



Flora of
**Nawegaon National Park and
Nagzira Wildlife Sanctuary**
Maharashtra



Botanical Survey of India

2024



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FLORA OF NAWEGAON NATIONAL PARK AND NAGZIRA WILDLIFE SANCTUARY, MAHARASHTRA

Authors

**DEVIDAS N. PATIL
M.J. KOTHARI**

Assistance: Arpan Dey



भारतीय वनस्पति सर्वेक्षण
BOTANICAL SURVEY OF INDIA

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MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

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Front Cover: *Solanum virginianum* L. ('Ran-vangi')

Back Cover: Landscapes of Nawegaon National Park & Nagzira Wildlife Sanctuary

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ए. ए. माओ
निदेशक
A. A. Mao
Director



सत्यमेव जयते

भारत सरकार
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय
भारतीय वनस्पति सर्वेक्षण
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST
& CLIMATE CHANGE
BOTANICAL SURVEY OF INDIA



FOREWORD

India is endowed with a diverse range of flora and fauna, all of which are being carefully preserved in various protected areas across the country. Since the protected areas are prime centers for *in-situ* conservation and also considered as the eco-sensitive zones, the documentation and assessment of their biome are essential. As a leading authority in plant taxonomic research, the Botanical Survey of India is mandated to document the flora of the country including the protected areas and the information is made available to the researchers in the public domain. The e-book, “Flora of Nawegaon National Park and Nagzira Wildlife Sanctuary, Maharashtra” is such an effort by BSI to document the floral diversity of the National Park and Wildlife Sanctuary. The authors are to be commended for their meticulous work in preparing the comprehensive data of 722 species including 43 endemics, 300 economically and medicinally important species from the Wildlife Sanctuary. I wish this book will serve as an important reference guide to the students, teachers and general public in understanding the biodiversity and take meaningful step towards its conservation.


(A.A. MAO)



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Authors

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PLATE-A

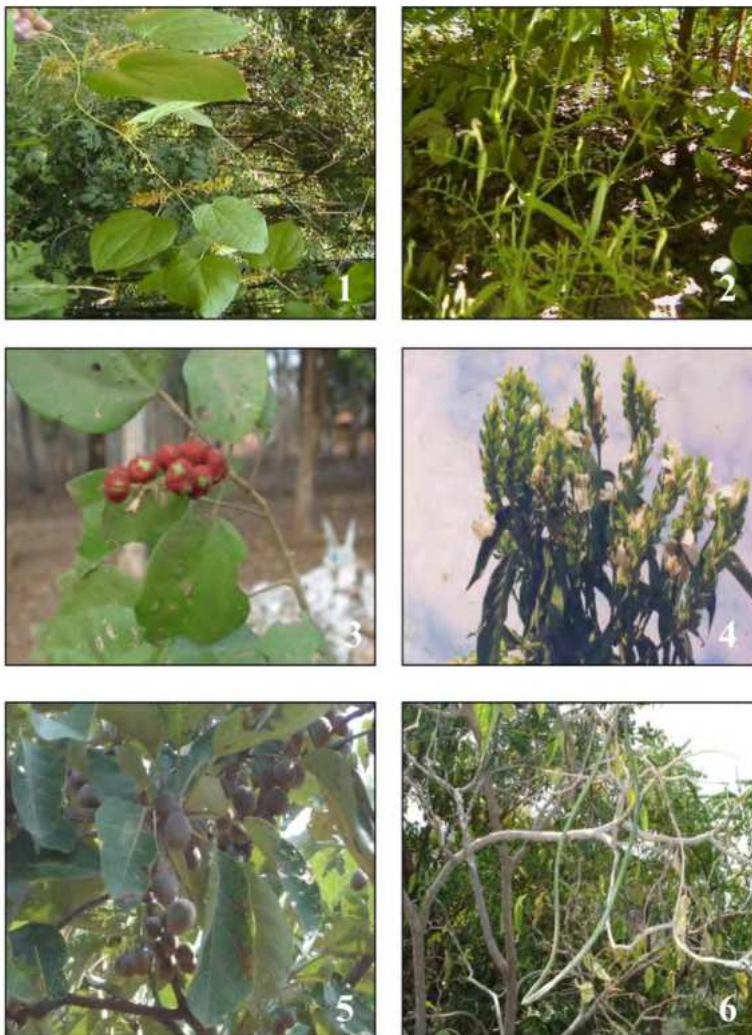


1. Vegetation along Nagzira lake showing predominance of *Polygonum plebeium*; 2. Aquatic vegetation in Nawegaon lake-*Nelumbo nucifera* in flowers; 3. Nawegaon lake with luxurious vegetation; 4. Moist deciduous forests in top storey with *Sterculia urens*, *Anogeissus latifolia*, *Diospyros melanoxylon* etc.; 5. Moist deciduous vegetation showing *Anogeissus latifolia*, *Cleistanthus collinus* etc.; 6. Moist deciduous vegetation in Nawegaon National Park.

PLATE-B



1. *Cleistanthus collinus* (Roxb.) Benth. ex Hook.f. ('Garari'); 2. *Solanum virginianum* L. ('Ran-vangi'); 3. *Solanum virginianum* L. ('Ran-vangi'); 4. *Costus speciosus* (Koen.) J.E. Sm.; 5. *Flemingia strobilifera* (L.) Ait. & Ait.f.; 6. *Helicteres isora* L. ('Murud-Sheng').

PLATE-C: Medicinal Plants

1. *Dioscorea bulbifera* L.; 2. *Andrographis paniculata* (Burm.f.) Wall. ex Nees ('Karayat'); 3. *Mallotus philippensis* (Lam.) Muell-Arg. ('Kumkum'); 4. *Justicia adhatoda* L. ('Adulsa'); 5. *Terminalia bellirica* (Gaertn.) Roxb. ('Beheda'); 6. *Wrightia tinctoria* R.Br. ('Kala-kuda').

PLATE-D: Medicinal Plants

1. *Butea monosperma* (Lam.) Taub. ('Palas'); 2. *Cassia fistula* L. ('Bahava'); 3. *Asparagus racemosus* Willd. var. *javanica* (Kunth) Baker ('Shatavari'); 4. *Emblica officinalis* Gaertn. ('Avala'); 5. *Abrus precatorius* L. ('Gunja'); 6. *Martynia annua* L. ('Vagnaki').

PLATE-E: Medicinal Plants

1. *Dendrophthoe falcata* (L.f.) Etting. ('Bandgul'); **2.** *Vanda tessellata* Don; **3.** *Nymphaea nouchali* Burm.f.; **4.** *Polygonum plebeium* R.Br.; **5.** *Ottelia alismoides* Pers.; **6.** *Nymphoides indicum* (L.) O. Ktze.

PLATE-F



1. *Pongamia pinnata* (L.) Pierre ('Karanj'); 2. *Vetiveria zizanioides* Nash ('Vala');
 3. *Buchanania cochinchinensis* (Lour.) Almeida ('Char'); 4. *Sterculia urens* Roxb.
 ('Karu'); 5. *Abelmoschus manihot* (L.) Medic. ssp. *tetraphyllus* (Roxb. ex Horn.)
 Borss. ('Ranbhendi'); 6. *Ziziphus xylopyra* (Retz.) Willd. ('Ghatbor').

PLATE-G

1. *Mucuna pruriens* (L.) DC. ('Khaj-Kuilee'); 2. *Ziziphus oenoplia* (L.) Mill. ('Yeruni'); 3. *Erythrina variegata* L. ('Pangara'); 4. *Kydia calycina* Roxb. ('Warang'); 5. *Smilax ovalifolia* Roxb.; 6. *Terminalia cuneata* Roth ('Arjun').

PLATE-H



1. *Diospyros melanoxylon* Roxb. ('Tendu'); 2. *Madhuca longifolia* (Koen.) Macbr. var. *latifolia* (Roxb.) Chev. ('Moha'); 3. *Tectona grandis* L.f. ('Sag'); 4. *Dendrocalamus strictus* (Roxb.) Nees ('Bamboo'); 5. *Bombax ceiba* L. ('Kate Savar'); 6. *Celosia argentea* L. ('Kombada').

PLATE-I



1. *Woodfordia fruticosa* (L.) kurz ('Dhayati'); 2. *Euphorbia nivulia* Buch.-Ham. ('Kate-Thuwa'); 3. *Typhonium bulbiferum* Dalz. Endemic; 4. *Zingiber neesatum* Ramam. Endemic; 5. *Ventilago denticulata* Willd.; 6. *Aristolochia indica* L.

PLATE-J



1. Idol of “Hanuman-Nawegaon National Park; 2. Local people Idol Nagdev mandir-Nagzira Wildlife Sanctuary; 3. Local Idol “ Bodrai Mata” temple Nawegaon. Inset: Watch Tower; 4. Local Idol “ Mamabhanja”-A pair of trees-*Terminalia elliptica* Willd. (‘Yen’); 5. Ethnic People-‘Gond’; 6. Products from *Dendrocalamus strictus* (Roxb.) Nees (‘Bamboo’).

INTRODUCTION

Plants have many and diverse uses which have direct or indirect bearing on the civilization of human society. India is a vast country with its main land area about 3,287 million sq. km and a coastline of over 7,500 km and is the second largest country in Asia and seventh in the world. Over and above, with diversity of climate, soil and topography with almost all types of ecosystems found anywhere in the world and hundreds of biotopes, each supporting rich characteristic floristic and faunistic elements with Eurasian, Afro-tropical and Indo-Malayan floristic elements. India harbours over 45,000 species of plants (c.11 percent of world's flora). This includes Bacteria and viruses (850 spp.), Algae (6,500 spp.), Fungi (14,500 spp.), Lichens (2,021 spp.), Bryophytes (2,850 spp.), Pteridophytes (1,200 spp.), Gymnosperms (48 spp.) and Angiosperms (17,500 spp.). Among them are number of plants with botanical interest e.g. insectivorous (c.41 spp.), Orchids (c.1087 spp.) and Parasites (c.135 spp.). Because of this rich diversity, India is recognized as one of the 12 mega diversity regions of the world (Kothari & Singh, 1998; Singh & Singh, 2002).

The rich floristic diversity in India is not withstanding i.e. c.1700 spp. of Indian flowering plants are threatened with extinction today (c. 7 percent of 26,106 globally threatened spp. are from India). During last 400 years c. 654 spp. have become extinct (WCMC, 1992). During past two centuries, India has lost about 17 spp. like *Sterculia khasiana* and number of other spp. also could not be relocated due to natural (abiotic) and manmade (biotic) causes (Jain & Sastry, 1984; Nayar and Sastry, 1990).

Conservation of above mentioned biowealth in India initiated dates back to 4th century B.C. and is attributed to Acharya Kautilya who in the book Arth-shastra underlined the need for setting aside forested areas not only for protection of Wildlife, but also to provide goods and services to the society (Rangrajan, 1992). Similarly, the Emperor Ashoka in 252 B.C. laid down 'Stone edicts' for conservation of Wildlife (Saharia, 1981; Mackinnon & al., 1986). Since the vedic periods, every form of life was loved, worshipped and even sheltered in the ashrams of sages (hermitages), there by nurturing the philosophy of nature conservation (Jain and Sastry, 1981). The importance of the forests in remote areas of Kutch (Gujarat, India) was realized much earlier by Maharaja (King) of Kutch who demarcated certain areas (Chadua Rakhal & Nadibaug) as reserved protected forests where biotic activities like hunting of wild animals, felling of trees, Grazing etc. were strictly prohibited (Kothari & Singh, 2002). Therefore for *In-Situ* conservation of biological diversity under article 8, India today has elaborated network of c. 578 protected areas covering an area of c. 1,55,508.54 sq.km including 13 Biosphere reserves, 89 National parks and 489 Wildlife Sanctuaries (Rodgers & al., 2002). This includes 5 national parks and 35 wildlife Sanctuaries in Maharashtra.

To study the floristic composition of the Nawegaon National Park and Nagzira Wildlife Sanctuary, plant exploration tours were arranged in different seasons during 2001 to 2008. Flowering and fruiting specimens were collected and field observations regarding habit, habitat, colour of the flowers, local names, relative abundance, associated plants etc. were noted.



Map 1: Showing National Park of Maharashtra State including location of Navegaon (Navegaon) National Park

Close-up of flowering/fruiting material and habit along with associated plants were also photographed. Plants were processed in customary way and studied in the regional herbarium of Botanical Survey of India, Pune and deposited (BSI).

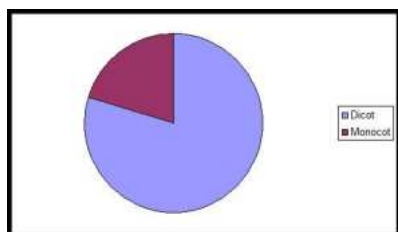
In the book, the families are arranged according to Bentham & Hooker's system of classification in general (1862–1883). For the sake of convenience, the genera under each family and the species under each genus are arranged alphabetically.

Bracketed keys have been provided for the families, genera and species based on exomorphic characters to help in their easy identification. The nomenclature of the plants has been updated applying International Code of Botanical Nomenclature

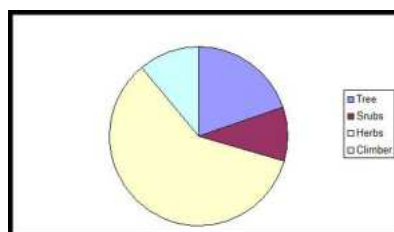
(ICBN, 2000) and recent taxonomical literature. For each species, the currently accepted botanical name followed by basionyms if any and important synonyms wherever necessary to connect the names with Hooker's flora of British India, regional Cooke's Flora of Bombay Presidency (1958, Repr.) and reference to earlier work done in the areas by Malhotra & Rao (1980, 1981) have been given. After citation, available local Marathi names are given. The description of the species is given based on morphological characters along with Flowering & fruiting period, reference to Illustrations from recognized literature, distribution in Nawegaon National Park and Nagzira Wildlife Sanctuary and notes regarding uses.

Throughout the present work, decimal and metric system have been used for the measurements. Maps, pie charts and tables representing various data and some abbreviation viz. op. cit.: opera citato in the work cited; m: metric; cm: centimeter; mm: millimeter; *Fl.*: Flowering; *Fr.*: Fruting; var.: Variety; *BSI* are provided. As the adjoining study areas viz. Nawegaon National Park and Nagzira Wildlife Sanctuary are separate, their Location, Geology, Soil, Climate, and vegetation data are given separately under study areas.

Statistics of the flora



Pie Chart- I: Species Analysis
– Monocot & Dicot.



Pie Chart II: Habit Analysis in
general

STUDY AREAS

A. Nawegaon National Park, Maharashtra, India.

The National park (Bio-geographical Province 06D) was established on 22 November 1975 as per the Govt. Gazette Dec. 4,1975/ AP. Shake 1897, covering an area of 133.884 sq.km under Wildlife Protection Act 1972. The name Nawegaon National Park is based on the Nawegaon bandh lake with water spread over 11 sq.km., surrounded by seven peaks of Nishani hill ranges known as the "Sat Bahini" or seven sisters. On the fringe of the lake is an idol of Hanuman. An island in the middle of the lake is known as "Maldongar" and was used by 'Pindaris' (A tribe of professional robbers). The lake is a gift to bird watchers given by the Dongarwar family. Their descendants even today contribute towards Biodiversity conservation. Hence it is a tribute to founder of the Kolasur island ("Maldongar") (PLATE:A-1) with the Samadhi of Shri. Kolu Patil Dongarwar, who was instrumental in the establishment of this lake

in the 13th century and is still revered by the local people. The area around the lake is now known as 'Dr. Salim Ali Bird Sanctuary' in memory of the noted ornithologist.

Location: The area is located towards South of Bhandara in Maharashtra State (India) under the Gondia forest division between 29° 9'–29° 27' latitude and 80° 2'–80° 40' longitude. It includes a forest range viz. Pratapgarh and a few villages (Kawlewada, Zankargondi, Nishani, Tumdimendha and Malkazari) and 4 Reserve forest compartments. The area is bounded on the North by Kohamara, Duggipar, Mogra, Rajguda and Khadki, on the east by Mehuli and Palasgaon, on the south by Jamadi, Rampuri, Yelodi, Kholi and Nawegaon lake and On the west by Kosambi, Baki, Mendki, Kokna, Kaneri, Khoba, Parsodi, Raitwari and Pandarwani.

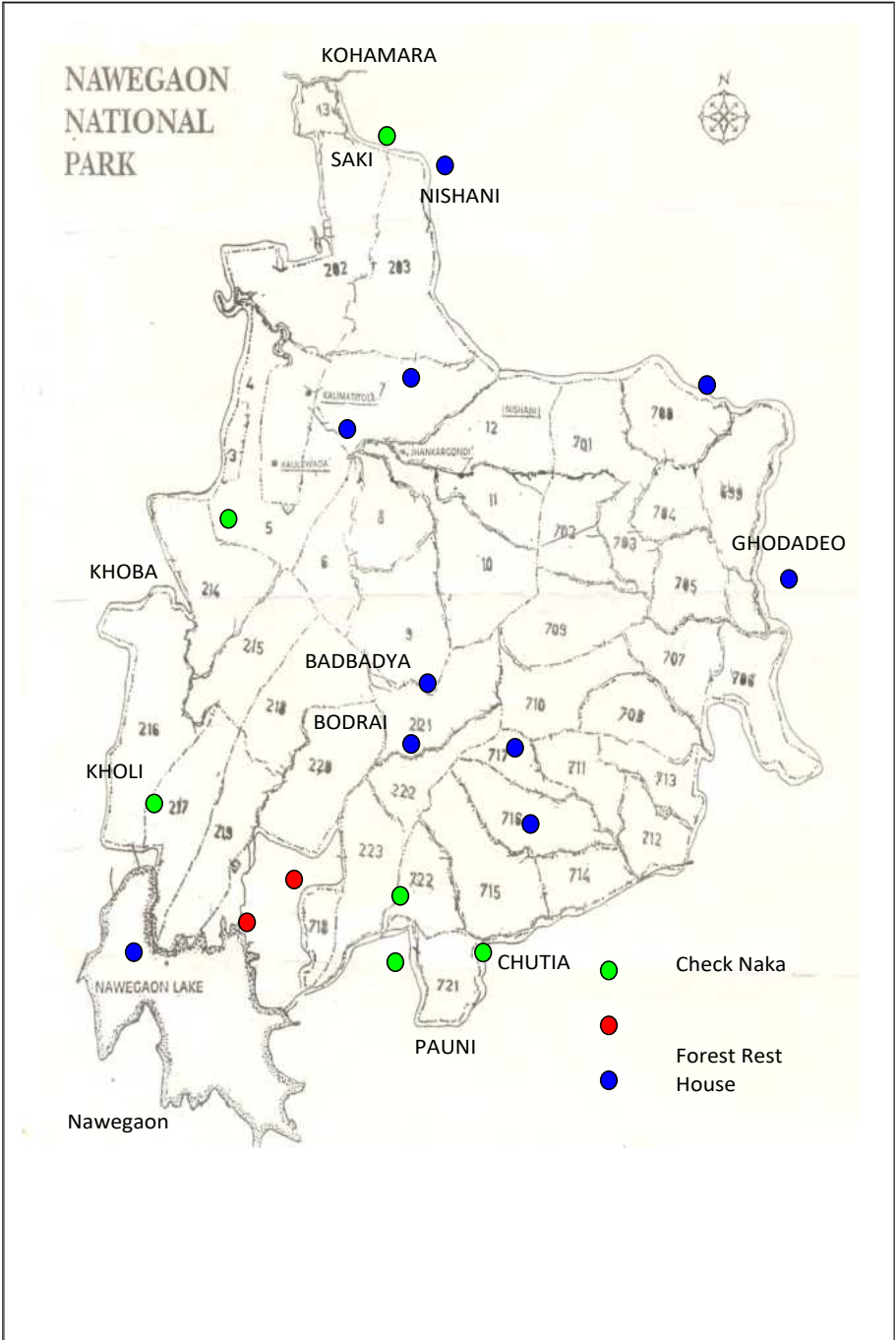
Geology: The National Park is popular forest Resort with picturesque low lying undulating hills fringing the lake of Nawegaon. Geologically the area has varied rocks ranging from Precambrian gneiss and granite to laterite and alluvium. The geological formation of the National park gives rise to numerous natural spings, streams, water holes which have maintained diverse living forms in the area. A few are Bodrai, Badbada, Madhavzari, Ranidoh, Kamkazari, Telanzari, Agezari etc.

