

FURTHER CONTRIBUTION TO THE FLORA OF DANGS FOREST IN GUJARAT

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ABSTRACT

223 more plants collected from Dangs forest have been accounted for in this paper. Of these 68 are monocotyledons and 155 are dicotyledons. 28 species, marked with an asterisk, are published in earlier works but their nomenclature is brought up-to-date. *Sida rhombifolia* var. *obovata* Mast., *Zizyphus mauritiana* var. *fruticosa* Seb. and Balk. and *Dicliptera roxburghiana* Nees are additional new records from Dangs for erstwhile Bombay Presidency.

INTRODUCTION

From the localities cited by Cooke (1901-1908) and from all the information available to us, the earliest collections from the Dangs Forest were made by Dalzell in the middle of the 19th century, followed a good many years later by Bhiva, Woodrow etc. Between 1919 and 1921 Saxton, Dastur and others collected some plants from our area; these collections formed the basis of a paper on the plants of the Dangs published by Chavan and Oza (1966). Considerable information has been added by Santapau (1954, 1955), Santapau and Shah (1965), Santapau and Kapadia (1966) and Chavan and Sabnis (1967), based on collections mostly from Unai (U), Waghai (W), Ahwa, Pimpri (Pim), Subir Sunda, etc., Jain (1963) gave a good ecological account of the vegetation of Dangs covering many areas. From all literature it is clear that none of these workers has explored any area throughout the year and that there are a number of areas which have not been botanically explored. This makes the information on the flora of Dangs rather incomplete. One of us (B. Suryanarayana) undertook intensive explorations of the forests in vicinity of Ahwa (A), Bhavandagadh (B), Subir (Su), Mahal (M), Malegaon (Mal), Shamgahan (Sh), Saputara (S) and Pipalhdhad (Pi) which had either not at all or only cursorily been explored by previous workers. The collections were made in all seasons in 1965-1968. On the basis of these collections short accounts on the plants of Dangs were published by Shah and Suryanarayana (1967, 1967a, 1968, 1969). Even then, there are a number of plants in our collections which have not yet been reported from Dangs. To this collection are added a few plants available in Gujarat College Herbarium, Ahmedabad collected

by Saxton (WTS) and Dastur (D) and Blatter Herbarium, Bombay, collected by Santapau (HS), Fernandez (RR), Saldhana (Sald) and Mehendale, which are still not listed by any other worker from Dangs. The present paper is, therefore, prepared incorporating all these data to bridge up, as far as possible, the existing lacuna in our knowledge about the Flora of Dangs.

The names of most of the plants in the following pages are the same as given by Cooke in his Flora; wherever there has been a change in nomenclature, the name which in our opinion is the correct one is given first followed by the name in Cooke's Flora in parenthesis. The nomenclature on grasses is after Bor (1960). For the sake of brevity the information on the vegetation is omitted as it has been already published by Santapau (1954, 1955) and Jain (1963) and an account of some of monsoon plants is given by Shah and Suryanarayana (1967a). A note on relative abundance, flower colour (Fls.), flowering and fruiting time (FLS., FRS.) and local name where available, is given for each plant, followed in parenthesis by our collection numbers prefixed by the abbreviated letter for locality. When the plants are included on the authority of other collectors, the abbreviated author's name, prefixed by abbreviated locality name, and their collection numbers are given. The plants marked with an asterisk are published in earlier literature but their nomenclature has been adjusted as per the requirements of the *International Code of Botanical Nomenclature* and in light of the modern researches. Our collection is deposited in the herbarium of the department of Botany, Sardar Patel University, Vallabh Vidyanagar.

ENUMERATION

RANUNCULACEAE

Clematis gouriana Roxb. ex DC.

Common in Mal-S area (2240, 3064). FLS. greenish-white or pale yellow, Nov.-Dec. FRS. Dec.-Feb.

C. hedysarifolia DC.

Frequent in open forests. FLS. creamy-white to pale yellow, Aug.-Nov. FRS. Nov. (A 2069; S 1900; Su 2386).

ANNONACEAE

Milusa tomentosa (Roxb.) Sinclair (*Saccopetalum tomentosum* Hk. f. & Th.)

Occasional. FLS. at first greenish-pink, at length deep mauve, Mar.-Apr. FRS. Mar.-May. (M 2599; Mal 1344; Su 1537).

Local name: *Umbh.*

MENISPERMACEAE

Cissampelos pariera Linn.

Common and abundant. FLS. greenish yellow, Aug.-Sept. FRS. Sept.-Oct. (A 2050; Mal 1284; Su 1468).

Tinospora sinensis (Lour.) Merr. (*T. malabarica* Miers)

Rare. FLS. or FRS. not seen. (Mal 1346).

NYMPHAEACEAE

Nelumbo nucifera Gaertn. (*Nelumbium speciosum* Willd.)

Rare. FLS. or FRS. not seen. (A 2930).

Local name: *Kamal.*

CRUCIFERAE

Cardamine trichocarpa Hochst. ex Rich (*C. subumbellata* Hk. f.)

Common and abundant, in pure stands. FLS. yellow. FLS. and FRS. July-Aug. (Mal 1193; S 1217).

Raphanus sativus Linn.

An escape from cultivation. FLS. pale purple or violet. FLS. and FRS. Sept.-Jan. (B 237, 2613).

Local name: *Muli.*

CAPPARACEAE

Capparis sepiaria Linn.

Rare, along ghat road. FLS. white, Mar. FRS. Apr. (Mal 2775; S 1289, 2752).

Crateva nurvala Buch.-Ham. (*C. religiosa* auct. non Forst. 1786).

Rare. FLS. and FRS. not seen. (Su 2688).

FLACOURTIACEAE

Casearia esculenta Roxb.

Occasional. FLS. pale greenish-yellow. FLS. and FRS. Apr. (A 2667; M 2558, 3005).

C. graveolens Dalz.

Common. FLS. pale greenish-yellow. FLS. and FRS. Mar.-July. (A 1174, 2914; M 2878; Mal 1260, 2795; Pi 944).

