatic and marshy habitats near Atru.

Fl. & Fr.: Jan.-April.

L. verbenaefolia (Colsm.) Pennell (74477).

Rare; found in wet places near Shikar burj (Bundi).

Fl. & Fr.: Dec.-March.

Scoparia dulcis Linn. (83916).

Native of tropical America; naturalized in wastelands in and around the gardens near Bundi.

Fl. & Fr.: Aug.-Oct.

Sutera dissecta (Del.) Walp. (74792, 90454, 90907).

Common in wet and marshy habitats near Kota, Kelwara and Eklera.

Fl. & Fr.: Dec.-March.

BIGNONIACEAE

Bignonia unguis-cati Linn. (74690).

Native of S. America; occasionally found among bushes in wastelands near Bundi.

Fl. & Fr.: Dec.-Aug.

Stereospermum suaveolens (Roxb.) DC. (91015)

Occasionally found in wastelands near Chhabra.

Fl.: Feb.-May; *Fr.*: June-onwards.

PEDALIACEAE

Pedaliium murex Linn. (74613).

Native of Africa; occasionally found in wastelands near Amar Niwas in sandy soils.

Fl. & Fr.: Aug.-Oct.

ACANTHACEAE

Asystasia gangetica (Linn.) T. Anders. (90624).

Common among bushes along roads, canals and rivers near Kota.

Fl. & Fr.: Nov.-Dec.

Eranthemum purpurascens Wt. ex Nees (83935).

Rare; found as an undergrowth in evergreen forests at Sitabari.

Fl. & Fr.: Jan.-June.

Haplanthodes verticillata (Roxb.) Majumdar (90959).

Rare; found in shady places in the forests and wastelands near Atru and Kelwara.

Fl. & Fr.: Dec.-Feb.

Hemigraphis hirta (Vahl) T. Anders. (74053).

Common along canal-banks and in wastelands near ditches at Chhabra.

Fl. & Fr.: March-Aug.

Hygrophila serpyllum (Nees) T. Anders. var. ***hookeriana*** Clarke (90305).

Rare; forming dense patches on the sides of Parbati river near Atru.

Fl. & Fr.: Sept.-Dec.

Justicia heterocarpa T. Anders. (83917).

Common in gravel soils on the foot of the hills and in wastelands near Jhalawar.

Fl. & Fr.: Aug.-Oct.

Lepidagathis cristata Willd. (90905).

Common in dry, stony and sandy grounds. Abundant near Chhabra.

Fl. & Fr.: Oct.-March.

Nelsonia canescens (Lamk.) Spreng. (90847).

Common in shady and wet localities in evergreen forests at Sitabari.

Fl. & Fr.: Nov.-March.

Ruellia tuberosa Linn. (90120).

Native of tropical America ; perfectly naturalized in the wastelands near Kota.

Fl. & Fr.: Aug.-Oct.

THUNBERGIACEAE

Thunbergia fragrans Roxb. var. **laevis** (Nees)

C. B. Clarke (*basion. T laevis* Nees) (74722).

Occasionally found among hedges of gardens near Bundi.

Fl. & Fr.: Nov.-March.

VERBENACEAE

Clerodendrum indicum (Linn.) Kuntze (90117).

Occasionally found in wet and shady localities near Kota.

Fl. & Fr.: July-Dec.

Lantana indica Roxb. (74672).

Occasionally found in Scrub forests in Kota district.

Fl. & Fr.: Aug.-Dec.

LABIATAE (LAMIACEAE)

Anisochilus carnosus (Linn. f.) Wall. (83829).

Common on barren hills at Darah.

Fl. & Fr.: Aug.-Nov.

Leucas aspera (Willd.) Spreng. (74080, 90624).

Common weed of cultivated fields and wastelands at Devari and Kathoon.

Fl. & Fr.: Jan.-April.

L. montana (Roth) Spreng. (74092).

Rare : found near Hindoli in dry sandy soils.

Fl. & Fr.: Jan.-April.

Ocimum americanum Linn. (*syn. O. canum* Sims) (90417).

Commonly found in dry, sandy and stony grounds from plains to the foot of hills near Kota.

Fl. & Fr.: Most part of the year.

Salvia santolinaefolia Boiss. (83610).

Rare ; found in dry wastelands near Hindoli, Eklara and Kota.

Fl. & Fr.: Jan.-Aug.

PLANTAGINACEAE

Plantago pumila Willd. (90854).

Rare ; a rabi-crop weed near Baran.

Fl. & Fr.: Jan.-March.

NYCTAGINACEAE

Boerhavia chinensis (Burm. f.) Druce (90517).

Occasionally found in wastelands and on the boundaries of gardens and fields near Kota.

Fl. & Fr.: Aug.-Oct.

AMARANTHACEAE

Achyranthes aspera Linn. var. **porphyrischya** Hook. f. (90228).

Common in wastelands, open forests, grasslands and along the fences of gardens in Kota district.

Fl. & Fr.: Sept.-May.

Aerva javanica (Burm. f.) Juss. ex Schult. (83628, 90600).

Occasionally found in dry sandy soil and often at foot of the hillocks near Bundi and Atru.

Fl. & Fr.: Aug.-Nov.

A. sanguinolenta (Linn.) Blume (74067, 90455).

Commonly found among bushes in wastelands and often in forests near Kota and Shahabad.

Fl. & Fr.: Dec.-April.

Nothosaerva brachiata (Linn.) Wt.

Jain & Kotwal (in Sci. & Cult. 26: 191-192, 1950) reported this species from Shahabad. Authors could not see this species in the field.

Fl. & Fr.: Sept.-Feb.

Pupalia atropurpurea (Lamk.) Moq. (90143).

