

A CONTRIBUTION TO THE FLORA OF KANHA NATIONAL PARK, MADHYA PRADESH

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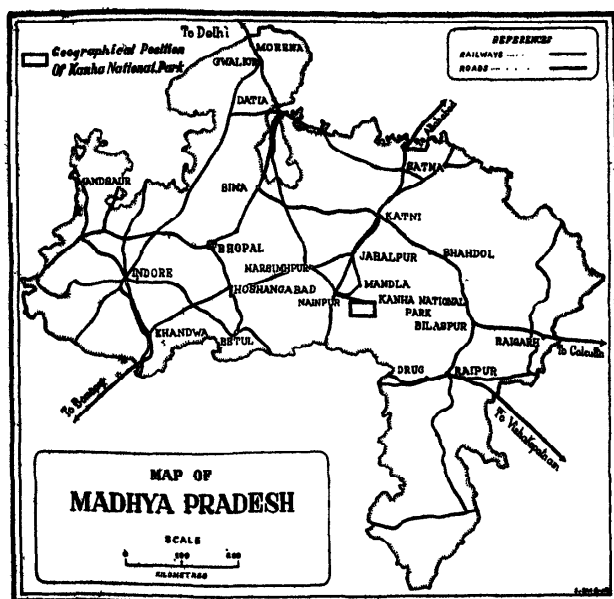
ABSTRACT

This paper deals with a floristic account of Kanha National Park. No literature on the flora of this famous Park in Madhya Pradesh is available. The present study was, therefore, undertaken with a view to prepare an annotated list of the flowering plants and ferns inhabiting the Park. A total number of 275 species of plants is reported from the Park.

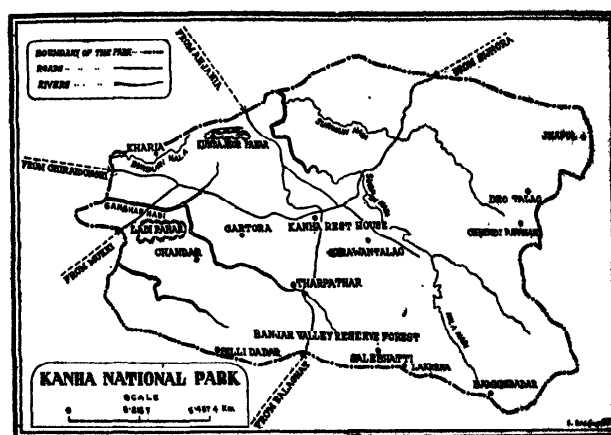
INTRODUCTION

The Kanha National Park, formerly a Wild Life Sanctuary, was established in the year 1953 by legislation. The Park is a centre of great attraction to visitors and foreigners for the abundance and variety of wild life as well as for the picturesque scenery of wooded undulating hills of the Central Highlands of India. In view of the fact that natural vegetation and floras everywhere in the tropics are in increasing danger of destruction in the face of economic pressures, the place of National Parks in

complete flora of the State and floras for the districts of Madhya Pradesh.



the preservation of wild life needs no emphasis. However, no literature on the flora and fauna of this famous Park in Madhya Pradesh is available. Further, our knowledge regarding the vegetation and flora of Madhya Pradesh State, as a whole, is also scanty. At present, there is a great interest in the study of the vegetation of Madhya Pradesh. The present study was, therefore, undertaken by the author with a view to bring out an annotated list of the flowering plants of the Park, with special emphasis on the woody phanerogams of the terrain. It is hoped that in the near future, the flora of other parts of the State of Madhya Pradesh will be worked out by other workers so as to prepare a



GEOGRAPHY, CLIMATE AND SOIL

The Park covers an area of 253 sq. km. of the forest area of Mandla District. Two forest villages, viz., Kisli (512 m. above sea level) and Kanha (576 m. above sea level) are situated within the area of the Park. Apart from these, seven forest villages viz., Bamhni Daddar, Indri, Sonph, Silpura, Natigahen, Kisli-Bhilwani and Jhpal are situated along the boundary of the National Park. The Park is situated between $22^{\circ} 13' - 22^{\circ} 22' N.$ and $89^{\circ} 32' - 89^{\circ} 45' E.$ This area is essentially hilly and often very picturesque and rugged. There are also open maidans in the Park, near and around Kanha Rest House. The hills are typically flat-topped, the plateaux being locally known as "Daddara". They are characteristic of the district and occur at various elevations. In fact, the district extends over the highest plateaus of the Satpuras ranging from 457-762 m. above sea level. The successive elevations of valleys present a step-like formation from west to east. Further to the west, the valley of the Banjar river has a general height of ca 550 m. above sea level and that of the Sulkum ca 580 m. The principal river system in the Park is that of the Sulkum which is the chief feeder of Banjar river. The drainage of the Park area is carried into the Nerbudda river by its tributary—the Banjar which joins it at Mandla. Access may be had to the Park by road from Jabalpur

and Nagpur, and by rail from Mandla Fort and Chiraidongri on South-Eastern Railway. From Mandla Fort and Chiraidongri Station, the Park is approachable by road from three directions: (1) Southern approach from Mukki (Balaghat District); (2) Northern approach from Bichhia via Kisli-Bhilwani (Mandla District); and (3) Western approach from Chiraidongri Railway Station via Fhatia-Narangi (Mandla District). All the three routes are open to the public, but the main approach is through Chiraidongri-Kisli Road from the West. The best spots to see wild animal and plant life are Shrawantalao—a tank about 1.5 km. from Kanha Rest House, Dashrathmachan, Kopedabri and Sob.

The climatic data directly concerning the National Park were not available as there is no recording station. The one nearest to the Park is at Mandla and the other at Dindori. The climatic conditions, however, differ little between Kanha, Mandla and Dindori, except perhaps at the higher parts of the Park where the rainfall may be slightly higher and temperature slightly lower. Owing to the height of its mountain ranges, the rainfall in the district is fairly heavy. The average annual rainfall for the years 1870-1910 is 137 cm. for Mandla and 131 cm. for Dindori Tahsil. The maximum rainfall registered is 203 cm. for Dindori Tahsil in 1881 and minimum 59.7 cm. in 1886 in the same Tahsil. 5-8 cm. of rain may be expected during the spring and summer months, much of which falls in heavy showers between the middle of April and end of May. The average rainfall for the dry months is 13.8 cm. During the cold weather months of November to March, a very heavy dew falls and, in December and January there are occasional severe frosts, the temperature frequently falling as low as -5.6°C . The heat of the summer months is dry and healthy, and the nights are always pleasant. It appears that in the hottest days of the hot weather, the temperature never registers more than 40°C in shade, while in cold weather there are frequently one to ten degrees of frost in the open tracts.

The district is mainly covered by trap and its geology presents little variety. In the south, in immediate vicinity of the Banjar and eastwards as far as the Kawardha border, there is a narrow strip in which the crystalline formation is uppermost. East of the Banjar valley, granite, limestone and syanite also appear in some places on the edges of hills and nalas; and occasionally, as for instance at Bamhni, Chiraidongri and Thawar, sandstone is uncovered. Generally speaking, trap is the uppermost rock capped by laterite on the highest peaks. The rugged hills and valleys of the east are of volcanic origin. Both in the higher plateaus and in the valleys, the rocks are obscured by soil which may be recent, lateritic or decomposed trap popularly known as black cotton or *regur* soils. These layers are of very great depth except in the more level portions of the district, particularly along the

valleys of the Nerbudda, Banjar and Thawar. However, the sides of the hills and hillocks are almost invariably bare. There are, in general, four classes of soil: (1) *Kabar* or *Kanhar*—a black-cotton clayey soil of extreme or medium depth and fertility. It is soft and sticky when wet, and very hard and heavy when dry. It will grow either wheat or rice. (2) *Morand* or *mund*—a black-cotton soil, more gritty and friable than Kabar, and breaking into small clods with a roughish surface. It is more sandy and frequently contains white limestone pebbles, and is suitable for all crops. (3) *Sahra*—a pure sand, pale yellow, friable and unfit for rain or spring crops, but given good rains it is highly suitable for cultivation of rice. (4) *Barra*—a red gravelly or murram soil, often extraordinarily stony or with rock underlying it within 30-45 cm. Large expanses of red barra soils are usually found on the "daddars" or flat tops of hills, so common in this district. Rarely, a rich yellow riverine deposit is left after the rains on the banks of the Nerbudda and Banjar rivers.

THE VEGETATION OF KANHA NATIONAL PARK.

The vegetation of the Park may be divided into four distinct types:

(1) **Sal Forest:** In practically all the well-watered valleys of the South, the sal (*Shorea robusta* Gaertn.) grows in rich profusion, unmixed with any other species and is practically evergreen. The best sal forest occurs on the porous, well-drained, sandy-loam soils derived from the disintegration of the mica schists and gneisses found in the greater part of the Banjar valley reserves. The ridges, however, where the rock is frequently quartz, bear an inferior quality of forest. The sal grows peculiarly straight and rises to a height of ca 30 m. with a girth of 4-4.5 m. The sal forests usually occupy the lower hills, the lower slopes of the higher hills and such portions of the valleys as are undulating and well-drained. It usually degenerates in growth as it ascends hill slopes and ultimately gives place to mixed forests. Regeneration of sal seems to be sporadic in some areas of the Park, while totally absent in many other places.

(2) **Mixed Forest:** This is most widely distributed among the forest types of Madhya Pradesh. It is found more particularly in the northern, central and western parts of Mandla district as well as in valleys and on the hill slopes of the Park. Here the growth of sal is poor and several other species characteristic of the district are found in this forest. The arboreal species most commonly found are: *Terminalia alata* Heyne ex Roth, *T. bellirica* Roxb., *T. arjuna* Wt. & Arn., *T. chebula* Retz., *Anogeissus latifolia* Wall., *Stereospermum suaveolens* DC. forma *suaveolens*, *Emblica officinalis* Gaertn., *Bridelia squamosa* Gehrm., *Mallotus philippensis* Muell.-Arg., *Bauhinia retusa* Buch.-Ham., *B. racemosa*



PHOTO 1. View of the National Park at Kanha near the entrance gate.



PHOTO 3. The vegetation of Bamhni-Banjar forest along Banjar River.



PHOTO 2. *Shorea robusta* Gaertn. with straight boles, growing in the forest at Kanha.



PHOTO 4. The vegetation along Banjar River at Dookridhar.

Lamk., *Cassia fistula* Linn., *Piliostigma malabaricum* Benth., *Ougeinia oojeinensis* Hochr., *Pterocarpus marsupium* Roxb., *Dalbergia paniculata* Roxb., *Acacia catechu* Willd., *Albizia odoratissima* Benth., *Sterculia urens* Roxb., *Boswellia serrata* Roxb. ex Colebr., *Syzygium cumini* Skeels, *S. fruticosum* DC., *Lanea coromandelica* Merr., *Buchanania lanzan* Spreng., *Semecarpus anacardium* Linn. f., *Ficus virens* Ait. var. *virens*, *F. glomerata* Roxb., *F. cunia* Buch.-Ham. ex Roxb., *F. gibbosa* var. *parasitica* King, *Mitragyna parvifolia* Korth., *Xeromphis uliginosa* Maheshwari, *Adina cordifolia* Hook. f., *Gardenia latifolia* Ait., *G. resinifera* Roth, *Garuga pinnata* Roxb., *Careya arborea* Roxb., *Bombax ceiba* Linn. (p.p.), *Madhuca indica* J. F. Gmel., *Lagerstroemia parviflora* Roxb., *Diospyros melanoxylon* Roxb., *Holarrhena antidysenterica* Wall., *Aegle marmelos* Corr., *Zizyphus xylopyra* Willd., *Z. rugosa* Lamk. and *Dendrocalamus strictus* Nees. The common shrubs and climbers in this forest are: *Woodfordia fruticosa* Kurz, *Carissa spinarum* Linn., *Nyctanthes arbor-tristis* Linn., *Flacourtia indica* Merr., *Helicteres isora* Linn., *Grewia subinaequalis* DC., *Ochna pumila* Buch.-Ham., *Olex scandens* Roxb., *Celastrus paniculata* Willd., *Indigofera pulchella* Roxb., *Securinega virosa* Pax & Hoffm., *Phoenix acaulis* Buch.-Ham. ex Roxb., *Combretum nanum* Buch.-Ham., *Xeromphis spinosa* Keay, *Mucuna prurita* Hook., *Bauhinia vahlii* Wt. & Arn., *Coccinia grandis* Voigt, *Diplocyclos palmatus* C. Jeffrey, *Cryptolepis buechanani* Roem. & Schult., *Hemidesmus indicus* Schult., *Ipomoea hederifolia* Linn., *I. maxima* Don ex Sweet, *I. pes-tigridis* Linn., *Dioscorea alata* Linn., *D. bulbifera* Linn., *Asparagus racemosus* Willd. and *Smilax zeylanica* Linn. Among herbaceous phanerogams may be noted: *Sida cordifolia* Linn., *Triumfetta rhomboidea* Jacq., *Crotalaria albida* Heyne ex Roth, *C. prostrata* Roxb., *C. medicaginea* var. *neglecta* Baker, *Desmodium gangeticum* DC., *D. heterocarpon* DC., *D. pulchellum* Benth., *Moghania bracteata* H. L. Li, *M. macrophylla* Kuntze, *M. nana* Mukerjee, *M. strobilifera* St. Hil. ex Jacks., *Osbeckia chinensis* Linn., *Peucedanum dhana* var. *dalzellii* Cl., *Pimpinella heyneana* Wall., *P. monoica* Dalz., *Oldenlandia gracilis* Hook. f., *Ageratum conyzoides* Linn., *Artemisia parviflora* Buch.-Ham., *Blumeopsis falcata* Merr., *Cyathocline purpurea* Kuntze, *Elephantopus scaber* Linn., *Emilia sonchifolia* DC., *Vernonia roxburghii* Less., *Vicoa indica* DC., *Lobelia heyneana* Roem. & Schult., *Campanula canescens* Wall. ex DC., *Wahlenbergia marginata* A. DC., *Evolvulus alsinoides* Linn., *Merremia gangetica* Cuf., *Nelsonia canescens* Spreng., *Micromeria capitellata* Benth., *Aerva sanguinolenta* Blume, *Rungia pectinata* Nees and *Orthosiphon rubicundus* Benth. The fern flora is represented by *Adiantum caudatum* Linn., *Cheilanthes farinosa* Kaulf., *Diplazium esculentum* Sw. and *Dryopteris prolifera* C. Chr.

