

THE VEGETATION OF NAWEGAON NATIONAL PARK AND ITS ENVIRONS (MAHARASHTRA)

S. K. MALHOTRA* AND K. M. RAO

Botanical Survey of India, Pune

ABSTRACT

An account of the vegetation of the Nawegaon National Park and its environs, is given, including a list of 301 species in 222 genera and 73 families ; local names and economic uses of the plants of whatever known are also mentioned.

INTRODUCTION

Nawegaon National Park is a popular forest resort with picturesque low lying hills fringing the lakes of Nawegaon, located towards south of Bhandara in Maharashtra. It covers an area of about 134 sq. km with several villages, all around. Excepting for a passing reference and mention of a few plants of Bhandara district by Haines (Descriptive list of trees and shrubs and economic herbs of the Southern Circle, Central provinces, Allahabad, 1916) there is no account of the vegetation of this area. In view of the need for a better knowledge of the flora and fauna of our National Parks, this study was made.

Geologically, the area has varied rocks ranging from precambrian gneiss and granite to laterite and very recent alluvium. The Pratapgarh range is almost entirely Dharwars, with Quartzite prevailing in the hills, and extending north to the Nawegaon lake and Nishani hills to the north-east of the lake is of igneous rocks.

Weatherwise it is quite pleasant for the greater part of the year, with only a short span of hot weather. The temperature ranges from 5°C during January to 43°C during May. The average rainfall varies from 11 to 16 mm with humidity being around 50%.

VEGETATION

The vegetation of the area is of mixed deciduous type. In the forest areas of Pratapgarh, Nawegaon and Nishani the trees are close, rather tall, with spread out high canopy. The main species are *Albizia lebbbeck* (L.) Benth. and *A. odoratissima* (L. f.) Benth., *Lannea coromandelica* (Houtt) Merr, *Mitragyna parvifolia* (Roxb.) Korth, etc. Forming a second storey of small trees and often mixed with numerous shrubs, are species like *Bridelia retusa* (L.) Spreng, *Cleistanthus collinus* Benth., *Emblica officinalis* Gaertn., *Holarrhena antidysenterica* (Roth) A. DC. etc. Here and there, climbing over some of these trees and often forming thickets or bushes, are lianes and slender climbers like *Oxalis scandens* Roxb., *Ventilago denticulata* Willd., *Abrus precatorius* L. etc. Several trees are further marked by infestations of stem parasites like *Dendrophthoe falcata* (L. f.) Etting., while on a few others orchids like *Vanda tessellata* (Roxb.) G. Don occur as epiphytes.

The ground flora is not particularly noticeable but briefly during the monsoon the forest floor becomes gay with grasses and sedges and scattered Asteraceae herbs with pretty flower heads and an odd herbaceous climber here and there. *Bothriochloa pertusa* (L.) A. Camus, *Chrysopogon fulvus* (Spreng) Chiov., *Echinochloa colonum* (L.)

*Present address : Botanical Survey of India, Jodhpur
Date of receipt: 16.5.78, Date of acceptance: 14.3.80

Link, *Eragrostis tenella* (L.) Beauv. etc. are some of the prominent grass species which among the sedges can be spotted. *Cardiospermum halicacabum* L. is the lone herbaceous climber. Amongst other herbs that may be mentioned are *Cyperus cyperoides* (L.) O. Ktze of Cyperaceae, *Eriocaulon dianae* Fyson of Eriocaulaceae, *Euphorbia hirta* L. of Euphorbiaceae, *Sida cordata* (Burm. f.) Borss. of Malvaceae, *Evolvulus alsinoides* L. of Convolvulaceae, the Amaranthaceae like *Gomphrena celosioides* Mart, the Asteraceae, *Eclipta prostrata* (L.) L., Acanthaceae, *Hygrophila auriculata* (Sch.) Heine, *Justicia diffusa* Willd., and still others of Labiatae like *Leucas cephalotes* Spreng, of Fabaceae like *Indigofera linifolia* Retz., *Oldenlandia corymbosa* L. of Rubiaceae etc.

On the hillocks distinctive vegetation can be noticed along the base, on the slopes and at the top. Amongst the plants at the base of hillocks are trees like *Aegle marmelos* Corr., and *Butea monosperma* (Lamk.) Taub. and shrubs like *Cassia fistula* L., *Bauhinia purpurea* L., *Clerodendrum serratum* (L.) Moon. Amongst herbs *Cassia tora* L., *Hibiscus lobatus* (J. A. Murray) O. Ktze, *Sphaeranthus indicus* L. are common. Plants on the slopes of hillocks are *Anogeissus latifolia* (DC.) Wall. ex Bedd., *Boswellia serrata* Roxb., *Mitragyna parvifolia* (Roxb.) Kunth. among trees, shrubs *Helicteres isora* L., *Woodfordia fruticosa* (L.) Kurz. *Ziziphus oenophia* Mill., herbs like *Andrographis paniculata* (Burm.) Wall. ex Nees, *Curculigo orchioides* Gaertn., *Desmodium velutinum* (Willd.) DC. The plants of the top of hillocks are trees like *Bombax ceiba* L., *Diospyros melanoxylon* Roxb., *Lannea coromandelica* (Houtt.) Merr., shrubs like *Gardenia latifolia* Ait., *Grewia hirsuta* Vahl and herbs like *Barleria pratensis* Sant.; *Dipteracanthus prostratus* (Poir) Nees, *Waltheria indica* L.

