

SUPPLEMENT TO THE SYNOPSIS FLORA OF KOTA DIVISION (S. E. RAJASTHAN)

J. K. MAHESHWARI AND V. SINGH*

National Botanical Research Institute, Lucknow

ABSTRACT

The present paper includes a supplementary list of 67 indigenous species belonging to 57 genera and 25 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. This attempt may be considered a step forward towards better understanding of the flora of the region.

INTRODUCTION

The vegetation of Kota division (Kota, Bundi and Jhalawar districts) has drawn the attention of many botanists and ecologists during recent years (Gupta, 1965, 66; Jain & Kotwal, 1960; Maheshwari and Singh, 1972, 74; Majumdar, 1969; Singh, 1970, 73, 74, 75 and Verma, 1965). The most recent and appreciable work is Majumdar's (1971) "Synopsis Flora of Kota division" in which he claims 700 species as inhabiting the region. One part of it, containing about 63 families starting from Ranunculaceae to Periplocaceae, has been published so far. In this work he has also included the species recorded by earlier workers mentioned above. The present authors were busy in the botanical exploration of this area since 1968 and have collected 1107 species belonging to 633 genera and 135 families. A perusal of literature reveals that 67 species belonging to 57 genera and 25 families have not been previously recorded from this area. The present paper is a supplement to the first part of Majumdar's "Synopsis Flora of Kota division" and as soon as the remain-

ing part of it is published in the Bulletin of the Botanical Survey of India, the authors will be able to throw more light on the vegetation for the better understanding of the flora of the region.

The herbarium specimens have been deposited in the Herbarium of National Botanical Research Institute, Lucknow (LWG). In the Enumeration the specific names are followed by the field numbers in parenthesis.

ENUMERATION MENISPERMACEAE

Cocculus pendulus (Forst.) Diels (74660, 74886).

Rare; found at the foot of hills near Darah. It is a desertic plant and seems to have recently invaded the area.

Fl. & Fr.: Throughout the year.

CRUCIFERAE (BRASSICACEAE)

Farsetia hami'tonii Royle (74093).

Occasional; grows in dry sandy soils in Bhimlet forest near Bundi.

Fl. & Fr.: Mar.-Oct.

Rorippa montana Sm. (83662).

Common weed of cultivated fields and wastelands near Jhalarapatan. This species resembles closely *R. indica* (L.) Hiern., but is less robust with large, less divided leaves.

Fl. & Fr.: Jan.-Mar.

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Sisymbrium irio Linn. (74401).

Rare; found growing on the wet banks of Chambal river near Kota-Dam. Plants resemble *Rorippa montana* Sm.

Fl. & Fr.: Jan.-Mar.

CAPPARACEAE

Capparis zeylanica Linn. (90591).

Common among bushes along roadsides and railway-lines near Kota and rarely on the top of hills at Darah.

Fl. & Fr.: Oct.-Mar.

Cleome brachycarpa Vahl ex DC. (74861).

Rare; grows in dry habitats, usually in the crevices of rocks at Darah.

Fl. & Fr.: Aug.-Sept.

RESEDACEAE

Oligomeris linifolia (Vahl) Macbride (83686).

Common in drying ponds and ditches in association with *Hemigraphis dura* Anders, near Aklera. Fruiting spikes appear beautiful due to red, petaloid calyx.

Fl. & Fr.: Feb.-May.

CARYOPHYLLACEAE

Arenaria serpyllifolia Linn. (74055).

Rare; found in waste, wet and shady localities and in cultivated fields near Kelwara. Plant resembles closely *Stellaria media* (Linn.) Vill., but has entire petals and 6-valved capsules.

Fl. & Fr.: Jan.-Apr.

Silene conoidea Linn. (74751).

Native of Temperate Asia and Europe. Rare; found as a weed in cultivated fields near Kelwara. Resembles closely *Vaccaria pyramidata* Medik. due to its pink flowers, but can be distinguished by its many-ribbed glandular calyx.