Soil: Most of the soil in Maharashtra formed from Deccan trap. The soils are black, dark-brown or reddish in colour (black cotton soils or Regurs) are derived from Vindhyan and Gondwana formations.

Climate: The climate is quite pleasant for the greater part of the year with only short Span of hot weather. The temperature ranges from 5° C during January to 48° C during May. Mean annual temperature is 25.5° C. The average annual rainfall varies from 1100 to 1600 mm (cf. Table-I and Graphs 1-3).

Vegetation: The vegetation of the area is of South Indian moist deciduous type (Champion & Seth, 1968) (PLATE: A-3). The plants are distributed in three different zones. In top storey, the trees are close, rather tall spread out in tall canopy. The main deciduous species are *Albizia lebbeck*, *Albizia odoratissima*, *Anogeissus latifolia*, *Butea monosperma*, *Cleistanthus collinus*, *Diospyros melanoxylon*, *Mitragyna parvifolia*, *Pterocarpus marsupium*, *Tectona grandis*, etc. Middle storey has small trees and numerous shrubs like *Bridelia retusa*, *Holarrhena pubescens*, *Maytenus senegalensis* etc. Some slender climbers like *Abrus precatorius*, Lianas like *Butea superba*, *Oxalis psittacorum* and *Ventilago denticulata*, etc., stem parasite *Dendrophthoe falcata* and epiphytic orchids like *Vanda tessellata* also occur. Ground flora with *Carissa congesta*, *Lavandula bipinnata*, *Woodfordia fruticosa*, a number of grasses and sedges (*Cyperus* spp.) and aquatics in stagnant water eg. *Bacopa monnieri*, *Limnophila indica*, *Nymphaea nouchali*, *Nymphoides hydrophylla* etc. occur.

FAUNA: The hills have good growth of bamboo on the slopes and also provide special habitats like caves, cliff's, tableland and vallies. Due to total ban on exploitation, the area provides a good thicket and tall trees. It supports carnivores animals like *Cnon alpinus* (Wild-dog, Ran-kutra) (PLATE-B-4), *Felis chaus* (Ran-manjar), *Hyaena hyaena* (Taras), *Panthera pardus* (Bibtya), *Panthera tigris* (Wagh, Tiger), along with herbivores like *Axis axis* (Chital), *Boa gaurus* (Gawa),



Map 2: Showing details of Nawegaon National Park including Forest beats, National Water Resources etc.

Boselaphus tragocamelus (Nilgai), *Canis aureus* (Kolha), *Cervus unicolor* (Samber), *Funambullus palmarum* (Khar), *Herpestes edwardsi* (Mongoose), *Lepus nigricollis* (Sasa), *Petaurista petaurista* (Udan-khar), *Presbytis entellus* (Wanar), *Rattus rattus* (Undir), *Melursus ursinus* (Aaswal), *Sus scrofa* (Ran-dukkar), *Tetracerus quadricornis* (4-horned Antelope) etc. Herpets like *Najana kaouthia* (Cobra, Naag), *Ptyas mucosus* (Dhaman), *Python molurus* (Ajgar), *Varanus bengalensis* (Ghorpad) etc. abound in the area. There are also many species of fishes like *Mastacembelus armatus* (Vam), *Parastromateus niger* (Halwa), *Scomberomorus commerson* (Surmai) etc. Butterflies like *Danaus chrysippus* (Common tiger), *Euploea core*, *Neptis hyalus* (Common sailor) and insects.

The area is an ornithologist's paradise, with the large lake adjacent to the National Park. There are c. 209 species representing 56 families of birds. To mention a few, *Acridotheres tristis-tristis* (Myna), *Amaurornis phoenicurus* (Pankombdi), *Bubo bubo* (Motha-ghubad), *Centropus sinensis-parroti* (Bharadwaj), *Columba livia* (Kabutar), *Gallus sonneratii* (Ran-kombda), *Grus antigone* (Saras Crane), *Gyps bengalensis* (Gidhad), *Milvus migrans* (Ghar), *Pavo cristatus* (Mor), *Psittacula krameri* (Popat), *Pycnonotus cafer* (Bulbul), *Vanellus indicus-indicus* (Titwi) etc. are commonly found in protected area and one can see many nestings of birds while moving in the forests. One can also notice activities of uncommon birds like Shama, Racket tailed drongo, Paradise Flycatcher etc. near natural water holes like Badabya, Katethuwa, Bodrai, Madhavzari.

B. Nagzira Wildlife Sanctuary, Maharashtra, India.

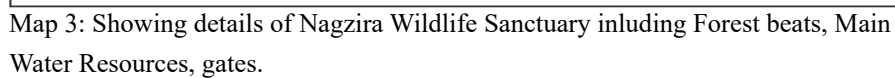
The wildlife Sanctuary (Biogeographical Province 6D) was constituted as per the notification No. WLP/1669/22860/Y/dt.3/6/1970, covering an area 152.81 sq. km. The Sanctuary is miraculously preserved as 'Green Oasis' in the eastern most part of the Maharashtra State and has a great importance from bio-diversity conservation point of view. The name Nagzira Wildlife Sanctuary is based on idol Nagdev and Nagzira lake.

Location: The Sanctuary is situated in Sakoli tahsil of Bhandara district and Arjuni (Sadak), Goregaon & Tiroda tahsil of Gondia District (Maharashtra State) under the

Nagzira range at 79° 58' E–80° 11' E longitude and 21° 12' N– 21° 21' N latitude.

Bio-geographic Zonation: As per the wildlife Institute of India, Dehradun, This Sanctuary is classified as follows: 1) Bio-geographical Kingdom-Paleotropical 2) Sub-Kingdom- Indomalayian 3) Bio-geographical Zone-6- Deccan peninsula 4) Biotic Province-6B-Central Deccan. The Bio-geographic zone is one of the least protected zones in India though rich in floral and faunal diversities. Hence it needs a tall degree of protection. The entire area [152.81 sq. km, old Reserved Forest] of this Sanctuary is covered by 4 Topo-sheets bearing numbers 55(0/15), 55(0/16), 64(C/3) & 64(C/4).

Boundaries: The total length of external boundary is 104.53 km out of which 74.93 km is an artificial boundary and 29.60 km is natural boundary as under.



On the north: Revenue village boundary of the villages Kursipar, Berdipar, Belapur, Hamesha, Kodebarra, Mangezari. On the East: Railway line Gondia to Chandrapur, broad gauge section of S.E. Railway. On the South: Pitezari fazal forests and Sakoli range, village boundaries of Jamdi, Kosamtondi and Reserved forest boundary. On the West: Village boundary of Bhajepar, Chorkhamara, Chorkhamara-Pangdi cart track and Reserve forest boundary.

The Sanctuary is surrounded externally by the Reserve forests of Gondia forest division and Bhandara Forests Division on the Northern and Eastern side and by Reserve Forests of FDCM of Bhandara Division on the Southern and Western side. The length of internal range of boundary is 104.53 km. 'Thadezari' is the only village geographically situated inside the Sanctuary, coinciding the Compartment boundary. Ecologically, the forest area surrounding the Sanctuary is a self-sufficient ecosystem with its living fauna & flora.

Geology, rock and soil : The Sanctuary exhibits amazing diversity of terrain and altitude ranges from nearly 30 m to 560 m above sea level. The typical geological formations are Sakoli series having number of formations comprise Phyllites, Slates, Chiovites, Sauser series etc. Rocks of two groups show difference in chemical composition of lime bearing rocks with a diversity of terrain having steep ridges, narrow valleys, deep gorges and varying altitude.

Soils are laterite textured and vary from sand to sandy-loam in plains and lower slopes, sandy to Murram on the steep slopes and rocky on the precipitous slopes. Calcareous soils found in patches and foot hills along the nasal and near villages where top soil is removed. The laterite soil is well suited for *Tectona grandis*.

Climate : The climate is quite pleasant during greater part of the year. The temperature varies between 6° c during December and 46° c during May. The mean annual rainfall observed is 1200 mm. The maximum rainfall about 1600 mm occurs during July–August. Draught occurs approximately once per 10 years. Last draught occurred during 1997. Frost is not experienced in the area. Except rainy season, other seasons have predominant Sunny days. Maximum wind velocity is observed from June–August (cf. Table-I and Graphs 1-3).

Drainage: The seven important lakes in the adjoining areas are Chorkhamara, Bodalkasa, Balapur, Ledezari, Malujunga, Murpar and Rangepar. There are two big water reservoirs within the Sanctuary at Nagzira and Thadezari lakes.

Fauna: The Nagzira wildlife Sanctuary has a number of fishes, c. 34 species of mammals, 166 species of birds, 36 species of reptiles and four species of amphibians. Wild animals to spot are the tigers, panthers, bisons, sambars, nilgais, chitals, wild boars, sloth bears and wild dogs.

Vegetation : The vegetation of the area is of South Indian Moist deciduous type (Champion & Seth, 1968) and distributed in three different zonations. The top canopy of the forest includes tree species like *Anogeissus latifolia*, *Bridelia retusa*,

Cleistanthus collinus, *Diospyros melanoxylon*, *Sterculia urens*, *Xylia xylocarpa* etc.

The second layer of the forest comprises a number of small trees and shrubs like *Clerodendrum serratum*, *Gardenia latifolia*, *Holarrhena pubescens*, *Lagerstroemia parviflora* etc., lianas and climbers like *Acacia pennata*, *Aristolochia indica*, *Aspidopterys cordata*, *Cocculus hirsutus*, *Dioscorea bulbifera*, *Hemidesmus indicus*, *Smilax zeylanica* etc.

The ground flora is rich after the monsoon. A number of herbs, grasses and undershrubs like *Abutilon indicum*, *Achyranthes aspera*, *Alternanthera sessilis*, *Alysicarpus vaginalis*, *Buchnera hispida*, *Crotalaria linifolia*, *Cyanotis cristata*, *Elephantopus scaber*, *Euphorbia hirta*, *Heteropogon contortus*, *Thespesia lampas*, *Peristrophe paniculata* etc. are common.

In waste places common plants found which are *Amaranthus spinosus*, *Cassia absus*, *Corchorus aestuans*, *Cyperus tenuispica*, *Datura innoxia*, *Sida cordata*, *Triumfetta rhomboidea* etc. while some marshy elements met in the area are *Ammannia baccifera*, *Commelina benghalensis*, *Hygrophila schulli*, *Polygonum plebeium* etc.

The General Survey of the plant diversity is given in Table-II as below.

SALIENT FEATURES OF THE FLORA

The present study mainly deals with flowering plants of Nawegaon National Park and Nagzira Wildlife Sanctuary. It includes 715 species belonging to 440 genera spread over 122 families of Angiosperms. Besides the angiosperms, 7 pteridiophytes were also recorded from the study areas. The General Survey of the plant diversity excluding Pteridophytes is given in Table-II.

Table-II – General Survey

GROUPS	Families	Genera	Species
Monocot	22	90	145
Dicot	100	350	570
Pteridophytes	07	07	07
Total	129	447	722

The General Survey shows the proportion of monocot-dicot ratio, which is 2:9 and genera to species is 5:8. Pradhan & al. (2005) estimated the ratio between monocot to dicot as 5:13 and genera to species is 1:9. Pie chart-I also conforms proportion of species Monocotyledon and Dicotyledon families as mentioned in General Survey (Table-II). Pie chart-II includes habit analysis of Plant diversity ie. Trees, Shrubs, Herbs, Climbers etc. in general where herbs are dominant. A comparison between this sequence and those given in Sanjay Gandhi National Park (Pradhan & al. 2005) in

Table-III. The position of Fabaceae is first in the present flora which is second in Flora of Sanjay Gandhi National Park. The position of Orchidaceae is tenth in The Flora of Sanjay Gandhi National Park while it is not dominant in present flora. The position of other families too vary in both cases.

Malhotra & Rao (1980, 1981) reported list of 301 species from Nawegaon National park and 174 species from Nagzira Wildlife Sanctuary. The present study revealed that there are *c.* 461 species in Nawegaon National Park and *c.* 438 species in Nagzira Wildlife Sanctuary.

Some noteworthy findings:

- 1) *c.* 43 endemics recorded from the study areas including *c.* 8 species are rare, threatened or vulnerable.
- 2) *c.* 19 species found over exploited for medicines or other commercial purpose.
- 3) *c.* 160 species found as an addition for Nawegaon National Park.
- 4) *c.* 264 species found as an addition for Nagzira Wildlife Sanctuary.
- 5) *c.* 17 plants found with botanical interest and 12 species as wild relatives of cultivated plants.
- 6) *c.* 300 species are useful economically for various aspects including medicines.

Table – III The Ten Dominant Families: Comparison with Flora of Sanjay Gandhi National Park.

Sr.No.	Flora Nawegaon & Nagzira	Sr.No.	Flora of Sanjay Gandhi National Park
1	Fabaceae	1	Poaceae
2	Poaceae	2	Fabaceae
3	Acanthaceae	3	Cyperaceae
4	Asteraceae	4	Acanthaceae
5	Euphorbiaceae	5	Asteraceae
6	Cyperaceae	6	Euphorbiaceae
7	Lamiaceae	7	Convolvulaceae
8	Rubiaceae	8	Scrophulariaceae
9	Mimosaceae	9	Rubiaceae
10	Convolvulaceae	10 a.	Malvaceae
		10 b.	Orchidaceae

ETHNOBOTANY AND USEFUL PLANTS

Ethnic people found in the areas are 'Gond'. Plants used by them in their day-to-day life for food, shelter, clothing and medicines are mentioned in detail under economic and medicinal plants including wild relatives of cultivated plants. The area is very rich in economic and medicinal plant wealth. Economically, plants are used for food, fodder, shelter for wild animals & birds, timber, fiber, minor forest products and for medicines are mentioned. Glimpses of this wealth in the form of museum is established near 'Pitezari' area of Nagzira Wildlife Sanctuary. The account of this wealth (c. 300 spp.) is depicted as under as well as notes of individual plants in systematic enumeration.

a) Edible plants: *Aegle marmelos* ('Bel'), *Annona squamosa* ('Sitaphal'), *Bombax ceiba* ('Sawar'), *Carissa congesta* ('Karvand'), *Embllica officinalis* ('Avla'), *Citrus aurantium* ('Santra'), *Cordia dichotoma* ('Bhokar'), *Grewia tiliifolia* ('Dhaman'), *Maesa indica* ('Atki'), *Mangifera indica* ('Amba'), *Tamarindus indica* ('Chinch'), *Ziziphus mauritiana* ('Ber'), *Ziziphus oenoplia* etc.

b) Fodder plants: *Albizia lebbeck* ('Siras'), *Albizia odoratissima* ('Chichva'), *Anisomeles indica* ('Gopali'), *Bauhinia purpurea* ('Rakat-kanchan'), *Bauhinia variegata* ('Kanchan'), *Bidens biternata*, *Bridelia retusa* ('Asana'), *Canavalia ensiformis* ('Abai'), *Cleome monophylla*, *Curculigo orchoides* ('Kajuri'), *Desmodium triflorum* ('Ran-methi'), *Emilia sonchifolia* ('Sadamandi'), *Elephantopus scaber* ('Bhut-ganja'), *Eriolaena hookeriana* ('Bhondia-Dhaman'), *Ipomoea aquatica* ('Nelich-Bhaji'), *Ipomoea pes-tigridis*, *Indigofera glandulosa* ('Borupadi'), *Pentanema indicum* ('Sankadi'), *Pergularia daemia* ('Utarani'), *Sesbania grandiflora* ('Hadga'), *Sida cordata*, *Tamarindus indica*, ('Chinch'), *Tephrosia purpurea* ('Unhali'), *Teramnus labialis* ('Ran-udid'), *Vigna trilobata* ('Mukni'), *Ziziphus oenoplia* ('Ber') and all grasses.

c) Shelter for Birds & Animals: Most of the plant species are being used by animals and birds for their shelter. Plants with thick canopy of branches over it are preferred by 'Bison' while *Arundo donax* ('Dev- kanda'), *Bambusa arundinacea* ('Kalak') are used by deers for their shelter eg. *Aegle marmelos* ('Bel'), *Albizia odoratissima* ('Chichva'), *Bauhinia racemosa* (Apta), *Bridelia retusa* ('Asana'), *Ficus benghalensis* ('Vad') etc.