There are also ponds and at places stag-

nant waters and ditches where there is a distinct aquatic vegetation. The species that occur here are *Bacopa monnieri* (L.) Pennell, *Coix lachryma-jobi* L., *Limnophila indica* (L.) Druce, *Nymphoides cristatum* (Roxb.) O. Ktze, etc.

Along the roads, avenue trees include *Albizia lebbek* (L.) Benth., *Mangifera indica* L. and *Tectona grandis* L. etc.

PLANTS USED BY WILD ANIMALS FOR FOOD OR SHELTER

There are a number of species which are used by the wild animals as a source of their food, varying with the animal and their food habits. Most of the animals prefer shorter grasses growing around the open areas. The tender shoots of the reeds coming out immediately after burning are also relished by the animals. But as the reeds grow taller shooting more than 6 metres or so they go out of the reach of the deer etc. Some of the plants generally relished by the wild animals in the area are *Bothriochloa pertusa* (L.) A. Camus, *Cynodon dactylon* (L.) Pers., *Ficus* spp., *Ipomoea aquatica* Forsk., *Tamarindus indica* L., *Terminalia bellirica* (Gaertn.) Roxb., *Themeda triandra* Forsk., *Ziziphus oenophia* Mill. etc.

Most of the tree species in the area are being used by the animals and birds for their shelter purposes. Bison generally prefer a tree with thick canopy of branches over it while a deer can avail even the tall grasses as its source of shelter. Some of the other plants used as shelter are *Aegle marmelos* (L.) Corr., *Albizia odoratissima* (L.) Benth., *Bauhinia racemosa* Lamk., *Bridelia retusa* (L.) Spreng., *Diospyros melanoxylon* Roxb., *Ficus benghalensis* L., *Mangifera indica* L., *Tamarindus indica* L., etc.

UTILITY OF THE MAJOR COMPONENTS

There are many plants which are being used as minor forest products and also as timbers and some have the potential to be used as such by the tribals and residents of the area as follows:

(a) *Timbers used for carpentry and cabinet work:*

Some of the trees and shrubs which are used for carpentry and cabinet work are *Albizia lebbek* (L.) Benth., *Anogeissus latifolia* (DC.) Wall. ex Bedd., *Bombax ceiba* L., *Boswellia serrata* Roxb., *Bridelia retusa* (L.) Spreng; *Diospyros melanoxylon* Roxb., *Gardenia latifolia* Ait., *Kydia calycina* Roxb., *Lagerstroemia parviflora* Roxb., *Mangifera indica* L., *Mitragyna parvifolia* (Roxb.) Korth; *Pterocarpus marsupium* Roxb., *Tectona grandis* L., *Terminalia belirica* (Gaertn.) Roxb. etc.

(b) *Plants used in the manufacture of Bidis, match boxes and in paper industry:*

The leaves of *Diospyros melanoxylon* Roxb. are extensively used for wrapping the Bidis. The collection of "Tendu leaves" as it is commercially known is quite common and is a big trade in the area. The plants such as *Bombax ceiba* L., *Buchanania lanzan* Spreng; *Kydia calycina* Roxb. etc. are used in the manufacture of match boxes. *Dendrocalamus strictus* (Roxb.) Nees is extensively used in the manufacture of paper. The collection and sale of this also is a big trade in the area.

(c) *Plants used for agricultural implements:*

Plants such as *Anogeissus latifolia* (DC.) Wall. ex Bedd., *Bridelia retusa* (L.) Spreng; *Emblica officinalis* Gaertn., *Lagerstroemia parviflora* Roxb., *Mitragyna parvifolia* (Roxb.) Korth., *Pterocarpus marsupium* Roxb. etc. are used for Agricultural implements etc.

(d) *Plants used for tanning:*

The bark of the following tree species is used for tanning purposes: *Acacia chundra* (Roxb.) Willd., *Anogeissus latifolia* (DC.) Wall. ex Bedd., *Boswellia serrata* Roxb., *Bridelia retusa* (L.) Spreng; *Cassia fistula* L., *Cleistanthus collinus* Benth. and *Emblica officinalis* Gaertn.

(e) *Gum and resin yielding plants:*

Anogeissus latifolia (DC.) Wall. ex Bedd., *Bauhinia racemosa* Lamk., *Butea monosperma* (Lamk.) Taub., *Gardenia gummifera* L., *Terminalia tomentosa* Wt. & Arn. are some of the gum yielding plants. Resin is obtained from trees of *Boswellia serrata* Roxb. and *Mitragyna parvifolia* (Roxb.) Korth.