Drosera burmanni Vahl and *Youngia acaulis*

DC. grow frequently in open grasslands at Kanha and Kisli.

Butea monosperma Taub. var. *monosperma* is common everywhere in the Park on cultivated and fallow lands. It springs up at once as a weed in black soil areas of the Park. Besides, the common trees and shrubs in the open forest are: *Bombax ceiba* Linn. (p.p.), *Zizyphus mauritiana* Lamk., *Z. nummularia* Wt. & Arn., *Lagerstroemia parviflora* Roxb., *Madhuca indica* J. F. Gmel., *Calotropis procera* R. Br., *Cordia dichotoma* var. *wallichii* Maheshwari, *Ficus gibbosa* var. *parasitica* King and *Phoenix acaulis* Buch.-Ham. ex Roxb.

(3) **Grasslands**: In the heart of the Park there are a number of open maidans, of which the famous Kanhari Maidan is an excellent grazing ground for herbivores. These are covered with luxuriant grasses, of which the common ones include: *Themeda quadrivalvis* Kuntze, *T. triandra* Forsk., *Iseilema prostratum* Anders., *Ischaemum indicum* Merr., *Dichanthium annulatum* Stapf, *Eragrostis unioloides* Nees ex Steud., *E. gangetica* Steud., *E. stenophylla* Hochst. ex Miq., *Cynodon dactylon* Pers., *Sacciolepis myosuroides* A. Camus, *Chloris dolichostachya* Lagasca, *Heteropogon contortus* Beauv. and *Eulalia trispicata* Henr. The line of demarcation, where the sal forests end and the grasslands begin, is always sharp and distinct, owing probably to frost or some unfavourable soil factors which are fatal to trees.

(4) **Bamboos**: The bamboos grow in the Park along the banks of rivers and streams, in valleys and on hill slopes; the only species met with in the forest is the Male Bamboo, *Dendrocalamus strictus* Nees.

MARSHES, SWAMPS AND RIVERS IN THE PARK

The common habitats of the aquatic and marsh species in this area are a number of natural tanks and ponds (Shrawantalao, Deotalao), the rivers Kanhar, Banjar, Sulkum, Ganghar, Surwani, Surpan, Nila and their tributaries, irrigation channels and streams (Kanhana, Salghatnala, Deshinala, Burburinala). The Banjar, Kanhar and Ganghar rivers flow in the western part of the Park and maintain a rich hydrophytic flora. The plants, to name the commoner ones, *Ammannia baccifera* Linn. ssp. *baccifera*, *Rotula rotundifolia* Blatt. & Hallb., *R. tenuis* Koehne, *Jussiaea suffruticosa* Linn., *Centella asiatica* Urban, *Hydrocotyle sibthorpioides* Lamk., *Ageratum conyzoides* Linn., *Caesulia axillaris* Roxb., *Xanthium strumarium* Linn., *Cyathocline purpurea* Kuntze, *Emilia sonchifolia* DC., *Sphaeranthus indicus* Linn., *Gnaphalium luteoalbum* ssp. *offine* Koster, *Canscora diffusa* R. Br., *Rotula aquatica* Lour., *Limnophila indica* Druce, *Lindernia anagallis* Pennell, *L. pyxidaria* All., *Mazus japonicus* Kuntze, *Mecardonia dianthera* Pennell, *Mimulus strictus* Benth., *Verbascum chinense* Sant., *Veronica anagallis-*



PHOTO 5. The vegetation along Ganghar River, Kisi.



PHOTO 7. View of Kanha Maidan showing a recently burnt grassland



PHOTO 6. *Limnophila indica* Druce, flowering in the bed of Kanhanala, Kisi.



PHOTO 8. The vegetation of Shrawantakao, Kanha and its embankments. In the foreground *Polygonum lunatum* Meissn. forming dense mat-like growth.

aquatica Linn., *Salvia plebeia* R. Br., *Alternanthera sessilis* DC., *Polygonum barbatum* Linn., *P. plebeium* R. Br., *Mallotus philippensis* Muell.-Arg., *Juncus prismatocarpus* var. *leschenaultii* Buchenau, *Cyperus eleusinoides* Kunth, *C. pygmaeus* Rottb., *Fimbristylis dichotoma* Vahl, *Scirpus supinus* Linn., *Elytrophorus spicatus* A. Camus, *Imperata cylindrica* Beauv., *Saccharum spontaneum* Linn. and *Thysanolaena maxima* Kuntze, mainly constitute the vegetation of Banjar, Kanhar and Ganghar rivers, and their embankments.

In the neighbourhood of temporary ponds, puddles and ditches, a rich marsh flora is recognizable. The common species are: *Equisetum debile* Roxb., *Ceratopteris thalictroides* Brongn., *Marsilea quadrifolia* Linn., *Polycarpon prostratum* Aschers. & Schweinf., *Ammannia baccifera* Linn. ssp. *baccifera*, *Jussiaea suffruticosa* Linn., *Glinus oppositifolius* A. DC., *Centella asiatica* Urban, *Hydrocotyle sibthorpioides* Lamk., *Caesulia axillaris* Roxb., *Centipeda minima* A. Br. & Aschers., *Gnaphalium indicum* Linn., *Grangea maderaspatana* Poir., *Sphaeranthus indicus* Linn., *Canscora diffusa* R. Br., *Limnophila indica* Druce, *Mazus japonicus* Kuntze, *Mecardonia dianthera* Pennell, *Asteracantha longifolia* Nees, *Alternanthera sessilis* DC., *Rumex dentatus* Linn., *Polygonum barbatum* Linn., *P. plebeium* R. Br., *Eriocaulon quinquangulare* Linn., *Cyperus brevifolius* Hassk., *C. pygmaeus* Rottb. and *Fuirena ciliaris* Roxb. The vegetation of Shrawantalao is mainly dominated by dense stands of *Polygonum limbatum* Meissn., *Nymphoides cristatum* Kuntze and *Aponogeton natans* Engl. & Krause.

WEEDS, ALIENS AND RUDERAL PLANTS

The vegetation on the roads and pathways in the Park, along the sides of the road as well as in waste lands includes several weeds and weedy plants. All such man-made habitats are very susceptible to invasion of a weed flora which quickly occupies such areas unless they are properly cared for. Among the commoner roadside weeds, the following deserve mention: *Sida veronicifolia* Lamk., *Zizyphus nummularia* Wt. & Arn., *Cassia tora* Linn., *Blumea eriantha* DC., *B. fistulosa* Kurz, *B. lacera* DC., *B. mollis* Merr., *Launaea nudicaulis* Hook. f., *Tridax procumbens* Linn., *Vernonia cinerea* Less., *Evolvulus alsinoides* Linn., *Nelsonia canescens* Spreng., *Justicia diffusa* Willd., *Lepidagathis fasciculata* Nees, *L. hamiltoniana* Wall., *Boerhavia diffusa* Linn., *Amaranthus spinosus* Linn., *Euphorbia hirta* Linn., *Dichanthium annulatum* Stapf and *Eragrostis gangetica* Steud. Besides, several alien plants are frequently met with on the road and bus routes in the Park, showing thereby the means of introduction of the same into the district. Such, for instance, are *Gomphrena celosioides* Mart., *Acanthospermum hispidum* DC., *Gnaphalium purpureum* Linn., *Scoparia dulcis* Linn. and others. Some of them are obnoxious and, therefore, likely to spread all over

the National Park unless measures are taken to check them. The fruits of cockle-burr, *Xanthium strumarium* Linn. are reported to have been introduced into the Park by adhering to the hairs of the cattle. It is now spreading at an alarming speed, particularly along the banks of rivers, canals and streams.

Among the foreign plants being introduced and naturalized in the district, the following are noticeable: *Argemone mexicana* Linn., *Acanthospermum hispidum* DC., *Xanthium strumarium* Linn., *Gnaphalium purpureum* Linn., *Evolvulus nummularius* Linn., *Ipomoea hederifolia* Linn., *Mecardonia dianthera* Pennell, *Scoparia dulcis* Linn., and *Gomphrena celosioides* Mart.

In open waste lands, fallow fields and cultivated lands, one comes across a characteristic ruderal association of weeds and weedy plants, the common species of which are: *Argemone mexicana* Linn., *Sida acuta* Burm. f., *Urena lobata* Linn., *Triumfetta rhomboidea* Jacq., *Oxalis corniculata* Linn., *Zizyphus nummularia* Wt. & Arn., *Crotalaria medicaginea* var. *neglecta* Baker, *C. sericea* Retz., *Tephrosia purpurea* Pers., *Cassia tora* Linn., *C. occidentalis* Linn., *Glinus lotoides* Linn., *Oldenlandia corymbosa* Linn., *Blumea virens* DC., *B. membranacea* DC., *B. oxydonta* DC., *B. lacera* DC., *Elephantopus scaber* Linn., *Pulicaria foliolosa* DC., *P. wightiana* Cl., *Sphaeranthus indicus* Linn., *Trichodesma indicum* R. Br., *Convolvulus pluricaulis* Choisy, *Blepharis maderaspatensis* Heyne ex Roth, *Leucas hysopifolia* Benth., *Achyranthes aspera* var. *porphyristachya* Hook. f., *Celosia argentea* Linn., *Euphorbia hirta* Linn. and *Aristida setacea* Retz.

ENUMERATION OF SPECIES

I. PTERIDOPHYTA

Adiantum caudatum Linn. A densely tufted, simply pinnate "Maiden-Hair" Fern with short, erect rhizome. Common on hilly slopes in moist shady situations of the forest.

J. K. Maheshwari 4888, between Kanha and Kisli ; 4889.

Ceratopteris thalictroides (Linn.) Brongn. An aquatic, light-green fern, floating or rooting in mud. Leaves rosette-forming, dimorphic. Occurs sporadically in wet lands and marshes.

J. K. Maheshwari 4677.

Cheilanthes farinosa (Forsk.) Kaulf. An erect, tufted "Silver-Fern". Lower surface of pinnae covered with a white waxy powder. Common in moist shady or exposed situations on hilly slopes. It curls up when dry.

J. K. Maheshwari 4897, between Kanha and Kisli.

Diplazium esculentum (Retz.) Sw. syn. *Asplenium esculentum* Presl. A large fern with an erect, stout caudex. Occurs in moist, cool situations of the forest.

J. K. Maheshwari 4716, Bamhni-Banjar.

Dryopteris prolifera (Retz.) C. Chr. syn. *polypodium proliferum* Roxb. A spreading fern, often rooting at the tips of the fronds. Occurs along streams throughout the Park.

J. K. Maheshwari 4800, Kanha.

Equisetum debile Roxb. The "Horse Tail". An erect or semi-scandent herb, 1-3 m. high. Common in marshes, along canal banks and ditches inside the forest.

Local name: Chhote har singhare; Harh-judhi.

J. K. Maheshwari 4732; 4846, Kanha; 4932, Ganghar Nadi.

Marsilea quadrifolia Linn. An aquatic, amphibious herb. Common in shallow water in ditches, along banks of ponds and marshes.

Local name: Chicholi.

J. K. Maheshwari 4935, Kisli.

II. GYMNOSPERMAE

Thuja orientalis Linn. An evergreen shrub, often conical in shape. Leaves opposite, decussate, bright green. Planted in the compound of Kanha Rest House.

Local name: Mor-pankhi.

III. ANGIOSPERMAE

Dicotyledones

PAPAVERACEAE

Argemone mexicana Linn. A robust, prickly herb to bushy undershrub. Flowers yellow. A native of tropical America; established as a weed in waste lands and cultivated fields.

Local name: Katai; Kateli.

Flowers and Fruits: Oct.—April.

J. K. Maheshwari 4852, Kanha.

FLACOURTIACEAE

Flacourtia indica (Burm.f.) Merr. A thorny shrub or small tree. Leaves ovoid-ovate or suborbicular. Flowers yellow. Drupes globose, purple, ca 7 mm. in diam. Uncommon in the forest.

Local name: Churna; Kanker.

Flowers and Fruits: Jan.—June.

J. K. Maheshwari 4696; 4930, Kisli.

CARYOPHYLLACEAE

Polycarpon prostratum (Forsk.) Aschers. & Schweinf. An erect or diffuse herb. Flowers small, in terminal cymes. Fruits reddish. Occurs on riversides and river-beds.

Flowers and Fruits: Cold season.

J. K. Maheshwari 4712, Banjar River.

DIPTEROCARPACEAE

Shorea robusta Gaertn. A large, gregarious, nearly evergreen tree. Leaves broad-ovate, glabrous, shining. Flowers yellowish. A dominant tree in

the forest, often forming pure crops at Kanha and Kisli, especially on sandstone formations.

Local name: Sarai.

Flowers and Fruits: March—July.

J. K. Maheshwari 4790, Kanha.

MALVACEAE

Kydia calycina Roxb. A small tree. Flowers white or pink. Capsules with brown persistent bracts at base.

Local name: Bothi; Barga.

Flowers and Fruits: Aug.—Jan.

Sida acuta Burm. f. syn. *S. carpinifolia* Linn. f. A much-branched herb or small undershrub. Flowers yellow.