d) Timber yielding plants: *Acacia nilotica* ('Vedi-babhl'), *Acacia chundra* ('Lal- Khair'), *Albizia lebbeck* ('Siras'), *Anogeissus latifolia* ('Dhavla'), *Bombax ceiba* ('Sawar'), *Boswellia serrata* (Salai), *Bridelia retusa* ('Asana'), *Buchanania cochinchinensis* ('Char'), *Butea monosperma* ('Palas'), *Dalbergia latifolia* ('Shisam'), *Diospyros melanoxylon* ('Temru'), *Erythrina indica* ('Pangara'), *Grewia tiliifolia* ('Dhaman'), *Ixora pavetta* ('Lokhandi'), *Lagerstroemia parviflora* ('Bondara'), *Kydia calycina* ('Warang'), *Madhuca indica* ('Moha'), *Mangifera indica* ('Amba'), *Semecarpus anacardium* ('Biba'), *Terminalia bellirica* ('Behda'), *Terminalia cuneata* ('Arjunsadada'), *Terminalia chebula* ('Hirada'), *Terminalia elliptica* ('Ain'), *Tectona grandis* ('Sag'), *Xylia xylocarpa* ('Surya') etc.

e) Agricultural implements: *Acacia leucophloea* ('Hivar'), *Anogeissus latifolia* ('Dhavla'), *Bridelia retusa* ('Asana'), *Butea monosperma* ('Palas'), *Mitragyna parvifolia* ('Kadam'), *Pithecellobium dulce* ('Vilayati chinch'), *Tamarindus indica* ('Chincha'), *Terminalia bellirica* ('Beheda'), *Terminalia chebula* ('Hirda'), *Tectona grandis* ('Sag') etc.

f) Paper industries: *Bombax ceiba* ('Sawar'), *Dendrocalamus strictus* ('Velu'), *Ficus racemosa* ('Umber') etc.

g) Tannin: *Acacia chundra* ('Lal-Khair'), *Bridelia retusa* ('Asana'), *Cassia fistula* ('Bahava'), *Cleistanthus collinus* ('Garari'), *Emblica officinalis* ('Avla'), *Xylia xylocarpa* ('Surya') etc.

h) Gums & Resins: *Acacia nilotica* ('Vedi-bhabul'), *Anogeissus latifolia* ('Dhavada'), *Boswellia serrata* ('Salai'), *Butea monosperma* ('Palas'), *Gardenia gummifera* ('Dikemali'), *Mitragyna parvifolia* ('Kadamb'), *Sterculia urens* ('Kadai', 'Pandhurki').

i) Bidi Wrappers: *Bahuinia racemosa* ('Apta'), *Diospyros melanoxylon* ('Tendu') etc.

j) Beverages and Narcotics: *Madhuca longifolia* var. *latifolia* ('Moha').

k) Fibre yielding plants: *Abutilon indicum* ('Petari'), *Aristida setacea* ('Mothikusal'), *Arundo donax* ('Dev-kanda'), *Bombax ceiba* ('Sawar'), *Corchorus olitorius*, *Combretum album*, *Cyperus iria*, *Dendrocalamus strictus* ('Velu'), *Dioscorea pentaphylla* ('Shendon-vel'), *Gossypium herbaceum* ('Dev-kapas'), *Helicteres isora* ('Muradphali'), *Ichnocarpus frutescens* ('Kalidudhi'), *Kydia calycina* ('Waranga'), *Sida acuta* ('Bala'), *Urena lobata* ('Van-bhendi'), *Vetiveria zizanioides* ('Khas- khas') etc.

l) Dye yielding plants: *Acacia catechu* ('Khair'), *Butea monosperma* ('Palas'), *Mallotus philippensis* ('kumkum'), *Terminalia elliptica*, *Woodfordia fruticosa* ('Dhayati'), *Jatropha gossypifolia* ('Jangali-erand') etc.

m) Bio-diesel: Pods of *Pongamia pinnata* ('Karanj'), over exploited for Bio-diesel.

n) Medicinal plants: There are a number of plants used for medicines, a few of them (34) are mentioned in Table-IV.

S1. No.	Name of the plant & family	Local names	Parts used for cure
1.	<i>Abrus precatorius</i> L. FABACEAE	Gunja	Roots -Cold, cough, sore throat.
2.	<i>Abutilon indicum</i> (L.) Sweet MALVACEAE	Petari	Leaves -Diabetes. Seeds -Cough, piles, laxative.

3.	<i>Acacia catechu</i> (L.f.) Willd. MIMOSACEAE	Khair	Bark -Asthma, Bronchitis, blood purifier, skin diseases.
4.	<i>Achyranthes aspera</i> L. AMARANTHACEAE	Aghada	Roots, Seeds - Bronchitis, rheumatic, tooth ache. Whole plant -Cough,, piles.
5.	<i>Argemone mexicana</i> L. PAPAVERACEAE	Pivla-dhotra	Roots, Leaves, Seeds - Scabies. Whole plant - Jaundice.
6.	<i>Aristolochia indica</i> L. ARISTOLOCHACEAE	Sapasan	Roots -Diarrhoea. Whole plant -Snake- bite.
7.	<i>Bombax ceiba</i> L. BOMBACACEAE	Sawar	Fruits -Pain killer. Water extract of thorns for pimples.
8.	<i>Bridelia retusa</i> (L.) Spreng. EUPHORBIACEAE	Asana	Leaves, Fruits - Diabetes.
9.	<i>Boswellia serrata</i> Roxb. ex Coleb. BURSERACEAE	Salai	Bark -Antiseptic,cold, stomach pain.
10.	<i>Buchanania cochinchinensis</i> (Lour.) Almeida ANACARDIACEAE	Charoli	Seeds -Digestive, brain tonic. Seed oil -Protection against white ants.
11.	<i>Butea monosperma</i> (Lam.) Taub. FABACEAE	Palas	Root bark -Blood Pressure. Leaves -Eye diseases. Flowers -Cough, leprosy. Seeds -Dysentery, ring worm.
12.	<i>Caesalpinia bonduc</i> (L.) Roxb. CAESALPINIACEAE	Sagargota	Seed oil -Rheumatic pains, skin diseases.

13.	<i>Capparis sepiaria</i> L. CAPPARACEAE	Kanthatara, Pachra	Bark, roots -Dropsy, Gout.
14.	<i>Careya arborea</i> Roxb. LECYTHIDACEAE	Kumbhi	Bark -Fistula, Stomach pain, snakebite Flowers -Tonic after delivery to women. Calyx -Cold, cough..
15.	<i>Celastrus paniculatus</i> Willd. CELASTRACEAE	Malkangoni	Bark -Wounds.
16.	<i>Cleistanthus collinus</i> (Roxb.) Benth. ex Hook.f. EUPHORBIACEAE	Garari	Bark - Wound healing and skin disease.
17.	<i>Cordia dichotoma</i> Forst.f. BORAGINACEAE	Bhokar	Bark -Cough, sore throat. Fruits -Cough, Chest pain, Urinary disorder.
18.	<i>Elephantopus scaber</i> L. ASTERACEAE	Rantambaku	Roots -Toothache, Vomiting, ulcer. Roots, Leaves - Snake bite, Eczema, Dysentery.
19.	<i>Gardenia gummifera</i> L.f RUBIACEAE	Dikemali, Kamarri	Gum -Antiseptic, constipation.
20.	<i>Gloriosa superba</i> L. LILIACEAE	Khadyanag	Roots -Leprosy, scabies, piles, snake bite.
21.	<i>Helicteres isora</i> L. STERCULIACEAE	Murud-sheng	Roots -Diabetes. Bark, fruits - Dysentery.
22.	<i>Hemidesmus indicus</i> (L.) Schult. PERIPLOCACEAE	Anantvel	Roots -Stomach cure, skin disease.

23.	<i>Holarrhena pubescens</i> (Buch.-Ham.) Wall. ex G. Don APOCYNACEAE	Pandhra-kuda	Roots -Spleen, Urinary cure. Bark -Bronchitis. Flower, seeds -Skin disease.
24.	<i>Jatropha gossypifolia</i> L. EUPHORBIACEAE	Mogli-Erand	Stem -Tooth ache.
25.	<i>Lannea coromandelica</i> (Hout.) Merr. ANACARDIACEAE	Moya, Shimti	Bark -cough, wounds. Leaves -swelling, Elephantiasis. Gum -edible.
26.	<i>Mallotus philippensis</i> (Lam.) Muell.-Arg. EUPHORBIACEAE	Kumkum	Bark -Leprosy. Fruits -Abortion, purgative.
27.	<i>Plumbago zeylanica</i> L. PLUMBAGINACEAE	Chitrak	Roots -Spleen, skin disease, piles, liver cure. Root-bark -antiperiodic.
28.	<i>Pongamia pinnata</i> (L.) Pierre FABACEAE	Karanj	Leaves -Diarrhoea, fever Bark -piles, stomach pain Seeds, Seed-oil -Skin diseases.
29.	<i>Pterocarpus marsupium</i> Roxb. FABACEAE	Chikna, pale- asan	Gum -Asthama in children Stem, bark -Bone fracture, tonic. Leaves -skin disease. Flowers -Urinary disorder.
30.	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz APOCYNACEAE	Sarpgandha	Roots -Blood pressure. Leaf juice -vomiting. Whole plant -snake bite.
31.	<i>Solanum virginianum</i> L. SOLANACEAE	Kate-ringni Ran-wangi	Berries vapour -Tooth ache.

32.	<i>Soyimida febrifuga</i> (Roxb.) A. Juss. MELIACEAE	Rohan	Bark -Diarrhoea, dysentery.
33	<i>Terminalia bellirica</i> Roxb. COMBRETACEAE	Beheda	Fruits, Seeds -Asthma, Bronchitis, stomach disorder, piles, leprosy.
34.	<i>Woodfordia fruticosa</i> (L.) Kurz LYTHRACEAE	Dhayti	Paste of flowers - Injuries, dysentery, cough, small pox. Fruits -Tonic.

Wild relatives of cultivated plants: In India there are c. 166 cultivated crop plants and c. 320 wild relatives of cultivated plants. Among them c. 250 spp. in India are having horticultural importance are distributed in different phytogeographical regions of India. Of which c. 60 spp. are rare or endangered due to over exploitation in their natural habitats (Singh & Kothari, 1996). The present study has revealed c. 12 species of wild relatives of cultivated plants in the areas studied. These are *Amorphophallus paeoniifolius*, *Cajanus scarabaeoides*, *Canavalia ensiformis*, *Dioscorea bulbifera*, *Ensete superbum*, *Jasminum malabaricum*, *Mucuna pruriens*, *Rauvolfia serpentina*, *Sphenostylis bracteatus*, *Thespesia populnea*, *Vigna vexillata*, *Ziziphus oenoplia* etc. Arora & Nayar (1983), Rao & Hajra (1986) opined that the wild relatives are also affected due to shifting cultivation and developmental programmes. According to Singh & Rethy (1995) "Agroforestry system" using native species as an alternative to Jhum or shifting cultivation will reduce pressure on land and loss of species in the area.

ENDEMIC, THREATENED AND PLANTS OF BOTANICAL INTEREST

Endemic and Threatened Plants: In spite of migration of the foreign elements from Malesia, Burma (Myanmar), Tibet, Japan, Sri Lanka etc. in Indian flora, India is also rich in its Characteristic flora *i.e.* endemic elements. Chatterjee (1940, 1962), analysed such endemic or restricted phytogeographical elements in Indian subcontinent. Out of more than 17000 species of Angiosperms found in India c. 5000 species are said to be endemic. Raghavan and Singh (1983) estimated c. 36 endemic and threatened taxa for Western India. Ahmedullah and Nayar (1986) estimated 1932 endemics including 974 arborescent taxa in peninsular India,

According to Yadav & al. (1997) there are 33 rare, endangered and threatened endemics in Maharashtra. Over 500 species and 45 infra-specific taxa endemic to peninsular India occur in Maharashtra of which c. 125 species are endemic to the state (Yadav, 1997).

Recently, Singh and Karthik. (2000) have listed 694 endemics to India are occurring in Maharashtra. The present study area also includes c. 42 endemic to india and 1

species viz. *Sphenostylis bracteata* to Maharashtra. Other species are *Alysicarpus racemosus*, *Anisomeles heyneana*, *Argyrea sericea*, *Aspidopterys canarensis*, *Barleria gibsoni*, *Barleria prattensis*, *Begonia crenata*, *Blumea belangeriana*, *Blumea eriantha*, *Blumea malcolmii*, *Boswellia serrata*, *Canscora pauciflora*, *Carvia callosa*, *Chlorophytum glaucum*, *Clematis heynei*, *Commelina attenuata*, *Crotalaria pusilla*, *Curcuma inodora*, *Curcuma pseudomontana*, *Cynarospermum asperrimum*, *Dipcadi ursulae*, *Dyschoriste dalzellii*, *Ensete superbum*, *Eranthemum roseum*, *Eriocaulon lanceolatum*, *Eulophia ochreatea*, *Exacum pumilum*, *Flacourtia montana*, *Garcinia indica*, *Haplanthodes tentaculatus*, *Iphigenia magnifica*, *Jasminum malabaricum*, *Lagerstroemia microcarpa*, *Nilgirianthus barbatus*, *Pogostemon purpurascens*, *Pogostemon salicifolius*, *Pseudanthistiria heteroclita*, *Tonningia cucullata*, *Torenia indica*, *Trewia polycarpa*, *Typhonium bulbiferum*, *Zingiber nees anum*.

There are c. 27 plants which are either vulnerable, endangered or threatened if over-exploited for commercial or other purposes. Among them 2 spp. viz. *Iphigenia magnifica*, and *Sphenostylis bracteata* are vulnerable and c. 6 endemic species are endangered viz. *Barleria prattensis*, *Chlorophytum glaucum*, *Curcuma inodora*, *Curcuma pseudomontana*, *Eulophia ochreatea*, *Zingiber nees anum* etc. and there are c. 19 species which are not endemics but over-exploited for medicinal and other purposes viz. *Andrographis paniculata*, *Caesalpinia bonduc*, *Diospyros melanoxylon*, *Embelia basaal*, *Emblia officinalis*, *Entada rheedei*, *Gardenia gummifera*, *Indigofera constricta*, *Justicia adhatoda*, *Madhuca longifolia* var. *latifolia*, *Mimusops elengi*, *Plumbago zeylanica*, *Pongamia pinnata*, *Rauvolfia serpentina*, *Semecarpus anacardium*, *Sterculia urens*, *Tectona grandis*, *Tinospora cordifolia*, *Vetiveria zizanioides* etc.

Plants of botanical interest: There are number of interesting plants either morphologically or from botanical point of view. The present study has also revealed that there are c. 17 plants including epiphytic orchids (2 spp.) viz. *Eulophia ochreatea*, *Vanda tessellata*, insectivorous plants like *Utricularia* (3 spp.), parasitic plants (6 spp.) which may be root parasites eg. *Sopubia delphiniifolia*, *Striga angustifolia* or stem parasites eg. *Cassytha filiformis*, *Cuscuta reflexa*, *Dendrophthoe falcata* and *Viscum articulatum* and morphologically interesting (6 spp.) eg. *Entada rheedei* - a liana for its woody fruit and largest seeds, *Abrus precatorius* for its red seeds like eye ball, *Oroxylum indicum* with its fruits resembling large swords, *Martynia annua* with hooked fruits, *Mimosa pudica* with sensitive leaves and giant tree *Terminalia elliptica* (c. 20m tall, 16 feet width) in Nagzira forest and a pair of same trees in Nawegaon forest locally known as “Mamabhanja”. Local people of the area worship the trees.

ENVIRONMENTAL IMPACT

The vegetation of Nawegaon National Park and Nagzira Wildlife Sanctuary is affected by number of biotic and abiotic factors.

Biotic factors: Biotic factors like ‘overgrazing’ by domestic and wild animals, indiscriminate illicit cutting of wood for fuel and building purpose, tourists and tourism development to entertain thousands of visitors in the National Park and Wildlife Sanctuary and plant collectors have affected the growth and development

of the plant diversity. “Over-exploitation” of many economic plants like *Diospyros melanoxylon* (Tendu) for bidi leaves, *Madhuca longifolia* var. *latifolia* (Moha) for beverages, *Pongamia pinnata* (Karanj) and *Jatropha gossypifolia* for bio-diesel and medicinal plants like *Rauvolfia serpentina* (Sarpagandha), *Sterculia urens* (Karu) for its gum etc. have affected the distribution of the rare species in the Sanctuary as well as other places in Maharashtra and India. Because of this over-exploitation for commercial purpose, these species have become rare, threatened and species like *Sphenostylis bracteata* (Thapti-sheng) as vulnerable.

Abiotic factors: Abiotically, land slides due to heavy rainfall in the year 2002 and 2007 and forest-fire (natural as well as man-made) have resulted in the degradation of the floristic diversity. There are number of species recorded by earlier workers and forest officials (Working plan of the National Park and Sanctuary) but could not be traced out. Perhaps these species have become rare, threatened or extinct due to abiotic as well as biotic factors. The greatest threat to the species in the present century is the habitat destruction of plant communities (Nayar, 1984).

DISCUSSION AND CONSERVATION

Discussion : Khoshoo (1991) has described ‘Biological diversity’ as a sum total of species including number of plants, animals and micro-organisms living in a Ecosystem. To protect the Flora and Fauna from the above mentioned biotic and abiotic factors, Govt. of India has taken certain steps such as ban on export of plants like *Rauvolfia serpentina*, *Aconitum* spp., *Nardostachys grandiflora* and beautiful orchids for commercial purposes under Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which was organized in 1973 and activated in 1975.

To conserve plants in their natural habitat (*In situ* conservation) 13 biosphere reserves, 89 National parks and 489 Wildlife Sanctuaries including 5 National parks and 35 Wildlife Sanctuaries (Area 14747.84 sq. km) in Maharashtra have been declared by Govt. of India. However, Batisse (1982) and Gadgil (1983) concluded that National parks and Wildlife Sanctuaries have not yielded the desired results and hence biosphere reserves are the only remedy for conservation. Sankhala (1991) has also observed that “National parks are in great pressure due to grazing, human population and illicit felling of trees. Same is true for the present National Park and Wildlife Sanctuary.

The faunistic diversity depends on rich floristic diversity. This inter dependence was emphasized by Gilbert (1980) stating that loss of a Keystone mutualist (typical plant) would cause loss of mobile links (animals) followed by link of dependent plants. A noted conservationist Myer (1984) also concluded that at least one species is disappearing each day in tropical forests alone and in a few more years there will be species loss each hour. The disappearing plant can take with it 10–30 dependent species such as insects, taller animals and even other plants (Jain & Sastry, 1980). Hence to preserve the animal diversity, it is essential to preserve plant diversity.