(f) *Plants used for medicinal purposes:*

Many plants including the sedges in the area, are used for medicinal purposes in one way or the other. Some of the important ones are *Aegle marmelos* (L.), *Cassia fistula* L., *Helicteres isora* L., *Hollarrhena antidysenterica* (Roxb.) A. DC., *Emblica officinalis* Gaertn., *Mitragyna parvifolia* (Roxb.) Korth, *Tamarindus indica* L., *Terminalia belirica* (Gaertn.) Roxb. and *Vitex negundo* L.

ENUMERATION

The following enumeration includes 301 species in 222 genera and 73 families. The binomial is followed by the local name if any and economic uses if any. Field numbers and collection numbers are cited of S. K. Malhotra, senior author. The specimens are deposited in the Herbarium of the Botanical Survey of India, Pune (BSI).

ANNONACEAE

Anona squamosa L. *Sitaphal*.

Fruits are eaten by wild animals and birds. 144429.

MENISPERMACFAE

Cocculus hirsutus (L.) Diels, *Cocculus villosus* DC. *Vasanvel* 151302.

NYMPHAEACEAE

Nymphaea nouchali Burm. *Nymphaea lotus* Hook. f. Fl. Brit. Ind. 1: 114. 1872; Cooke, Fl. Pres. Bombay 1: 26. 1958. (Repr. ed.). *Lal Kamal*.

The rhizomes and flowers are eaten by wild animals. 144579.

PAPAVERACEAE

Argemone mexicana L. *Pivala Dhotra* 145030.

BRASSICACEAE

Brassica nigra Koch, *Mohori* 144813.

CLEOMACEAE

Cleome monophylla L. *C. viscosa* L. *Jangli Harar*.

The leaves are used as food by wild animals. 151386.

VIOLACEAE

Hybanthus aneaspermus (L.) F. Muell. *Ionidium suffruticosum* (L.) Ging. ex DC. *Ionidium heterophyllum* Vent. *Ratianpurus* 144580, 144847.

POLYGALACEAE

Polygala elongata Klein ex Willd. 144493.
P. erioptera DC. 149853.

PORTULACACEAE

Portulaca oleracea L. *Pasalei* 149836.

MALVACEAE

Abelmoschus manihot (L.) Medic. *Hibiscus tetraphyllus* Roxb. 151137.

Hibiscus lampas Cav. *Thespesia lampas* Dalz. & Gibs. *Thespesia macrophylla* Blume. *Ranbhendi* 144815.

H. lobatus (J. A. Murray) O. Ktze. *Hibiscus solandra* L. *Herit* 144959.

Kydia calycina Roxb. *Warang*.

Wood is used as timber ; leaves are eaten by animals. 151369.

Malachra capitata (L.) L. *Bhanbhendi* 144929.

Sida acuta Burm. f. *Visabodi* 144778.

S. cordata (Burm. f.) Borss. *Sida veronicaefolia* Lam. *Kungyi*.

Leaves are eaten by animals. 144852.

S. cordifolia L. *Chikna* 144898.

S. rhombifolia L. *Gubatada* 144858.

Urena lobata L. *Venbhendi* 149675.

BOMBACACEAE

Bombax ceiba L. *Bombax malabaricum* DC. *Semal*.

Seeds are eaten by animals. 149609.

STERCULIACEAE

Eriolaena hookeriana Wt. & Arn. *Kunugai*.

Wood is used as timber ; leaves are eaten by wild animals. 144800, 151130.

Helicteres isora L. *Muradphali*.

The stem fibre is used for making ropes ; leaves and tender shoots are eaten by wild animals. 144518.

Melochia corchorifolia L. *Bilpat* 149789.

Waltheria indica L. *Haldubi* 144873, 144899.

TILIACEAE

Corchorus aestuans L. (non Forsk.). *Corchorus acutangulus* Lam. 144494, 151329.

C. capsularis L. *Narcha* 144546.

Grewia hirsuta Vahl, 144663.

G. tiliaefolia Vahl, *Dhaman*.

Fruits are edible ; leaves and shoots are also eaten by wild animals. 144500.

Triumfetta rhomboidea Jacq. *Jhinjhira* 151121.

MALPIGHIACEAE

Aspidopteris cordata (Wall.) A. Juss. 144661.

OXALIDACEAE

Biophytum reinwardtii (Zucc.) Klotzsch, *Biophytum reinwardtii* Walp. ex Edgew. 144754.

B. sensitivum (L.) DC. *Jharera* 151134.

BALSAMINACEAE

Impatiens balsamina L. *Terada* 144496.

RUTACEAE

Aegle marmelos (L.) Corr. *Del*.

Fruits are edible ; leaves are eaten by wild animals. 151384.

BURSERACEAE

Boswellia serrata Roxb. ex Coleb. *Salai*.

Wood is used as timber ; flowers and seeds are eaten by wild animals. 149786.

OLACACEAE

Olex scandens Roxb. *Aradphal*.

Fruits are eaten by wild animals. 144517.

CELASTRACEAE

Meytenus emarginata (Willd.) Ding Hou, *Gymnosporia montana* (Roth) Benth. *Bharati* 149759, 151423.