Common in waste lands.

Local name: Bariari.

Flowers and Fruits: Aug.—Nov.

J. K. Maheshwari 4944, Kisli.

S. cordifolia Linn. An erect, tomentose undershrub. Flowers yellow or cream-coloured. Carpels 7-10 with long awns. Common in waste lands.

Local name: Bariara.

Flowers and Fruits: Aug.—Jan.

J. K. Maheshwari 4910, Kisli.

S. veronicifolia Lamk. syn. *S. humilis* Cav. A procumbent, trailing herb. Flowers pale yellow. Found in the forest undergrowth and elsewhere.

Flowers and Fruits: June—Nov.

J. K. Maheshwari 4758; 4828, Kanha; 4890.

Urena lobata Linn. A herbaceous undershrub, 60-120 cm. high. Flowers pink. Fruits covered with hooked bristles. Common in waste lands at Kisli.

Local name: Chirchitta; Bariari.

Flowers and Fruits: Aug.—Dec.

J. K. Maheshwari 4919, Kisli.

BOMBACACEAE

Bombax ceiba Linn., *pro parte*. syn. *B. malabaricum* DC.; *Salmaalina malabarica* Schott & Endl.; *Gossampinus malabarica* Merr. The common "Silk-Cotton Tree". A large, handsome, deciduous tree forming a spreading crown. Leaflets 5-7. Flowers large, bright-red. Capsules woody. Seeds enveloped in copious floss. Met with throughout the Park in Maidans and open forest.

Local name: Semra; Semal.

Flowers and Fruits: Feb.—April.

J. K. Maheshwari 4706; 4855, Kanha Maidan.

N.B. The above nomenclature for this plant has been adopted on the authority of Merrill (*Enum. Philip. Fl. Pl.* 3:45, 1923) and Robyns (in *Taxon* 10: 156-160, 1961).

STERCULIACEAE

Helicteres isora Linn. A large, tomentose shrub. Flowers brick-red or lead-coloured. Fruit of 5

brown carpels twisted together in the form of a screw. Common as an undergrowth in the mixed forest, especially on rocky slopes.

Local name: Aithi; Aitha.

Flowers and Fruits: July—March.

J. K. Maheshwari 4730.

Sterculia urens Roxb. A large, spreading tree with smooth, white or pink, papery bark. Flowers small, yellow. A characteristic tree of dry rocky hills.

Local name: Kulloo.

Flowers and Fruits: Dec.—April.

J. K. Maheshwari 4912, Kisli.

TILIACEAE

Grewia subinaequalis DC. A small tree with stellate tomentum in young parts. Leaves ovate to orbicular. Flowers dark orange. Rather common in open grounds.

Flowers and Fruits: May—Sept.

J. K. Maheshwari 4796, Kanha.

Triumfetta rhomboidea Jacq. syn. *T. bartramia* Linn., *nom. illegit.* A small undershrub or herb. Flowers small, yellow. Fruits small, ovoid, with minute hooked spines. A common weed of waste lands, fallow fields and open forest.

Flowers and Fruits: Aug.—Jan.

J. K. Maheshwari 4891, between Kanha and Kisli.

ZYGOPHYLLACEAE

Balanites roxburghii Planch. A shrub or small tree. Bark yellowish. Flowers greenish-white, scented. Fruits yellowish, ovoid. Occurs on black cotton soil in open forests.

Local name: Bhandra.

Flowers: April—May. *Fruits:* November.

OXALIDACEAE

Oxalis corniculata Linn. A procumbent, much-branched herb. Flowers yellow. Common throughout the area in moist, shady situations.

Local name: Amti chhoti; Khatua.

Flowers and Fruits: Nov.—June.

J. K. Maheshwari 4776, Kisli; 4795, Kanha.

RUTACEAE

Aegle marmelos (Linn.) Corr. A medium-sized, thorny tree. Flowers greenish-white. Fruits globose or ovoid. Common in valleys and rare in open grounds.

Local name: Bael.

Flowers and Fruits: May—July.

J. K. Maheshwari 4922, Kisli.

Citrus aurantifolia (Christm.) Swingle. A shrub or small tree. Flowers white. Fruits yellow or green when ripe; pulp acidic. Cultivated.

Local name: Nimbu.

C. aurantium Linn. A shrub or small tree. Flowers white. Fruits globose; pulp acid. Cultivated in gardens and nurseries for its useful fruit.

Local name: Santra.

Feronia limonia Swingle. A large, thorny tree. Flowers greenish-red. Fruits globose, with a woody rind. Cultivated near villages; often found as an escape.

Local name: Kaitha.

Flowers: Feb.—April. *Fruits:* Nov.—Feb.

OCHNACEAE

Ochna pumila Buch.-Ham. An undershrub. Flowers bright yellow. Drupes ellipsoid, seated on an enlarged disc. Occurs rarely in dry mixed forests.

Flowers: April—June.

BURSERACEAE

Boswellia serrata Roxb. ex Colebr. A moderate-sized, deciduous tree. Bark peeling off in thin flakes. Flowers whitish. Fruits edible. Common on dry rocky hills.

Local name: Saleh; Salai.

Flowers and Fruits: Feb.—May.

Garuga pinnata Roxb. A moderate-sized tree. Leaves crowded near the ends of branches. Flowers yellow. An associate of sal, in ravines, on slopes and hilly localities.

Local name: Gharri; Kenkar.

Flowers and Fruits: Feb.—July.

OLACACEAE

Olax scandens Roxb. A large, climbing shrub or small, scandent tree. Flowers white, scented. Fruit a yellow drupe enclosed in the enlarged calyx. Occurs in damp shady places, ravines and near rivers.

Flowers: April—June. *Fruits:* Nov.—Jan.

J. K. Maheshwari 4746.

CELASTRACEAE

Celastrus paniculata Willd. A large, climbing shrub. Flowers greenish. Fruits yellow, 3-lobed. Seed enclosed in a red aril. Rather uncommon in the forest.

Local name: Malkangni.

Flowers: April—June. *Fruits:* Oct.—Dec.

RHAMNACEAE

Zizyphus mauritiana Lamk. syn. *Z. jujuba* Lamk., non Mill. A large shrub or small tree. Flowers greenish-yellow. Drupes red, orange or yellowish. Common in open grounds and near villages.

Local name: Ber; Renga.

Flowers: April—July. *Fruits:* Dec.—Feb.

Z. nummularia (Burm. f.) Wt. & Arn. syn. *Z. rotundifolia* Lamk. A small shrub. Flowers pale yellow. Drupes red or black. Common in open

waste lands and black cotton soil; often gregarious.

Local name: Jaria.

Flowers and Fruits: Oct.—Jan.

- Z. rugosa** Lamk. A straggling shrub, often climbing. Flowers greenish-yellow. Drupes white, fleshy, edible. Confined to the hilly areas of the Park.

Local name: Churni; Churna; Sagda.

Flowers and Fruits: Feb.—July.

J. K. Maheshwari 4782, Kisli; 4931.

- Z. xylopyra** Willd. A straggling shrub or small tree. Flowers greenish. Drupes greyish-green. Common in dry rocky areas. The fruits are exported from the district and used for tanning purposes.

Local name: Ghont.

Flowers: April—June. *Fruits:* Dec.—Jan.

J. K. Maheshwari 4915, Kisli.

ANACARDIACEAE

- Buchanania lanzan** Spreng. syn. *B. latifolia* Roxb. A small, straight tree. Bark dark grey, peeling into square flakes. Flowers greenish-white. Fruits black, edible. Scattered in the forest.

Local name: Char; Sareka.

Flowers and Fruits: Jan.—May.

J. K. Maheshwari 4691; 4860, Kanha.

- Lannea coromandelica** (Houtt.) Merr. syn. *L. grandis* Engl.; *Odina wodier* Roxb. A moderate-sized tree. Bark smooth, ash-coloured. Flowers greenish. Fruits reniform, red. Common.

Local name: Gharri.

Flowers and Fruits: Feb.—June.

J. K. Maheshwari 4701.

- Mangifera indica** Linn. A large, evergreen, spreading tree. Flowers yellow, scented, polygamous. Common in ravines and open lands; also planted.

Local name: Am.

Flowers and Fruits: Jan.—June.

J. K. Maheshwari 4670.

- Semecarpus anacardium** Linn. f. A small tree. Flowers greenish-yellow. Fruits obliquely ovoid, purplish-black, seated in a fleshy cup. Scattered throughout the Park.

Local name: Kohka; Bhelwa.

Flowers: July—Sept. *Fruits:* Jan.—March.

J. K. Maheshwari 4878, Kanha.

MORINGACEAE

- Moringa oleifera** Lamk. syn. *M. pterygosperma* Gaertn. A small or moderate-sized tree. Trunk greenish-white. Flowers white, scented. Pods long, pendulous. Cultivated and found as an escape near villages.

Local name: Munga.

Flowers and Fruits: Nov.—June.

PAPILIONACEAE

- Atylosia scarabacoides** Benth. A herbaceous twiner. Flowers yellow. Pods hairy, with deep transverse lines between the seeds. Common on shrubs in forest undergrowth.

Local name: Ban Kurti.

Flowers and Fruits: Aug.—Nov.

J. K. Maheshwari 4728; 4945, Kisli.

- Butea monosperma** Taub. var. *monosperma*. syn. *B. frondosa* Roxb. The well-known "Flame of the Forest". A small or moderate-sized, deciduous tree. Latex red. Flowers bright orange-red, showy. Common in open waste lands and Maidans of the Park.

Local name: Cheola; Palas.

Flowers and Fruits: Feb.—June.

J. K. Maheshwari 4723.

- Cicer arietinum** Linn. An erect, branched herb, 30-60 cm. high. Flowers white or purplish. Pods 2-2.5 × 1.2 cm. Cultivated.

Local name: Chana.

Flowers and Fruits: Cold season.

J. K. Maheshwari 4738.

- Crotalaria albida** Heyne ex Roth. An erect or diffuse, much-branched undershrub, 30-60 cm. high. Flowers pale yellow. A weed of waste lands and fallow fields.

Local name: Chhota dhundhuna.

Flowers and Fruits: Dec.—Feb.

J. K. Maheshwari 4694.

- C. medicaginea** var. *neglecta* Baker. An erect or ascending, tufted herb, 15-20 cm. high. Flowers yellow, in racemes. Common in grasslands and open grounds in the forest.

Flowers and Fruits: July—Dec.; March.

J. K. Maheshwari 4813, Kanha; 4854.

- C. prostrata** Roxb. A diffuse, hairy herb with prostrate or trailing branches. Flowers yellow. A weed of waste lands, fallow fields and forest undergrowth.

Local name: Chhota dhundhuna.

Flowers and Fruits: Oct.—Dec.

J. K. Maheshwari 4695; 4814, Kanha; 4898.

- C. sericea** Retz. A stout, glabrous undershrub, up to 2 m. high. Flowers large, yellow, turning brownish-orange on drying. Found as an undergrowth in the forest. The fruits make noise while dehiscent, hence one of its local names.

Local name: Jangli san; Dhun-dhuna.

Flowers and Fruits: Nov.—March.

J. K. Maheshwari 4745; 4789, Kanha.

- Dalbergia paniculata** Roxb. A tall, straight tree. Bark smooth, grey. Flowers bluish-white. Pods flat, black. Rather uncommon in the forest.

Local name: Pasi; Dhobin; Dhoobni.

Flowers: May—July. *Fruits:* Nov.—Jan.

- D. sissoo** Roxb. A moderate-sized tree. Flowers yellowish. Pods strap-shaped. Planted.