***Flacourtia indica** (Burm.f.) Merr. (*F. latifolia* Cooke)

Common on hilly slopes. FLS. greenish-yellow. FLS. and FRS. Mar. (A 1084, 2933, 2955; Mal 1273, 2772, 3081).

CARYOPHYLLACEAE

Polycarpon prostratum (Forsk.) Aschers. & Schweinf. (*P. loeflingiae* Bth. & Hk. f.)

Rare in moist river beds. FLS. white or tinged pink. FLS. and FRS. Feb. (A 1124; M 3007).

MALVACEAE

Abelmoschus esculentus (L.) Moench. (*Hibiscus esculentus* Linn.)

Cultivated during monsoon. FLS. and FRS. Aug.-Oct. (A 298a; Su 1685).

Abutilon polyandrum Schlecht.

Occasional in dense forests. FLS. orange-yellow with deep purple eye in centre. FLS. and FRS. Nov.-Feb. (Mal-S 887, 2416, 3065).

Hibiscus hirtus Linn.

Occasional along paths in dense forests. FLS. white. FLS. and FRS. Oct.-Mar. (Mal-S 866, 2407, 2786).

Sida orientalis Cav. (*S. rhombifolia* L. var. *rhomboides* Mast.)

Common in the forest undergrowth. FLS. reddish-yellow. FLS. and FRS. Sept.-Dec. (A 358; Mal 772; Su 1767; Pi 1797; B 2156).

S. rhombifolia L. var. *obovata* Mast.

Occasional in shaded spots. FLS. yellow. FLS. and FRS. Sept.-Oct. (A 344; B 2140; Su 1596; Mal 1942; Pi 1826).

S. rhombifolia L. var. *retusa* Mast.

Common. FLS. yellow. FLS. and FRS. Sept.-Oct. (Su 1596; A 2096).

STERCULIACEAE

Sterculia villosa Roxb.

Listed by Cooke from Gadhi, Dangs on the authority of Woodrow. We have a specimen from Subir (1570) which matches with the sheets of this species in Blatter Herbarium but in absence of FLS. or FRS. the identification is provisional.

TILIACEAE

Corchorus trilocularis Linn.

Rare. FLS. Yellow. FLS. and FRS. Jan. (B 2631).

Triumfetta pentandra A. Rich.

Common, gregarious in forest undergrowth. Fls. yellow. FLS. and FRS. Sept.-Oct. (A 389; Mal 1964; Pi 1798; Su 1637).

MALPIGHIACEAE

Hiptage benghalensis (Linn.) Kurz (*H. madablota* Gaertn.)

Rare. FRS. Mar. (S 2753; Mal 2812).

BALSAMINACEAE

Impatiens balsamina L. var. **coccinea** Hk. f.

Common in pure patches. FLS. pale to deep purple or violet, Aug.-Sept. FRS. Sept. (A 305; Mal 1343; Pi 1802; Su 1473).

I. kleinii Wt. & Arn.

Common in forest undergrowth. Fls. pale to bright purple, rarely white. FLS. and FRS. July-Sept. (Mal 1206, 1526; A 148).

BURSERACEAE

Boswellia serrata Roxb. ex Colebr.

Bark distinctive. Rare in forests 10 km from Subir (2388). FLS. or FRS. not seen.

Local name: *Dupelio*.

RHAMNACEAE

Zizyphus horrida Roth

Rare. FLS. or FRS. not seen. Leaves almost glabrous (A 2091, 2451).

Z. mauritiana Lam. var. **fruticosa** Seb. & Balk.

Rare. FLS. creamy-yellow, Sept.-Nov. FRS. Oct.-Feb. (A 2447; B 2617; M 2860).

SAPINDACEAE

Dodonaea viscosa (Linn.) Jacq.

A hedge in the compound of D.F.O.'s bungalow at Ahwa (91). FRS. Sept.

ANACARDIACEAE

Anacardium occidentale Linn.

Planted along road near P.W.D. and Forest Rest Houses at Ahwa. (2075, 3116). Fls. bright pink. FLS. and FRS. Jan.-Mar.

Local name: *Kajlu*.

PAPILIONACEAE

Aeschynomene indica Linn.

Common, gregarious in moist ground. Fls. pale creamy-yellow. FLS. and FRS. Aug.-Oct. (A 601; Su 1434, 1689).

Alysicarpus bupleurifolius (Linn.) DC.

Common among grasses. Fls. reddish-purple. FLS. and FRS. Sept. (A 204; Mal 584; Su 1724; Pi 1814).

A. vaginalis (Linn.) DC.

Common in grass fields. Fls. bright reddish-purple. FLS. and FRS. July-Sept. (A 22; Mal 1264; Pi 1795; Su 594).

Atylosia platycarpa Bth.

Rare, among grasses in forest undergrowth. Fls. pale yellow. FLS. and FRS. Sept. (Su 1612).

Crotalaria chinensis Linn.

Rare in the forests. Fls. yellow. FLS. and FRS. Oct. (Mal-S 2222).

C. medicaginea Lam.

Rare, on hilly slopes. Fls. yellow. FLS. and FRS. Dec. (Mal 776).

C. nana Burm. f.

Rare along with previous species. Fls. yellow. FLS. and FRS. Sept. (Mal-S 1899).

C. spectabilis Roth (*C. sericea* Retz.)

Rare in moist ground. Fls. yellow. FLS. and FRS. Dec.-Jan. (M 2492; Pi 971).

C. vestita Baker

Common in the undergrowth on hilly slopes. Fls. yellow. FLS. and FRS. Oct.-Dec. (Mal-S 808, 872, 2227).

***Desmodium heterocarpum** (Linn.) DC. (*D. polycarpum* DC.)

Reported by Chavan and Oza.

D. rotundifolia Baker

Occasional among grasses. Fls. bright purple. FLS. and FRS. Sept. (Mal-S 1897, 2009).

Dolichos biflorus Linn.

Cultivated, also an escape. Fls. yellow. FLS. and FRS. Sept.-Nov. (A 2003; Mal 2205; Pi 1790).