RHAMNACEAE

Ventilago denticulata Willd. *Ventilago calyculata* Tulasne, *Sakalyel* 151421.

Ziziphus oenoplia Mill. *Yeroni*.

Fruits are eaten by wild animals. 144888, 151374.

VITACEAE

Ampelocissus latifolia (Roxb.) Planch. *Vitis latifolia* Roxb. *Golenda* 151444.

Cayratia trifolia (L.) Domin, *Vitis trifolia* L. 144582, 144797.

Leea edgeworthii Sant. *Leea aspera* Edgw. Fruits are eaten by wild animals. 144789.

SAPINDACEAE

Cardiospermum halicacabum L. *Kanphuti* 149798.

Dodonea viscosa (L.) Jacq. *Kharata* 144908.

ANACARDIACEAE

Buchanania lanzan Spreng. *Charoli*.

Fruits and seeds are eaten by wild animals. 149756, 149783.

Lannea coromandelica (Houtt.) Merr. *Odina wodier* Roxb. *Mohwai* 149695.

Mangifera indica L. *Amba*.

Fruits are eaten by wild animals. Timber is used for furniture etc. 149575.

FABACEAE

Abrus precatorius Linn. *Gunja* 151359.

Alysicarpus bupleurifolius (L.) DC. 144846.

A. vaginalis (L.) DC. 144495, 1444585, 144842.

Atylosia scarabaeoides (L.) Benth. 149818.

Butea monosperma (Lamk.) Taub. 3(3): 366. 1894. *Butea frondosa* Koenig, *Palas*.

Flowers are used for an yellow dye. Lac is collected from the trees. 149784.

Crotalaria albida Heyne ex Roth, *Ban-methi* 144796, 144812, 151373.

C. prostrata (Rottl.) Willd. *Crotalaria prostrata* Roxb. 151328.

C. pusilla Heyne, 144580.

C. sericea Retz. *Jhymghunia* 149821.

Dalbergia latifolia Roxb. *Kala Rukh* 144798, 144879.

Desmodium triflorum (L.) DC. *Junglimethi*. Plants eaten by wild animals. 144845, 149787, 151392.

D. velutinum (Willd.) DC. *Desmodium latifolium* DC. 144790.

Indigofera astragalina DC. *I. hirsuta* sensu Baker (non Linn.), *I. hirsuta* L. 144594, 144872.

I. cassioides Rottl. ex DC. *Indigofera pulchella* Roxb. 149764.

I. glandulosa Roxb. ex Willd. *Bargadan*. Fresh plants are eaten by wild animals. 144895.

I. linifolia Retz. *Bhangra* 144591, 151417.

I. tinctoria L. *Nili* 144917, 144930.

Millettia auriculata Baker, 144488.

Moghania strobilifera L. St. Hil. ex O. Ktze, *Flemingia strobilifera* R. Br. ex Ait. 144675.

Mucuna prurita Hook. Bot. *Mucuna pruriens* DC. *Kāvacha* 151406.

Pseudarthria viscida (L.) Wt. & Arn. 144501, 14890, 151424.

Pterocarpus marsupium Roxb. *Bija*.

Wood is used for furniture etc. Flowers and seeds are eaten by wild animals. 151338.

Rhynchosia minima (L.) DC. *Dafrtaranghevada* 144804, 144954.

Sesbania grandiflora (L.) Pers. *Madga*.

Leaves and fruits are eaten by wild animals. 151399.

Smithia conferta Sm. *Smithia geminiflora* var. *conferta* Baker, *Naichi bhaji* 144859.

Tephrosia purpurea (L.) Pers. *Davali*.

Eaten by the wild animals. 151447, 151398.

Teramnus labialis (L.) Spreng. *Ran udid*.

Leaves are eaten by wild animals. 144887, 144955.

Uraria lagopodioides (L.) Desv. ex DC. *Dowala* 144814, 144923.

U. picta (Jacq.) Desv. ex DC. *Prisniparni* 144774.

Vigna trilobata (L.) Verdc. *Phaseolus trilobatus* Ait. *Mugam*.

Plant eaten by wild animals. 144932.

V. vexillata (L.) A. Rich. 144927.

Zornia gibbosa Span. *Zornia diphylla* auct. Plur. (non Pers. 1807), *Landgu*.

Plant eaten by wild animals. 144760.

CAESALPINIACEAE

Bauhinia purpurea L. *Kanchan*.

Leaves are eaten by wild animals. 144969, 151370.

Bauhinia racemosa Lamk. *Apta*.

Flower buds and fruits eaten by wild animals. 144598, 144856, 151361.

B. variegata L. *Kachnar*.

Flower buds and leaves eaten by wild animals. 151402.

Caesalpinia crista L. *Caesalpinia bonducella* Flem. *Sagargota* 151303.

C. pulcherrima (L.) Sw. *Gulutura* 144784, 151383.

Cassia absus L. *Vhaksu* 144628.

C. fistula L. *Bahava*.

Wood used as timber. 144832.