Fl. & Fr.: Feb.-Apr.

Stellaria media (Linn.) Vill. (90669, 74077).

Common weed of cultivated fields, gardens and lawns. Occasionally found at the top of hills near Naharagarh.

Fl. & Fr.: Jan.-Mar.

Vaccaria pyramidata Medik. (90921).

Common weed of cultivated fields. Abundant near Chhabra.

Fl. & Fr.: Dec.-Mar.

PORTULACACEAE

Portulaca tuberosa Roxb. (83903).

Rare; found in the crevices of rocks near Darah. Flower colour is pink instead of yellow as mentioned in most Indian floras.

Fl. & Fr.: Aug.-Oct.

TAMARICACEAE

Tamarix dioica Roxb. (74762).

Few shrubs in unhealthy condition were found on the banks of Amjhar river near Darah village.

Fl. & Fr.: Aug.-Oct.

MALVACEAE

Abutilon hirtum (Lamk.) Sweet (90693).

Occasionally found in wastelands near Kota and Bundi.

Fl. & Fr.: Jan.-Mar.

Hibiscus trionum Linn. (90602).

Occasional; found in dry, sandy soils in Bundi and Jhalawar districts.

Fl. & Fr.: Sept.-Dec.

Malva parviflora Linn. (90975).

Common in the fertile soils of the gardens and fields, particularly near Kota.

Fl. & Fr.: Nov.-Mar.

Sida ovata Forsk. (74797; Duthie 4562 DD.).

Common in wastelands near Kota. Plants resemble closely *S. alba* Linn., but the latter bears spines at the base of petioles and is more robust. Duthie (1903) also collected this plant from Baran.

Fl. & Fr.: Oct.-Feb.

STERCULIACEAE

Guazuma ulmifolia Lamk. (83725).

A native of W. Indies. Occasionally seen in scrub vegetation at the foot of hills near Jhalawar. Plants resemble *Grewia* sp. in flowering state.

Fl. & Fr.: Oct.-Feb.

TILIACEAE

Grewia aspera Roxb. (74656).

Occasionally found in open forests at Kota-Dam. Plants resemble closely *G. sclerophylla* Roxb., but bears fleshy fruits.

Fl. & Fr.: Mar.-Dec.

Triumfetta rhomboidea Jacq. (74603).

Occasional; found in wastelands and on the hill-slopes near Darah.

Fl. & Fr.: Aug.-Nov.

MALPIGHIACEAE

Hiptage benghalensis (Linn.) Kurz (91060).

Rare; found climbing on *Mangifera indica* Linn., *Carissa congesta* Wt. and *Ficus* sp. in the evergreen forest of Sitabari.

Fl. & Fr.: Mar.-May.

ZYGOPHYLLACEAE

Fagonia cretica Linn. (83915).

Rare; found in dry sandy soils, chiefly near Talera.

Fl. & Fr.: Aug.-Oct.

RUTACEAE

Murraya koenigii (Linn.) Spreng. (91069).

Occasionally found in wastelands near Kelwara.

Fl. & Fr.: Apr.-June.

BURSERACEAE

Commiphora wightii (Arn.) Bhand. (91047).

Occasionally found in deciduous forests on the hill-slopes near Shahabad and Jhalawarh.

Fl. & Fr.: Mar.-May.

VITACEAE

Cissus repanda Vahl (91065).

Rare; climbing on the trees with the help of sucker-like tendrils and covering trees with their beautiful foliage at Sitabari.

Fl. & Fr.: Apr.-June.

ANACARDIACEAE

Rhus mysorensis Heyne ex Wt. & Arn. (83614).

Rare; found in sandy or rocky grounds in the protected forests on Hindoli-Deoli road.

Fl. & Fr.: June-Sept.

PAPILIONACEAE

Crotalaria ferruginea Grah. ex Benth. (74638).

Rare; found in sandy soils near Kota.

Fl. & Fr.: Aug.-Oct.