Conservation: Conservation of wild flora and fauna and their habitat is now receiving attention all over the world. Certain endangered taxa and plants with

horticultural and medicinal value as well as animals like Tigers, Rhinos etc. need particular attention. To conserve them, 14 tiger reserves and 9 other tiger habitats including Nawegaon National Park & Nagzira Wildlife Sanctuary in Gondia District (Maharashtra) are actively working in India through Indian Wildlife Board, National MAB Committee, Central and State forest depts., Botanical Survey of India (BSI) and Zoological Survey of India (ZSI) to contribute to these efforts (Jain & Sastry, 1983). To conserve such rare floristic & faunistic elements various international organizations are also active e.g IUCN, BGCS, WWF, CITES, CGCR, IABG, WCMC, TPU etc.

The Nawegaon National Park and Nagzira Wildlife Sanctuary are not only rich in Floristic diversity but also support many carnivores such as tigers, leopards, wild dogs along with herbivores like Sambar, Gaur, barking deer etc. The area is an ornithologist's paradise with large lake adjacent to National park. There are about 209 species of water-birds (Dharankar, 1976). Therefore for effective conservation of biodiversity under article 8, Govt. of India has taken necessary action to elaborate network of 578 protected areas including 89 National parks (Area 37,534 sq. km.) and 489 Wildlife Sanctuaries (Area 1,17,974.53 sq.km.). In Maharashtra there are 5 National parks viz. Gugamal, Nawegaon, Pench, Sanjay Gandhi, Tadoba and 35 wild life Sanctuaries including Nagzira Wildlife Sanctuary (Singh & Singh, 2002). An account of two National Parks has been published in bookform (cf. Pradhan & al., 2005 ; Malhotra & Moorthy, 1992.).

International Union for conservation of Nature & Natural Resources (IUCN) with the advice of co-operation & financial support of the United Nations Environmental Programme (UNEP) and the World Wildlife Fund (WWF) has prepared a world conservation strategy on 5th March 1980 with 3 main objectives viz. **1)** Maintenance of essential ecological processes and life-support systems; **2)** Preservation of Genetic Diversity and **3)** Sustainable utilization of species and ecosystems. Through the efforts of IUCN, The Indian Wildlife (Protection) Act 1972 has also further been amended to include plants for their conservation.

Thus, to save the biodiversity of the Nawegaon National park and Nagzira Wildlife Sanctuary from above mentioned threats (biotic and abiotic) it is our moral duty to create awareness among the common people through all medias (Radio, Television, News papers), flower shows etc. starting from children education. To stop destruction of the above mentioned biological wealth, frequent seminars in regional and accepted national languages regarding conservation should also be organised for constant hammering among the intellectual people in particular and masses in general. For conservation and awareness, Botanical Survey of India has published 4 volumes of the *Red Data books of Indian plants* (Singh & Singh, 2002).

SYSTEMATIC TREATMENT

KEY TO FAMILIES

1a. Leaves usually dorsiventral and reticulately veined; seeds contain two cotyledons (Dicotyledon)	2
1b. Leaves usually isobilateral and parallel veined; seeds contain one cotyledon (Monocotyledon)	102
2a. Perianth usually 2-seriate, outer sepaloid, inner petaloid	3
2b. Perianth 1-seriate (apetalous), 2-seriate (monochlamydeous) or absent (achlamydeous)	88
3a. Petals free; stamens free from petals	4
3b. Petals usually united; stamens inserted on the corolla	60
4a. Sepals free from ovary	5
4b. Sepals usually adnate to the ovary	28
5a. Stamens indefinite; carpels free or sunk in the torus	6
5b. Stamens usually definite; carpels united	11
6a. Plants aquatic; flowers > 20 cm across	7
6b. Terrestrial plants; flowers < 20 cm across	8
7a. Ovules 1–2; seeds exalbuminous	NELUMBONACEAE
7b. Ovules many; seeds albuminous	NYMPHAEACEAE
8a. Flowers bisexual; ovary apocarpous	9
8b. Flowers unisexual; ovary syncarpous	MENISPERMACEAE
9a. Climbing herbs or undershrubs	RANUNCULACEAE
9b. Trees or shrubs	10
10a. Flowers usually greenish; carpels often stalked	ANNONACEAE
10b. Flowers yellow or white; carpels sessile	DILLENIACEAE
11a. Ovary on elongated gynophore	CAPPARACEAE
11b. Ovary not on elongated gynophore	12
12a. Ovary 2 celled; fruit a siliqua	BRASSICACEAE
12b. Ovary 2-celled; fruit capsular	13
13a. Leaves exstipulate	PAPAVERACEAE
13b. Leaves stipulate	14
14a. Trees and shrubs	15
14b. Herbs	17
15a. Leaves palmately lobed	COCHLOSPERMACEAE
15b. Leaves simple	16
16a. Thorns usually present; sepals persistent	FLACOURTIACEAE
16b. Thorns absent; sepals deciduous	BIXACEAE
17a. Ovary 1-locular	VIOLACEAE
17b. Ovary usually 2-locular rarely 1 or more locular	18
18a. Sepals and petals usually 5	POLYGALACEAE
18b. Sepals and petals 2–5	19
19a. Herbs	20
19b. Plants usually shrubs or trees	21
20a. Succulents; stems nodes prominently hairy; stamens as many as petals	

	PORTULACACEAE	
20b. Plants not succulents; stem nodes glabrous; stamens twice as many as petals		
	CARYOPHYLLACEAE	
21a. Leaves minute, scaly	TAMARICACEAE	
21b. Leaves not scaly		22
22a. Sepals valvate		23
22b. Sepals imbricate		26
23a. Leaves digitate	BOMBACACEAE	
23b. Leaves usually simple or lobed		24
24a. Epicalyx present	MALVACEAE	
24b. Epicalyx absent		25
25a. Petals stellately hairy; seeds occasionally winged	STERCULIACEAE	
25b. Petals not stellately hairy; seeds wingless	TILIACEAE	
26a. Fruits prickly	ZYGOPHYLLACEAE	
26b. Fruits not prickly		27
27a. Lianas; petals fimbriate	MALPIGHIACEAE	
27b. Shrubs or trees; petals entire	CLUSIACEAE	
28a. Ovary superior		29
28b. Ovary peri or epigynous (inferior)		43
29a. Disc usually annular, adnate to the stamens		30
29b. Disc usually cupular, free		36
30a. Stamens as many as petals or fewer	BALSAMINACEAE	
30b. Stamens twice as many as petals or numerous		31
31a. Leaves bifoliolate, not gland dotted	BALANITACEAE	
31b. Leaves not as above		32
32a. Leaves often gland dotted, aromatic	RUTACEAE	
32b. Leaves not as above		33
33a. Flowers bisexual; stamens connate		34
33b. Flowers usually polygamous, sometimes bisexual; stamens free	BURSERACEAE	
34a. Herbs	OXALIDACEAE	
34b. Shrubs or trees		35
35a. Bark papery; disc annular	FLINDERSIACEAE	
35b. Bark corky; disc cupular	MELIACEAE	
36a. Disc free; petals densely hairy within	OLACACEAE	
36b. Disc adnate to the calyx tube or lining it; petals not as above		37
37a. Flowers regular		38
37b. Flowers often irregular		41
38a. Racemes paniculate, umbellate or spicate; stamens opposite to petals		39
38b. Racemes dichasial; stamens alternating with petals	CELASTRACEAE	
39a. Plants tendrillar, juicy	VITACEAE	
39b. Plants non tendrillar, not juicy		40
40a. Stipules minute or absent; petals cucullate	RHAMNACEAE	
40b. Stipules distinct, sheathing, adnate to petiole; petals not cucullate	LEEACEAE	
41a. Petals often bearded or squamate within	SAPINDACEAE	
41b. Petals not as above		42

42a. Style single; fruits elongated	MORINGACEAE	
42b. Styles 2–3, fruits not elongated	ANACARDIACEAE	
43a. Carpels usually free, if united then (ovary) 1-celled		44
43b. Carpels united		47
44a. Branchlets and leaves succulent;carpel with hypogynous scale	CRASSULACEAE	
44b. Branchlets and leaves not succulent; carpels devoid of scales		45
45a. Flowers actinomorphic; perianth segments valvate in bud	MIMOSACEAE	
45b. Flowers zygomorphic; perianth segments imbricate in bud		46
46a. Corolla papilionaceous,descendingly imbricate	FABACEAE	
46b. Corolla not as above, ascendingly imbricate	CAESALPINIACEAE	
47a. Ovary 1-celled	COMBRETACEAE	
47b. Ovary 2 or more celled		48
48a. Stamens as many as petals		49
48b. Stamens usually numerous		50
49a. Calyx tube free or partially adnate to the ovary; anther connective appendaged	MELASTOMATACEAE	
49b. Calyx tube wholly adnate to the ovary; anther connective not appendaged	ONAGRACEAE	
50a. Flowers solitary; petals crinkled	LYTHRACEAE	
50b. Flowers not solitary; petals not crinkled		51
51a. Leaves opposite,usually gland dotted	MYRTACEAE	
51b. Leaves alternate, not gland dotted		52
52a. Inflorescences cauliflorous; fruits cannon ball like	LECYTHIDACEAE	
52b. Inflorescences other than cauliflorous,fruits otherwise		53
53a. Trees; leaves apically clustered	BARRINGTONIACEAE	
53b. Herbs, shrubs or climbers; leaves not apically clustered		54
54a. Ovules on parietal placenta		55
54b. Ovules on axile or basal placenta		56
55a. Plants tendrillar	CUCURBITACEAE	
55b. Plants not tendrillar	BEGONIACEAE	
56a. Calyx free or rarely adnate to the ovary		57
56b. Calyx tube always adnate to the ovary		59
57a. Stems fleshy and flat, areolate; leaves reduced to spines or bristles	CACTACEAE	
57b. Stems herbaceous or woody, if fleshy then not reduced as above		58
58a. Leaves exstipulate; stamens 5–20	AIZOACEAE	
58b. Leaves stipulate; stamens 3–5	MOLLUGINACEAE	
59a. Aromatic herbs; leaves usually much dissected; fruits mericarps	APIACEAE	
59b. Non-aromatic shrubs or trees;leaves not as above; ruits usually drupaceous	ALANGIACEAE	
60a. Flowers epigynous		61
60b. Flowers hypogynous		64
61a. Leaves usually opposite, stipulate	RUBIACEAE	
61b. Leaves usually alternate, exstipulate		62
62a. Inflorescence a capitulum; calyx reduced to pappus; ovary 1-celled	ASTERACEAE	
62b. Inflorescence other than capitulum; calyx not reduced as above; ovary 2-many locular		

	63
63a. Corolla irregular, bilipped; anthers connate around style	LOBELIACEAE
63b. Corolla regular or slightly oblique; anthers free	CAMPANULACEAE
64a. Ovary 1-celled	65
64b. Ovary 2 to many celled	66
65a. Corolla salverform; placentation basal	PLUMBAGINACEAE
65b. Corolla rotate, campanulate or infundibuliform; placentation free central	MYRSINACEAE
66a. Stamens more than the number of corolla lobes	67
66b. Stamens as many as corolla lobes	68
67a. Stamens free from corolla lobes	EBENACEAE
67b. Stamens inserted on corolla lobes	SAPOTACEAE
68a. Corolla actinomorphic	69
68b. Corolla usually zygomorphic	80
69a. Leaves usually alternate, if opposite then ovary 4-celled	70
69b. Leaves opposite or whorled, sometime radical	74
70a . Marshy or aquatic plants	MENYANTHACEAE
70b. Terrestrial plants	71
71a. Corolla lobes plicate; fruits capsules or rarely berries	72
71b. Corolla lobes imbricate or contorted; fruits drupaceous	BORAGINACEAE
72a. Ovary many ovuled; fruits usually a berry or capsule	SOLANACEAE
72b. Ovary usually with 2-ovules or rarely 1-4 in each cell; fruits capsular	73
73a. Leafless parasitic vines	CUSCUTACEAE
73b. Leafy, non-parasitic, erect twiners or trailers	CONVOLVULACEAE
74a. Branchlets pendulous	SALVADORACEAE
74b. Branchlets spreading	75
75a. Stamens 2	OLEACEAE
75b. Stamens as many as corolla lobes	76
76a. Carpels united	77
76b. Carpels usually free	78
77a. Leaves exstipulate; placentation parietal	GENTIANACEAE
77b. Leaves stipulate; placentation axile	LOGANIACEAE
78a. Gynostegium present; follicles divaricate	79
78b. Gynostegium absent; follicles usually cohering	APOCYNACEAE
79a. Stamens united in a ring; pollen grains in pollinia	ASCLEPIADACEAE
79b. Stamens free; pollen grains granular	PERIPLOCACEAE
80a. Insectivorous plants	LENTIBULARIACEAE
80b. Plants not insectivorous	81
81a. Leaves pinnately compound	BIGNONIACEAE
81b. Leaves usually simple	82
82a. Fruits capsular; placentation axile	83
82b. Fruits usually drupaceous, pyrene or nutlets, rarely capsules; placentation basal	85
83a. Placenta swollen; seeds with inconspicuous funicle	SCROPHULARIACEAE
83b. Placenta not swollen; seeds with distinct funicle	84
84a. Calyx annular, minute or 10–16 toothed	THUNBERGIACEAE

84b. Calyx 5–6 partite or 2-lipped	ACANTHACEAE	
85a. Corolla ventricose; stigmas 2-lobed		86
85b. Corolla not ventricose; stigmas entire or bifid		87
86a. Flowers in racemes, usually with glands at base of pedicel; Fruit a capsule	PEDALIACEAE	
86b. Flowers solitary, without glands at base of pedicel; fruit a pyrene with two hooks at apex	MARTYNIACEAE	
87a. Plants aromatic; calyx bilabiate; style gynobasic, ovary 4-lobed	LAMIACEAE	
87b. Plants non or scarcely aromatic; calyx not bilabiate; styles terminal, ovary entire	VERBENACEAE	
88a. Flowers usually bisexual		89
88b. Flowers usually unisexual, if bisexual then perianth absent		97
89a. Parasites		90
89b. Autophytes		91
90a. Branches terete; perianth limb tubular	LORANTHACEAE	
90b. Branches filiform; perianth limb campanulate (<i>Cassytha</i>)	LAURACEAE	
91a. Perianth lobes plicate	NYCTAGINACEAE	
91b. Perianth lobes not plicate		92
92a. Stamens adnate to stylar column; ovary inferior	ARISTOLOCHIACEAE	
92b. Stamens free; ovary superior		93
93a. Stipules present and ochraceous	POLYGONACEAE	
93b. Stipules absent or inconspicuous		94
94a. Seeds exalbuminous	LAURACEAE	
94b. Seeds albuminous		95
95a. Perianth scarious and dry	AMARANTHACEAE	
95b. Perianth membranous, herbaceous		96
96a. Stems twining; bracteoles adnate to the perianth	BASELLACEAE	
96b. Stems not twining; bracteoles free from perianth	CHENOPODIACEAE	
97a. Leaves usually reduced to scales	CASUARINACEAE	
97b. Leaves developed, not reduced		98
98a. Inflorescence a cyathium; ovary usually 2 to many-celled	EUPHORBIACEAE	
98b. Inflorescence other than cyathium; ovary usually 1-celled		99
99a. Inflorescence catkin like spike; perianth absent	SALICACEAE	
99b. Inflorescence other than catkin; perianth absent		100
100a. Stipules absent or inconspicuous		101
100b. Stipules present; stamens not inflexed in bud	ULMACEAE	
101a. Trees with milky latex; style bifid	MORACEAE	
101b. Herbs, shrubs or trees with watery sap; style undivided	URTICACEAE	
102a. Perianth 2-seriate, the segments of both corolline, rarely herbaceous		103
102b. Perianth series both calycine		115
103a. Seeds minute or inconspicuous		104
103b. Seeds conspicuous		105
104a. Flowers zygomorphic	ORCHIDACEAE	
104b. Flowers actinomorphic	HYDROCHARITACEAE	
105a. Ovary superior		106
105b. Ovary inferior		109

- 106a. Perianth series well differentiated into outer calycine, inner corolline
COMMELINACEAE
- 106b. Perianth series corolline and dry 107
- 107a. Aquatic herbs; inflorescence subtended by spathe like leaf sheath
PONTEDERIACEAE
- 107b. Terrestrial or marshy plants; inflorescence not as above 108
- 108a. Climbing shrubs **SMILACACEAE**
- 108b. Erect herbs **LILIACEAE**
- 109a. Flowers usually actinomorphic 110
- 109b. Flowers prominently zygomorphic 113
- 110a. Climbers; flowers unisexual; fruits winged **DIOSCOREACEAE**
- 110b. Plants erect; flowers usually bisexual; fruits wingless 111
- 111a. Plants xerophytic **AGAVACEAE**
- 111b. Plants not xerophytic 112
- 112a. Leaves plicate; inflorescence spicate, racemose, not surrounded by an involucre of
membranous bracts **HYPOXIDACEAE**
- 112b. Leaves not plicate; inflorescence umbellate, surrounded by an involucre of
membranous bracts **AMARYLLIDACEAE**
- 113a. Fertile stamens 5 **MUSACEAE**
- 113b. Fertile stamen 1, the other stamens transformed into petal like staminodes 114
- 114a. Aromatic plants; sepals united **ZINGIBERACEAE**
- 114b. Non-aromatic plants; sepals free **CANNACEAE**
- 115a. Perianth usually 2-seriate, trimerous 116
- 115b. Perianth absent or reduced to scales 117
- 116a. Both perianth series calycine **ARECACEAE**
- 116b. One series of perianth calycine **BUTOMACEAE**
- 117a. Inflorescence of heads or spikelets consisting of solitary flowers in the axils of
glumaceous bracts 118
- 117b. Inflorescence of many or few flowered spadices, spike or racemes or if flowers
solitary then not in the axils of glumes 120
- 118a. Flowers borne in capitulum, always unisexual **ERIOCAULACEAE**
- 118b. Flowers in spikelets, uni or bisexual, rarely dioecious 119
- 119a. Stem 3-angled, without nodes; leaves tristichous with closed sheaths; flowers in the
axil of single bract **CYPERACEAE**
- 119b. Stem terete or 2-edged, nodose; leaves usually distichous; flowers enclosed between
lemma and palea **POACEAE**
- 120a. Plants submerged or floating 121
- 120b. Plants erect, free floating or sometimes submerged 123
- 121a. Plants terrestrials or floating; stem stoloniferous 122
- 121b. Plants submerged; stem tuberous, creeping or absent **NAJADACEAE**
- 122a. Spadices with large spathes; perianth absent **ARACEAE**
- 122b. Spikes not spathaceous; perianth slender, hairy **TYPHACEAE**
- 123a. Leaves radical; spathes present; perianth segments 1–3; stamens 6 or more
APONOGETONACEAE
- 123b. Leaves cauline; perianth of 4-clawed segments; spathes absent; stamens 4
POTAMOGETONACEAE

DICOTYLEDONS

RANUNCULACEAE

Clematis L.