- Local name*: Shisham.
Flowers: May—July. *Fruits*: Nov.—Jan.
J. K. Maheshwari 4876, Kanha.
- Desmodium gangeticum** (Linn.) DC. An undershrub, 60-100 cm. high. Flowers reddish-purple. Pods falcate. Common as an undergrowth in the forest.
Local name: Chuppa.
Flowers and Fruits: July—Feb.
J. K. Maheshwari 4733; 4820, Kanha.
- D. heterocarpon** (Linn.) DC. syn. *D. polycarpum* (Poir) D.C. An erect undershrub. Flowers purple. Pods brown, hairy, sticky. Common in the forest undergrowth at Kanha.
Local name: Chota chipa.
Flowers and Fruits: Aug.—Feb.
J. K. Maheshwari 4786, Kanha.
- D. pulchellum** (Linn.) Benth. A shrub, 1-1.5 m. high. Flowers yellow, hidden in 2-foliate, orbicular bracts. As an undergrowth in the forest.
Local name: Mohmoonda.
Flowers and Fruits: Aug.—Dec.
J. K. Maheshwari 4781, Kisli; 4808, Kanha.
- D. triflorum** (Linn.) DC. A gregarious, trailing herb. Flowers pink or purplish. Common in grasslands.
Local name: Chippa.
Flowers and Fruits: During rains and early winter.
J. K. Maheshwari 4777, Kisli.
- Indigofera pulchella** Roxb. A tall, much-branched shrub, 1.2-2.5 m. high. Flowers rosy-purple. Common in hill forests as an undergrowth.
Local name: Jhirula.
Flowers and Fruits: Oct.—April.
J. K. Maheshwari 4760; 4812, Kanha; 4843.
- Moghania bracteata** (Roxb.) H.L.Li. syn. *Flemingia strobilifera* var. *bracteata* Baker. An erect shrub, up to 1 m. high. Flowers pink, in terminal panicles with a zigzag rachis; bracts large, persistent. Occurs in the forest undergrowth.
Local name: Chuppa.
Flowers and Fruits: Dec.—April.
J. K. Maheshwari 4720, Bamhni-Banjar; 4809, Kanha.
- M. macrophylla** (Willd.) Kuntze. syn. *Flemingia congesta* Roxb. An erect, woody shrub, 1-2 m. high. Flowers purple, in axillary, often fascicled racemes shorter than the petiole; bracts lanceolate, deciduous. Seeds black, round. Common in the forest undergrowth along banks of streams. The seeds are consumed by local tribes.
Local name: Ban chanai; Jangli Rahar.
Flowers and Fruits: Nov.—Feb.
J. K. Maheshwari 4801, Kanha.
- M. nana** (Roxb.) Mukerjee. syn. *Flemingia nana* Roxb. A dwarf shrub, 15-20 cm. high. Racemes radical. Flowers pale green, tinged with pink and with deeper stripes. Pods covered with viscid, bright red glands. Frequently met with in open grasslands and bare grounds.
Flowers and Fruits: March—May.
J. K. Maheshwari 4810, Kanha.
- M. strobilifera** (Linn.) St. Hil. ex Jacks. syn. *Flemingia strobilifera* R. Br. ex Ait. A scandent shrub, 1-3 m. high. Flowers white; bracts large, persistent, enclosing the fruits. Common in the forest undergrowth at Kisli.
Flowers and Fruits: Dec.—April.
J. K. Maheshwari 4925, Kisli.
- Mucuna prurita** Hook. syn. *M. pruriens* Baker, non DC. An annual twiner. Flowers dark purple. Pods densely clothed with persistent, brown, irritant bristles. Common on shrubs in the forest undergrowth.
Local name: Kaunch.
Flowers and Fruits: Aug.—March.
- Ougeinia oojeinensis** (Roxb.) Hochreut. syn. *O. dalbergioides* Benth. A small tree. Bark dark brown, deeply fissured. Flowers whitish or pale rosy. Uncommon in the forest.
Local name: Tinsa.
Flowers and Fruits: Feb.—June.
J. K. Maheshwari 4729; 4847, Kanha Maidan.
- Pterocarpus marsupium** Roxb. A large tree. Bark rough, yellowish-grey. Flowers pale yellow. Pods nearly circular. Scattered in the Park but nowhere common.
Local name: Bija sal.
Flowers and Fruits: Aug.—Feb.
J. K. Maheshwari 4941, Kisli.
- Tephrosia purpurea** (Linn.) Pers. A much-branched undershrub. Flowers red or purplish. A common weed of waste lands; often gregarious in open grounds.
Local name: Sarponkh.
Flowers and Fruits: July—Dec.

CAESALPINIACEAE

- Bauhinia racemosa** Lamk. A small, crooked tree. Flowers white. Pods 10-18 cm. long. Common in dry localities.
Local name: Kateri.
Flowers: April—June. *Fruits*: Nov.—Jan.
- B. retusa** Buch.-Ham. A small tree. Bark grey. Flowers white. Pods 10-15 cm. long. Common in valleys.
Local name: Amti; Thaur.
Flowers and Fruits: Sept.—March.
J. K. Maheshwari 4700; 4708.
- B. vahlii** Wt. & Arn. A large, woody climber. Flowers creamy white. Pods woody, 15-30 cm. long. Common on trees in ravines and valleys.
Local name: Mohlain.
Flowers: April—June. *Fruits*: Dec.—March.

Caesalpinia sepiaria Roxb. A straggling or climbing shrub, armed with hooked prickles. Flowers bright yellow. Pods 8-10 cm. long, long-beaked. Found in hedges.

Local name: Kirkich.

Flowers and Fruits: Dec.—June.

J. K. Maheshwari 4754.

Cassia fistula Linn. A moderate-sized tree. Bark yellowish or greenish-grey. Leaflets 10-15 × 5 cm. Flowers bright yellow. Pods cylindrical, 30-60 × 2-2.5 cm. Rather scattered throughout the Park.

Local name: Jhagarua; Amaltas.

Flowers: May—Aug. *Fruits:* December.

J. K. Maheshwari 4819, Kanha.

C. occidentalis Linn. An erect undershrub. Flowers yellow. Common in waste lands and near village sites.

Local name: Chakora.

Flowers and Fruits: Aug.—Jan.

C. tora Linn. A herb or undershrub. Flowers bright yellow. A common weed of waste lands, often gregarious on open grounds. The seed extract is used locally in medicine.

Local name: Chakora.

Flowers and Fruits: Aug.—Dec.

Piliostigma malabaricum (Roxb.) Benth. syn. *Bauhinia malabaricum* Roxb. A small tree. Flowers white. Pods 25-30 cm. long. Fairly common in moist localities. The leaves are sour and hence its local name 'Amti'.

Local name: Amti.

Flowers and Fruits: Sept.—Feb.

J. K. Maheshwari 4780, Kisli; 4817, Kanha.

MIMOSACEAE

Acacia catechu Willd. A small tree. Leaflets 30-50 pairs. Flowers pale yellow. Pods thin, brown, shining. Found on dry shallow rocky soil at Kisli.

Local name: Khair.

Flowers: June—Aug. *Fruits:* Dec.—Feb.

Albizia odoratissima Benth. A moderate-sized tree. Bark dark grey with irregular horizontal cracks. Flowers pale yellow. Pods reddish-brown. Common, chiefly in hill forests.

Local name: Bansa; Bhains-mowra.

Flowers: April—June. *Fruits:* Nov.—April.

J. K. Maheshwari 4879, Kanha.

DROSERACEAE

Drosera burmanni Vahl. A rosette-forming, glandular-hairy herb. Flowers light pink or whitish. Occurs sporadically in moist cool or dry, grassy areas and bare grounds; rather common in Kanha Maidan on Sher Road.

Flowers: March.

J. K. Maheshwari 4673; 4773, Kisli; 4858.

CRASSULACEAE

Bryophyllum pinnatum (Lamk.) Oken. syn. *B. calycinum* Salisb. A tall, glabrous herb. Leaves fleshy, becoming leathery. Flowers reddish or purple-tinted. Cultivated in the garden near Kanha Rest House either as a pot-herb or in beds for its medicinal properties.

Flowers and Fruits: Dec.—May.

J. K. Maheshwari 4884.

COMBRETACEAE

Anogeissus latifolia Wall. An erect tree. Bark smooth, whitish-grey. Leaves 6-10 × 3-5 cm. Flowers yellow, in small dense heads. Common in all types of forest.

Local name: Dhawa.

Flowers: March—July. *Fruits:* Nov.—Jan.

J. K. Maheshwari 4749, Bamhni—Banjar.

Combretum nanum Buch.-Ham. A small undershrub with thick woody rootstock, 30-60 cm. high. Flowers pale yellow. Fruits pink or reddish. Found on grassy areas and open grounds in sal forest.

Local name: Kaina.

Flowers and Fruits: March—July.

J. K. Maheshwari 4778, Kisli; 4811, Kanha.

Terminalia alata Heyne ex Roth. syn. *T. tomentosa* Wt. & Arn. A medium-sized or large tree. Leaves pubescent beneath. Flowers dull yellow, in panicle spikes. Fruits 5-winged. Common in valleys and riverine forests.

Local name: Saja; Saj.

Flowers: June—July. *Fruits:* Feb.—March.

J. K. Maheshwari 4662.

T. arjuna Wt. & Arn. A large tree. Bark smooth, grey. Flowers pale yellow. Fruits 5 to 7-winged. Common along the banks of rivers.

Local name: Kowa; Koha.

Flowers: April—June. *Fruits:* Feb.—April.

T. bellirica (Gaertn.) Roxb. A large, deciduous tree. Bark dark grey. Leaves 10-20 × 8-11 cm. Flowers greenish-yellow, foetid-smelling. Drupes ovoid or ellipsoid, velvety. Rather uncommon in the forest.

Local name: Bahera.

Flowers: April—May. *Fruits:* Jan.—April.

T. chebula Retz. A medium-sized tree. Bark much cracked and fissured. Flowers whitish. Drupes ellipsoid or obovoid, 5-ribbed when dry. Met with on the high plateaux in open forest of the Park.

Local name: Harra.

Flowers: April—Aug. *Fruits:* Nov.—Feb.

J. K. Maheshwari 4702; 4928, Kisli.

MYRTACEAE

Eucalyptus sp. A tall tree. Bark peeling in long strips or sheets, whitish or reddish-grey. Planted in the compound of Kanha Rest House.

Psidium guajava Linn. A small tree. Bark scaly. Flowers white. Fruits globose, ovoid or pyriform, yellow with white or deep pink pulp. Planted.

Local name: Bihi.

Flowers and Fruits: July—Sept.

Syzygium cumini (Linn.) Skeels. syn. *Eugenia jambolana* Lamk. A large tree. Leaves 7.5–15 × 5 cm. Flowers greenish-white. Berries dark purple, juicy, edible. Common along the banks of rivers and canals.

Local name: Jamun.

Flowers and Fruits: March—July.

S. fruticosum (Roxb.) DC. syn. *Eugenia fruticosa* Roxb. A medium-sized tree. Flowers small. Berries size of pea. Rare. The fruits are greedily eaten by monkeys.

Local name: Jamun.

Flowers and Fruits: March—July.

J. K. Maheshwari 4692.

LECYTHIDACEAE

Careya arborea Roxb. A medium-sized tree. Leaves 30–40 cm. long, clustered near the end of branchlets. Flowers large, white or pinkish. Fruits green, globose. Occurs rarely in the forests of Kisli.

Local name: Kumhi.

Flowers and Fruits: March—July.

MELASTOMATACEAE

Orebeckia chinensis Linn. An erect herb, up to 60 cm. high. Flowers capitate, mauve. Fruits urn-shaped, open at the top at maturity. Frequently met with in the forest undergrowth from Kanha to Kisli.

Fruits: March.

J. K. Maheshwari 4937, Kisli.

LYTHRACEAE

Ammannia baccifera Linn. subsp. *baccifera*. An erect, glabrous, dark purplish herb. Flowers in condensed, axillary racemes or clusters. Capsules red when ripe. Common in marshes, moist cool situations and along canal banks.

Flowers and Fruits: Sept.—Jan.

J. K. Maheshwari 4666; 4768, Banjar River.

Lagerstroemia parviflora Roxb. A medium-sized tree. Bark ash-coloured, peeling in dark-coloured strips. Common throughout the Park.

Local name: Lariya; Lendia; Lenria.

Flowers: April—June. Fruits: Dec.—Feb.

J. K. Maheshwari 4805, Kanha.

Rotala rotundifolia (Roxb.) Blatt. & Hallb. syn. *Ammannia rotundifolia* Roxb. A leafy herb, creeping and rooting at the base. Flowers bright rose-coloured. Occurs sporadically along the banks of rivers, canals and on wet cliffs.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4771, Banjar River; 4791.

R. tenuis Koehne. syn. *Ammannia tenuis* Cl. A moisture-loving, tufted, elegant herb. Flowers rosy-pink. Occurs sporadically in dense tufts on wet cliffs and rocky surfaces along the banks of rivers. The plant extract is said to be given to patients suffering from gonorrhoea and diabetes.

Local name: Jal-kesar.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4940, Ganghar Nadi.

Woodfordia fruticosa (Linn.) Kurz. syn. *W. floribunda* Salisb. A bushy shrub. Bark reddish-brown. Leaves 5–10 × 2 cm. Flowers bright red. Capsules 9 × 4 mm. A common shrub in the forest. The flowers yield a red dye which is used for colouring silks and clothes.

Local name: Surteli; Dhawai.

Flowers and Fruits: Jan.—May.

J. K. Maheshwari 4690.

ONAGRACEAE

Jussiaea suffruticosa Linn. An erect, branched herb. Flowers yellow. Frequent in river-beds of Ganghar Nadi.

Flowers and Fruits: Sept.—Nov.; April—May.

J. K. Maheshwari 4923, Kisli.

SAMYDACEAE

Casearia tomentosa Roxb. A small tree. Flowers greenish. Fruits green, 6-ribbed, 3-valved. Seeds embedded in a red pulp. Occurs in ravines and valleys. The leaves turn red before falling.

Local name: Bhedi.

Flowers and Fruits: Feb.—June.

J. K. Maheshwari 4744.

CUCURBITACEAE

Coccinia grandis (Linn.) Voigt. syn. *C. cordifolia* Cogn., *pro parte*; *Cephalandra indica* Naud. A perennial climber. Flowers large, white. Fruits spindle-shaped, scarlet when ripe. Common in hedges.

Local name: Kundru.

Flowers and Fruits: Aug.—Oct.

***Diplocyclos palmatus** (Linn.) C. Jeffrey in Kew Bull. 15:352. 1962. syn. *Bryonopsis laciniosa* auct., non Naud. An annual climber. Leaves deeply, palmately 5-lobed. Flowers small, yellow. Fruits globose, red when ripe, streaked with white vertical lines. Common in village hedges.

Local name: Pachguriya.

Flowers and Fruits: Aug.—Oct.

*C. Jeffrey (loc. cit.) has shown that the Linnean epithet, *Bryonia laciniosa* has long been erroneously applied to a widespread plant of the Old World tropics in the combination *Bryonopsis laciniosa* (Linn.) Naud., for which species the correct name appears to be *Diplocyclos palmatus* (Linn.) C. Jeffrey, based on *Bryonia palmata* Linn. This erroneous use has resulted from Linne's wrong identification of this Old World species, which he knew at the time only from descriptions by Hermann, Boerhaave and Tournefort. That Linne confused two elements is quite pointedly shown by the citation under his species.

- Momordica charantia** Linn. An annual climber. Flowers lemon-yellow. Fruits bright orange, fusiform, tubercled. Cultivated at Kisli in hedges.
Local name: Chhoti kareli.
Flowers and Fruits: July—Sept.
J. K. Maheshwari 4929, Kisli.

CACTACEAE

- Opuntia monacantha** Haw. A bushy shrub. Spines usually 1 or 2. Flowers yellow; petals reddish at base. Fruits fleshy, reddish-purple. Planted in the compound of Kanha Rest House.
Local name: Nagphani.
Flowers and Fruits: March—Sept.