Indigofera prostrata Willd.

Abundant among grasses. Fls. red. FLS. and FRS. Sept. (Mal 1915; Su 1464, 1715).

I. spicata Forsk. (*I. endecaphylla* Jacq.)

Rare. Fls. red. FLS. and FRS. Nov. (M 2325, 3026).

***I. trita** ssp. **trita** var. **maffei** (Chiov.) Ali (*I. oreophila* Sant. & Panth.)

This is the correct name for the new record *I. oreophila* from Dangs published by Santapau and Panthki in *J. Bombay nat. Hist. Soc.* 54: 222-224, 1956.

Melilotus indica All.

Rare, in a cultivated field. Fls. yellow. FLS. and FRS. Jan.-Mar. (B 2595).

Phaseolus calcaratus Roxb.

Common among grasses on earth bunds of cultivated fields and along roads. Fls. yellow. FLS. and FRS. Sept. (A 23, 289; Su 1594, 1599, 1704).

Phaseolus khandalensis Sant. (*P. grandis* Dalz. non Wall. nec Bth.)

Gregarious on hilly slopes. Fls. yellow. FLS. and FRS. Sept.-Oct. (S 1863, 2228).

Pisum sativum Linn.

An escape from cultivation. Fls. white. FLS. and FRS. Jan. (B 2604).

Rhynchosia bracteata Bth.

Rare on low bushes. Fls. yellow. FLS. and FRS. Feb. (M 3020).

R. rothii Bth. ex Ait.

Rare on low bushes. FRS. Oct. (A 2089; Mal-S 1869).

Sesbania javanica Miq.

Rare. FLS. and FRS. Jan.-Feb. (B 2632, 3105).

S. sesban (Linn.) Merr. ssp. *sesban* var. *sesban* (*S. aegyptiaca* var. *picta* Prain)

For the nomenclature of this plant see Gillett in *Kew. Bull.* 17: 112 (1963).

Smithia bigemina Dalz.

Abundant among grasses. Fls. yellow. FLS. and FRS. Sept. (S 1886).

S. salsuginea Hance

Rare among grasses. Fls. yellow. FLS. and FRS. Sept. (A 28).

S. sensitiva Ait.

Occasional, sub-gregarious in moist ground. Fls. yellow. FLS. and FRS. Sept.-Dec. (Mal-S 894).

S. sensitiva Ait. var. *flava* (Dalz.) Cooke

Gregarious in moist ground. Fls. yellow. FLS. and FRS. Oct.-Nov. (A 2066; Su 502, 648, 672).

S. setulosa Dalz.

Occasional in the forest undergrowth on hilly slopes. Fls. yellow. FLS. Sept. FRS. Oct. (S 1867, 2272).

Vigna capensis Walp.

Rare. Fls. bright rosy-purple. FLS. and FRS. Sept. (S 1885; Su 1681).

CAESALPINIACEAE

Cassia javanica Linn.

Planted along roads. Fls. bright rosy-pink. FLS. May (A 2924).

C. mimosoides Linn.

Occasional among grasses. Fls. yellow. FLS. and FRS. Sept. (Su 1592; Mal 1903, 2008).

MIMOSACEAE

Acacia polyacantha Willd. (*A. suma* Buch.-Ham.)

Common. Fls. white. FLS. July. FRS. Nov.-Feb. (A 1095; Pi 906; Mal 1238; Su 671).

Local name: *Gobita*.

Leucaena leucocephala (Lam) de Wit (*L. glauca*) Bth.

Rare in forest. Fls. white or pale creamy-yellow. FLS. and FRS. Nov. (Su 719).

MYRTACEAE

Eucalyptus citriodora Hk. f.

Occasional, planted near houses. Fls. creamy-white. FLS. June (A 1136).

Local name: *Nulgiri*.

Psidium guajava Linn.

Same as the previous species. FLS. white, July. (A 230; Mal 796).

Local name: *Jam-phal*.

LYTHRACEAE

***Rotala serpyllifolia** (Roth) Bremek. (*Ammannia tenuis* Clke.)

Common and abundant in rocky river-beds. Fls. bright pink to purple. FLS. and FRS. Oct.-Jan. (A 2067; M 2350; Pi 902; Su 741, 1719).

ONAGRACEAE

***Ludwigia perennis** Linn. (*L. parviflora* Roxb.)

A common weed in cultivated fields. Fls. yellow. FLS. and FRS. Sept.-Oct. (A 537, 539, 2664; Mal 1954).

CUCURBITACEAE

Citrullus lanatus (Thunb.) Matsumara and Nakai (*C. vulgaris* Schrad.)

Rare near houses. FLS. or FRS. not seen. (Mal 1243).

Luffa acutangula (L.) Roxb.

Cultivated. FLS. yellow, Sept. (B 447; M 2351).

Local name: *Dodka*.

Momordica charantia Linn.

Occasionally an escape. Fls. yellow. FLS. and FRS. Monsoon. (B 449; M 2334, 2543).

Local name: *Kareela*.

M. dioica Roxb. ex Willd.

Common. Fls. yellow. FLS. and FRS. June-Sept. (A 1180; Mal-S 1222, 1345).

Local name: *Kantola*.

***Mukia maderaspatana** (Linn.) M. Roem. (*Melothria maderaspatana* Cogn.)

Common and abundant. FLS. minute, yellow, Aug.-Oct. FRS. Sept.-Dec. (A 400; B 271; M 863, 1297; S 799; Su 1471).

***Solena heterophylla** Lour. (*Melothria heterophylla* Cogn.)

Occasional in shaded spots. FLS. creamy-white or pale yellow, July. (Mal 1197, 1221; Pi 1779).

TURNERACEAE

Turnera ulmifolia Linn.

Planted in gardens. Fls. bright yellow. FLS. and FRS. July-Sept. (A 323; Mal 1308).

UMBELLIFERAE

Peucedanum grande Clke.

Occasional on hilly slopes. Fls. yellow. FLS. and FRS. July-Aug. (Mal-S 1365, 1427).