Key to the species

1a. Flowers c. 4.5 cm across

C. heynei

1b. Flowers 1–1.5 cm across

C. gouriana

Clematis gouriana Roxb. ex DC., Syst. Nat. 1: 138. 1818; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 4. 1872; Cooke, Fl. Pres. Bombay 1: 2. 1958 (Repr.); M.A. Rau in Sharma & al. Fl. India 1: 64. 1993; S.Y. Kamble in Singh & S. Karthik., Fl. Maharashtra State 1: 151. 2000. '*Morvel*', '*Shendvel*'.

Climbers; stem grooved. Leaves uni-bi or tripinnate; leaflets ovate, toothed, acute at apex, rounded or cordate at base. Flowers yellowish, in branched panicles. Achenes ovoid, hairy; tails feathery.

Fl. & Fr.: October–November.

Distrib.: Frequent in thickets along the ghat, Nawegaon.

Notes: The species used medicinally as an astringent (Singh & Sharma, 1998).

Clematis heynei M.A. Rau in Sharma & al. Fl. India 1: 67. 1993; S.Y. Kamble in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 152. 2000. *Clematis triloba* Heyne ex Roth, Nov. Pl. Sp. 251. 1821 non Thunb. 1794; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 3. 1872; Cooke, Fl. Pres. Bombay 1: 2. 1958. (Repr.). '*Ranjai*', '*Morvel*', '*Mogra-bel*'.

Herbaceous climber with tomentose young branches. Leaves simple or ternate, entire, or 1–7 lobed, 5–7 cm long, ovate, acute at apex, rounded at base. Flowers white, in axillary, corymbose panicles. Achenes silky-villous, ovoid, compressed; tails long, feathery.

Fl. & Fr.: September–November.

Illus.: Gupta in Bull. Natn. Bot. Gard. Lucknow 54: t. 18. 1961.

Distrib.: Common along foot hill of Nagzira.

Notes: Common in deciduous forest of Maharashtra, endemic (S.Y. Kamble, *op. cit.*). The species is used medicinally for boils, tooth decay, wound, maggots and as a mosquito and insect repellent (Singh & Sharma, 1998).

DILLENIACEAE

Dillenia L.

Dillenia pentagyna Roxb., Pl. Cor. 1: 21, t. 20. 1795; Hook.f. & Thoms. in Hook.f. Fl. Brit. India 1: 38. 1872; Cooke, Fl. Pres. Bombay 1: 6. 1958 (Repr.); N.C. Mujumdar in Fasc. Fl. India 2: 7. 1979 & in Sharma & al. Fl. India 1: 156. 1993; P. Venkanna & P. V. Prasanna in N. P. Singh & S. Karthik., Fl. Maharashtra State 1: 160. 2000. '*Kalla*', '*Karanbidi*', '*Karmal*', '*Karamvel*', '*Karval*', '*Rankel*'.

Deciduous trees, 5–12 m tall; branches straggling, young parts shining and silky. Leaves 60–80 × 14–18 cm, obovate, at apex obtuse, margins dentate. Flowers yellow, fragrant, showy pedicelled, fascicled on leafless branches. Fruits pendulous, fleshy, enclosed within sepals, purplish-black, shining. Seeds 1 or 2.

Fl. & Fr.: March–June.

Distrib.: Frequent in open forests Nagzira, Nawegaon.

Notes: Fruits are edible as vegetable.

ANNONACEAE

Key to the genera

- 1a. Inner petals minute or absent
- 1b. Inner petals larger than outer

Annona
Milusa

Annona L.

Key to the species

- 1a. Ripe fruits green, bullate
- 1b. Ripe fruits brownish-red, smooth

A. squamosa
A. reticulata

Annona reticulata L., Sp. Pl. 537. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 78. 1872; Cooke, Fl. Pres. Bombay 1: 15. 1958 (Repr.); S.K. Mudaliar & V.P. Prasad in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 163. 2000. '*Ramphal*'.

Small trees, 4–6 m high. Leaves oblong-lanceolate. Flowers 2–4, greenish-yellow, solitary, leaf opposed. Fruits subglobose, syncarpous, yellowish-red. Seeds smooth, black.

Fl. & Fr.: July–November.

Distrib.: A native of Tropical America. Usually cultivated but also occurs as an escape, Nagzira.

Notes: Fruits are edible.

Annona squamosa L., Sp. Pl. 537. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 78. 1872; Cooke, Fl. Pres. Bombay 1: 15. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 3. 1980; S.K. Mudaliar & V.P. Prasad in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 165. 2000. '*Sitaphal*'.

Shrubs or small trees, upto 4 m high. Leaves elliptic, oblong-lanceolate, pellucid-punctate, glaucous beneath. Flowers green, solitary leaf opposed, extra-axillary. Fruits yellowish-green, aggregate. Seeds brownish-black, polished, oblong.

Fl. & Fr.: March–December.

Distrib.: Indigenous in West Indies, naturalized throughout Asia, cultivated throughout for its edible fruits; also occurs as an escape, Nawegaon, Nagzira.

Notes: Fruits eaten by wild animals.

Miliusa Leschen. ex A. DC.

Miliusa tomentosa (Roxb.) Finet & Gagnep. in Bull. Sco. Bot. Fr. 53(4): 153. 1906; D. Mitra in Fl. India 1: 221. 1993; S. Mudaliar & V.P. Prasad in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 169. 2000. *Uvaria tomentosa* Roxb., Pl. Corm. 1: 31 t. 35. 1795. *Saccopetalum tomentosum* Hook.f. & Thoms., Fl. Ind. 152. 1855 et in Hook.f., Fl. Brit. India 1:88. 1872; Cooke, Fl. Pres. Bombay 1: 17. 1958 (Repr.). 'Hoom', 'Humb', 'Minmara', 'Thoska'.

Deciduous trees, 8–10 m tall; young shoots densely tomentose. Leaves 10–12 × 5–6 cm, elliptic-ovate or elliptic-lanceolate, at apex acute, base subacute. Flowers solitary or fascicled. Carpels succulent, purple.

Fl. & Fr.: February–April.

Distrib.: Frequent in moist deciduous forests.

Deciduous trees, 8–10 m tall; young shoots densely tomentose. Leaves 10–12 × 5–6 cm, elliptic-ovate or elliptic-lanceolate, at apex acute, base subacute. Flowers solitary or fascicled. Carpels succulent, purple.

Fl. & Fr.: February–April.

Distrib.: Frequent in moist deciduous forests.

MENISPERMACEAE**Key to the genera**

- | | |
|---|--------------------|
| 1a. Leaves peltate | 2 |
| 1b. Leaves not peltate | 4 |
| 2a. Female bracts foliaceous, cordate | Cissampelos |
| 2b. Female bracts not as above | 3 |
| 3a. Flowers on old stems; stamens free | Diploclisia |
| 3b. Flowers not on old stems; stamens connate | Stephania |
| 4a. Seeds horse-shoe shaped | Cocculus |
| 4b. Seeds not as above | Tinospora |

Cissampelos L.

Cissampelos pareira L. var. **hirsuta** (Buch.-Ham. ex DC.) Forman in Kew Bull. 22: 356. 1968; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78 (3): 477. 1981; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 178. 2000. *Cissampelos hirsuta* Buch.-Ham. ex DC., Syst. Nat. 1: 535. 1817. *Cissampelos pareira* L., Sp. Pl. 1031. 1753 p.p.; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1:103. 1872; Cooke, Fl. Pres. Bombay 1:24. 1958 (Repr.). 'Pahadmal', 'Pahadvel'.

Herbaceous climbing undershrubs. Leaves 3.5–5.5 × 2.5–3.5 cm ovate to orbicular, glabrous or sparsely pubescent above, pale and pubescent on nerves beneath, apex rounded, base truncate or subcordate. Flowers unisexual; male flowers in pendent, subcorymbose cymes; female flowers in racemes. Drupes ovoid, scarlet.

Fl. & Fr.: August–December.

Distrib.: Frequent in deciduous forest along hedges, Nagzira, Nawegaon.

Illus.: Mathew, *Illus. Fl. Tamilnadu Carnatic*. t. 12. 1982.

Notes: Decoction of the roots and leaves used as an antiseptic.

Cocculus DC., (*nom. cons.*)

Cocculus hirsutus (L.) Theob. in Mason, *Burma ed. Theob.* 2: 657. 1883; S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 3. 1980 et in *J. Bombay Nat. Hist. Soc.* 78(3). 477. 1981; B.G. Kulkarni in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 179. 2000. *Menispermum hirsutum* L., *Sp. Pl.* 341. 1753. *Cocculus villosus* (Lam.) DC., *Syst. Nat.* 1:525. 1817; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 101. 1872; Cooke, *Fl. Pres. Bombay* 1:22.1958 (Repr.). ‘*Para-vel*’, ‘*Vasan-vel*’.

Straggling shrubs; stems and branches hirsute. Leaves 2.5–6 × 1.5–3.6 cm. ovate, softly pubescent or villous on both surfaces, at apex obtuse and mucronate, base truncate. Flowers unisexual; male and female flowers in axillary fascicles. Drupes keeled, laterally compressed, become reddish after ripening.

Fl. & Fr.: January–March.

Distrib.: Common in open shady places, Nawegaon, Nagzira.

Notes: Roots used for rheumatism and as sedative. Leaves used for sores, cuts, eczema, venereal diseases, as laxative and excessive urination especially bed wetting in children (Kothari & al. 2003).

Diploclisia Miers

Diploclisia glaucescens (Bl.) Diels in *Engl., Pflanzenr.* 46: 225. t. 77. 1910; B.G. Kulkarni in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 181. 2000. *Cocculus glaucescens* Bl., *Bijdr.* 25. 1825. *Cocculus macrocarpus* Wight & Arn., *Prodr.* 13. 1834; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 101. 1872; Cooke, *Fl. Pres. Bombay* 1: 22. 1958 (Repr.). ‘*Ramrakh*’.

Woody climbers. Leaves 3.5–9.5 × 3.5–11.5 cm, broadly ovate to suborbicular, at apex obtuse, base subcordate. Flowers faint yellowish, in drooping panicles. Drupes obovoid, kidney shaped.

Fl. & Fr.: February–May.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: tt. 15 & 961 c, d. 1982.

Distrib.: Frequent along hedges in moist deciduous forests, Nagzira.

Stephania Lour.

Stephania japonica (Thunb.) Miers in *Ann. Mag. Nat. Hist.* 3, 18: 14. 1866; B.G. Kulkarni in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 181. 2000. *Menispermum japonicum* Thunb., *Fl. Jap.* 193.1784. *Stephania hernandifolia* (Willd.) Walp., *Rep* 1: 96.1842; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 103. 1872; Cooke, *Fl. Pres. Bombay* 1: 23. 1958 (Repr.). ‘*Pahad-vel*’, ‘*Patal*’.

Climbers with tuberous roots. Leaves 4.5–7 × 4–5 cm, at apex shortly acuminate, base rounded. Flowers greenish-yellow, in umbellate heads. Drupes globose, red.

Fl. & Fr.: June–September.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 17. 1982.

Distrib.: Frequent in dense forests, Nawegaon.

Tinospora Miers

Tinospora cordifolia (Willd.) Miers ex. Hook.f. & Thoms., *Fl. Ind.* 184. 1855; & in Hook.f., *Fl. Brit. India* 1: 97. 1872; Cooke, *Fl. Pres. Bombay* 1: 20. 1958 (Repr.); B.G. Kulkarni in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 183. 2000. *Menispermum cordifolium* Willd., *Sp. Pl.* 4: 826. 1806. ‘*Gul-vel*’.

Woody climbers, up to 9 m long; bark green, corky. Leaves as long as broad, sometimes reniform. Flowers unisexual, greenish-yellow; males fascicled; females solitary or in racemes. Drupes orange-red when ripe, globose, dorsally convex, ventrally flat.

Fl. & Fr.: January–June.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 12. 1982.

Distrib.: Common in dense forests and on hedges, Nagzira, Nawegaon.

Notes: Decoction of the roots and leaves used as an antiseptic. Leaves, stems and roots are used medicinally to cure fever, blood pressure, dysentery and muscular swellings. Roots also useful for snake-bite (Kothari & S. Moorthy, 1996).

NYMPHAEACEAE

Nymphaea L. (nom. cons.)

Nymphaea nouchali Burm.f., *Fl. Ind.* 120. 1768; S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 3. 1980; S. Moorthy in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 10: 185. 2000. *Nymphaea stellata* Willd., *Sp. Pl.* 2: 1153. 1799; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 114. 1872; Cooke, *Fl. Pres. Bombay* 1: 27. 1-91958 (Repr.). ‘*Uplia kamal*’. (PLATE:E-3).

Aquatic herbs; roots stock submerged, tuberous, roundish. Leaves 18–25.8 × 15–20 cm, orbicular or reniform. Flowers white, pink or red, solitary. Nutlets fleshy, globular. Seeds ovoid, arillate.

Fl. & Fr.: Almost throughout the year.

Illus.: Subram. *Aq. Ang.* 113, f. 1. 1962.

Distrib.: Common in shallow lakes or ponds, Nawegaon.

Notes: Rhizome and flowers are eaten by wild animals (S.K. Malhotra & K.M. Rao, *op.cit.*). Stalk, Fruits and rhizomes edible as vegetable. Seeds used to prepare ‘Laddu’ (sweet) after frying, adding ghee and suger (Kothari & D. L. Shirodkar, 2000).

NELUMBONACEAE

Nelumbo Adans

Nelumbo nucifera Gaertn. Fruct. 1: 73, t. 19, f. 2. 1788; S. Moorthy in N. P. Singh & S. Karthik., Fl. Maharashtra State 1: 187. 2000. *Nelumbium speciosum* Willd., Sp. Pl. 2: 1258. 1799; Hook.f. & Thoms. In Hook.f., Fl. Brit. India 1: 116. 1872; Cooke, Fl. Pres. Bombay 1: 28. 1958 (Repr.). ‘*Kankadi*’, ‘*Kamal*’ (PLATE: A-2).

Rhizomatous, aquatic herbs; rhizomes slender, elongate, creeping, branched. Leaves glossy or waxy, glaucous beneath, radiatingly reticulate. Flowers white or rosy, solitary, on long peduncle. Ripe carpels ovoid, glabrous; nutlets smooth.

Fl. & Fr.: July–October.

Illus.: Subram., Aq. Ang. 8, 116, f. 4. 1962.

Distrib.: Common in lakes, Nawegaon.

PAPAVERACEAE

Argemone L.

Argemone mexicana L., Sp. Pl. 508. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 117. 1872; Cooke, Fl. Pres. Bombay 1: 29. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 3. 1980; K.M. Rao in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 187. 2000. ‘*Pivla dhotra*’.

Annual herbs, prickly, 30–90 cm tall. Leaves 5–12 × 2–4 cm, radical and cauline, bluish-green, variegated white, spiny along margins and on veins, sessile. Flowers bright yellow, solitary, terminal. Capsules oblong-elliptic, spinous. Seeds numerous, reticulate, globose, blackish-brown.

Fl. & Fr.: Throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 23. 1982.

Distrib.: Frequent along sandy bank of lake, Nawegaon, Nagzira.

Notes: Leaves and whole plant sap used for jaundice. Stem juice and leaf extract mixed with ‘Ghee’ used for scabies (Kothari & D. L. Shirodkar, 2004).

BRASSICACEAE (CRUCIFERAE)

Brassica L.

Brassica nigra (L.) Koch in Roehl. Deutschl. Fl. ed. 3, 4: 713. 1833; Hook.f. & T. And. in Hook.f., Fl. Brit. India 1: 157. 1872; Cooke Fl. Pres. Bombay 1: 36. 1958 (Repr); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 192. 2000. *Sinapis nigra* L., Sp. Pl. 668. 1753. ‘*Kali Rai*’.

Herbs, 45–60 cm tall. Lower leaves 5–8 cm long, lyrate lobed, deeply pinnatifid to pinnatisect; upper leaves 2–4.5 × 0.5–1.2 cm, narrowly elliptic or lanceolate with

toothed margins. Flowers bright yellow, in racemes. Pods linear. Seeds brownish-black, glabrous, finely punctate.

Fl. & Fr.: Throughout the year.

Distrib.: Usually cultivated for its fruits, occasionally found as an escape. Nawegaon, Nagzira.

Notes: Seed oil rich with sulphur used as a medicine and edible oil.

CAPPARACEAE

Key to the genera

- 1a. Armed shrubs or trees
- 1b. Unarmed herbs

Capparis
Cleome

Capparis L.

Key to the species

- 1a. Flowers in umbels; berries 0.6–1.2 cm. across
- 1b. Flowers not in umbels; berries 2–2.5 cm across

C. sepiaria
C. zeylanica

Capparis sepiaria L. Syst. Nat. ed. 10, 2: 1071; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 177. 1872; Cooke, Fl. Pres. Bombay 1: 51. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 214. 2000. '*Kanthtara*', '*Pachra*'.

Shrubs; stem straggling, armed. Leaves 1.5–3.5 × 1–2.5 cm, ovate-elliptic or obovate, at apex obtuse, emarginated; stipular spines hooked. Flowers white, in axillary and terminal umbels, gynophore filiform. Fruits globose, smooth, black when ripe.

Fl. & Fr.: February–May.

Illus.: Mahesh. Illus. Fl. Delhi f. 13. 1966.

Distrib.: Frequent in deciduous forests..

Notes: The species included based on Anjankar & Bardekar (2000). Bark & roots used for dropsy and gout.

Capparis zeylanica L., Sp. Pl. ed. 2. 720. 1762; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 215. 2000. *Capparis horrida* L.f. Suppl. Pl. 264. 1781; Cooke, Fl. Pres. Bombay 1: 47. 1958 (Repr.). '*Torati*', '*Wagati*'.

Shrubs, straggling or climbing, with short recurved spines. Leaves 3–6 × 2–4 cm, coriaceous, elliptic or ovate-elliptic. Flowers pinkish-white, solitary, axillary or 2–3 together. Fruits irregularly ovoid, hanging on woody stalks, bright red.