MOLLUGINACEAE

- Glinus lotoides** Linn. syn. *Mollugo hirta* Thunb. A prostrate, stellate-hairy herb. Flowers green. Common in dried marshes and river-beds.
Flowers and Fruits: April—July.
J. K. Maheshwari 4759, Banjar River; 4914, Kisli.
- G. oppositifolius** (Linn.) A. DC. syn. *Mollugo spergula* Linn. A glabrous, diffuse, leafy herb. Flowers greenish. Common in waste lands near nalas and rivers. Used as a fodder.
Local name: Khakhra.
Flowers and Fruits: Sept.—Dec.
J. K. Maheshwari 4927, Kisli.

UMBELLIFERAE

- Centella asiatica** (Linn.) Urban. syn. *Hydrocotyle asiatica* Linn. A prostrate, marshy herb, rooting at the joints. Leaves reniform. Flowers purplish-white. Occurs in moist, cool situations.
Local name: Brahmi.
Flowers and Fruits: May—Nov.
J. K. Maheshwari 4731, Bamhni—Banjar.
- Hydrocotyle sibthorpioides** Lamk. syn. *H. rotundifolia* DC. A prostrate, marshy herb. Leaves orbicular, shining. Flowers greenish-white, small. Occurs in moist, cool situations in the forest.
Flowers: March.
J. K. Maheshwari 4821, Kanha.
- Peucedanum dhana** var. *dalzellii* Cl. A glaucous, rosette-forming herb, 15—30 cm. high. Flowers yellow. Found in open grassy areas at Kanha.
Local name: Tejrāj.
Flowers: March.
J. K. Maheshwari 4798, Kanha.
- Pimpinella heyneana** Wall. An erect, branched herb, 60—120 cm. high. Leaflets variable in shape. As an undergrowth in the forest.
Local name: Chhota tejraj.
Flowers and Fruits: Aug.—Oct.
J. K. Maheshwari 4830, Kanha.
- P. monoica** Dalz. A tall plant, 2—2.5 m. high. Leaves dimorphic. Flowers white. Occurs in the forest undergrowth,

Local name: Chhota tejraj.

Flowers and Fruits: Nov.—March.

J. K. Maheshwari 4784, between Kisli and Kanha.

RUBIACEAE

- Adina cordifolia** Hook. f. A large tree. Bark rough, grey. Flowers yellow. Fruits a globular head of capsules. Scattered throughout the Park, but nowhere common.
Local name: Hardi; Hardu.
Flowers: June—Aug. *Fruits:* Feb.—May.
- Gardenia latifolia** Ait. A small tree. Bark smooth, grey. Flowers pale yellow, star-shaped. Fruits globose, speckled greyish-green. Common throughout the Park.
Local name: Paniabilo; Pipar.
Flowers and Fruits: Feb.—April.
J. K. Maheshwari 4703; 4883, Kanha.
- G. resinifera** Roth. syn. *G. lucida* Roxb. A small tree. Bark smooth, grey. Flowers large, white, scented. Calyx teeth persistent. Fruits ovoid or ellipsoid, with a thin shell. Occurs uncommonly in the mixed forest.
Local name: Malin.
Flowers and Fruits: April—June.
J. K. Maheshwari 4668.
- Ixora arborea** Roxb. ex Sm. syn. *I. parviflora* Vahl. non Lamk. A small tree. Flowers small, white or pale yellow, scented. Fruits depressed-globose, black, shining. Uncommon in the forest.
Flowers and Fruits: March—June.
J. K. Maheshwari 4727, Bamhni-Banjar.
- Mitragyna parvifolia** (Roxb.) Korth. syn. *Stephegyne parvifolia* Korth. A medium or large-sized tree. Bark smooth, with dark exfoliating scales. Common in the forest.
Local name: Mundi.
Flowers and Fruits: March—July.
J. K. Maheshwari 4748.
- Oldenlandia corymbosa** Linn. A slender, erect herb. Flowers white. Common throughout the area.
Flowers and Fruits: Sept.—Nov.
J. K. Maheshwari 4762, Banjar River.
- O. gracilis** Hook. f. A slender, erect herb. Leaves grass-like. Flowers brownish, in lax branched cymes. Fairly common in grasslands and rocky grounds throughout the Park.
Local name: Chhoti kawanj.
Flowers and Fruits: March—April.
J. K. Maheshwari 4774, Kisli; 4816, Kanha.
- Xeromphis spinosa** (Thunb.) Keay. syn. *Randia dumetorum* Lamk. A small, bushy tree. Bark grey. Flowers white, turning yellow. Fruits smooth, yellow when ripe. Common in sal forest.
Local name: Mainhar.
Flowers: May—June. *Fruits:* Nov.—Jan.
- X. uliginosa** (Retz.) Maheshwari. syn. *Randia uliginosa* DC. A small tree. Bark reddish-brown.

Flowers dimorphic, white, scented. Berries ovoid, yellow, edible. A characteristic tree of open grasslands; frequently met with in sal forests.

Local name: Katul.

Flowers and Fruits: Dec.—June.

J. K. Maheshwari 4859, near Shrawantalao.

COMPOSITAE

Acanthospermum hispidum DC. An erect, recently introduced herb. Leaves obovate or spatulate. Florets yellow. An obnoxious weed of waste lands and fallow fields; frequent in the neighbourhood of Kisli village.

Local name: Phadki Kanta; Gokhru.

Flowers and Fruits: March—Dec.

J. K. Maheshwari 4924, Kisli.

Ageratum conyzoides Linn. An erect, hairy, annual herb. Heads white, fragrant. Common in forest undergrowth and along canal banks.

Local name: Koobhi.

Flowers and Fruits: Oct.—June.

J. K. Maheshwari 4815, Kanha.

Artemisia parviflora Buch.-Ham. A shrub-like herb, 30-100 cm. high. Common in the forest undergrowth at Kisli. The leaves are used as a vegetable by the jungle tribes.

Local name: Phanka; Purranj bhaji.

Flowers and Fruits: Oct.—Dec.

J. K. Maheshwari 4917, Kisli.

Blumea eriantha DC. An erect, dichotomously branched herb. Heads in pedunculate, dichotomous cymes. Frequent in the forest undergrowth.

Flowers and Fruits: Dec.—March.

J. K. Maheshwari 4895, between Kanha and Kisli; 4904.

B. fistulosa (Roxb.) Kurz. syn. *B. glomerata* DC.; *B. fasciculata* DC. A pubescent or villous herb. Heads purple, arranged in sessile axillary clusters, often spiciform. Common along canal banks and throughout the forest.

Flowers and Fruits: Jan.—April.

J. K. Maheshwari 4679; 4806, Kanha; 4845; 4893.

B. lacera (Burm. f.) DC. var. *lacera*. An erect annual, with a strong odour of turpentine. Florets yellow. Common along canal banks and in forest undergrowth.

Flowers and Fruits: Jan.—April.

J. K. Maheshwari 4681; 4740, Banjar River; 4874, Kanha.

B. lacera var. *glandulosa* Hook. f. A glandular-hairy herb. Florets yellow. Common throughout the Park.

Flowers and Fruits: March.

J. K. Maheshwari 4825, Kanha.

B. malcolmii Hook. f. A leafy herb, densely clothed with soft, white, silky wool. Florets yellow. It occurs rarely in the waste lands at Kisli.

Flowers: March.

J. K. Maheshwari 4913.

B. membranacea (Wall.) DC. A slender, glandular-hairy herb. Florets yellow. Occurs in waste lands and fallow fields.

Flowers and Fruits: March—May.

J. K. Maheshwari 4737.

B. mollis (D. Don) Merr. syn. *B. wightiana* DC. An erect, glandular-hairy herb. Florets pale yellow, often a few purple ones in the centre. Common along canal banks and in forest undergrowth.

Local name: Kaimul duggi.

Flowers and Fruits: Dec.—April.

J. K. Maheshwari 4684; 4803, Kanha; 4896.

B. oxyodonta (Wall.) DC. A prostrate or decumbent herb. Branches spreading from the root, simple or dichotomously forked. Florets yellow. Common in waste lands and forest undergrowth.

Local name: Sakholi.

Flowers and Fruits: Jan.—March.

J. K. Maheshwari 4833, Kanha; 4864.

B. virens (Wall.) DC. An erect, slender, much-branched herb, 30-120 cm. high. Heads in open, much-branched panicles. Florets yellow. Grows along canal banks in the forest undergrowth.

Flowers and Fruits: Dec.—March.

J. K. Maheshwari 4804, Kanha; 4826.

Blumeopsis falcata (D. Don) Merr. syn. *Laggera flava* Benth. A slender herb, 15-30 cm. high. Florets golden-yellow. Pappus white. Grows in shady places along paths and in forest undergrowth.

Flowers and Fruits: Cold season.

J. K. Maheshwari 4870, Kanha.

Caesulia axillaris Roxb. A prostrate or suberect, marshy herb. Florets whitish. Common in the seasonal marshes of fallow fields.

Local name: Ghonti.

Flowers and Fruits: Oct.—April.

J. K. Maheshwari 4678.

Centipeda minima (Linn.) A. Br. & Aschers. syn. *C. orbicularis* Lour. A prostrate, slender herb. Heads small, yellow. Common in shady situations in the forest undergrowth between Kanha and Kisli.

Flowers and Fruits: Cold season.

Cyathocline purpurea (Don) Kuntze. syn. *C. lyrata* Cass. An erect, sweet-scented herb. Leaves pinatisect. Florets rosy-purple. Common in sandy river-beds, riversides and along the banks of canals.

Local name: Ban-dhanai.

Flowers and Fruits: Cold season.

J. K. Maheshwari 4724, Banjar River; 4802, Kanha.

Elephantopus scaber Linn. A rosette-forming herb. Florets violet or purple. Common in waste lands,

- open bare grounds as well as in forest undergrowth.
Local name: Chirchitta ; Ban-tamaku.
Flowers and Fruits: October.
- Emilia sonchifolia** (Linn.) DC. A slender herb. Florets light purple. Occurs in moist, cool situations.
Flowers and Fruits: Major part of the year.
J. K. Maheshwari 4824, Kanha.
- Glossogyne pinnatifida** DC. A rosette-forming, glabrous herb. Leaves pinnatifid. Florets yellow. In grasslands of the Park.
Flowers and Fruits: Sept.—Oct. ; March.
J. K. Maheshwari 4871, Kanha.
- Gnaphalium indicum** Linn. An erect or bent, white-woolly herb. Capitula pale brown. A common weed of fallow fields.
Local name: Kurkutti.
Flowers and Fruits: Dec.—April.
J. K. Maheshwari 4669.
- G. luteo-album** subsp. *affine* (D. Don) Koster in Blumea 4: 484. 1941. syn. *G. luteo-album* var. *multiceps* Hook. f. A variable, woolly herb. Heads golden-yellow. Common in sandy riverbeds and dried up marshes.
Local name: Kurkutti.
Flowers and Fruits: Cold and early summer seasons.
J. K. Maheshwari 4711, Banjar River ; 4838, Kanha.
- G. purpureum** Linn. An erect or ascending, annual herb. Leaves spatulate. Heads pale brown, in spiciform globose clusters. An alien weed, believed to have been introduced with American cotton-seed. Common along the banks of rivers and in shades of trees on roadsides.
Flowers and Fruits: Cold and early summer seasons.
J. K. Maheshwari 4718, Banjar River ; 4894, between Kanha and Kisli.
- Grangea maderaspatana** (Linn.) Poir. A prostrate or suberect herb. Heads yellow. Common in fallow fields, river-beds and on riversides.
Local name: Lanjani.
Flowers and Fruits: Major part of the year.
J. K. Maheshwari 4680.
- Launaea nudicaulis** Hook. f. A glabrous herb. Latex yellow. Heads yellow. Grows on reddish sandstones in the Park.
Flowers and Fruits: Cold season.
J. K. Maheshwari 4853, Kanha.
- Pulicaria foliolosa** DC. A branched, annual, aromatic herb. Heads yellow, disciform. Found along the banks of rivers in moist, sandy soils.
Flowers and Fruits: Nov.—Jan. ; March.
J. K. Maheshwari 4725, Banjar River.
- P. wightiana** Cl. An annual herb with ascending branches. Florets yellow, heterogamous. Common in the forest undergrowth and open waste lands.
Flowers and Fruits: Sept. ; March.
J. K. Maheshwari 4848, Kanha.
- Sphaeranthus indicus** Linn. An erect or prostrate, aromatic herb with long, spreading branches. Heads compound, pink or purplish. A common weed of waste lands, fallow fields and roadsides.
Local name: Moondi ; Gorakh moondi.
Flowers and Fruits: Cold season.
J. K. Maheshwari 4699 ; 4840, Kanha.
- Tagetes patula** Linn. The "French Marigold". An erect, bushy herb with spreading branches. Florets yellow with red markings. Cultivated.
Local name: Genda.
Flowers: Jan.—April.
- Tridax procumbens** Linn. An erect, hispid herb. Florets cream-coloured or whitish. Common throughout the Park.
Local name: Barmasiya.
Flowers and Fruits: Dec.—May.
J. K. Maheshwari 4877, Kanha.
- Vernonia cinerea** (Linn.) Less. An erect, suberect or prostrate herb. Florets pink, rosy-pink or lilac. Common throughout the Park.
Flowers and Fruits: Rainy and winter seasons.
J. K. Maheshwari 4756, Banjar River ; 4793, Kanha ; 4885.
- V. roxburghii** Less. An erect, rigid herb or undershrub. Heads many, fascicled, in terminal paniculate corymbs. A common undershrub in sal forests.
Flowers and Fruits: Nov.—March.
J. K. Maheshwari 4764, Bamhni-Banjar ; 4787, Kanha.
- Vicoa indica** (Willd.) DC. syn. *Inula indica* Willd. An erect herb. Florets bright yellow. Common in the forest undergrowth.
Local name: Jangli ramtila.
Flowers and Fruits: Oct.—March.
J. K. Maheshwari 4672.
- Xanthium strumarium** Linn. A scabrous, erect, tall herb or undershrub. An obnoxious herb, growing in small patches near canals and rivers.
Local name: Kuthua.
Flowers and Fruits: Sept.—Nov. ; April.
- Youngia acaulis** DC. syn. *Crepis acaulis* Hook. f. A glabrous, rosette-forming, scapigerous, dwarf herb. Florets bright yellow. Common throughout in grassy areas and rocky grounds of the Park, especially on lateritic soil.
Flowers: March.
J. K. Maheshwari 4775, Kisli ; 4836, Kanha.