C. mimosoides L. 144807.

C. occidentalis L. *Kasoda* 144862.

C. tora L. *Tarota* 144837.

Delonix regia (Boj. ex Hook.) Raf. *Poinciana regia* Boj. ex Hook. *Gulmohur*. Ornamental tree, 151322.

Peltophorum pterocarpum (DC.) Baker ex Heyne.

Wood used for furniture etc. 151321.

Tamarindus indica L. *Chinch*.

Leaves and fruits eaten by wild animals. Wood used for making agricultural implements. 149608.

MIMOSACEAE

Acacia chundra (Roxb.) Willd. *Khair*.

Wood used as timber. 144936.

A. pennata (L.) Willd. *Shembi* 151372.

A. rugata (Lamk.) Ham. ex Merr. *Acacia concinna* (Willd.) DC. 144891.

A. torta (Roxb.) Caraib. 149773.

Albizia lebbek (L.) Benth. *Sirisha*.

Leaves and twigs used as food by wild animals. Wood used for making furniture etc. 151401.

A. odoratissima (L.) Benth. *Chichhwa*.

Leaves eaten by wild animals. 144876, 144999, 154592.

COMBRETACEAE

Anogeissus latifolia (DC.) Wall. ex Bedd. *Dhavada*.

Wood is used as timber. Trees are leased out for gum trade; gum used in calico printing. 149772.

Cayopteris floribunda (Roxb.) Lamk. *Ukshi*.

Wood used for making wooden tools etc. 149757.

Combretum decandrum Roxb. *Punk*.

Stems used for making baskets. 151304.

C. ovalifolium Roxb. *Piwarbhal* 149763.

Terminalia bellirica (Gaertn.) Roxb. *Bahada*.

Wood is used as timber. Fruits are eaten by wild animals. 144863, 149783.

T. tomentosa Wt. & Arn. *Asna*.

Fruits are used for dyeing; gum of commercial value. 144805, 151308, 151390.

MYRTACEAE

Psidium guajava L. *Peru*.

Fruits eaten by wild animals. 144785.

LYTHRACEAE

Ammannia baccifera L. *Bharjambhuli* 151317.

Lagerstroemia indica L. *Lendia* 144841.

L. parviflora Roxb. *Sena*.

Wood is used as timber. 151337.

Woodfordia fruticosa (L.) Kurz. *Woodfordia floribunda* Salisb. *Phulsatti* 151315.

ONAGRACEAE

Ludwigia hyssopifolia (G. Don) Exell. 144766.

L. octovalvis (Jacq.) Raven sub. sp. *sessiliflora* (Mich.) Raven, *Jussiaea suffruticosa* L. 144723.

L. perennis L. *Ludwigia parviflora* Roxb. 149800.

CUCURBITACEAE

Cucumis melo L. var. *agrestis* Naud. *Kharbuja*.

Fruits are eaten by wild animals. 144849.

Diplocyclos palmatus (L.) Jeff. *Bryonia laciniosa* L. 144867.

Trichosanthes cucumerina L. *Rancha Padawal*.

Fruits are eaten by wild animals. 144864.

MOLLUGINACEAE

Mollugo pentaphylla L. *Mollugo stricta* L. *Jharasa* 144878, 151353.

RUBIACEAE

Borreria aricularis (L.) F. N. Will. *Spermocoe hispida* L. 150999.

B. pusilla (Wall.) DC. 144819.

Gardenia gummifera L. *Dikamali* 151394.

G. latifolia Ait. *Goghal*.

Wood used for making toys etc. 144515, 144821, 151360.

Knoxia sumatrensis (Retz.) DC. *Knoxia corymbosa* Willd. 144797.

Mitragyna parvifolia (Roxb.) Korth, *Stephegyna parvifolia* Korth, *Karam*.

Wood used for making Agriculture implements; leaves eaten by wild animals. 151342.

Morinda tomentosa Heyne ex Roth, *M. tinctoria* Roxb. 144593.

O'den'andia corymbosa L. *Phapti* 144850, 151306, 151353.

ASTERACEAE

Acanthospermum hispidum DC. 144866.

Ageratum conyzoides L. *Osari* 151325.

Bidens biternata (Lour.) Merr. & Sherff. *Bidens pilosa* L.

Leaves are eaten by wild animals. 144974.

Blumea eriantha DC. *Nimurdi* 151414.

B. obliqua (L.) Druce, *Blumea amplexans* DC. 151335.

Caesulia axillaris Roxb. 144905.

Cyathocline purpurea (Don) Kuntze, *Cyathocline lyrata* Cass. 149689.

Eclipta prostrata (L.) L. *Eclipta alba* Hassk. *Bhangra* 144896, 151411.

Elephantopus scaber L. *Pathari*.

Leaves eaten by wild animals. 154512.

Emilia sonchifolia (L.) DC. ex Wight, *Sirankhuri*.

Plants eaten by wild animals. 149721.

Lagascea mollis Cav. 144806.

Sphaeranthus indicus L. *Corakhamundi* 149769.

Tridax procumbens L. *Ekdandi* 144503, 151334.

Vernonia cinerea (L.) Less. *Osari* 149639.