Local name: *Bapri*.

Trachyspermum roxburghianum (DC.) Craib. (*Carum roxburghianum* Kurz)

Common, sometimes gregarious, in open fields. Fls. white, tinged purple. FLS. and FRS. Sept.-Dec. (Mal-S 793, 851, 1887; Su 512).

Local name: *Ova*.

T. stictocarpum Wolff. var. *stictocarpum* (C. *stictocarpum* Clke.)

Rare in forest undergrowth on hilly slopes. FLS. white, Oct. (Mal 2240).

RUBIACEAE

***Borreria pusilla** DC. (*Spermaoce stricta* Linn. f., *B. stricta* Schum.)

Common in rocky ground. Fls. white. FLS. and FRS. Aug.-Sept. (A 85; Mal 1407; Su 1458).

Gardenia resinifera Roth (*G. lucida* Roxb.)

Rare. FLS. or FRS. not seen. (Su 2689).

Local name: *Pendri*.

Neanotis foetida (Hook. f.) Lewis (*Anotis foetida* Hk. f.)

Occasional among grasses. Fls. purple. FLS. and FRS. July-Sept. (A 167; Mal-S 1324, 1406).

Oldenlandia herbacea (L.) Roxb.

Rare, but abundant in a cultivated field. Fls. white. FLS. and FRS. Sept. (Mal 1953).

Pavetta crassicaulis Bremek. (*P. indica* Hk. f.)

Occasional on hilly slopes. FLS. pale blue to almost white, Nov.-Dec. FRS. July. (Mal-S 790, 1248).

***Spermadictyon suaveolens** Roxb. (*Hamiltonia suaveolens* Roxb.)

Reported by Chavan and Oza.

Thecagonum ovalifolium (Cav.) Babu (*Oldenlandia nudicaulis* Roth).

Reported by Chavan and Oza.

COMPOSITAE

Amberboa ramosa (Roxb.) Jafri (*Volutarella divaricata* Bth.)

Rare, in forest clearings. Fls. light purple. FLS. and FRS. Feb. (Su 2726).

Blainvillea acmella (Linn.) Philip. (*B. rhomboidea* Cass.)

Common. Fls. yellow. FLS. and FRS. Sept.-Oct. (A 108, 329).

Blumea belangeriana DC.

Common in the undergrowth on hilly slopes. Fls. yellow. FLS. and FRS. Dec.-Mar. (A 2467, 2568; Mal-S 2395, 2764).

B. malcolmii (Clke.) Hk. f.

Common in the undergrowth on hilly slopes. Fls. yellow. FLS. and FRS. Nov.-Mar. (Mal-S 2254, 2728).

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

Common along roads and on exposed hilly slopes. Fls. light purple. FLS. and FRS. Dec.-Apr. (A 2643; M 2516, 2866; Mal 754; Pi 960).

B. oxyodonta DC.

Common in dry cultivated fields and grasslands. Fls. yellow. FLS. and FRS. Nov.-Jan. (A 2484; M 2550; Mal 2808; Su 2691).

Conyza stricta Willd.

Common in open grasslands. Fls. yellow. FLS. and FRS. Sept.-Dec. (Mal-S 819, 1939, 2268).

Coreopsis tinctoria Nutt.

An escape from cultivation. FLS. and FRS. Sept.-Oct. (A 354, 2042).

***Goniocaulon indicum** (Klein ex Willd.) Clke. (*G. glabrum* Cass.)

Reported by Santapau from Unai under *G. glabrum* Cass.

Lagascea mollis Cav.

Rare, near Forest Range Office. Fls. bluish-purple. FLS. and FRS. Sept. (A 96).

Laggera aurita (Linn. f.) Sch.-Bip.

Rare, a weed in cultivated fields, Fls. light purple. FLS. and FRS. Feb. (B 3109).

***Pluchea wallichiana** DC.

Listed by Cooke (2:26) from Dangs, on the authority of Woodrow, without precise locality. Since then, not reported from Dangs by any other worker.

Pulicaria wightiana (DC.) Clke.

Rare, in forest undergrowth. Fls. yellow. FLS. and FRS. Sept. (Su 1698).

Senecio grahami Hk. f.

Common on grassy hilly slopes and open field. Fls. yellow. FLS. and FRS. Aug.-Sept. (Mal-S 1410, 1936).

***Spilanthes paniculata** Wall. ex DC. (*S. acmella* auct non Murr.)

Common in the forest undergrowth on hilly slopes and in cultivated fields. Fls. brownish-

yellow. FLS. and FRS. Sept.-Dec. (A 2106; Mal 1928; Su 69).

Synedrella nodiflora (Linn. ex Willd.) Gaertn.

Rare near forest Rest House. Fls. yellow. FLS. and FRS. Jan. (M 2520).

Tricholepis amplexicaulis Clke.

Occasional, scattered. Head 2.5-5 cm across. Fls. purple. (S 2246).

T. glaberrima DC.

Rare on hilly slopes. Head 1.5-2 cm across. Fls. bright purple. FLS. and FRS. Oct. (A 2101; Mal-S 2199).

Wedelia urticaefolia DC.

Occasional. Fls. yellow. FLS. and FRS. Sept.-Nov. (S 2213; Su 1635).

EBENACEAE

Diospyros montana Roxb.

Rare. FLS. (male) greenish-white, Mar. (Mal 2781; S 2729, 3078).

Local name: *Paali*.

ASCLEPIADACEAE

***Oxystelma secamone** (Linn.) Karst. (*O. esculentum* R. Br.)

Rare along river banks. FLS. or FRS. not seen. (M 2992).

Tylophora dalzellii Hk. f.

Rare in the Kotumdar Reserve Forest undergrowth. FLS. reddish brown, July. (Mal 1252).

T. fasciculata Ham.

Rare among grasses near Holiday home. FLS. chocolate-brown, Aug. (S without number).

OLEACEAE

Jasminum officinale Linn.

Planted. FLS. white, tinged pink, Aug.-Sept. (A 232; Su 1752).