LOBELIACEAE

- Lobelia heyneana** Roem. & Schult. syn. *L. trialata* Buch.-Ham. A glabrous, nearly erect herb.

Flowers pale blue or white. A weed in forest undergrowth.

Flowers and Fruits: Major part of the year.

J. K. Maheshwari 4901, between Kanha and Kisli.

CAMPANULACEAE

Campanula canescens Wall. ex DC. An erect, glabrous or hispid herb. Flowers dimorphic, greyish- or rosy-purple, campanulate. Common in the forest undergrowth along canal banks and riversides.

Flowers and Fruits: March.

J. K. Maheshwari 4674 ; 4719, Banjar River ; 4792, Kanha ; 4886.

Wahlenbergia marginata (Thunb.) A. DC. syn. *W. gracilis* Schrad. An erect or decumbent herb. Flowers pale blue or pinkish-purple. Corolla bell-shaped. Common along the banks of rivers.

Flowers and Fruits: Dec.—March.

J. K. Maheshwari 4726, Banjar River.

MYRSINACEAE

Embelia tsjeriam-cottam (Roem. & Schult.) DC. syn. *E. robusta* Cl., non Roxb. A large shrub, 1.5-3 m. high. Flowers greenish-white. Berries globose, small, red, size of a pepper corn. In shady places and as undergrowth in denser forests.

Local name: Bai barang ; Bai birangi.

Flowers: May—July. *Fruits*: Dec.—Jan.

SAPOTACEAE

Madhuca indica J. F. Gmel. syn. *Bassia latifolia* Roxb. A large tree. Leaves 15-25 × 9-12 cm. Flowers creamy-white, peculiarly musty, sweet-scented. Common in the forest as well as on cultivated lands.

Local name: Mahua.

Flowers: Feb.—April. *Fruits*: June—Aug.

J. K. Maheshwari 4704.

EBENACEAE

Diospyros melanoxylon Roxb. A small tree. Bark black, exfoliating in rectangular scales. Male flowers yellowish, in cymes. Female flowers solitary. Common in valleys. Coppiced shoots are frequently met in the Park.

Local name: Tendu.

Flowers and Fruits: April—June.

OLEACEAE

Jasminum arborescens Roxb. A large, climbing or erect shrub. Flowers white, scented. Fruits an ovoid, oblique, black berry. Common in all forests.

Local name: Jangli Chameli.

Flowers and Fruits: April—Aug.

APOCYNACEAE

Carissa spinarum Linn. An evergreen shrub. Leaves 1.5-4 × 1.2-2 cm. Flowers pure white, scented, fading towards reddish-brown. Berries dark purple at maturity, about 7 × 7 mm. Common on black soil.

Local name: Karaunda.

Flowers: March—April. *Fruits*: Dec.—Feb.

Holarrhena antidysenterica Wall. A medium-sized tree. Flowers white, scented. Fruit shape of a 2-pronged pitchfork. Rather uncommon in open grounds and denser forests.

Local name: Kohda.

Flowers: April—July. *Fruits*: Nov.—Feb.

ASCLEPIADACEAE

Asclepias curassavica Linn. The famous "Blood-Flower" A herb or undershrub, up to 1 m. high. Flowers reddish-orange. Planted in the compound of Kanha Rest House.

Flowers: March.

J. K. Maheshwari 4882.

Calotropis procera R. Br. An evergreen shrub. Leaves 10-17 × 8-12 cm. Flowers purplish-mauve. Follicles recurved, smooth. Common in open waste lands and black cotton soil.

Local name: Akawan.

Flowers and Fruits: Dec.—April.

Cryptolepis buchanani Roem. & Schult. A glabrous, twining shrub. Latex milky. Bark purplish-red peeling off in papery flakes. Flowers yellowish-green. Follicles smooth, terete, tapering. Scattered in the forests of Kisli.

Local name: Nangor dudhi bel.

Flowers: May—July. *Fruits*: Dec.—Feb.

Hemidesmus indicus (Linn.) Schult. A twining shrub. Flowers green outside, purple within. Follicles cylindric, smooth. Common in hedges and forest.

Flowers and Fruits: Sept.—Feb.

GENTIANACEAE

Canscora diffusa (Vahl) R. Br. A slender, elegant herb. Flowers rosy or pale pink. Common in marshes, moist cool situations and along the banks of rivers.

Local name: Agya.

Flowers and Fruits: Oct.—April.

J. K. Maheshwari 4686 ; 4832, Kanha ; 4900.

Nymphoides cristatum (Roxb.) Kuntze. syn. *Limnanthemum cristatum* Griseb. An aquatic, floating herb. Flowers white, scented. Common and abundant in Shrawantalao.

Flowers and Fruits: Summer and rainy seasons.

J. K. Maheshwari 4851, Shrawantalao.

BORAGINACEAE

Cynoglossum wallichii G. Don. syn. *C. denticulatum* DC. An erect, annual, branched herb. Nut-

lets glochidiate. A common weed in the forest undergrowth.

Flowers and Fruits: Oct.—Nov.; March.

J. K. Maheshwari 4872, Kanha.

Trichodesma amplexicaule Roth. An erect or diffuse, bristly herb. Flowers blue or violet; auricles at the base of calyx turning inwards. A common weed in waste lands and cultivated grounds.

Local name: Aundhi jhar.

Flowers and Fruits: After rains.

J. K. Maheshwari 4794, Kanha.

T. indicum (Linn.) R. Br. An erect or diffuse, hispid herb. Flowers blue or violet; auricles at the base of calyx spreading outwards. Common in waste lands.

Local name: Aundhi jhar; Ghammara.

Flowers and Fruits: After rains.

J. K. Maheshwari 4779, Kisli.

EHRETIACEAE

Cordia dichotoma Forst. f. var. **wallichii** Cl. (Wall.) Maheshwari, comb. nov. *C. tomentosa* Wall. in Roxb. Fl. Ind. 2: 339. 1824. *C. grandis* Wall. Cat. 892 B. 1829, nom. nud. *C. wallichii* G. Don, Gen. Syst. 4: 379. 1837. *C. obliqua* Wight, Icon. t. 1378. 1848, non Willd. (1798). Basi. *C. obliqua* Willd. var. *wallichii* Cl. in Hook. f. Fl. Brit. Ind. 4: 137. 1883. *C. obliqua* var. β . auct. plur., non vera. Type: Heyne s.n., India.

A tree. Leaves densely stellate-fulvous or white-tomentose beneath. Berry 1-seeded. Rather rare in Kanha Maidan. The young leaves are used as vegetable. The fruits are eaten.

Local name: Rasalla; Lasoora.

Flowers and Fruits: March—Aug.

J. K. Maheshwari 4861, Kanha.

C. macleodii Hook. f. & Thoms. A small or moderate-sized tree. Bark smooth, light grey. Flowers white. Fruits yellowish, ovoid. An occasional tree in the forests of Kisli.

Local name: Dehwan.

Flowers and Fruits: March—June.

J. K. Maheshwari 4948, Kisli.

Rotula aquatica Lour. syn. *Rhabdia lycioides* Mart. A small shrub with erect or prostrate branches. Flowers pink. Fruit a small, orange-red, fleshy drupe. Common among rocks and cliffs on banks of rivers, streams and in river-beds. Like betel leaf, the leaves are used for chewing purposes.

Local name: Datrangi; Panbidiya.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4905, Ganghar Nadi, Kisli.

CONVOLVULACEAE

Convolvulus pluricaulis Choisy. A diffuse, prostrate or suberect herb. Flowers pale rose. A weed in open waste lands.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4770, Bamhni—Banjar.

Evolvulus alsinoides Linn. A spreading or ascending herb. Flowers blue. Common in open, burnt grounds and forest undergrowth.

Flowers and Fruits: July—Nov.; March.

J. K. Maheshwari 4834, Kanha; 4867.

E. nummularius (Linn.) Linn. A procumbent herb with trailing stems. Flowers white. A recently introduced weed of grasslands and forest undergrowth. The flowers are conspicuous in the morning but close about mid-day.

Flowers: March.

J. K. Maheshwari 4899, between Kanha and Kisli.

Ipomoea hederifolia Linn. Syst. Nat. (ed. 10) 925. 1759. syn. *I. coccinea* Linn. var. *b* Willd. Sp. Pl. 1: 880. 1797. *I. phoenicea* Roxb. Fl. Ind. 2: 92. 1824. A pretty, twining annual. Leaves broad-ovate, cordate. Flowers red, narrowly funnel-shaped, in long-peduncled cymes. A native of Tropical America; found in hedges near villages.

Flowers and Fruits: Nov.—Feb.

J. K. Maheshwari 4698.

N.B. The above nomenclature for this American plant, now well naturalized in different parts of India is adopted on the authority of O'Donnell (in Lilloa 29: 45. 1959).

I. maxima (Linn. f.) Don ex Sweet. syn. *I. sepiaria* Koenig ex Roth. A herbaceous twiner. Flowers pink or white with a purplish centre, in umbelliform cymes. A twiner on shrubs.

Flowers and Fruits: Aug.—Jan.

J. K. Maheshwari 4741.

I. pes-tigridis Linn. A spreading or twining, hispid herb. Flowers white or pinkish, opening in the afternoon. Common in hedges and grasslands.

Flowers and Fruits: Sept.—Dec.

J. K. Maheshwari 4849, Kanha.

Merremia gangetica (Linn.) Cuf. syn. *M. emarginata* Hall. f.; *Ipomoea reniformis* Choisy. A prostrate, creeping herb. Flowers yellow. Found as an undergrowth in the forest.

Flowers and Fruits: Sept.—Nov.

N.B. See Cufodontis in Bull. Jard. Bot. État Brux. Suppl. 31: 743. 1961, for the correct nomenclature of this plant.

SCROPHULARIACEAE

Limnophila indica (Linn.) Druce. syn. *L. gratioioides* R. Br. A small, greenish or purplish herb with a strong scent of turpentine. Leaves pinnatifid or multifid. Flowers whitish with dark purple spots. Common in fallow fields and moist, cool situations.

Flowers and Fruits: Nov.—March.

J. K. Maheshwari 4663; 4664; 4906, Kanhanala.

Lindernia anagallis (Burm. f.) Pennell. syn. *Ilysanthes veronicifolia* Urban; *Bonnaya veronicaefolia* Spreng. A decumbent or creeping herb. Leaves

penninerved. Flowers violet streaked with purple. Common in moist, cool situations.
Flowers and Fruits: Aug.—Feb.
 J. K. Maheshwari 4752.

L. pyxidaria All. syn. *Vandellia erecta* Benth. A small, erect, glabrous herb. Flowers whitish. Occurs in moist situations along the banks of canals and rivers.
Flowers and Fruits: Cold season.
 J. K. Maheshwari 4750, Banjar River ; 4902.

Mazus japonicus (Thunb.) Kuntze. syn. *M. rugosus* Lour. An erect, tufted herb. Flowers pale blue or white, streaked with blue. Common in fields and moist, cool places.
Local name: Nakh chinkni.
Flowers and Fruits: Jan.—March.
 J. K. Maheshwari 4667.

Mecardonia dianthera (Sw.) Pennell. syn. *Herpestis chamaedryoides* H. B. & K. A glabrous, prostrate herb. Flowers yellow. Calyx strongly ridged or winged. This herb is a native of tropical America but has now run wild in several places in India. Common in the Park in shades of trees, fallow fields and on riversides.
Flowers and Fruits: Cold and early summer seasons.
 J. K. Maheshwari 4661.

Mimulus strictus Benth. syn. *M. gracilis* auct., non R. Br. An erect, glabrous herb. Leaves semi-amplexicaul. Flowers white or pale blue spotted with yellow. Common on riversides and in moist, shady places.
Flowers and Fruits: March—May.
 J. K. Maheshwari 4934, Kisli.

***Nelsonia canescens** (Lamk.) Spreng. syn. *N. campestris* R. Br. A diffuse, softly villous herb. Flowers purplish. Common throughout in waste lands, along roadsides and in forest undergrowth.
Local name: Chota aandhi ; Khara bhaji.
Flowers and Fruits: Jan.—April.
 J. K. Maheshwari 4753 ; 4785, Kanha.

Scoparia dulcis Linn. A glabrous, leafy under-shrub, up to 1 m. high. Flowers white, many, in terminal panicles. Capsules globose. A native of tropical America ; established in the forest undergrowth as well as in damp, shady localities throughout the Park.
Local name: Ban mirach.
Flowers and Fruits: March—June.
 J. K. Maheshwari 4942, Kisli.

Verbascum chinense Sant. syn. *Celsia coromandeliana* Vahl. An erect, pubescent annual. Flowers yellow. Common along the banks of rivers and

canals. The Baigas use the plant as a fish-poison.
Local name: Akhphooti.

Flowers and Fruits: Cold and summer seasons.
 J. K. Maheshwari 4765, Banjar River ; 4918, Kisli.