C. mysorensis Roth (90283).

Common in wastelands near Kota. Plants resemble *C. ferruginea* Grah. ex Benth., but

bracts and hairs are much longer in the latter species.

Fl. & Fr.: Sept.-Nov.

Dalbergia sericea G. Don (91040).

Rare; found in the deciduous forests at Shahabad.

Fl. & Fr.: Mar.-June.

Lathyrus aphaca Linn. (90639).

Common weed of Rabi crops, particularly in Kota district.

Fl. & Fr.: Jan.-Mar.

L. sativus Linn. (90891).

Native of W. Asia to Afghanistan. Common weed of Rabi crops, particularly near Chhabra.

Fl. & Fr.: Jan.-Mar.

Medicago polymorpha Linn. (90928).

Native of Europe. Common weed of cultivated fields and other wet and shady localities near Chhabra.

Fl. & Fr.: Jan.-Mar.

Melilotus indica All. (90994).

Native of S. Europe and S. W. Asia. Common weed of cultivated fields near Baran during winter season.

Fl. & Fr.: Jan.-Apr.

Phaseolus calcaratus Roxb. (83634).

Native of Philippines. Rarely found in grasslands near Nenwa.

Fl. & Fr.: Aug.-Oct.

P. trilobus Ait. (90224, 90261).

Common throughout the area in open wastelands.

Fl. & Fr.: Sept.-Nov.

Pueraria tuberosa (Roxb. ex Willd.) DC. (90827).

Rare; found climbing on *Phoenix sylvestris* (Linn.) Roxb. and on the bushes near Kelwara village. Fruits cause irritation in the skin.

Fl. & Fr.: Mar.-Apr.

Rhynchosia capitata DC. (83613).

Rare; found in dry, sandy soils near Hindoli.

Fl. & Fr.: Aug.-Oct.

Tephrosia pauciflora Grah. ex Baker (90229, 83703).

Common in open, dry and sandy places or in the crevices of rocks near Kota and Atru.

Fl. & Fr.: July-Oct.

Vicia hirsuta (Linn.) Gray (74076, 90836).

Native of Europe, W. Africa and Continental Asia. Common weed of cultivated fields and gardens near Kota. The shape and size of leaflets are much variable.

Fl. & Fr.: Jan.-Mar.

CAESALPINIACEAE

Caesalpinia decapetala (Roth) Alston (90890).

Rare; few plants were growing in wasteland near Bara-talao at Kota.

Fl. & Fr.: Jan.-May.

MIMOSACEAE

Prosopis juliflora (Sw.) DC. (90491).

Native of America; naturalized in open wastelands throughout the area; abundant in Bundi district.

Fl. & Fr.: Mar.-July.

LYTHRACEAE

Rotala indica (Willd.) Koehne (90694, 83705).

Commonly found in ponds, ditches and low-lying areas. More abundant in Jhalawarh and Kota districts. Previously collected from Mt. Abu only in Rajasthan. (Blatter and Hallberg, 3270).

Fl. & Fr.: Oct.-Feb.

UMBELLIFERAE

Anethum graveolens Linn. (90468).

Native of Eurasia. Occasionally found as a weed of cultivation and wastelands near Baran.

Fl. & Fr.: Jan.-Mar.

RUBIACEAE

Hymenodictyon excolsum (Roxb.) Wall. (74410, 746644).

Common on steep hill-slopes at Kota-Dam and Garari-Mahadeo. The inflorescence appears like a bottle-brush.

Fl. & Fr.: Aug.-Feb.

Randia fasciculata DC. (83844).

Rare; found in mixed deciduous forests on the foot of hills at Darah.

Fl. & Fr.: Mar.-June.

COMPOSITAE

Blumea mollis (D. Don) Merr. (90458, 90691, 90165).

Common in wastelands near Shahabad, Chhabra and Kota-Dam. Very close to *B. lacera* (Burm. f.) DC., but can be distinguished by its entire leaves and small capitula.

Fl. & Fr.: Feb.-May.