LOGANIACEAE

****Buddleia asiatica** Lour.

Listed by Cooke (2: 183) on the authority of Bhiva. Since then not reported from Dangs by any other worker.

Cynoctonum mitreola (Linn.) Britt. (*Mitreola oldenlandioides* Wall. ex A. DC.)

Rare in dense undergrowth. Fls. white. FLS. and FRS. Sept.-Oct. (A 2019; Su 1609).

Swertia minor (Griseb.) Knobl.

Rare, locally abundant in the compound of Forest Rest House. Fls. pale bluish purple. FLS. and FRS. Aug. (Mal 1384).

BORAGINACEAE

Cordia macleodii Hk. f.

Rare, only 2-3 trees seen in Surkai forest near Ahwa (2950). FLS. May.

Local name: *Dahavi*.

Cynoglossum meeboldii Brand (*C. denticulatum* var. *zeylanicum* Clke.)

Common on hilly slopes. Fls. pale blue or purplish with deep blue centre. FLS. and FRS. Aug.-Dec. (Mal-S 1209, 1402, 1902; Su 1751).

Heliotropium ovalifolium Forsk.

Common and abundant in small patches in river beds. Fls. white. FLS. and FRS. Jan.-June (A 1127; B 2621; M 2848).

Trichodesma sedgwickianum Banerjee (*T. amplexicaule* auct. non Roth)

Common. Fls. bright violet-blue or lilac-purple. FLS. and FRS. Aug.-Oct. (A 371; Mal 1267, 1421, 1912; S 823).

CONVOLVULACEAE

Argyrea sericea Dalz.

Occasional. Fls. bright rosy purple. FLS. Aug.-Sept.; FRS. Oct. (A 546; Mal-S 1204, 1398; Pi 1786; Su 1769).

Convolvulus arvensis Linn.

A weed in a cultivated field, locally abundant. Fls. bright rosy-pink, rarely white, Feb. (B 3101).

***Ipomoea arachnosperma** Welv. (*I. pilosa* Sw.)

Rare. Fls. bright purple. FLS. and FRS. Oct. (B 2142).

I. cairica (Linn.) Sw. (*I. palmata* Forsk.)

Cultivated. Fls. violet-purple. FLS. and FRS. throughout the year. (A 2565).

I. eriocarpa R. Br.

Common among low grasses and on hedges. Fls. purple. FLS. Sept.-Oct. FRS. Oct.-Nov. (A 2190; Pi 1819; Mal 1913; Su 1703).

I. fistulosa Mart. ex. Choisy (*I. carnea* auct. non Jacq.)

Planted. FLS. bright rosy-purple, Jan.-Mar. (Mal 2802; Pi 989).

***I. hederifolia** Linn. (*Quamoclit coccinea* Cooke, non Moench.)

Rare. Fls. deep red. FLS. and FRS. Nov. (Su 714, 715).

I. illustris (Clke.) Prain (*I. campanulata* Choisy)

Common on large shrubs and trees. FLS. deep purple inside, paler outside, Nov.-Mar. FRS. Mar.-July (Mal-S 765, 1190, 2731, 3079; Sh 2440 A).

Local name: *Gog-vel*.

Merremia aegyptia (Linn.) Urb. (*M. pentaphylla* Hall. f.)

Rare on hedges and in forest undergrowth. Fls. white. FLS. and FRS. Aug.-Nov. (A 575, 2058).

SOLANACEAE

Nicandra physaloides (Linn.) Gaertn.

Rare, a few clumps seen. Fls. blue. FLS. and FRS. Aug.-Oct. (S 1446, 1743; Su 1944, 2232).

Solanum tuberosum Linn.

Cultivated. FLS. or FRS. not seen. (B 2597).

Local name: *Bataca*.

SCROPHULARIACEAE

Centranthera indica (Linn.) Gamble (*C. hispida* auct. non R. Br.)

An occasional parasite on grasses. Fls. purple. FLS. and FRS. Sept. (Mal 1957, 2005).

Dopatrium junceum (Roxb.) Buch.-Ham. ex Bth.

Rare, in moist ground. Fls. bluish-purple. FLS. and FRS. Sept. (A 301).

***Lindenbergia muraria** (Roxb.) P. Bruehl (*L. urticaefolia* Lehm.)

Rare, but locally abundant on rocks on river banks. Fls. yellow, tinged red. FLS. and FRS. Feb. (M 2996).

Lindernia antipoda (Linn.) Alst. (*Bonnaya veronicaefolia* var. *grandiflora* Hk. f.)

Rare in moist ground. Fls. blue. FLS. and FRS. Apr. (M 2827).

L. ciliata (Colsm.) Penn. (*Bonnaya brachiata* L. & O.)

Common in grass lands, rice fields and in moist ground in river beds. Fls. white or bright purple. FLS. and FRS. Aug.-Sept. (A 166; Su 1503, 1557).

L. oppositifolia (Retz.) Muk. (*Bonnaya oppositifolia* Spr.)

Occasional in moist ground and cultivated fields. Fls. pale to bright purple. FLS. and FRS. Sept.-Oct. (A 598; Su 1621).

Sopubia trifida Buch.-Ham. ex Don

Common on grasses. Fls. bright rosy purple. FLS. and FRS. Sept.-Oct. (A 2034; Mal 1986; S 2198).

Striga lutea Lour. var. *lutea*

Occasional on grasses. Fls. yellow. FLS. and FRS. Aug.-Sept. (A 2076; Mal 1945; Su 1560).

S. gesneroides Vatke

Rare. FLS. rosy purple, Oct. (S 2253 A).

Torenia indica Sald. (*T. cordifolia* auct. non Roxb.)

Rare. Fls. white or bluish purple. FLS. and FRS. Aug.-Oct. (A 2102; Su 1555, 1695).

LENTIBULARIACEAE

Utricularia striatula Sm.

Rare on moist rocks. Fls. bright purple, fading blue. FLS. and FRS. Sept. (S 2011).

BIGNONIACEAE

Jacaranda mimosifolia D. Don

Planted. FLS. blue, Feb.-Apr. (A 2898).