Fl. & Fr.: February–April.

Illus.: Talb. For. Fl. Bombay Pres. & Sind. 1: 63, f. 41. 1909. (*Capparis horrida*).

Distrib.: Frequent in dense forests, Nagzira.

Notes: Fruits edible as a vegetable. Roots, bark and leaves useful for stomach pain, cholera and piles (N.P. Singh & Sharma, 1998).

Cleome L.

Key to the species

1a. Stamens 6 or less

C. monophylla

1b. Stamens more than 10

C. viscosa

Cleome monophylla L., Sp. Pl. 672. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 168. 1872; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; Cooke, Fl. Pres. Bombay 1:39.1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 221. 2000. '*Jangli-harar*'.

Glandular hairy herbs, 25–50 cm tall. Leaves 3–5 × 0.5–1.5 cm, ovate-lanceolate, at apex acute, base subcordate. Flowers pink, in elongated corymbiform racemes. Capsules cylindric, beaked, hairy; gynophore short or absent. Seeds rugose.

Fl. & Fr.: August–September.

Distrib.: Frequent in scrub forests, Nawegaon.

Notes: Leaves used as food by Wild animals (S.K. Malhotra & K.M. Rao, *op.cit.*).

Cleome viscosa L., Sp. Pl. 672. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 170. 1872; Cooke Fl. Pres. Bombay 1:39. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 223. 2001. '*Pivli-Iilwan*'.

Herbs, 30–70 cm tall, viscous-glandular. Leaves 3–5 foliolate, leaflets 2–4 × 0.4–2 cm, elliptic, oblong or obovate, at apex acute or obtuse, base rounded. Flowers solitary, yellow, axillary in lax racemes. Capsules linear, cylindric, hairy, tapering at both ends. Seeds subglobose.

Fl. & Fr.: June–December.

Illus.: Mahesh., Illus. Fl. Delhi f. 9. 1966.

Distrib.: Frequent in open places, road sides, Nawegaon.

Notes: The species is used as carminative, in deafness, ear-ache and rubefacient (Singh & Sharma, 1998).

VIOLACEAE

Hybanthus Jacq.

Hybanthus enneaspermus (L.) F.V. Muell., Fragm. Phyt. Austr. 10: 81. 1876; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 & in J. Bombay Nat. Hist. Soc. 78(3): 477. 1981; A. Godbole & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 227. 2000. *Viola enneasperma* L., Sp. Pl. 937.1753. *Ionidium heterophyllum* Vent. Jard. de la Malm. fol. 27. 1803; Cooke, Fl. Pres. Bombay 1: 55. 1958 (Repr.). *Ionidium Suffruticosum* (L.) Roem. & Schult., Syst. Veg. 5: 394. 1819; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 185. 1872. '*Ratan-Paras*'.

Perennial herbs, 15–30 cm tall; stem diffuse with ascending branches. Leaves 2–5 cm long, elliptic to linear-lanceolate, alternate subsessile, base attenuate, at apex acute, margin serrate. Flowers bright purple, or reddish-pink, axillary, solitary. Capsules subglobose. Seeds ovoid, acute, longitudinally ribbed, yellowish-white.

Fl. & Fr.: October–December.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic*, 2: t. 37. 1982.

Distrib.: Frequent weed in moist habitats, Nawegaon, Nagzira.

Notes: The species is used as a tonic. (S.K. Malhotra & K.M. Rao, *op. cit.*).

BIXACEAE

Bixa L.

***Bixa orellana* L.**, Sp. Pl. 512. 1753; Cooke, *Fl. Pres. Bombay* 1: 56. 1958 (Repr.); D.L. Shirodkar in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 231. 2000. ‘*Kesri*’, ‘*Shendri*’.

Small, evergreen trees. Leaves 8–18 × 5–11 cm, ovate, acute or acuminate at apex, truncate or subcordate at base. Flowers white or pink, in terminal panicles. Capsules ovoid or subglobose, covered with soft prickles. Seeds trigonous, rounded and grooved on the back; pulp red.

Fl. & Fr.: July–November.

Illus.: Balakr. in Sharma & al. *Fl. India* 2: 381. f. 70. 1993.

Distrib.: Frequent, escape in scrub forests, Nagzira.

Notes: Native of Tropical America. Usually cultivated, occasionally found as an escape. Stem fibre used for cordage.

COCHLOSPERMACEAE

Cochlospermum Kunth ex DC. (*nom. cons.*)

***Cochlospermum religiosum* (L.) Alst.** in *Handb. Fl. Ceyl.* 6: 14. 1931; Kothari in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 231. 2000. *Bombax religiosum* L., Sp. Pl. 552. 1753. *Cochlospermum gossypium* (Cav.) DC., *Prodr.* 1: 527. 1824; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 190. 1872; Cooke, *Fl. Pres. Bombay* 1: 56. 1958 (Repr.). ‘*Gogal*’, ‘*Gonagal*’.

Deciduous trees 8–18 m tall. Leaves 5–20 cm across, digitately lobed; lobes 3–5, acuminate, white-tomentose beneath lobes. Flowers bright yellow, in terminal panicles. Capsules broadly ellipsoid or obovate, ribbed. Seeds brown, densely silky hairy.

Fl. & Fr.: February–April.

Illus.: Balakr. in Sharma & al. *Fl. India* 2: 383. f. 71. 1993.

Distrib.: Frequent in hilly deciduous forest, Nawegaon.

Notes: Gum exuded from stem is edible.

FLACOURTIACEAE

Key to the genera

- 1a. Flowers unisexual; fruit a berry
- 1b. Flowers bisexual; fruit a capsule

Flacourtia
Casearia

Casearia Jacq.

Key to the species

- 1a. Branchlets and leaves tomentose or pubescent; leaves entire or serrulate **C. tomentosa**
- 1b. Branchlets and leaves glabrous; leaves crenate along margins **C. graveolens**

Casearia graveolens Dalz. in Hook. J. Bot. & Kew Gard. Misc. 4: 107. 1852; C.B. Clarke in Hook.f., Fl. Brit. India 2: 592. 1879; Cooke, Fl. Pres. Bombay 1: 553. 1958 (Repr.); C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 233. 2000. '*Bouhada*', '*Kirmira*', '*Pandhri-Karai*', '*Rivil*'.

Small trees, 4–7 m high; stems and branches lenticelled. Leaves 5–22 × 2–12 cm, broadly elliptic, at apex obtuse or short acuminate, base usually rounded. Flowers green in axillary clusters. Capsules ellipsoid, 3-valved, yellow. Seeds ovoid, compressed, with red aril.

Fl. & Fr.: September–December.

Illus.: P.P. Lakshmi. & Sharma, Fl. Nasik Dt. 75, f. 2. 1991.

Distrib.: Frequent in deciduous forests, Nagzira.

Notes: Root paste used externally for piles, its juice cures jaundice (Kothari & S. Moorthy, 1996).

Casearia tomentosa Roxb., Fl. Ind. 2: 421. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 2: 593. 1879; Cooke, Fl. Pres. Bombay 1: 554. 1958 (Repr.); C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 235. 2000. '*Tondri*'.

Trees, 5–11 m tall; Leaves 4.5–20.5 × 2.8–7.5 cm, elliptic-oblong, at apex acute or acuminate. Flowers greenish-white, in short, axillary clusters. Capsules ellipsoid, 3-valved. Seeds arillate.

Fl. & Fr.: January–April.

Flacourtia L'Herit.

Key to the species

- 1a. Young twigs often densely tomentose, sometimes minutely puberulous; leaves turning brown on drying **F. montana**
- 1b. Young twigs glabrous or glabrescent; leaves not turning brown **F. indica**

Flacourtia indica (Burm.f.) Merr., Interpr. Rumph. Herb. Amb. 377. 1917; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 109. 1981; C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 235. 2000. *Gmelina indica* Burm.f., Fl. Ind. 132, t. 39. f. 5. 1768. *Flacourtia ramontchi* L., Herit. Stirp. Nov. 3. 59, t. 30 & 30b. 1785; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 193. 1872; Cooke, Fl. Pres. Bombay 1: 59. 1958 (Repr.). '*Kakai*'.

Small trees, 2–5 m high, deciduous, thorny. Leaves $2-10 \times 1.5-7$ cm, broadly elliptic, ovate or obovate, at apex acute, base rounded, margins crenate. Flowers in axillary, bracteate racemes or terminating in short thorny twigs; male flowers greenish yellow; female flowers with globular ovary. Berries ellipsoid, ribbed, dark purple or red when ripe.

Fl. & Fr.: January–July.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 41. 1982 (*Flacourtia ramontchi*).

Distrib.: Frequent in deciduous forests, Nawegaon, Nagzira.

Notes: Fruits edible.

Flacourtia montana Grah., *Cat. Bombay Pl.* 10. 1839; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 192. 1872; Cooke, *Fl. Pres. Bombay* 1: 58. 1958 (Repr.). C.R. Jadhav in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 237. 2000. ‘*Attak*’, ‘*Champer*’, ‘*Tar-bor*’.

Trees, 4–12 m tall; stems thorny. Leaves $5.5-20 \times 2.5-8.5$ cm, ovate or broadly rounded, elliptic to oblong, base acute. Flowers in densely pubescent, bracteate, fascicled racemes. Berries globose, obtusely ribbed, reddish-purple when ripe.

Fl. & Fr.: October–March.

Illus.: Talb. *For. Fl. Bombay Pres. & Sind.* 1: 75. f. 48. 1909.

Distrib.: Frequent in moist deciduous forests, Nagzira.

Notes: Fruits edible and also used for Jaundice. Leaves used as fodder (N.P. Singh & Sharma, 1998).

POLYGALACEAE

Polygala L.

Key to the genera

- | | |
|---|---------------------|
| 1a. Wing sepals broader above middle, obtuse at apex | P. erioptera |
| 1b. Wing sepals broader below middle, acute-acuminate at apex | 2 |
| 2a. Racemes longer than leaves; capsules densely ciliate at margins | P. elongata |
| 2b. Racemes shorter than leaves; capsules eciliate | P. arvensis |

Polygala arvensis Willd., *Sp. Pl. ed.* 3(2): 876. 1802; P. Lakshmi. & P. Venkanna in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 246. 2000. *Polygala chinensis* auct. non. L. 1753; Bennett in Hook.f., *Fl. Brit. India* 1: 203. 1872; Cooke, *Fl. Pres. Bombay* 1: 64. 1958 (Repr.). ‘*Phutani*’.

Diffuse hairy herbs. Leaves $1.5-2.5 \times 0.5-0.6$ cm, subsessile, elliptic, ovate, suborbicular or linear, acute at both ends. Flowers yellow, few, in short, lateral racemes. Capsules orbicular-oblong, emarginate at apex.

Fl. & Fr.: August–November.

Illus.: Banerjee in Sharma & al., Fl. India 2: 460. f. 87. 1993.

Distrib.: Common in open situation, Nagzira.

Notes: Leaves used for rheumatism and swollen joints (N. P. Singh & Sharma, 1998).

Polygala elongata Klein. in Willd., Sp. Pl. 3(2): 879. 1802; Bennett in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 64. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; P. Lakshmi. & P. Venkanna in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 247. 2000.

Erect herbs, 10–40 cm tall. Leaves 1.2×0.2 cm, linear-lanceolate, at apex obtuse or emarginate, base attenuate. Flowers yellow, in terminal, lax racemes. Capsules oblong, unequal sided. Seeds 2, black, obovoid, with short, whitish hairs.

Fl. & Fr.: July–October.

Distrib.: As a weed among grasses, infrequent. Nawegaon, Nagzira.

Polygala erioptera DC., Prodr. 1: 326. 1824; Bennett in Hook.f., Fl. Brit. India 1: 203. 1872; Cooke, Fl. Pres. Bombay 1: 63. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; P. Lakshmi. & P. Venkanna in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 247. 2000.

Herbs, 15–25 cm high, appressed hairy, branched from base. Leaves $0.5\text{--}2.5 \times 0.2\text{--}0.3$ cm, minutely simple hairy on both surfaces. Flowers yellow, in few flowered racemes, axillary or extra-axillary. Capsules oblong-ellipsoid, densely hairy. Seeds oblong, densely pilose.

Fl. & Fr.: August–October.

Distrib.: As a weed in open situations, Nawegaon.

CARYOPHYLLACEAE

Polycarpon L.

Polycarpon prostratum (Forssk.) Aschers. & Schweinf. in Ost. Bot. Zeitschr. 39: 128. 1889 in obs; D.L. Shirodkar in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 253. 2000. *Alsine prostrata* Forssk., Fl. Aeg-Arab. 207. 1775. *Polycarpon loeflingiae* (Wight & Arn.) Benth. & Hook.f. ex Edgew. in Hook.f., Fl. Brit. India 1: 245. 1874 *nom. ill.*; Cooke, Fl. Pres. Bombay 1: 69. 1958 (Repr.).

Herbs, 40–50 cm tall. Leaves $0.5\text{--}0.1 \times 0.1\text{--}0.2$ cm, linear-oblong, faintly hairy. Flowers green, in terminal or axillary dichotomous cymes. Capsules encircled by calyx. Seeds subcylindric, pale brown.

Fl. & Fr.: October–November.

Illus.: Mahesh. Illus. Fl. Delhi f. 20. 1966.

Distrib.: Frequent among grasses in open situations, Nagzira.

PORTULACACEAE

Portulaca L.

Portulaca oleracea L., Sp. Pl. 445. 1753; T. Dyer in Hook.f., Fl. Brit. India 1: 246. 1874; Cooke, Fl. Pres. Bombay 1: 72. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; K.M. Rao in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 261. 2000. '*Mhotighol*', '*Ranghol*'.

Succulent herbs; stem prostrate, reddish, swollen at nodes. Leaves 0.5–2 × 0.3–1.7 cm, fleshy, alternate, subopposite or whorled, ovate-obovate, sessile. Flowers yellow, solitary or in terminal clusters. Capsules ovate-oblong. Seeds minute, many, brown, granulate or tuberculate.

Fl. & Fr.: Throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 49. 1982.

Distrib.: Common along nallas in moist places, Nawegaon.

Notes: Leaves and stem edible as a vegetable and used medicinlly in headache, fever and prickly heat (N.P. Singh & Sharma, 1998).

TAMARICACEAE

Tamarix L.

Tamarix ericoides Rottl. in Ges. Naturf. Fr. Berl. Neue Schr. 4: 214. 1803; T. Dyer in Hook.f., Fl. Brit. India 1: 249. 1874; Cooke, Fl. Pres. Bombay 1: 76. 1958 (Repr.); Madhusudan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 267. 2000. '*Sheerni*'.

Bushy shrubs, 1–2.5 m tall; bark cracked. Leaves minute, scaly, ovate. Flowers pale to bright rosy, in terminal, branched spikes. Capsules beaked, pale brown. Seeds oblong, with pale white hairs.

Fl. & Fr.: October–February.

Illus.: Talb. For. Fl. Bombay Pres. & Sind. 1: 87. f. 56. 1909.

Distrib.: Frequent along wet beds of lakes, Nawegaon.

CLUSIACEAE (GUTTIFERAE)

Key to the genera

- | | |
|--|--------------------|
| 1a. Lateral veins parallel; ovary many celled | 2 |
| 1b. Lateral veins reticulate; ovary 1-celled | Calophyllum |
| 2a. Plants with yellow or reddish juice; flowers yellow or green | Garcinia |
| 2b. Plants without yellow or reddish juice; flowers white to pale purple | Mammea |

Calophyllum L.

Calophyllum inophyllum L., Sp. Pl. 513. 1753; T. And. in Hook.f., Fl. Brit. India 1: 274. 1874; Cooke, Fl. Pres. Bombay 1: 84. 1958 (Repr.); A. Godbole & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 274. 2000. '*Surangi*', '*Undi*'.

Trees 10–12 m tall; branches with persistent leaf-scars. Leaves 8–12 × 2.5–3.5 cm, elliptic-oblong, decussate, obtuse at apex, rounded at base. Flowers white, in axillary, lax racemes. Drupes globose, smooth, yellow on maturity, one seeded.

Fl. & Fr.: December–March.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* t. 55. 1982.

Notes: Paste of leaves used in rheumatic pains [Kothari & S. Moorthy, 1993].

Garcinia L.

Garcinia indica (Du Petit-Thou.) Choisy in DC., *Prodr.* 1: 561. 1824; T. And. in Hook.f., *Fl. Brit. India* 1: 261. 1874; Cooke, *Fl. Pres. Bombay* 1: 80. 1958 (Repr.); A. Godbole & S. Das Das in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 276. 2000. *Brindonia indica* Du Petit-Thou. in *Dict. Sci. Nat.* 5: 339. 1804. ‘*Amsul*’, ‘*Katambi*’, ‘*Kokam*’, ‘*Kokambi*’, ‘*Ratamba*’.

Trees 10–15 m tall; branches drooping. Leaves 8–12 × 3–4 cm, ovate-oblong, elliptic-lanceolate, red when young. Flowers unisexual, axillary or terminal, solitary or fascicled; male flowers 4–8; female flowers usually solitary. Berries globose, dark purple when ripe. Seeds compressed.

Fl. & Fr.: November–April.

Illus.: Talb. For. Fl. Bombay Pres. & Sind. 1: 91, f. 57. 1909.

Distrib.: Frequent along foot of ghat or hills, Nawegaon.

Notes: Fruits edible and used as a pickle, cooling used in dysentery and for skin disease (N.P. Singh & Sharma, 1998).

Mammea L. emend. De Wilde

Mammea suriga (Buch.-Ham. ex Roxb.) Kosterm. in *Comm. For. Res. Inst. Indonesia Bogor* 72: 23 f. 19. 1961; A. Godbole & S. Das Das in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 279. 2000. *Calophyllum suriga* Buch.-Ham. ex Roxb., *Fl. Ind.* 2: 608. 1832. *Ochrocarpus longifolius* Benth. & Hook.f. ex T. And. in Hook.f.,

Fl. Brit. India 1: 270. 1874; Cooke, *Fl. Pres. Bombay* 1: 84. 1958 (Repr.). ‘*Surangi*’.

Trees, 10–20 m tall. Leaves 2.5 × 6.5 cm, oblong, thickly coriaceous, acuminate at apex, subcordate at base. Flowers fragrant, in fascicles, in axils of fallen leaves. Berries obliquely ovoid. Seeds solitary.

Fl. & Fr.: February–March.