Vicoa indica (Willd.) DC. *Vicoa auriculata* Cass.

Plants eaten by wild animals. 149814, 151362.

Xanthium strumarium L. *Dutundi* 144884.

LOBELIACEAE

Lobelia alsinoides Lamk. *Lobelia trigona* Roxb. 144916.

PLUMBAGINACEAE

Plumbago zeylanica L. *Chitramula* 149679.

EBENACEAE

Diospyros melanoxylon Roxb. *Tendu*.

Wood is used as timber. Fruits eaten by wild animals; leaves used for wrapping bidis. 144507.

OLEACEAE

Nyctanthes arbor-tristis L. *Parijatak* 151339.

APOCYNACEAE

Ho'arrhena antidysenterica (Roth) A. DC. *Kuda* 149564.

Ichnocarpus frutescens (L.) R. Br. *Kalidudhi*. Stems used for making ropes. 144924.

Tabernaemontana divaricata (L.) R. Br. *Tabernaemontana coronaria* Willd. 149683.

Wrightia tinctoria R. Br. *Kalakuda* 151320, 151357.

ASCLEPIADACEAE

Ca'otropis procera (Ait.) R. Br. *Mandara* 149654.

Cryptolepis bucharani Roem. & Schult. *Bokharia* 144516, 144885.

Hemidesmus indicus (L.) R. Br. *Anantmula* 144669.

Pergularia daemia (Forsk.) Chiov. *Daemia extensa* (N. Jacq.) R. Br. *Urarni*.

The leaves and flowers are eaten by wild animals. 144577.

LOGANIACEAE

Mitrasacme indica Wight, *Mitrasacme alsinoides* (non R. Br.), 144962.

GENTIANACEAE

Canscora diffusa (Vahl) R. Br. 151120, 151310.

Exacum bicolor Roxb. 151138.

E. pumilum Griseb. 151119.

Nymphoides cristatum (Roxb.) O. Kuntze, *Limnanthemum cristatum* (Roxb.) Griseb. *Kolave chikal* 144506.

N. indicum (L.) O. Kuntze, *Limnanthemum indicum* (L.) Griseb. 149808.

BORAGINACEAE

Coldenia procumbens L. 149788.**Heliotropium ovalifolium** Forsk. 149838.

CONVOLVULACEAE

Evolvulus alsinoides L. *Vishnukaranta* 144584, 149777, 151314.**Ipomoea aquatica** Forsk. *Nalichibhaji*.

Leaves and shoots eaten by wild animals. 144911, 151410.

I. crassicaulis (Benth.) B. L. Robinson, 149785.**I. hederifolia** L. *Ipomoea coccinea* Clarke, 151301.**I. nil** (L.) Roth, *Ipomoea hederacea* Plur auct non Jacquin; *Nilpushpa* 144808.**I. pestigridis** L. *Panchpatri*.

Leaves eaten by wild animals. 144901.

I. quamoclit L. *Vishnukrantu* 144868.**Merremia emarginata** (Burm. f.) Hall. *Masakani* 144958.

SOLANACEAE

Datura innoxia Mill. *Datura metel* Sims. 149646.**Solanum nigrum** L. *Kamani* 151352.**S. surattense** Burm. f. *S. xanthocarpum* Schrad. & Wendl. *Kateringni* 151346.

SCROPHULARIACEAE

Bacopa monnieri (L.) Pennell, *Herpestis monniera* Benth. *Brahmi* 144510.**Centrathera indica** (L.) Gamble, *Centrathera hispida* R. Br., 144957.**Dopatrium junceum** (Roxb.) Buch.-Ham. ex Benth. 144697.**Limnophila indica** (L.) Druce, *L. gratioloides* R. Br. *Ambuli* 151409.**Sopubia delphinifolia** (L.) G. Don, 144943.**Stemodia viscosa** Roxb. 149802.**Striga angustifolia** (D. Don), *Striga euphrasioides* Benth. 144586.

PEDALIACEAE

Sesamum indicum L. *Til* 144780.**S. mulayanum** Nair, 144803.

MARTYNIACEAE

Martynia annua L. *Martynia diandra* Glox. *Vinchu* 144809.**Torenia indica** Saldanah, 144994.

ACANTHACEAE

Andrographis paniculata (Burm.) Wall. ex Nees, *Devkirayath* 144883, 149781, 157381.**Barleria cristata** L. 144999.**B. pratensis** Sant. *Kalsunda* 144827.**Dipteracanthus prostratus** (Poir) Nees, *Ruellia prostrata* Poir, 144909, 151363.**Eranthemum purpurascens** Nees, *Daedalcanthus purpurascens* T. Anders. 151332, 151341.**Hemigraphis latebrosa** Nees var. *heyneana* Bremek. 149760, 149809, 151122, 151326.**Hygrophila auriculata** (Sch.) Heine, *Asteracantha longifolia* Nees, 151381.**Justicia betonica** L. *Mokandar* 144828, 151336.**J. diffusa** Willd. 151327.**Peristrophe bicalyculata** (Retz.) Nees, *Arilal* 149630.**Rungia pectinata** (L.) Nees, *Rungia parviflora* var. *pectinata* (L.) Clarke, 151312, 151333.