Kigelia pinnata DC.

Planted along road. FLS. dull liver coloured, Feb.-Sept. (A 1109).

ACANTHACEAE

Asystasia dalzelliana Sant. (*A. violacea* Dalz.)

Common in shade along paths in the forest. Fls. pale violet or purplish-lilac. FLS. and FRS. Aug.-Oct. (A 306; Mal-S 1432, 2210; Su 499).

Barleria gibsoni Dalz.

Rare on hilly slopes. FLS. Oct. (S. 2248).

B. lawii T. Anders.

Common on hilly slopes. Fls. bright to deep violet purple. FLS. and FRS. Sept.-Nov. (A 352, 429, 2114; Mal 1999; Su 655).

Dicliptera roxburghiana Nees

Common in the dense forest undergrowth. FLS. purple, Oct.-Jan. FRS. Nov.-Apr. (B 2141; M 2844; Mal 861; Pi 949; Sh 2431; Su 2717).

***Dyschoriste erecta** (Burm. f.) O. Kuntze (*D. depressa* Nees)

Listed by Cooke (2: 361) from Dangs. Since then, not reported from the area by any other worker. We have of course collected *D. dalzellii* O. K., from Dangs during our explorations.

Eranthemum roseum (Vahl) R. Br. (*Daedalacanthus roseus* T. Anders.)

Common in dense forest undergrowth. Fls. blue when fresh. FLS. and FRS. Oct.-Jan. (A 2168; M 2295; Mal-S 2236, 2429; Pi 967; Su 716, 2377).

***Hemidelphus polyspermus** Nees (*Hygrophila polysperma* T. Anders.)

Reported by Santapau under *Hygrophila*.

Justicia betonica Linn.

Common, scattered in pasture lands. Fls. pale pink. FLS. and FRS. Sept.-Oct. (S 1875, 2231).

Lepidagathis trinervis Wall. ex Nees

Rare, subgregarious in rocky ground. FLS. light purple, Sept.-Oct. (S 1878, 233).

Neuracanthus trinervius Wt.

Common in dense forest undergrowth. Fls. blue. FLS. and FRS. Nov.-Mar. (Mal-S 2392, 2727, 2811).

Rungia repens (Linn.) Nees

Common in shade. Fls. pale to deep blue or

purple. FLS. and FRS. Sept.-Nov. (A 388, 581, 2019; M 2310; Mal 1958; Sh 2438).

Thunbergia laevis Nees (*T. fragrans* Roxb. p.p.)

Common along ghat road. Fls. white. FLS. and FRS. Sept.-Oct. (Mal-S 1227, 1921, 2220).

VERBENACEAE

Clerodendrum serratum (Linn.) Moon

Occasional, subgregarious, on hilly slopes. Fls. pure blue or tinged purple: (Mal-S 1386, 1931).

LABIATAE

Colebrookea oppositifolia Sm.

Common along ghat road. FLS. white, Nov.-Dec. FRS. Jan.-Feb. (Mal-S 2401, 2749, 2782).

Coleus forskohlii (Poir.) Briq. (*C. barbatus* Bth.)

Rare but abundant on hilly slopes. Fls. lilac-purple. FLS. and FRS. Oct. (S 2235, 2263).

Local name: *Residia*.

Lavandula bipinnata (Roth) O. Kuntze (*L. burmanni* Bth.)

Common, scattered or subgregarious in the forest undergrowth. FLS. blue, Oct.-Nov. FRS. Dec.-Feb. (Mal-S 2269; A 2170; Su 2724).

****Leucas capitata** Desf. (*L. cephalotes* Spr.)

Occasional. FLS. and FRS. Sept.-Nov. (Pi 1801; Su 2371).

Plectranthus mollis (Ait.) Spr. (*P. incanus* Link.)

Common, at times in pure patches. FLS. light purple or lilac, Aug.-Oct. FRS. Sept.-Nov. (A. 2072; Mal-S 2347; Pi 1799; Su 1632).

Pogostemon parviflorus Bth.

Common. FLS. Nov.-Mar. FRS. Dec.-Apr. (M 2854; Mal-S 2421, 2805).

Local name: *Pangota*.

AMARANTHACEAE

Amaranthus hybridus Linn. ssp. **cruentus** Thell. var. **paniculatus** Thell. (*A. paniculatus* Linn.)

Common, cultivated or escape. FLS. and FRS. Aug.-Jan. (A 2027; B 2592; Su 1579).

Local name: *Rajgira*.

A. tricolor Linn. (*A. gangeticus* Linn.)

Common. FLS. and FRS. Sept.-Jan. (A 90; B 474; M 2347).

Puppalia lappacea (Linn.) Juss.

Occasional along Purna river bank. FLS. and FRS. Nov. (M 2312).

CHENOPODIACEAE

Chenopodium album Linn.

A rare weed in cultivated fields. FLS. and FRS. Jan. (B 2608).

LORANTHACEAE

Dendrophthoe falcata (Linn. f.) Etting. var. **coccinia** (Talb.) Sant. (*Loranthus longiflorus* Desf. var. *coccineus* Talb.)

Common on *Anogeissus latifolia* Wall. ex Bedd., *Terminalia crenulata* Roth and *Wrightia tinctoria* R. Br. FLS. Sept.-Feb. FRS. Jan.-Feb. (M 2532; Mal 1989; Su 2703).

SANTALACEAE

Santalum album Linn.

Planted. FLS. Aug. (Su 1562).

Local name: *Chandan*.

EUPHORBIACEAE

Acalypha ciliata Forsk.

Rare in the forest undergrowth. FLS. and FRS. Sept. (Pi 1800).

Chrozophora rottleri (Geis.) Juss. ex Spr. (*C. plicata* Voigt)

Common in moist ground. FLS. and FRS. Dec.-May. (A 1053; M 2685).

Euphorbia pyconostegia Boiss.

Occasional on hilly slopes. FLS. and FRS. Oct.-Dec. (S 804, 1865, 2223).

Pedilanthus tithymaloides Linn.