Illus.: Talb. For. Fl. Bombay Pres. & Sind. 1: 98. f. 61. 1909 (*Ochrocarpus longifolius*).

Distrib.: Frequent in dense forest along hill slopes, Nagzira.

MALVACEAE

Key to the genera

- | | |
|--|--------------------|
| 1a. Carpels as many as style branches | 2 |
| 1b. Carpels half as many as style branches | 8 |
| 2a. Fruit a capsule | 3 |
| 2b. Fruit a schizocarp breaking into mericarps at maturity | 6 |
| 3a. Epicalyx segments winged | Kydia |
| 3b. Epicalyx segments not as above | 4 |
| 4a. Stigmas capitate or globose | 5 |
| 4b. Stigmas lobed | Thespesia |
| 5a. Calyx persistent | Hibiscus |
| 5b. Calyx deciduous | Abelmoschus |
| 6a. Seeds 2 or more in each mericarp | Abutilon |
| 6b. Seeds 1 in each mericarp | 7 |
| 7a. Epicalyx present | Malvastrum |
| 7b. Epicalyx absent | Sida |
| 8a. Flowers With Foliaceous Bracts | Malachra |
| 8b. Flowers Without Foliaceous Bracts | Urena |

Abelmoschus Medik.

Key to the species

- | | |
|--|---------------------|
| 1a. Epicalyx segments 6–16, linear to lanceolate | A. moschatus |
| 1b. Epicalyx segments 4–6, ovate | A. manihot |

Abelmoschus manihot (L.) Medik. Malv. 46. 1787, ampl. Hochr. in Candollea 2: 87. 1924; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 290. 2000. *Hibiscus manihot* L., Sp. Pl. 696. 1753; Mast. in Hook.f., Fl. Brit. India 1: 341. 1874. ‘*Ran-bhendi*’. (PLATE:F-5).

Herbs or undershrubs, 1–2 m tall; branchlets densely hispid. Leaves 5–13 × 6–11 cm, broadly ovate, 3–9 lobed, base cordate, margin dentate or serrate. Flowers yellow with purple center. Capsules acuminate, ovoid, strigose. Seeds globose with stellate hairs in concentric rings.

Fl. & Fr.: July–January.

Distrib.: Frequent along grasses in open places, Nawegaon, Nagzira.

Notes: Cultivated in India & S.E. Asia, naturalised.

Abelmoschus moschatus Medik., Malv. 46. 1787 ampl. Hochr. in Candollea 2: 86. 1924; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 110. 1981; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 293. 2000. *Hibiscus abelmoschus* L., Sp. Pl. 696. 1753; Mast. in Hook.f., Fl. Brit. India 1: 342. 1874; Cooke, Fl. Pres. Bombay 1: 118. 1958 (Repr.). ‘*Kasturi-bhendi*’.

Annual herbs, 2–3 m tall. Leaves 3.5–15.5 × 2.8–18.5 cm, 3–7 palmilobed, upper leaves narrower, base hastate or sagittate. Flowers yellow with dark purple centre. Seeds concentrically ribbed.

Fl. & Fr.: July–December.

Illus.: Paul in Sharma & al. Fl. India 3: 308, f. 86. 1993.

Distrib.: Frequent in deciduous forest, Nawegaon, Nagzira.

Abutilon Mill.

Abutilon indicum (L.) Sweet, Hort. Brit. 54. 1826; Mast. in Hook.f., Fl. Brit. India 1: 326. 1874; Cooke, Fl. Pres. Bombay 1: 102. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 477. 1981; P. Venkanna & S. Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 297. 2000. *Sida indica* L. in Torner, Cent. Pl. 2: 26. 1756. '*Mudra*', '*Petari*'.

Herbs or undershrub, 1–2 m tall; branchlets minutely stellate-pubescent. Leaves 2–5 × 2–6 cm, ovate-suborbicular, at apex acute, base cordate. Flowers yellow, solitary, axillary. Schizocarps globular; mericarps 15–20, mucronate, stellately hairy. Seeds ovoid or suborbicular, brownish black.

Fl. & Fr.: September–April.

Illus.: Tadul. & Venkat. Handb. S. Indian Weeds 105, f. 40. 1955 (Rev. ed.).

Distrib.: Common throughout scrub forests, Nawegaon, Nagzira.

Notes: Stem fibre used for ropes etc. Decoction of leaves cures bronchitis and seeds used as demulcent.

Hibiscus L. (nom. cons.)

Key to the species

1a. Segments of epicalyx very short, often caducous

H. lobatus

1b. Segments of epicalyx distinctly long, persistent

H. panduraeformis

Hibiscus lobatus (J.A. Murr.) O. Ktze., Rev. Gen. Pl. 3: 19. 1898; S.K. Malhotra & K.M. Rao in Bull. Bot. Sur. India 22: 4. 1980; P. Venkanna & S. Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 313. 2000. *Solandra lobata* J.A. Murr. Comm. Soc. Reg. Sci. Goetting 6: 20. t 1. 1785, t.49. 1785. *Hibiscus solandra* L' Herit. Stirp. Nov. 1: 103, t. 49. 1788; Mast. in Hook.f., Fl. Brit. India 1: 336. 1874; Cooke, Fl. Pres. Bombay 1: 114. 1958 (Repr.).

Annual herbs, 50–80 cm tall. Leaves polymorphic, lower ones 2–4 × 1.8–3.5 cm, orbicular to ovate acute at apex, margins crenate, hairy on both surfaces, upper ones deeply 3-lobed. Flowers white, solitary, axillary, rarely in racemes by reduction of upper leaves. Capsules ovoid, shortly beaked. Seeds black, many, ovoid.

Fl. & Fr.: August–November.

Illus.: Paul in Sharma & al. Fl. India 3: 336, f. 95. 1993.

Distrib.: Frequent in open places, Nawegaon.

Hibiscus panduraeformis Burm.f., Fl. Ind. 151, t. 47, f. 2. 1768; Mast. in Hook.f., Fl. Brit. India 1: 338. 1874; Cooke, Fl. Pres. Bombay 1: 115. 1958 (Repr.); P. Venkanna & S. Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 314. 2000.

Annual herbs, 2–4 m tall. Leaves 3–10 cm long, shallowly 3–5 lobed, margins irregularly toothed, silky hairy on both surfaces. Flowers yellow with dark purple centre, solitary, axillary. Capsules shorter than calyx, ovoid, densely hairy. Seeds reniform, brown.

Fl. & Fr.: October–January.

Illus.: Tadul. & Venkat. Handb. S. Indian Weeds 113, f. 44. 1955 (Rev. ed.).

Distrib.: Common in open places, Nawegaon.

Kydia Roxb.

Kydia calycina Roxb., Pl. Cor. 3: 12 t. 215. 1811; Mast. in Hook.f., Fl. Brit. India 1: 348. 1874; Cooke, Fl. Pres. Bombay 1: 100. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 476. 1981; P. Venkanna & S. Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 317. 2000. '*Warang*'.

Tall trees, 10–15 m tall; branchlets stellately hairy. Leaves 3 lobed, 3–10 × 2.5–8 cm, ovate-orbicular, cordate at base, palminerved. Flowers white or pink, in axillary, terminal panicles. Capsules 3-celled, globose, enclosed in persistent calyx. Seeds reniform, ellipsoid, blackish-brown.

Fl. & Fr.: September–February.

Illus.: Matthew, Fur. Illus. Fl. Tamilandu Carnatic 4: t. 42. 1988.

Distrib.: Common in dense deciduous forests, Nawegaon, Nagzira.

Malachra L.

Malachra capitata (L.) L., Syst. Nat. ed. 12, 2: 458. 1767; Mast. in Hook.f., Fl. Brit. India 1: 329. 1874; Cooke, Fl. Pres. Bombay 1: 105. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; P. Venkanna & S. Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 317. 2000. *Sida capitata* L., Sp. Pl. 685. 1753. '*Ran-ambadi*', '*Ran-bhendi*'.

Scabrid herbs or undershrubs, 40–120 cm tall. Leaves 3–12 × 2.5–13 cm, ovate-suborbicular, cordate at base, palmately 3–5 lobed. Flowers bright yellow, in capitate, axillary cymes. Schizocarps globose, wrinkled; mericarps trigonous. Seeds, ovoid, brownish-black.

Fl. & Fr.: November–December.

Illus.: Paul in Sharma & al. Fl. India 3: 367, f. 104. 1993.

Distrib.: Mostly on road sides and in shady open places, frequent, Nawegaon.

Notes: This Brazilian plant was introduced in India for its fibre. Now naturalized as a weed along roadsides and waste places.

Malvastrum A. Gray (*nom. cons.*)

Malvastrum coromandelianum (L.) Garcke in Bonplandia 5: 295. 1857; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 320. 2000. *Malva coromandeliana* L., Sp. 687. 1753. *Malvastrum tricuspidatum* (R.Br.) A. Gray. Pl. Wright 1: 16. 1852; Mast. in Hook.f., Fl. Brit. India 1: 321. 1874.

Herbs, c. 1 m tall; stem, petioles and pedicels with 4-armed appressed stellate hairs. Leaves 3–7 × 0.8–3 cm, ovoid-oblong, margins dentate. Flowers yellow, solitary, axillary. Schizocarps globular; mericarps radially curved, hairy. Seed one, reniform, brown.

Fl. & Fr.: September–December.

Illus.: Paul in Sharma & al. Fl. India 3: 277. f. 75. 1993.

Distrib.: Frequent, along grasses, Nawegaon.

Notes: It is a native of South America, naturalized.

Sida L.

Key to the species

- | | |
|---|-----------------------|
| 1a. Styles and mericarps 5 | S. cordata |
| 1b. Styles and mericarps 6–12 | 2 |
| 2a. Stipules of each pair different, one linear to lanceolate, the other linear to filiform and shorter | S. acuta |
| 2b. Stipules not as above | 3 |
| 3a. Stem with 1–2 spiny emergences at base of petiole | S. spinosa |
| 3b. Stem without any spiny emergences | 4 |
| 4a. Calyx velutinous to glabrous. | S. rhombifolia |
| 4b. Calyx tomentose | S. cordifolia |

Sida acuta Burm.f., Fl. Ind. 147. 1768; Cooke, Fl. Pres. Bombay 1: 98. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 477. 1981; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 325. 2000. *Sida carpinifolia* Mast. in Hook.f., Fl. Brit. India 1: 323. 1874. '*Jungli-methi*'.

Undershrubs, c. 1 m tall; pubescent when young. Leaves 0.5–6.0 × 0.2–1.5 cm, elliptic-lanceolate or ovate-oblong, serrate at margins. Flowers yellow, solitary, axillary or in clusters. Mericarps 6–10, globose. Seeds triangular, dark brown.

Fl. & Fr.: September–February.

Illus.: Paul in Sharma & al. Fl. India 3: 281. f. 76. 1993.

Distrib.: Common on road sides and in open places, Nawegaon, Nagzira.

Notes: Leaves useful medicinally for bone fracture (N.P. Singh & Sharma, 1988).

Sida cordata (Burm.f.) Borss. in Blumea 14: 182. 1966; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22:4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 477. 1981; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 325. 2000. *Melochia cordata* Burm.f., Fl. Ind. 143. 1768. *Sida humilis* var. *vernonicifolia* (Lam.) Mast. in Hook.f. op. cit. 322.; Cooke, Fl. Pres. Bombay 1: 97. 1958 (Repr.).

Herbs, c. 30–40 cm high, patently hairy. Leaves 1.3–4.0 × 1–3 cm, ovate-cordate, orbicular; crenate on margins. Flowers pale yellow, solitary or paired. Mericarps tetrahedral, with rounded angles. Seeds ovoid, trigonous, brown.

Fl. & Fr.: October–November.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 45. 1988.

Distrib.: Common in open situations and sometimes as undergrowth in forests. Nawegaon, Nagzira..

Notes: Leaves edible and whole plant useful for bone fracture (N. P. Singh & Sharma, 1998).

Sida cordifolia L., Sp. Pl. 684. 1753; Mast. in Hook.f., Fl. Brit. India 1: 324. 1874; Cooke, Fl. Pres. Bombay 1: 99. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 326. 2000. '*Bala*', '*Chikna*'.

Undershrubs, 50–60 cm high with an unpleasant smell. Leaves 1.3–5.5 × 0.5–3.5 cm, ovate-oblong, rarely orbicular, rounded at base, acute at apex. Flowers pale yellow, axillary, mostly solitary, sometimes in clusters of 2–5. Mericarps flattened, trigonous, 2-awned. Seeds flattened, reniform, brown or black.

Fl. & Fr.: September–November.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 46. 1988.

Distrib.: Common in open waste places Nawegaon, Nagzira.

Sida rhombifolia L., Sp. Pl. 684. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 328. 2000. ssp. *retusa* L. Borss. in Blumea 14: 198, f. 21 e-h. 1966. *Sida retusa* L., Sp. Pl. ed. 2, 961. 1763. *Sida rhombifolia* var. *retusa* (L.) Mast. in Hook.f., Fl. Brit. India 1: 324. 1874; Cooke, Fl. Pres. Bombay 1: 99. 1958 (Repr.). '*Ati-bala*', '*Jangli-methi*'.

Prostrate or ascending undershrubs. Leaves 4–6 × 1–5.5 cm, ovate-orbicular, obovate-cuneate, often more or less rhomboid, margins serrate to crenate, dentate at apex. Flowers yellow, axillary. Fruits subglobose. Seeds smooth, brown or black.

Fl. & Fr.: September–December.

Illus.: Paul & Nayar in Nayar & al. Fasc. Fl. India 19: 216, f. 53. 1988.

Distrib.: Common weed in open places. Nawegaon.

Sida spinosa L., Sp. Pl. 683. 1753; Mast. in Hook.f., Fl. Brit. India 1: 323. 1874; Cooke, Fl. Pres. Bombay 1: 98. 1958 (Repr.); P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 328. 2000.

Undershrubs, much branched, 40–60 cm tall, with minute stellate hairs. Leaves 0.5–2.5 × 0.4–1.8 cm. elliptic, ovate or lanceolate, serrate. Flowers yellow, solitary or in a clusters of 2–5. Mericarps 5, trigonous, 2-awned. Seeds ovoid, obscurely trigonous, dull brown-black.

Fl. & Fr.: September–December.

Illus.: Mahesh., Illus. Fl. Delhi. f. 23. 1966.

Distrib.: Common in waste places, Nawegaon.

Thespesia Soland. ex Corr. (*nom. cons.*)

Key to the species

1a. Leaves linear, nectary on midrib beneath, usually 3–5 lobed; seeds numerous

T. lampas

1b. Leaves not as above; seeds 2–4 per cell

T. populnea

Thespesia lampas (Cav.) Dalz. & Gibs., Bombay Fl. 19. 1861; Mast. in Hook.f., Fl. Brit. India 1: 345. 1874; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 329. 2000. *Hibiscus lampas* Cav., Diss. 3: 154, t. 56. f. 2. 1787.; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 497. 1981. *Thespesia macrophylla* Bl., Bijdr. 73. 1825; Cooke, Fl. Pres. Bombay 1: 121. 1958 (Repr.). ‘*Ranbhendi*’.

Undershrubs, 1.0–2.5 m tall. Lower leaves 6–12 × 5–11 cm, orbicular; deeply 3–5 lobed, upper ones broadly ovate-oblong. Flowers yellow solitary, axillary or in long stalked racemes of 1–5 flowers. Capsules ovoid to globose, beaked, woody. Seeds black, ovoid, angular.

Fl. & Fr.: August–December.

Illus.: Paul & Nayar in Nayar & al. Fasc. Fl. India 19: 223, f. 58. 1988.

Distrib.: Common in open places, Nawegaon, Nagzira.

Thespesia populnea (L.) Soland. ex Corr. in Ann. Mus. Herb. Paris 9: 290. t. 8, f. 1. 1807; Mast. in Hook.f., Fl. Brit. India 1: 345. 1874; Cooke, Fl. Pres. Bombay 1: 121. 1958 (Repr.); P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 330. 2000. *Hibiscus populnea* L., Sp. Pl. 694. 1753. ‘*Paras-bhendi*’.

Moderate sized trees 6–8 m high. Leaves 6–14 × 5–11 cm, orbicular, deltoid, deeply cordate. Flowers light yellow with a dark purple centre, axillary, solitary. Capsules globose, faintly 5-angled. Seeds obovoid, angular.

Fl. & Fr.: Throughout the year.

Illus.: Matthew, Illus.s Fl. Tamilnadu Carnatic 2: t. 69. 1982.

Distrib.; Frequent along road sides Nawegaon.

Notes: Leaves edible as a fodder and medicinally used for arthritis and eczema (N. P. Singh & Sharma, 1998).

Urena L.

Urena lobata L., Sp. Pl. 692. 1753; Mast. in Hook.f., Fl. Brit. India 1: 329. 1874; Cooke, Fl. Pres. Bombay 1: 06. 1958 (Repr.); S.K. Malhotra & K.M. Rao in & Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 477. 1981; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 331. 2000. '*Van Bhendi*'.

Undershrubs, 0.5–1.2 m tall. Leaves 2–11 × 0.5–11.5 cm, ovate-orbicular, entire, angular or shallowly lobed. Flowers pink, in axillary clusters. Schizocarps pubescent, spiny, globose with cupular epicalyx. Seeds reniform, angular.

Fl. & Fr.: September–December.

Illus.: Mahesh., Illus. Fl. Delhi F. 27. 1966.

Distrib.: Common along road side and open places, Nawegaon, Nagzira.

Notes: Stem fibre used as substitute for jute, ropes and coarse fabrics. Roots are diuretic and used for rheumatic pains (Kothari & K.M. Rao, 1999).

Cultivated Species:

Gossypium barbadense L., Sp. Pl. 693. 1753; Mast. in Hook.f., Fl. Brit. India 1: 347. 1874; Cooke, Fl. Pres. Bombay 1: 125. 1958 (Repr.). P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra 1: 336. 2000. '*Kapas*'.

Much branched shrubs, glabrous or the young parts more or less pubescent. Leaves orbicular-ovate, cordate at base. Flowers pale yellow, solitary, axillary; epicalyx segments orbicular to ovate, lanceolate. Capsules ovoid, beaked. Seeds ovoid with long, white floss and Fuzz.

Fl. & Fr.: Throughout the year.

Distrib.: Occasionally cultivated in farm and around reserve forest Nagzira.

Notes: Fibres obtained from stem bark used for clothing and seeds as fodder.

Hibiscus rosa-sinensis L., Sp. Pl. 694. 1753; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 477. 1981; P. Venkanna & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 340. 2000. '*Jasud*', '*Jaswand*'.