VERBENACEAE

Clerodendrum serratum (L.) Moon, *Bharang* 144799, 144902.**Duranta repens** L. *Duranta plumieri* Jacq. Planted.**Phyla nodiflora** (L.) Greene, *Lippia nodiflora* A. Rich. *Jalpimpli* 149823.**Tectona grandis** L. *Sagwak*.

Wood used for quality carpentary and cabinet work. 151358.

Vitex negundo L. *Nirgundi* 144787.

LAMIACEAE

Anisomeles indica (L.) O. Kuntze, *Anisomeles ovata* R. Br. *Gopali*.

Plants eaten by wild animals. 144818.

Hyptis suaveolens (L.) Poit. 151325.**Leonotis nepetifolia** (L.) R. Br. *Deepmal* 144558.**Leucas biflora** R. Br. 144904.**L. cephalotes** Spreng. *Deokhumba* 151318.**L. zeylanica** R. Br. 151344.

NYCTAGINACEAE

Boerhavia diffusa L. *Tambadi vasu* 151350.

AMARANTHACEAE

- Achyranthes aspera** L. *Aghada* 144952
A. bidentata Blume, 144630.
Aerva sanguinolenta (L.) Blume, *Aerva scandens* Wall. ex Micq. *Kapurphuti* 144869.
Alternanthera sessilis (L.) DC. *Kanchari* 149794, 151405.
Celosia argentea L. *Kurdu* 151385.
Gomphrena celosioides Mart. 149795, 151403.

CHENOPODIACEAE

- Chenopodium album** L. *Bathusag* 149666.

POLYGONACEAE

- Antigonon leptopus** Hook. & Arn. 144602.
Polygonum barbatum L. var. **gracile** (Dans) Steward, *P. serrulatum* Lagasca, 144922.
P. glabrum Willd. 144990.

LORANTHACEAE

- Dendrophoe falcata** (L. f.) Etting, *Loranthus longiflorus* Desr. 144893, 149771.

EUPHORBIACEAE

- Acalypha ciliata** Forsk. *Khokali* 144953.
Bridelia retusa (L.) Spreng, *Kassie*.
 Fruits and leaves eaten by wild animals. 144817, 151343.
Cleistanthus collinus Benth. *Garari*.
 Bark, leaves and fruits, used in tanning. 151309, 151356.
Croton bonplandianum Baill. 149837.
Emblica officinalis Gaertn. *Phyllanthus emblica* L. *Avala*.
 Fruits eaten by wild animals and pickled, candied, medicinal as well. 151397.
Euphorbia geniculata Orteg. 149664.
E. hirta L. *E. pilulifera* L. *Dudhi* 149792, 151345.
Jatropha gossypifolia L. *Bherenda* 144811.
Kirganelia reticulata (Poir.) Baill. *Phyllanthus reticulatus* Poir. *Pitouri* 149626.
Phyllanthus simplex Retz. 151412.
Ricinus communis L. *Erand*.
 Seeds yield castor oil. 149680.

MORACEAE

- Ficus amplissima** J. E. Sm. *Gulat* 144892.
F. benghalensis L. *Nad*.

Fruits eaten by birds and monkeys. 144603.

- F. racemosa** L. *Ficus glomerata* Roxb. 149619.

- F. religiosa** L. *Pimpala*. Planted. Tree of religious significance.
 Fruits eaten by wild animals.

CASURINACEAE

- Casuarina equisetifolia** J. R. & G. Forst. *Suru* 151389.

HYDROCHARITACEAE

- Ottelia alismoides** (L.) Pers.

Fruits eaten by wild animals. 144505, 144931.

ORCHIDACEAE

- Habenaria commelinifolia** Wall. ex Lindl. 144881, 144926.
H. plantaginea Lindl. 144880.
Vanda tessellata (Roxb.) Hook. *Vanda roxburghii* R. Br. *Rasna* 144928, 151340.

ZINGIBERACEAE

- Costus speciosus** (Koenig) Smith, *Pushkarmula* 144563.

CANNACEAE

- Canna indica** L. Planted.
 Fruits eaten by wild animals.

MUSACEAE

- Musa paradisiaca** L. Planted. All parts of plant useful. Fruits edible.

HYPOXIADACEAE

- Curculigo orchioides** Gaertn. *Kalimusali*.
 Roots eaten by wild animals. 144854.

DIOSCOREACEAE

- Dioscorea bulbifera** L. *Karukavinda* 144554.
D. pentaphylla L. *Ulas*.
 Flowers eaten by wild animals. 151422.

LILIACEAE

- Asparagus racemosus** Willd. *Satawari*.
 Roots used in the preparation of medicated oils. 144735.
Gloriosa superba L. *Khadyunag* 144795.

COMMELINACEAE

- Amischophacelus cucullata** (Roth) Rolla Rao et Kammarthy, *Cyanotis cucullata* (Roth) Kunth, 149801.