Common in wastelands and open forests near Kota-Dam.

Fl. & Fr.: Nov.-Jan.

CHENOPODIACEAE

Chenopodium ambrusioides Linn. (90635).

Native of Tropical America; imperfectly naturalized in marshy and damp places near Atru.

Fl. & Fr.: Aug.-Feb.

Chenopodium murale Linn. (90325).

Native of Europe or Africa. Common weed in moist and shady habitats in wastelands, cultivated fields and gardens near Atru.

Fl. & Fr.: Dec.-April.

PHYTOLACCACEAE

Rivina humilis Linn. (90108, 90293, 90527).

Native of tropical America; perfectly naturalized in wastelands near Bara-bag'i (Kota).

Fl. & Fr.: Sept.-Nov.

POLYGONACEAE

Polygonum hydropiper Linn. subsp. **microcarpum** Danser var. **lenticularis** Danser (74794).

Common in ditches, tanks, along canal banks and in other marshy habitats near Chhabra.

Fl. & Fr.: Sept.-April.

P. limbatum Meissn. (74795).

Occasionally found on the rocky banks of Chambal river near Kota-Dam.

Fl. & Fr.: Oct.-June.

Rumex nepalensis Spreng. (74870).

Rare; found in the wastelands near Darah.

Fl. & Fr.: March-June.

EUPHORBIACEAE

Bridelia squamosa (Lamk.) Garh. (91187).

Rare; found in mixed deciduous forests at Darah.

Fl. & Fr.: Aug.-Dec.

Chrozophora parvifolia Klotz. ex Schwfth. (83831, 90953).

Common in drying ponds and ditches at Darah, Chhabra and Guagor.

Fl. & Fr.: April-July.

Croton bonplandianum Baill. (90409).

Native of S. America. Rare; found as a weed in wastelands, especially along roadsides at Chhabra.

Fl. & Fr.: June-Oct.

Euphorbia heterophylla Linn. (90395).

Native of N. America or Peru and Brazil. Common in wastelands, especially in and around the gardens at Chhabra.

Fl. & Fr.: Aug.-Nov.

E. royleana Boiss. (90946).

Occasionally found in wastelands and on barren rocky slopes at Chhabra.

Fl. & Fr.: March-May.

E. tirucalli Linn. (90940).

Native of E. Africa. Common in dry wastelands near Chhabra.

Fl.: Ephemeral.

Kirganelia reticulata (Poir.) Baill. (74680, 83631, 90248).

Common in wastelands, open forests and on the edges of fields near Bundi and Kota.

Fl. & Fr.: Jan.-Oct.

Phyllanthus fraternus Webster

Gupta (in Trop. Eco. 6: 63-71. 1965) reported this species from Kota. Authors could not see it in the field.

P. urinaria Linn. (90412, 90446).

Common weed in cultivated fields and wastelands at Chhabra and Shahabad.

Fl. & Fr.: Aug.-Sept.

Tragia cannabina Linn. f. (90806).

Occasionally found in wastelands, especially on the boundaries of fields and gardens near Eklera and Chhipabaraut.

Fl. & Fr.: May-Oct.

CANNABINACEAE

Cannabis sativa Linn. (90526, 90563).

Native of Central Asia. Rare; found in evergreen forests at Sitabari.

Fl. & Fr.: Jan.-April.

URTICACEAE

Fleurya interrupta (Linn.) Gaud. (90522).

Rare; found in wet and shady places near Kota.

Fl. & Fr.: Aug.-Oct.

Pouzolzia penlandra (Roxb.) Benn. (74480).

Rare ; found in marshy or wet and shady habitats at Kota-Dam.

Fl. & Fr.: Sept.-Dec.

MORACEAE

Brasssonetia papyrifera (Linn.) Vent. (74742).

Occasionally found in wastelands and on the edges of gardens near Hindoli.

Fl. & Fr.: Aug.-Nov.

ORCHIDACEAE

Vanda tessellata (Roxb.) Hook. ex G. Dcn (90840).

Common epiphyte on Mango trees in evergreen forests at Sitabari.

Fl. & Fr.: March-Oct.

LILIACEAE

Aloe barbadensis Mill. (90982).

Native of N. Africa ; naturalized in wastelands, forming dense homogenous community at Atru.

Fl. & Fr.: Nov.-May.

Chlorophytum laxum R. Br. (74871).

Occasionally found in the crevices of rocks on the hills near Darah.

Fl. & Fr.: May-Aug.

C. tuberosum (Roxb.) Baker (91157).

Abundant in the wastelands in the vicinity of Jhalawar.

Fl. & Fr.: June-Oct.

Iphigenia indica (Br.) A. Gray (74872).

Rare ; found in the crevices of rocks at Darah.

Fl. & Fr.: June-Sept.

COMMELINACEAE

Commelina attenuata Koen. ex Vahl (74844).

Common in grassy places in the plains and on the slopes of the hills at Darah.

Fl. & Fr.: Oct.-Nov.

C. forskalaei Vahl (74694).

Common among grasses on the boundaries of fields and gardens near Bundi.

Fl. & Fr.: Aug.-Oct.

C. suffruticosa Blume (74848).

Common in sandy-loam soil in shady habitats at Darah.

Fl. & Fr.: Aug.-Nov.

JUNCACEAE

Juncus bufonius Linn. (74752).

Occasionally found in marshy habitats during winter season near Kota.

Fl. & Fr.: Jan.-April.

ZANNICHELLIACEAE

Zannichellia palustri Linn. (90356).

Common in ponds, ditches, tanks and rivers near Atru and Jhalawar.

Fl. & Fr.: Oct.-Feb.

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