Veronica anagallis-aquatica Linn. An erect, succulent herb. Flowers pale purple or white. Occurs in moist situations along the banks of canals and rivers.
Flowers and Fruits: Feb.—June.
 J. K. Maheshwari 4722, Banjar River.

BIGNONIACEAE

Jacaranda mimosifolia D. Don. syn. *J. ovalifolia* R. Br. ; *J. acutifolia* auct., non Humb. & Bonpl. A small, decorative tree. Pinnae 20 pairs or less. Flowers mauve-blue. Planted.
Flowers: March—May.

Stereospermum suaveolens DC. forma *suaveolens*. A medium-sized or large tree. Flowers dull crimson, scented, viscid-hairy. Capsules straight, 30—50 × 2 cm., white-spotted. A common associate of sal forest.
Local name: Pandar ; Pandri ; Padar.
Flowers: April—May. *Fruits*: Sept.—April.
 J. K. Maheshwari 4827, Kanha.

ACANTHACEAE

Asteracantha longifolia (Linn.) Nees. syn. *Hygrophila spinosa* T. Anders. An erect, hispid, stout herb. Flowers bright blue to bluish-purple. Gregarious in damp ditches and seasonal marshes.
Local name: Oont—katila.
Flowers and Fruits: Oct.—Dec.

Blepharis maderaspatensis (Linn.) Heyne ex Roth. syn. *B. boerhaviaefolia* Pers. A pubescent herb with wiry prostrate stems, rooting at the nodes. Flowers white or bluish. Common throughout in waste lands and forest undergrowth.
Local name: Dudhiya Choti.
Flowers and Fruits: Jan.—April.
 J. K. Maheshwari 4688.

Eranthemum roseum (Vahl) R. Br. syn. *Daedalacanthus roseus* T. Anders. An undershrub, 60-120 cm. high. Flowers blue. Planted.
Flowers and Fruits: Nov.—Jan.

Gendarussa vulgaris Nees. syn. *Justicia gendarussa* Burm. f. A small, erect, strongly scented shrub, tinged with purple. Flowers white or pink with purple spots. Cultivated in the compound of Kisli Rest House.
Flowers: Jan.—May.
 J. K. Maheshwari 4946.

Hemigraphis latebrosa Nees. A diffuse, viscid-hairy herb. Flowers yellowish below, blue or dark violet above, narrowly funnel-shaped, in dense heads. Widely distributed and occurring in a great variety of situations ; often abundant on laterite. It occurs throughout the Park along

*The genus *Nelsonia* R. Br. is included here under Scrophulariaceae on the authority of C. E. B. Bremekamp of Botanical Museum, Utrecht (see Reinwardtia 3 : 157-261, 1955 et Dansk Bot. Arkiv 20 : 57-62, 1961).

streams and in forest undergrowth. Var. *rupestris* Cl. is also found in similar habitats.

Local name: Bhangra.

Flowers and Fruits: Dec.—March.

J. K. Maheshwari 4865, Kanha.

Justicia diffusa Willd. An erect herb. Flowers pink or pale purple. Common in the forest undergrowth.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4682.

J. vahlii Roth. It occurs in grasslands and forest undergrowth.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4873, Kanha.

Lepidagathis fasciculata Nees. A diffuse, weak herb with spreading branches. Flowers white spotted with purple, few, in leafy spikes. Frequent in waste lands and forest undergrowth.

Flowers: Feb.

J. K. Maheshwari 4926, Kisli.

L. hamiltoniana Wall. A perennial herb with flagelliform stems. Spikes in globular heads, ca 10 cm. in diam. Flowers spotted with brown inside. Rather common in the forest undergrowth, open waste lands and bare grounds.

Local name: Agachiya.

Flowers and Fruits: Cold season.

J. K. Maheshwari 4687; 4823, Kanha.

L. incurva D. Don. syn. *L. hyalina* Nees. An erect or ascending, perennial herb. Flowers white, spotted with brown. Frequent at Kisli.

Local name: Patthar-chatti.

Flowers and Fruits: Jan.—May.

J. K. Maheshwari 4908, Kisli.

Petalidium barlerioides Nees. A much-branched shrub, 1—1.5 m. high. Bark exfoliating in long, papery flakes. Flowers white with purple spots, subtended by a pair of large, foliar bracts. Common in ravines.

Flowers and Fruits: Jan.—May.

J. K. Maheshwari 4736, Bamhni—Banjar; 4739.

Rungia pectinata (Linn.) Nees. A much-branched, procumbent herb. Flowers white with blue lines; bracts dimorphic. A common weed in the forest undergrowth.

Local name: Dhursi.

Flowers and Fruits: Nov.—Feb.

J. K. Maheshwari 4822, Kanha.

VERBENACEAE

Nyctanthes arbor-tristis Linn. A shrub or small tree. Leaves 10-15 × 5-6.5 cm. Flowers white with orange colour, fragrant. Capsules 1.3-2 × 1.2-2 cm. Common on dry hills.

Local name: Khirsaru; Siharu.

Flowers and Fruits: Sept.—Feb.

Tectona grandis Linn. f. The Teak Tree does not occur wild in the Park. It was recently introduced

in the district but its growth is extremely poor.

Local name: Sagwain; Sagon.

LABIATAE

Leonotis nepetaefolia R. Br. A tall, erect annual, 1.5—2 m. high. Flowers orange-red, numerous, densely crowded in globose, axillary heads. Found occasionally amongst shrubs in the forest undergrowth.

Local name: Gathooa sankh.

Flowers and Fruits: Sept.—Feb.

J. K. Maheshwari 4920, Kisli.

Leucas hyssopifolia Benth. A suffruticose, hispid-hairy herb. Flowers white. In grassy areas and waste lands of the Park.

Local name: Ghumi.

Flowers: March.

J. K. Maheshwari 4841, Kanha.

Micromeria capitellata Benth. A slender, aromatic herb. Flowers violet-coloured. Common in marshes and along canal banks.

Flowers and Fruits: March—May.

J. K. Maheshwari 4844, Kanha.

Nepeta hindostana (Roth) Haines. syn. *N. ruderalis* Buch.-Ham. ex Hook. f. An erect or ascending herb. Flowers bluish-purple or dark blue. Grows in cool, shady situations along the banks of rivers.

Flowers and Fruits: Cold and early summer seasons.

J. K. Maheshwari 4767, Banjar River.

Orthosiphon rubicundus Benth. An erect herb, 30-60 cm. high. Inflorescence dark purple. Flowers white or pinkish. A sporadic herb in shades near canals.

Flowers: March.

J. K. Maheshwari 4837, Kanha.

Salvia plebeia R. Br. An erect, deep-rooted annual. Flowers bluish-white. Common along the banks of rivers and canals.

Flowers and Fruits: Winter and summer seasons.

J. K. Maheshwari 4747, Banjar River.

NYCTAGINACEAE

Baccharia diffusa Linn. A procumbent, erect, suberect or straggling herb with long branches and small rosy-red or purplish flowers. Common and abundant throughout the Park.

Local name: Chatwa bhaji; Pathar-chatta.

Flowers and Fruits: Major part of the year.

J. K. Maheshwari 4868, Kanha.

AMARANTHACEAE

Achyranthes aspera var. *porphyristachya* Hook. f. An erect or subscandent herb. Flowers greenish-white. Common in waste lands.

Local name: Chirchira; Addha jhara.

Flowers and Fruits: Nov.—Feb.

J. K. Maheshwari 4907, Kisli.

Aerva sanguinolenta (Linn.) Blume. syn. *A. scandens* Wall. A climbing or straggling undershrub. Flowers polygamous, silvery-white. Common in shady places along the banks of canals and rivers. *Flowers*: April.

J. K. Maheshwari 4755, Banjar River.

Alternanthera sessilis DC. A prostrate, spreading, polymorphic herb. Flowers white. Common in shades along paths and in marshes.

Flowers and Fruits: During and after rains.

J. K. Maheshwari 4903, between Kanha and Kisli.

Amaranthus spinosus Linn. forma *spinosus*. An erect, spinous herb. Flowers green, in more or less interrupted spikes. Common in waste lands. The leaves and stems are used as a vegetable.

Local name: Kanta khutna.

Flowers and Fruits: Sept.—Dec.

J. K. Maheshwari 4939, Kisli.

Celosia argentea Linn. An erect, glabrous, tall herb. Flowers pink when young, becoming white and shining. Common in fields.

Local name: Sivlar.

Flowers and Fruits: Aug.—Oct.

Gomphrena celosioides Mart. A low-spreading, much-branched herb. Leaves 2.5-5 × 1-2 cm., spatulate or oblong-elliptic. Flowers white, in cylindrical or ovoid, 2.5-5 × 2-2.5 cm. spikes. Perianth lobes 5, cotton-woolly. A recently introduced weed, found on roadsides.

Flowers and Fruits: March—Aug.

J. K. Maheshwari 4916, Kisli.

CHENOPODIACEAE

Rumex dentatus Linn. An erect, glabrous annual. Flowers green. Common along the banks of Banjar River.

Flowers and Fruits: Jan.—June.

J. K. Maheshwari 4709.

POLYGONACEAE

Muehlenbeckia platyclada (Muell.) Meissn. An erect shrub, 60-150 cm. high. Branches phylloclades, jointed, ribbon-like. Flowers greenish-yellow, in sessile clusters at the joints. Grown as a curiosity.

Flowers and Fruits: Summer and rainy seasons.

J. K. Maheshwari 4850, near Kanha Rest House.

Polygonum barbatum Linn. An erect, glabrous annual. Flowers white. Common in river-beds and river-sides. The leaves are eaten by sambhar. *Local name*: Aese.

Flowers and Fruits: Aug.—Feb.

J. K. Maheshwari 4757, Banjar River.

P. limbatum Meissn. A stout, annual herb, erect or prostrate below. Stipules cylindric, strigose. A common marshy plant forming dense mat-like growth in Shrawaptalao.

Local name: Nandi bhaji.

J. K. Maheshwari 4862.

P. plebeium R. Br. A prostrate, diffusely branched herb. Flowers rosy. Common in sandy river-beds and riversides.

Flowers and Fruits: Cold and summer seasons.

J. K. Maheshwari 4721, Banjar River; 4763; 4875, Kanha.

PROTEACEAE

Grevillea robusta Cunn. ex R. Br. A lofty, oakaceous tree. Leaves fern-like. Flowers greenish-yellow mixed with orange. Planted in the compound of Kisli Rest House.

Flowers and Fruits: March—July.

LORANTHACEAE

Dendrophthoe falcata (Linn. f.) Etting. A robust, parasitic shrub. Flowers scarlet and orange. Fruit an oblong, pulpy berry. Common on various forest trees, especially on *Buchanania lanzan* and hence its local name.

Local name: Char ki bandho; Banda.

Flowers and Fruits: Dec.—April.

J. K. Maheshwari 4705.

EUPHORBIACEAE

Antidesma diandrum Roth. A large shrub or small tree. Flowers minute, green. Fruits reddish-purple, edible. As an undergrowth in sal forest. *Local name*: Khatua.

Flowers: July—Aug. *Fruits*: Nov.—Jan.

J. K. Maheshwari 4881, Kanha.

Baliospermum montanum (Willd.) Muell.-Arg. syn. *B. axillare* Blume. A stout undershrub. Leaves 2-glandular at base. Flowers greenish-yellow. Capsules obovoid. In waste places and forest undergrowth.

Flowers and Fruits: Dec.—March.

Bridelia squamosa Gehrm. syn. *B. retusa* Hook. f., non Spreng. A small or medium-sized tree. Bark grey with longitudinal cracks. Flowers greenish. Fruits fleshy, globose, yellowish or purple-black, ca 1 cm. in diam. Common.

Local name: Kasai.

Flowers and Fruits: July—Jan.

J. K. Maheshwari 4665.

Emblica officinalis Gaertn. syn. *Phyllanthus emblica* Linn. A large tree. Bark peeling off in flakes. Leaves distichous, resembling pinnate leaves. Flowers yellow. Fruits globose, fleshy, pale yellow. Common throughout the forest.

Local name: Aonla; Anwari; Lalli.

Flowers: March—May. *Fruits*: Nov.—March.

Euphorbia hirta Linn. An erect, suberect or prostrate herb. Involucres crowded in small cymes. Common in waste lands and forest undergrowth. The leaves are eaten by goats.

Local name: Dudhia.

Flowers and Fruits: Major part of the year.

J. K. Maheshwari 4936, Kisli.

E. milli Ch. des-Moulins. syn. *E. splendens* Boj. ex Hook. An upright or prostrate, spiny shrub, armed with needle-like spines. Flowers showy, crimson; each cyathium subtended by a pair of bright red bracts. Grown as an ornamental on rockeries in gardens.

Flowers: Major part of the year.

Mallotus philippensis (Lamk.) Muell.-Arg. A small tree. Leaves minutely scarlet-dotted beneath. Male flowers yellow. Capsules 3-lobed, covered with a bright-red powder. Fairly common along the banks of canals and rivers; rather more frequent at Kisli.

Local name: Tilwan; Sindoor; Rori.

Flowers and Fruits: Sept.—March.

J. K. Maheshwari 4799, Kanha; 4933, Kisli.

Securinega virosa (Roxb. ex Willd.) Pax & Hoffm. syn. *Flueggea microcarpa* Blume. An erect, dioecious shrub, 3.5-5.5 × 2-3 cm., variable in shape. Flowers greenish-yellow. Berries white. Scattered in the forest undergrowth.

Local name: Chiri godi.

Flowers and Fruits: June—Oct.

ULMACEAE

Trema orientalis (Linn.) Blumc. A small tree. Leaves oblique-cordate at base, silvery-white beneath. Fruit a very small, black drupe. An occasional tree in the forest.

Local name: Dandanni.

Flowers and Fruits: Nov.—April.