Planted. FLS. bright rose coloured. Feb.-Mar. (A 209, Mal 2758).

***Phyllanthus asperulatus** Hutch. (*P. niruri* auct. non Linn.)

Common. FLS. and FRS. Sept. (A 2599; M 2556; Mal 1321; Pi 993).

P. debilis Herb.

Rare. FLS. and FRS. Sept. (A 37).

Sapium insigne Bth. var. **malabaricum** (Wt.) Hk. f. (*S. insigne* Cooke)

There is only one tree in the Kotumdar Reserve Forest. FLS. Feb. FRS. Mar. (Mal 2791, 3057).

Local name: *Sherod*.

URTICACEAE

Boehmeria scabrella (Roxb.) Gaud.

Common, often gregarious in shaded spots. FLS. and FRS. Aug.-Oct. (Mal-S 1247, 1933, 2259).

***Laportea interrupta** (Linn.) Chew. (*Fleurya interrupta* Gaud.)

Occasional in the forest undergrowth. FLS. and FRS. Aug.-Sept. (A 153, Mal-S 1888; Su 1723).

Pouzolzia zeylanica (Linn.) Benn. (*P. indica* Gaud.)

Common in rocky ground in the forest undergrowth. FLS. and FRS. July-Oct. (A 578; Mal 1414; Su 1580).

MORACEAE

Ficus amplissima Sm. (*F. tsiela* Roxb.)

Common. Receptacles all the year. (A 1097 ; M 2306 ; Mal 2306, 2771 ; Pi 904 Su 1480).

Local name: *Payar*.

F. arnottiana Miq.

Occasional. Receptacles Jan. (A 2659 ; Mal 1266 ; Su 1615).

Local name: *Khadak-Payar*.

***F. racemosa** Linn. (*F. glomerata* Roxb.)

Common. Receptacles all the year. (A 2941 ; Mal 828 ; Pi 935 ; Su 703).

Local name: *Umbar*.

ORCHIDACEAE

Dendrobium barbatulum Lindl.

Occasional. FLS. white, tinged pink or pale lilac, Feb. FRS. Mar. (A 2963 ; Mal 3066).

D. microbulbon A. Rich.

Rare. FLS. white, Dec. (Mal 2962).

D. ovatum (Willd.) Kranz. (*D. chlorops* Lindl.)

Rare, seen on the trunk of *Garuga pinnata* Roxb. FLS. creamy yellow, Feb. (Su 270).

Habenaria longicorniculata Grah. (*H. longecalcarata* A. Rich.)

Rare. FLS. white, Aug.-Sept. (Mal 1361, 1380).

ZINGIBERACEAE

Zingiber cernuum Dalz.

Rare, in dense forest undergrowth. FRS. Feb. (M 3004).

Local name: *Jangli-adu*.

AMARYLLIDACEAE

Crinum defixum Ker-Gawl

In 30-60 cm of water. Inflorescence erect in flowers, prostrate in fruit. Flowers white tinged pink. Fruits green, fragrant. Dangs Forest in a stony river bed of Khapri. 9-11-1921. (WTS 2641, 2657).

Furcrea sp.

A border plant in D.F.O.'s compound. FLS. creamy-yellow, Feb. (A 3085).

DIOSCOREACEAE

Dioscorea bulbifera Linn.

Occasional. FLS. creamy-white, July-Sept. (A 15 ; B 246 ; Mal 1189).

Local name: *Kalia-kand*.

COMMELINACEAE

Commelina hasskarlii Clke.

Common. Fls. blue. FLS. and FRS. Sept. (A 242 ; Pi 1822 ; Su 1679).

***C. suffruticosa** Blume (*C. obliqua* Buch.-Ham.).

Common in moist shaded spots and forest undergrowth. FLS. blue, July-Aug. FRS. Aug.-Sept. (A 439 ; Mal 1230, 1428).

Murdannia semiteres (Dalz.) Sant. (*Aneilema paniculata* Wall.)

Common on exposed moist rocks. Fls. deep blue or violet. FLS. and FRS. Sept.-Oct. (A 212, 330 ; Mal 1661, 1721).

ERIOCAULACEAE

Eriocaulon quinquangulare Linn.

Common in moist drying cultivated fields. FLS. and FRS. Sept.-Nov.

ALISMATACEAE

Tenagocharis latifolia (D. Don) Buchen. (*Butomopsis lanceolata* Kunth)

Dangs. 25-10-1919 (D 173).

CYPERACEAE

Cyperus alulatus Kern

Common. FLS. and FRS. Aug.-Oct. (A 86 ; Su 1533).

C. malabaricus (Clke.) Cooke

Rare. Spikelet deep chocolate brown. FLS. and FRS. Sept. (A 206, 214).

C. metzii (Hochst.) Mattf. & Kukenth

Rare. FLS. and FRS. Sept. (A 102, 129).

C. nutans Vahl

Rare. FLS. and FRS. Nov.-Feb. (B 3097 ; M 2503).

C. pangorei Rottb. (*C. tegetum* Roxb.)

Common. FLS. and FRS. Sept.-Jan. (B 493 ; Pi 1820 ; Su 1530).

C. pumilus Linn.

Common everywhere. FLS. and FRS. Sept.-Nov. (A 254 ; M 2322 ; Mal 1872 ; Su 1668).

C. sanguinolentus Vahl ssp. *sanguinolentus*

Occasional. FLS. and FRS. Sept. (A 201 ; Mal 2006 ; S 1891).

C. tenuispica Steud. (*C. flavidus* Auct. non Vahl)

Occasional in cultivated fields. FLS. and FRS. Sept.-Nov. (A 541 ; Su 705, 1670).

***Fimbristylis bisumbellata** (Forsk.) Bub. (*F. dichotoma* Auct. non Vahl).

Reported by Chavan and Sabnis.

F. dichotoma (Linn.) Vahl [*F. diphylla* (Retz.) Vahl]

Common in moist places. FLS. and FRS. throughout the year. (A 2468 ; M 2501, 2994).

***F. littoralis** Gaud. (*F. miliacea* Auct. non Vahl).

Reported by Chavan and Sabnis.