Commelina hasskarli C. B. Clarke, 144740.

Cyanotis cristata (L.) D. Don, 144636.

Murdannia spirata (L.) Bruck. *Aneilema spiratum* (L.) R. Brown, 144851.

M. vaginata (L.) Bruck. *Aneilema vaginatum* R. Br. 144925.

TYPHACEAE

Typha angustata Bory. & Chaub. 151388.

BUTOMATACEAE

Tenagocharis latifolia (D. Don) Buchen.

Butomopsis latifolia Kunth, 144940.

ERIOCAULACEAE

Eriocaulon dianae Fyson, 144652.

CYPERACEAE

Cyperus compressus L. 144328.

C. cyperoides (L.) O. Ktze. *Mariscus sieberianus* Nees, 144457.

Cyperus iria L.

Culms used for making mats. 144618.

C. pangorei Rottb. *Cyperus tagetum* Roxb. 144921.

C. rotundus L. *Motha* 149194.

C. sanguinolentus Vahl, *Pycneus sanguinolentus* Nees, 144961.

C. triceps (Rottl.) Endl. *Kyllinga triceps* Rottb. 144681.

Fimbristylis dichotoma (L.) Vahl. 144644.

F. littoralis Gaud. *Fimbristylis miliacea* Vahl, 144960, 149538.

F. shoenoides (Retz.) Vahl, 144844.

F. tetragona R. Br. 144937.

Lipocarpa chinensis (Obs.) Kern, *Lipocarpa argentea* (Vahl) R. Br. ex Nees, 149732.

Scirpus corymbosus Heyne ex Roth, 144910.

S. mucronatus L. 144504.

S. supinus L. 149803.

POACEAE

Practically all the grasses included here are the staple food of the wild animals in the National Park.

Apluda mutica L. *Apluda varia* var. *aristata* Hack. 144823.

Aristida setacea Retz.

Used for making brooms and screens. 149816.

Arundinella pumila (A. Rich) Steud. 144992.

Arundo donax L. *Baramal*.

Used for making baskets etc. 144920.

Bothriochloa pertusa (L.) A. Camus, *Andropogon pertusus* (L.) Willd. *Gohhaya*.

Eaten by wild animals. 149754.

Chrysopogon fulvus (Spreng.) Chiov. *Andropogon monticola* Roem. & Schult.

Coix gigantea Koenig ex Roxb. 144934.

C. lachryma-jobi L. *Ran Jhondhala*.

Leaves and flowers eaten by wild animals. 144950.

Cynodon dactylon (L.) Pers. *Haryali*.

Eaten by wild animals. 151416.

Dendrocalamus strictus (Roxb.) Nees, *Bambu*. Used for paper making, baskets etc. 144882.

Dichanthium annulatum (Forsk.) Stapf. *Andropogon annulatus* Forsk.

Eaten by wild animals. 149643.

Echinochloa colonum (L.) Link. *Panicum colonum* L. *Sawank*.

Eaten by wild animals. 144933.

Eragrostis gangetica (Roxb.) Steud. *Todha*.

Eaten by wild animals. 149810, 151124, 151318.

E. tenella (L.) P. Beauv. ex Roem. et Schult. *Dhane*.

Eaten by wild animals. 149753.

E. unioloides (Retz.) Nees ex Steud. *E. amabilis* Wt. & Arn. ex Nees, *Poi motichava*.

Eaten by wild animals. 144358.

Elytrophorus spicatus (Willd.) A. Camus. *E. articulatus* P. Beauv. 151378.

Hackelochloa granularis (L.) O. Ktze. *Manisuris granularia* L. f. *Trinpali* 144619.

Heteropogon contortus (L.) P. Beauv. ex Roem. & Schultes, *Andropogon contortus* L. *Gantegawta* 144893.

Isachne globosa (Thunb.) O. Ktze. *I. australis* R. Br. 144860.

Iseilema antheophoroides Hack. in DC. 149527.

- Melanocenchris jacquemontii** Jaub. et Spach. The plant is eaten by wild animals.
Gracilea royleana Hook. *Bedami Dongri* 151125.
 144542.
- Oplismenus burmannii** (Retz.) P. Beauv. **Vetiveria zizanioides** (L.) Nash. *Andropogon squarrosus* Hook. *Vala*.
Mini 144951. The plant is used for making curtains etc.
 151319.
- Pennisetum pedicellatum** Trin. 149582, 151420.
- Paspalidium flavidum** (Retz.) A. Camus, *Panicum flavidum* Retz. 144855.
- Sacciolepis interrupta** (Willd.) Stapf. *Panicum interruptum* Willd. *Pakalia* 151408.
- Sporobolus diander** (Retz.) Beauv. *Cirivadana* 144871.
- Themeda triandra** Forsk. *Anthistiria imberis* Retz. *Themeda imberis* Cooke.

ACKNOWLEDGEMENTS

The authors are thankful to Dr. M. P. Nayar, Deputy Director, Botanical Survey of India, for encouragement and suggestions and also to the Director, Botanical Survey of India, Howrah for facilities.