J. K. Maheshwari 4921, Kisli.

MORACEAE 3

Ficus benghalensis Linn. syn. *F. indica* Linn. em. Lamk. A large tree, extending laterally by sending down aerial roots from the branches. Receptacles globose, red. Planted.

Local name: Bar.

Flowers and Fruits: Dec.—May.

J. K. Maheshwari 4947.

F. cunia Buch.-Ham. ex Roxb. syn. *F. conglomerata* Roxb. A small tree with aerial roots. Leaves with the lower half of the base much enlarged. Figs globose, in clusters on long, leafless branches from the trunk especially near the root. Uncommon in ravines.

Local name: Ghwi.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4742, Bamhni-Banjar; 4887, between Kanha and Kisli.

F. gibbosa var. *parasitica* King. A small tree, often epiphytic or climbing. Figs stalked, yellow when ripe. Usually found on *Phoenix acaulis* and *Terminalia belerica*. In an interesting specimen growing along the road from Kanha to Sijhora, this species was found to be epiphytic on *Ficus virens* Ait. var. *virens*; the latter in turn epiphytic on *Terminalia belerica*.

Local name: Majni.

Flowers and Fruits: Nov.—April.

J. K. Maheshwari 4734; 4761; 4863, Kanha.

F. glomerata Roxb. A moderate-sized or large tree. Bark dull white or reddish-brown. Receptacles 2.4 × 2.5 cm., reddish, with a sweet flavour. Common, generally near the banks of canals.

Local name: Umar.

Flowers and Fruits: May—June.

J. K. Maheshwari 4751, Bamhni-Banjar.

F. religiosa Linn. A large, wide-spreading tree. Receptacles 10 × 8 mm., dark purple when ripe. Planted.

Local name: Pipar.

Flowers and Fruits: Oct.—April.

***F. virens** Ait. var. *virens* syn. *F. infectoria* var. *lumbertiana* King. A large, epiphytic tree. Bark smooth, grey. Figs globose, shortly stalked, white or flushed with red. Common throughout the forest; epiphytic on *Terminalia chebula*.

Local name: Pakhri; Pakar.

Flowers and Fruits: Oct.—June.

J. K. Maheshwari 4880 Kanha.

Monocotyledones

ORCHIDACEAE

Vanda roxburghii R. Br. An epiphytic orchid with thick, white, fleshy roots. Flowers varicoloured, yellowish tessellated with brown. Capsules clavate, sharply ridged. Common in the Park on various forest trees.

Flowers: July.

J. K. Maheshwari 4707; 4831, Kanha, on *Pterocarpus marsupium*.

DIOSCOREACEAE

Dioscorea alata Linn. A climber, often with axillary bulb-like tubers. Male and female flowers greenish. Capsules leathery, 3-winged. Fairly common in hilly localities.

Local name: Ghonghri.

Flowers and Fruits: July—Dec.

J. K. Maheshwari 4892, between Kanha and Kisli.

D. bulbifera Linn. The famous 'Air Potato'. A tall climber, bearing large angular or globose tubers in the axils. Flowers green or purplish, in numerous, drooping, axillary spikes. Common on trees and shrubs.

Local name: Karhu Kanda.

Flowers and Fruits: July—Dec.

LILIACEAE

Asparagus racemosus Willd. A climbing or straggling shrub. Flowers white, drooping. Berries usually red when ripe. Scattered in the forests of Kanha and Kisli.

* See Corner in Gard. Bull. Singapore 17: 376-377. 1960, for the correct nomenclature of this plant.

Local name: Baolati ; Jogilati.
Flowers and Fruits: Sept.—Dec.

SMILACACEAE

Smilax zeylanica Linn. syn. *S. macrophylla* Roxb.
 A large, prickly climber. Flowers small, white.
 Fruit a globose berry, red when ripe. Common
 on shrubs and trees in denser forests ; usually
 growing on *Syzygium cumini*. The stems are
 used as tooth-brushes.
Local name: Ram datun ; Potar.
Flowers: June—Aug. *Fruits:* Nov.—Jan.

JUNCACEAE

Juncus prismatocarpus R. Br. var. *leschenaultii* (J.
 Gay ex Lah.) Buchenau. syn. *J. leschenaultii* J.
 Gay ex Lah. A glabrous, tufted herb. Flowers
 greenish. Met with in river-beds of Banjar River.
Flowers and Fruits: Oct.—Feb.
J. K. Maheshwari 4715, Banjar River.

PALMAE

Phoenix acaulis Buch.-Ham. ex Roxb. A dwarf
 palm. Leaves pinnate. Fruits black when ripe,
 edible. Scattered throughout the open grassy
 areas and sal forests of the Park. The leaves are
 used for making mats and brooms.
Local name: Chhindi ; Chindan ; Chhind.
Flowers and Fruits: April—June.

APONOGETONACEAE

Aponogeton natans (Linn.) Engl. & Krause. A
 scapigerous, aquatic herb. Leaves floating. Spikes
 solitary, densely flowered. Common in Shrawan-
 talao.
Flowers and Fruits: July—Dec.
J. K. Maheshwari 4857.

ERIOCAULACEAE

Eriocaulon quinquangulare Linn. A scapigerous,
 marshy herb. Leaves gramineous. Flowers in
 globose, white-villous heads. Common in marshes
 or wet and dry fallow lands.
Local name: Bhurli.
Flowers and Fruits: Dec.—Feb.
J. K. Maheshwari 4689.

CYPERACEAE

Courtoisia cyperoides Nees. A glabrous, tufted an-
 nual. Stems triquetrous. Heads globose, yellow-
 ish-brown. Common in river-beds and riversides.
Flowers and Fruits: Dec.—March.
J. K. Maheshwari 4766, Banjar River.

Cyperus brevifolius Hassk. syn. *Kyllinga brevi-
 folia* Rotib. An erect, glabrous plant with slender,
 horizontal rhizomes. Spikes ovoid, solitary, white
 or greenish. Common in river-beds and along the
 banks of Banjar River.

Flowers and Fruits: Sept.—Feb.

J. K. Maheshwari 4714 ; 4938, Ganghar Nadi.

C. eleusinoides Kunth. An erect, glabrous perennial.
 Stems triquetrous. Inflorescence a compound
 umbel. Spikelets pale brown. In marshes of the
 Park.

Flowers and Fruits: Sept.—Feb.

J. K. Maheshwari 4835, Kanha.

C. pygmaeus Rottb. syn. *Juncellus pygmaeus* Cl. A
 very tufted, prostrate or erect herb. Common in
 marshes, and beds of Banjar and Ganghar Rivers.
Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4713, Banjar River.

Fimbristylis dichotoma (Linn.) Vahl. syn. *F. di-
 phylla* Vahl. A tufted annual. Spikelets pale
 brown, in compound or decompound umbels.
 Common in sandy river-beds.

Flowers and Fruits: Feb.—June.

J. K. Maheshwari 4717, Banjar River ; 4943.

Fuirena ciliaris (Linn.) Roxb. syn. *F. glomerata*
 Lamk. An annual, tufted herb. Stems trique-
 trous. Spikelets 3-10, in clusters. Glumes awned.
 In marshes and wet lands.

Flowers and Fruits: Nov.—Feb.

J. K. Maheshwari 4693.

Scirpus supinus Linn. A tufted, fibrous-rooted herb.
 Stems terete. Spikelets 1-8, in solitary, lateral
 cluster. Occurs in marshes and fallow fields.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4675 ; 4769, Banjar River.

GRAMINEAE

Aristida setacea Retz. An erect or geniculate as-
 cending, filiform grass. Leaves 15-30 cm. × 2-4 mm.
 Panicles open or contracted. Floral glumes 3-
 awned. An obnoxious weed in waste lands.

Local name: Laria poonchi.

Flowers and Fruits: Sept.—Dec.

J. K. Maheshwari 4697.

Chloris dolichostachya Lagasca. syn. *C. incompleta*
 Roth. An erect, stout or slender grass, 15 cm.-1 m.
 high. Spikes digitate, 4-10, spreading.

Local name: Saina.

Flowers: February.

Cynodon dactylon (Linn.) Pers. Common and abun-
 dant in grasslands, marshes and swamps.

Local name: Duba.

Flowers and Fruits: Throughout the year.

J. K. Maheshwari 4869, Kanha.

Dendrocalamus strictus Nees. The well-known
 "Male Bamboo". An arborescent plant, forming
 dense clumps. Culms terete, green and shining
 when young, becoming golden yellow with age.
 Male flowers in dense heads arranged in large
 panicles. Common throughout the Park along
 canal banks and on hill slopes. It flowers gre-
 gariouly at intervals of several years, but flower-
 ing clumps may be found in the Park here and

there during the cold season of almost any year.

Local name: Bans ; Bhiri.

Male Flowers: March 8, 1962.

J. K. Maheshwari 4685.

Dichanthium annulatum (Forsk.) Stapf. A leafy, small grass, up to 60 cm. high. Spikes 2 to many. Common throughout the area. Used as a fodder.

Local name: Sukra ; Kel.

Flowers and Fruits: Aug.—Nov.

J. K. Maheshwari 4772, between Kisli and Kanha ; 4842, Kanha.

Elytrophorus spicatus (Willd.) A. Camus. syn. *E. articulatus* Beauv. An annual, tufted, erect or geniculate grass, 12-60 cm. high. Inflorescence a narrow, more or less interrupted, false spike, 10-30 cm. long. Common in marshes and fallow-fields.

Flowers and Fruits: Nov.—Feb.

J. K. Maheshwari 4671.

Eragrostis gangetica (Roxb.) Steud. A tufted, perennial grass. Panicles 10-15 cm. long, nodding. Common in sandy river-beds.

Flowers and Fruits: Dec.—April.

J. K. Maheshwari 4710, Banjar River ; 4866.

E. stenophylla Hochst. ex Miq. A perennial, densely tufted grass, 30-45 cm. high. Panicles sub-erect or nodding. Common in grasslands.

Flowers and Fruits: Dec.—April.

J. K. Maheshwari 4788, Kanha.

E. unioloides (Retz.) Nees ex Steud. An annual, erect or geniculately ascending grass. Panicles green or reddish-purple. Common in open fields at Kisli.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4911, Kisli.

Eulalia trispicata (Schult.) Henr. syn. *Pollinia argentea* Trin. A perennial, tufted, erect grass, 30-120 cm. tall. Spikes golden-brown, silky hairy. Common on black cotton soil.

Local name: Sena.

Flowers and Fruits: Oct.—Dec.

Heteropogon contortus (Linn.) Beauv. An erect or decumbent, tufted, slender grass. Inflorescence a single, terminal raceme or more often several flowering branches. It is a very troublesome grass on account of the awns which get twisted together like the strands of a rope. It serves as a good fodder grass if used before flowering.

Local name: Lampa.

Flowers and Fruits: Oct.—Dec.

Imperata cylindrica (Linn.) Beauv. A stoloniferous, often creeping, stout or slender grass. Panicles spiciform, silvery-white. Anthers orange. A common grass on burnt ground.

Flowers and Fruits: June—Oct.

J. K. Maheshwari 4839, Kanha.

Ischaemum indicum (Houtt.) Merr. syn. *I. ciliare* Retz. An erect or ascending, tufted grass.

Racemes 2, rather short. Common in open grounds and grasslands.

Flowers and Fruits: Oct.—Feb.

J. K. Maheshwari 4829, Kanha.

Iseilema prostratum (Linn.) Anders. syn. *I. wightii* Anders. A perennial grass ; often prostrate and rooting at base. Panicles erect, spreading. Common in grasslands and waste lands. Used as a fodder.

Local name: Bhond ; Bhor ; Musail.

Flowers and Fruits: Sept.—Dec.

J. K. Maheshwari 4856, Kanha.

Panicum miliare Lamk. Cultivated by the jungle tribes in hilly localities throughout the Park and consumed locally.

Local name: Kutki.

Paspalum scrobiculatum Linn. Widely cultivated by the local tribes, chiefly in hilly localities and consumed in the district.

Local name: Kodon.

Flowers: Oct.

Polypogon monspeliensis (Linn.) Desf. An annual, 30-60 cm. tall grass. Panicles pale, shining, yellowish-green. Occurs sporadically in sandy or silty river-beds.

Flowers and Fruits: Jan.—June.

J. K. Maheshwari 4743, Banjar River.

Saccharum spontaneum Linn. A coarse grass, 1-3 m. high. Panicles white, plumose. A persistent weed in waste lands, riversides and water-logged areas.

Local name: Kans ; Kansa.

Flowers and Fruits: Sept.—Dec.

Sacciolepis myosuroides (R. Br.) A. Camus. An erect or decumbent, slender or stout grass, 40-60 cm. tall. Panicles spiciform, dense, 10-20 cm. long. Spikelets olive-green. Occurs in dried up fallow lands.

Local name: Kodela.

Flowers: March.

J. K. Maheshwari 4683.

Themeda quadrivalvis (Linn.) Kuntze var. **quadrivalvis**. syn. *T. ciliata* Hack. ; *Anthistiria ciliata* Linn. f. A stout, gregarious grass, 1.2-1.8 m. high. Panicles racemiform, like a bushy tail. Common in grasslands.

Local name: Bari gunair ; Bhonr.

Flowers and Fruits: Oct.—Jan.

T. triandra Forsk. An erect or ascending, perennial grass. Inflorescence a leafy, narrow panicle. Spatheoles boat-shaped. A valuable fodder before flowering.

Local name: Chhoti ganair.

Flowers and Fruits: Cold season.

J. K. Maheshwari 4735.

Thysanolaena maxima (Roxb.) Kuntze. A perennial, tall, handsome grass, 2-3.5 m. tall. Panicles large, soft, bearing numerous, minute spikelets.

Grows in forest undergrowth along canal banks.
Local name: Chir.
Flowers and Fruits: Jan.—April.
J. K. Maheshwari 4783, between Kisli and Kanha.

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