***Fimbristylis miliacea** (Linn.) Vahl (*F. quinquangularis* Kunth)

Rare. FLS. and FRS. Sept. (A 308).

F. tetragona R. Br.

Rare, in moist ground. FLS. and FRS. Sept. (Mal 1982; S 1893).

F. woodrowii Clke.

Rare. FLS. and FRS. Sept. (A 123).

Rhychospora wightiana Steud.

Rare. FLS. and FRS. July. (A 293).

Scirpus kyllingoides Boeck.

Rare, scattered among grasses in moist ground. FLS. and FRS. July. (Mal-S 1300, 1328).

GRAMINEAE

Arthraxon hispidum (Thunb.) Makino (*A. ciliaris* P. Beauv.)

Not common. 8-11-1921 (W; WTS 2646).

Bothriochloa intermedia (R. Br.) A. Camus

Rare. Spikelets Jan. (Pi 969).

B. pertusa (L.) A. Camus

Common on hilly slopes. Spikelets Sept. (Pi 1793).

Capillipedium parviflorum (R. Br.) Stapf (*Andropogon micrantha* Kunth)

A sweet smelling grass, creeping or ascending. Fairly common. 13-11-1921 (W; WTS 2715).

Chloris dolichostachya Lags. (*C. incompleta* Roth)

Spikes 8-15 cm long. 13-11-1921 (W; WTS 2718).

C. virgata Sw.

Common. Spikelets Aug.-Sept. (Pi 1811; Su 1438).

Chrysopogon fulvus (Spr.) Chiov. ex Henr.

Rare, but abundant on rocky river bed. Spikelets Oct. (A 2115).

Cynodon dactylon (Linn.) Pers.

Common. Spikelets July-Jan. (B 2620; Mal 1263).

Dicanthium annulatum (Forsk.) Stapf

Common. Spikelets July-Jan. (A 2582; Mal 1186).

D. caricosum (Linn. f.) A. Camus (*Andropogon serratus* Retz.)

Tall grass. 13-11-1921 (W; WTS 2716).

Digitaria adscendens (H. B. K.) Henr.

Occasional in rocky or stony places. Spikelets Sept. (A 197).

D. biformis Willd.

Common in moist ground along river beds. Spikelets Aug.-Nov. (M 2296; Su 1439).

D. granularis (Trin.) Henr.

Common. Spikelets July. (A 109).

D. stricta Roth ex R. & S. var. **stricta**

Common. Spikelets Aug.-Sept. (A 205; Mal 1369).

Eragrostis tenella (Linn.) P. Beauv. var. **tenella**

Occasional. Spikelets Oct. (A 376, 381).

E. viscosa (Retz.) Trin.

Rare. Spikelets Oct. (A 2305 A)

Heteropogon contortus (Linn.) P. Beauv. ex R. & S. (*Andropogon contortus* Linn.)

Common, in large patches. Spikelets Sept.-Oct. (Mal-S 1876, 2266).

H. ritchiei (Hook. f.) Blatt. & McCann (*Andropogon ritchiei* Hook. f.)

Dangs. 20-11-1919 (D 87).

Isachne globosa (Thunb.) O. Kuntze var. **globosa**

Fairly common in moist places. Spikelets Sept. (Mal-S 1890).

Ischaemum indicum (Houtt.) Merrill (*I. aristatum* Auct. non Linn.)

Common and abundant, often in patches. Spikelets Aug.-Dec. (Mal 1892; Pi 1807).

I. molle Hook. f.

Spikelets Nov. (U; HS 17283).

I. timorensis Kunth

(W; RR 2226).

Manisuris clarkei (Hack.) Bor (*Rottboellia clarkei* Hack.)

Dangs. 25-10-1919 (D 176).

Oryza minuta J. F. Presl.

Spikelets Oct. (W; Sald 6185; HS 20017).

Panicum paludosum Roxb.

Common. Spikelet Aug. (Su 1440).

P. psilopodium Trin. var. **coloratum** Hk. f.

Rare. Spikelets Sept. (A 219).

Paspalum compactum Roth

Common in moist ground. Spikelets Sept. (Mal 1892).

Pennisetum purpureum Schum.

Cultivated as a fodder grass. Spikelets Sept. (B 491).

Pseudanthistiria hispidum Linn. f.

1 m. tall, gregarious in open grassland. 8-11-1921 (W; WTS 2617).

Pseudosorghum fasciculare (Roxb.) A. Camus

Spikelets Nov. (W; RR 2235, 2244).

Setaria pallide-fusca (Schum.) Stapf & Hubb.

Common in later half of monsoon. Spikelets July-Sept. (B 257; Mal 1350; Pi 1849).

S. tomentosa (Roxb.) Kunth

Common. Spikelets Aug. (Su 1588).

- Sporobolus diander** (Retz.) P. Beauv.
Common in grassland. Spikelets July (Mal 1327).
- S. fertilis** (Steud.) Clayton
Rare. Spikelets Sept. (A 197 A).
- S. tenuissimus** (Schrunk.) O. Kuntze
Spikelets Sept. (W ; HS 19010).
- Themeda tremula** (Nees ex Steud.) Hack.
Occasional. Spikelets Sept. (A 311 ; 384 ; Mal 2264).
- T. triandra** Forsk.
Common, gregarious. Spikelets Sept.-Oct. (U ; HS 17367 ; P ; HS 20163).
- Thysanolaena maxima** (Roxb.) O. Kuntze
Common. Spikelets Jan.-July. (M 2509 ; Mal 1248).
- Trilobachne cookei** (Stapf) Schenk. ex Henr.
Rare. Spikelets Sept. (Su 1652).
- Trilopogon ramosissimus** (Hack.) Bor
Spikelets Oct. (W ; HS 19698-19700).
- Tripogon lisboae** Stapf
Rare. Spikelets Sept.
- Trihicum aestivum** Linn.
Cultivated at some places.
- Urochloa panicoides** P. Beauv.
(W ; HS 19194 ; Mehendale 93).

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