B. obliqua Linn. Druce (74486).

Common in dry wastelands and on the walls of old buildings at Bundi.

Fl. & Fr.: Feb.-May.

B. virens (Wall.) DC. (90245).

Common in dry wastelands near Kota.

Fl. & Fr.: Jan.-Apr.

Breca arvensis (Linn.) Less. Syn. *Cirsium arvense* (L.) Scop. (74753).

Rare; found in wastelands and in and around fields near Nenwa and Indragarh.

Fl. & Fr.: Jan.-May.

Chrysanthellum americanum (L.) Vatke (74817, 90571).

Abundant in wet crevices of rocks on the hills near Darah and Shahabad.

Fl. & Fr.: Aug.-Oct.

Conyza aegyptiaca Dryand. (74054, 91073, 74072).

Common in dry sandy soils especially in Bundi and Kota districts.

Fl. & Fr.: June-Oct.

C. canadensis (Linn.) Cronquist (74618).

Native of North America; naturalized in waste, dry habitats near Kota.

Fl. & Fr.: June-Sept.

C. leucantha (D. Don) Ludlow & Ravan (74002).

Rare; found on exposed parts of hills near Bundi.

Fl. & Fr.: Dec.-Mar.

Cotula hemisphaerica (Roxb.) Wall. ex Benth. & Hook. f. (90645).

Rare; found in marshy habitats near Kota and Atru.

Fl. & Fr.: Jan.-Mar.

Dicoma tomentosa Cass. (74659).

Sparsely distributed in the Chambal ravines particularly near Garari-Mohadeo.

Fl. & Fr.: Aug.-Mar.

Flaveria trinervia (Spreng.) C. Mohr. (74699, 90470).

Native of Central America; imperfectly naturalized in the gardens and wastelands near Kota and Bundi.

Fl. & Fr.: Aug.-Oct.

Gnaphalium luteo-album Linn. subsp. **affine** (D. Don) Koster (74436).

Common throughout the area, particularly in Bundi and Jhalawar districts, but nowhere abundant.

Fl. & Fr.: Jan.-Apr.

G. pennsylvanicum Willd. (90370).

Native of Central America; naturalized in wastelands and cultivated fields near Kelwara.

Fl. & Fr.: Jan.-May.

Pluchea lanceolata (A. DC.) Oliv. & Hiern. (74754).

Rare; found in waste, dry sandy soils in Bundi district.

Fl. & Fr.: Mar.-July.

Pulicaria crispa Sch.-Bip. (74766).

Rare; found in dry sandy soils or in the crevices of rocks near Hindoli.

Fl. & Fr.: Feb.-Aug.

P. wightiana (DC.) Cl. (90312).

Occasionally found on dry, open hillocks near Atru.

Fl. & Fr.: Aug.-Oct.

Vicoa vestita (Wall. ex DC.) Benth. ex Hook. f. (90580).

Occasionally found in dry, open wastelands and in the sugarcane fields.

Fl. & Fr.: Jan.-May.

SALVADORACEAE

Salvadora persica Linn. (90494).

Common in dry wastelands; forming compact clumps near Talera.

Fl. & Fr.: Nov.-June.

ASCLEPIADACEAE

Ceropegia bulbosa Roxb. (74820, 83674, 83681).

Common among bushes near Bhawani-mandi and Darah villages.

Fl. & Fr.: July-Oct.

Leptadenia pyrotechnica (Forsk.) Decne. (74097, 83630).

Rare; found in dry, open wastelands in the western part of Bundi district.

Fl. & Fr.: Aug.-Jan.

L. reticulata (Retz.) Wt. & Arn. (74854, 91108).

Usually found in open wastelands near Kota and Darah. Very close to *Pentatropis spiralis* (Forsk.) Decne., but can be distinguished by the presence of its double corona.

Fl. & Fr.: May-Mar.

Pentatropis spiralis (Forsk.) Decne. (90809).

Rare; found among the bushes in dry habitats near Shahabad.

Fl. & Fr.: Jan.-Oct.

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