Shrubs; stems woody, without prickles. Leaves ovate-lanceolate, tapering at base, acuminate at apex. Flowers red, solitary, axillary; epicalyx segments 5–8. Capsules globose, rarely formed.

Fl. & Fr.: Throughout the year.

Distrib.: Introduced to India from Mauritius. Cultivated in gardens as an ornamental, Nagzira.

Notes: Flowers useful for making dyes.

BOMBACACEAE

Bombax L.

Bombax ceiba L., Sp. Pl. 511. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 343. 2000. *Bombax malabaricum* DC., Prodr. 1: 479. 1824; Mast. in Hook.f., Fl. Brit. India 1: 349. 1874; Cooke, Fl. Pres. Bombay 1: 127. 1958 (Repr.). ‘*Kate-saveri*’, ‘*Savar*’, ‘*Malyari*’. (PLATE:H-5).

Trees, 25–30 m tall; trunk buttressed. Leaves 11–14 cm long, 5–7-foliolate; leaflets 5–15 × 1.5–4.5 cm, at apex caudate or cuspidate, base acute. Flowers red, solitary, paired or clustered near ends of leafless branchlets. Capsules ovoid-oblong, loculicidal. Seeds numerous, ovoid, packed in white cotton.

Fl. & Fr.: February–March.

Distrib.: Common throughout in dsciduous forests, Nawegaon.

Notes: Red silk cotton from capsules stuffing pillows and mattresses. Flowers edible. Fruits pain killer. Water extracts of thorns used for pimples (Kothari & K.M. Rao, 1999).

STERCULIACEAE

Key to the genera

1a. Herbs	2
1b. Shrubs or trees	3
2a. Flowers pink; calyx shortly or obscurely lobed	Melochia
2b. Flowers Yellow; Calyx Deeply Lobed	Waltheria
3a. Petals 5	4
3b. Petals Absent	5
4a. Follicles Spirally Twisted	Helicteres
4b. Capsule Not Twisted	Eriolaena
5a. Flowers Orange; Ovules 2 Per Cell; Follicles Thin Walled	Firmiana
5b. Flowers Flesh Coloured; Ovules Many Per Cell; Follicles Woody	Sterculia

Eriolaena A.P. DC.

Key to the species

1a. Involucral bracts sub-pinnatifid; sepals linear-oblong; styles glabrous	E. candollei
1b. Involucral bracts entire or toothed at margins; sepals lanceolate; style pubescent	E. hookeriana

Eriolaena candollei Wall., Pl. Asiat. Rar. 1: 51. t. 64. 1830; Mast. in Hook.f., Fl. Brit. India 1: 370. 1874; Cooke, Fl. Pres. Bombay 1: 140. 1958 (Repr.); S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 351. 2000. ‘*Bothi*’, ‘*Hadang*’.

Trees 10–15 m tall. Leaves 10–15 × 5–12 cm, broadly ovate, glabrous or with a few stellate hairs above, grey tomentose beneath, at apex acute, base cordate. Flowers

yellow in corymbose cymes. Capsules woody, ovoid, acute, beaked, 10-valved. Seeds numerous, winged.

Fl. & Fr.: February–April.

Distrib.: Frequent in dense forests, Nagzira.

Eriolaena hookeriana Wight & Arn., Prodr. 70. 1884; Mast. in Hook.f., Fl. Brit. India 1: 370. 1874; Cooke, Fl. Pres. Bombay 1: 139. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 351. 2000.. '*Bhondia-Dhaman*', '*Bother*', '*Bute*'.

Trees, 8–12 m tall. Leaves 9–12 cm long, as broad as long, roundish, dotted with small tufts of stellate hairs above, finely pubescent beneath. Flowers many in flowered cymes. Capsules ovoid-oblong, pointed, 10-valved, pubescent. Seeds winged.

Fl. & Fr.: March–May.

Illus.: Malick in Sharma & al. Fl. India 3: 415. f. 116. 1993.

Distrib.: Frequent in open places Nawegaon, Nagzira.

Notes: Wood is used as timber and leaves eaten by wild animals (S.K. Malhotra & K.M. Rao, *op. cit*).

Firmiana Marsili

Firmiana colorata (Roxb.) R.Br. in Bennett & Brown, Pl. Jav. Rar. 255. 1844; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 353. 2000. *Sterculia colorata* Roxb., Pl. Cor. 1: 26. t. 25. 1795; Mast. in Hook.f., Fl. Brit. India 1: 349. 1874; Cooke, Fl. Pres. Bombay 1: 133. 1958. '*Khavas*'.

Trees, 10–15 m tall. Leaves 6–16 × 5–15 cm, ovate, palmately 5–7 lobed, acute to acuminate at apex, cordate at base. Flowers orange-red, tomentose, in terminal panicles. Follicles 5, oblong, stipitate, strongly nerved. Seeds ovoid, compressed, smooth.

Fl. & Fr.: March–May.

Illus.: Malick in Sharma & al. Fl. India 3: 420. f. 117. 1993.

Distrib.: Infrequent in deciduous forests, Nawegaon, Nagzira.

Helicteres L.

Helicteres isora L., Sp. Pl. 963. 1753; Mast. in Hook.f., Fl. Brit. India 1: 365. 1874; Cooke, Fl. Pres. Bombay 1: 134. 1958 (Repr.). S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 355. 2000. '*Murudsheng*', '*Atai*'. (PLATE:B-6).

Shrubs, 2.0–2.5 m tall; young shoots stellate hairy. Leaves 6–15 × 7–10 cm, oblong-obovate clothed with stellate hairs on both surfaces, at apex acuminate, base subcordate. Flowers crimson red, distinctly bilabiate in axillary clusters. Follicles beaked, stellately tomentose. Seeds numerous, angular, wrinkled.

Fl. & Fr.: August–November.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 76. 1982.

Distrib.: Most common on road sides and hill slopes, Nawegaon, Nagzira.

Notes: Fruits are fried, mixed with milk and given to children to kill intestinal germs, also used for stomach pains and dysentery.

Melochia L.

Melochia corchorifolia L., *Sp. Pl.* 675. 1753; Mast. in Hook.f., *Fl. Brit. India* 1: 374. 1874; Cooke, *Fl. Pres. Bombay* 1: 142. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 4. 1980; S. Moorthy in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 356. 2000.

Undershrubs up to 1 m tall; branchlets stellate-tomentose. Leaves 2–5.5 × 0.5–5 cm, ovate-oblong, obscurely 3-lobed, acute at apex, truncate at base, margins serrate. Flowers pink in capitate, subsessile terminal cymes. Capsules depressed-globose, hispid. Seeds ovoid angled, mottled black-grey.

Fl. & Fr.: April–November.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 80. 1982.

Distrib.: Common in open places near moist clayey soils, Nawegaon, Nagzira.

Notes: Leaves used as pot herb (S.K. Malhotra *op. cit.*).

Sterculia L.

Key to the species

1a. Leaves palmately lobed

S. urens

1b. Leaves entire

S. guttata

Sterculia guttata Roxb. ex DC., *Prodr.* 1: 482. 1824; Mast. in Hook.f., *Fl. Brit. India* 1: 355. 1874; Cooke, *Fl. Pres. Bombay* 1: 132. 1958 (Repr.); S. Moorthy in N.P. Singh & S. Karthik., *Fl. Maharashtra* 1: 359. 2000. '*Kuden*'.

Trees, 15–20 m tall; bark slightly cracked. Leaves 8–15 × 5–10 cm, ovate-oblong, acuminate at apex, subcordate at base, glabrous. Flowers yellow mottled with purple and glossy above, in terminal racemes. Follicles 1–5 lobed, obovoid, bright red or deep orange when ripe. Seeds ellipsoid or oblong, black.

Fl. & Fr.: January–June.

Illus.: Malick in Sharma & al. *Fl. India* 3: 462, f. 127. 1993.

Distrib.: Frequent in moist deciduous forests.

Sterculia urens Roxb., *Pl. Cor.* 1: 25, t. 24. 1795; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 190. 1872; Cooke, *Fl. Pres. Bombay* 1: 131. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78(3): 478. 1981; S. Moorthy in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 359. 2000. '*Karu*' (PLATE:F-4).

Trees, 15–20 m tall; deciduous, young parts pubescent; bark white, smooth, papery. Leaves 15×30 cm, crowded at tips of branches, shallowly scabrid above, velvety beneath, at apex acuminate, base cordate, palmately 5-lobed. Flowers yellow, in glandular-pubescent, terminal panicles appearing before leaves. Follicles ovoid oblong. Seeds 3–6, oblong, dark black.

Fl. & Fr.: December–May.

Illus.: Talb. For. Fl. Bombay Pres. & Sind 1: 37. f. 83. 1909.

Distrib.: Common in deciduous forests, Nawegaon, Nagzira.

Notes: Bark used for cordage. The plant is becoming rare and threatened due to commercial exploitation for its edible gum used as a tonic and in medicines.

Waltheria L.

Waltheria indica L., Sp. Pl. 673. 1753; Mast. in Hook.f., Fl. Brit. India 1: 374. 1874; Cooke, Fl. Pres. Bombay 1: 144. 1958 (repr.); S.K. Malhotra & K.M. Rao in Bull Bot. Surv. India 22: 4. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State. 1: 361. 2000.

Herbs, perennial, 45–75 cm tall; stems terete. Leaves 2.5×1.6 –3 cm, ovate-elliptic, acute at apex, subcordate at base, margins crenate-serrate, woolly on both surfaces. Flowers yellow, in dense, axillary or terminal, compact clusters. Capsules obconical, enclosed by calyx. Seeds solitary, obconical, black.

Fl. & Fr.: August–December.

Illus.: Malick in Sharma & al. Fl. India 3: 473. f. 131. 1993.

Distrib.: Common in open places, Nawegaon.

Cultivated Species:

Pterospermum xylocarpum (Gaertn.) Sant. & Wagh in Bull. Bot. Surv. India 5: 108 (1963) 1964; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 373. 2000. *Velanga xylocarpa* Gaertn., Fruct. Sem. Pl. 2: 245, t. 133, f. 2. 1791. ‘Konak champa’.

Trees, 15–20 m tall. Leaves oblong-obovate, at apex acuminate, base cordate. Flowers white, solitary or 2–3 in fascicles. Capsules oblong-pyriform, narrowed at both ends. Seeds orbicular, winged; wings papery.

Fl. & Fr.: December–February.

Distrib.: Usually planted as an ornamental.

TILIACEAE

Key to the genera

- | | |
|--|---------------|
| 1a. Inflorescence a terminal panicle or a paniculate cyme | Grewia |
| 1b. Inflorescence of solitary flowers, axillary or terminal, umbellate cymes or leaf-opposed cymes | |

- | | |
|--|-------------------|
| 2a. Petals glandular at base; stamens arising from at apex of the torus | Triumfetta |
| 2b. Petals not glandular at base; stamens arising from the base of the torus | Corchorus |

Corchorus L.

Key to the species

- | | |
|---|----------------------|
| 1a. Capsules globose | C. capsularis |
| 1b. Capsules cylindric, elongate and beaked | 2 |
| 2a. Capsules 5-valved | C. olitorius |
| 2b. Capsules 3–4 valved | C. aestuans |

Corchorus aestuans L., Syst. Nat. ed. 10, 2: 1079. 1759; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 377. 2000. *Corchorus acutangulus* Lam., Encycl. 2: 104. 1786; Mast. in Hook.f., Fl. Brit. India 1: 398. 1874; Cooke, Fl. Pres. Bombay 1: 160. 1958 (Repr.).

Undershrubs, 40–60 cm tall; stems reddish, much branched. Leaves 2.5–5.5 × 1.3–2.2 cm, ovate, elliptic or oblong, obtuse or subacute at both ends, margins serrate. Flowers yellow, in leaf-opposed, 2–3 flowered cymes. Capsules 3–6 angled, beaked; beak divided. Seeds angular, minutely wrinkled, dark-brown.

Fl. & Fr.: September–November.

Illus.: Mahesh., Illus. Fl. Delhi f. 35. 1966.

Distrib.: Common in open places, Nawegaon, Nagzira.

Notes: Seeds are usefull in stomach ache and pneumonia.

Corchorus capsularis L., Sp. Pl. 529. 1753; Mast. in Hook.f., Fl. Brit. India 1: 397. 1874; Cooke, Fl. Pres. Bombay 1: 157. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 379. 2000.

Herbs, 20–40 cm high; stems erect, woody. Leaves 3–5.5 × .5–1.8 cm, lanceolate, acute or acuminate at at apex, rounded at base. Flowers yellow, in short peduncled, leaf-opposed clusters. Capsules prominently echinate, depressed-globose, 5-valved. Seeds few in each cell, wedge-shaped, smooth, brown.

Fl. & Fr.: September–November.

Illus.: Mahesh. Illus. Fl. Delhi f. 37. 1966.

Distrib.: Common near wet places Nawegaon.

Corchorus olitorius L., Sp. Pl. 529. 1753; Mast. in Hook.f., Fl. Brit. India 1: 397. 1874; Cooke, Fl. Pres. Bombay 1: 157. 1958 (Repr.); S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 380. 2000. ‘*Banpat*’, ‘*Chichuria*’, ‘*Motichinch*’.

Herbs or undershrubs, 60–70 cm tall. Leaves 2.5–6.5 × 1.5–3.2 cm, elliptic, ovate or ovate-lanceolate, acute at apex, rounded at base, margins serrate. Flowers yellow in axillary, leaf opposed fascicles. Capsules 10-ribbed, shortly beaked. Seeds trigonous, black.

Fl. & Fr.: September–December.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* t. 85.1982.

Distrib.: Common throughout in open places, Nawegaon.

Notes : Leaves used as vegetable and for urinary complaints while seeds as purgative (N.P. Singh & Sharma, 1998).

Grewia L.

Key to the species

- | | |
|---|--------------------------|
| 1a. Flowers polygamous | 2 |
| 1b. Flowers bisexual | 3 |
| 2a. Stamens 20 or less | G. helicterifolia |
| 2b. Stamens 40 or more | G. hirsuta |
| 3a. Petals bifid or notched at apex | 4 |
| 3b. Petals entire or slightly emarginated at apex | 5 |
| 4a. Petal glands as long as petal | G. serrulata |
| 4b. Petals gland absent | G. tiliifolia |
| 5a. Leaves smooth | G. orientalis |
| 5b. Leaves hairy tomentose beneath | G. rothii |

Grewia helicterifolia Wall. ex G. Don, *Gen. Hist.* 1: 548. 1831; S.G. Pradhan in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 386. 2000. *Grewia polygama* auct. non Roxb. 1832; Mast. in Hook.f., *Fl. Brit. India* 1: 391. 1874; Cooke, *Fl. Pres. Bombay* 1: 153. 1958 (Repr.). ‘*Gauli*’, ‘*Gvali*’.

Trees, 10–12 m high; young parts velvety tomentose. Leaves 5–8 × 1.5–3.5 cm, oblong-lanceolate, acute at apex, rounded or subacute at base, irregularly serrate. Flowers polygamous, in axillary umbellate cymes. Drupes brownish, hairy, faintly 4-lobed.

Fl. & Fr.: September–November.

Distrib.: Frequent along hill slope, Nagzira.

Grewia hirsuta Vahl, *Symb. Bot.* 1: 34. 1790; Mast. in Hook.f., *Fl. Brit. India* 1: 391. 1874; Cooke, *Fl. Pres. Bombay* 1: 153. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 4. 1980 et in *J. Bombay Nat. Hist. Soc.* 78(3): 478. 1981; S.G. Pradhan in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 387. 2000. ‘*Kirmid*’.

Undershrubs 1–3 m tall; erect, fulvous hairy. Leaves distichous, 2.5–6 × 1.5–3.5 cm, broadly ovate or lanceolate, acute at apex, rounded at base, margins serrate, lower surface densely villous. Flowers yellow, in umbellate cymes. Drupes fleshy, wrinkled, slightly 4-lobed with sparse stellate hairs.

Fl. & Fr.: October–November.

Illus.: Wight, *Ic.* t. 76. 1838.

Distrib.: Common throughout in open forests, Nawegaon, Nagzira.

Notes: Bark used to check dysentery.

Grewia orientalis L., Sp. Pl. 964. 1753; Mast. in Hook.f., Fl. Brit. India 1:384. 1874; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra 1: 390. 2000. *Grewia columnaris* J.E.Sm. in Rees, Cyclop.17, no. 5. 1811; Mast. in Hook.f., op. cit. 383.; Cooke, Fl. Pres. Bombay 1: 146. 1958 (Repr.). ‘Kala Dhaman’.

Tall shrubs or small trees, 4–8 m high; stems much branched. Leaves 4–8 × 1.5–4.5 cm, ovate-elliptic or ovate-lanceolate, acute at apex, rounded at base, Flowers whitish, in axillary and terminal, umbellate cymes. Drupes 4-lobed, subglobose, bristly hairy.

Fl. & Fr.: April–June.

Illus.: Wight, Ic. t. 44. 1838 (*G. columnaris*).

Distrib.: Frequent in open places, Nagzira.

Grewia rothii DC., Prodr. 1: 509. 1824; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 391. 2000. *Grewia exceisa* Mast. in Hook.f., Fl. Brit. India 1:385. 1874 p. non. Vahl, 1790.

Shrubs or small trees. Leaves 5–10 × 1–4 cm, ovate-oblong or ovate-lanceolate, acuminate or acute at apex, obtuse at base, Flowers in axillary, clustered cymes. Drupes 0.5 cm across, glabrous, tomentose.

Fl. & Fr.: September–November.

Distrib.: Rare in open places.

Grewia serrulata DC., Prodr. 1: 510. 1824; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 391. 2000. *Grewia laevigata* auct. Pl. non Vahl 1790; Mast. in Hook.f., Fl. Brit. India 1: 389. 1874; Cooke, Fl. Pres. Bombay 1: 152. 1958 (Repr.). ‘Gulgollop’, ‘Kala Dhaman’, ‘Kaori’.

Trees, 4–6 m high; branches terete. Leaves 7–15 × 3.2–5.5 cm, acuminate at apex, ovate-lanceolate or rounded or narrowed at base. Flowers yellow or white in umbellate cymes. Drupes 0.2 cm across, deeply 2-lobed, pubescent.

Fl. & Fr.: August–November.

Illus.: Talb. For Fl. Bombay Pres. & Sind 1: 164, f. 101. 1909.

Distrib.: Frequent in hill slopem, Nagzira.

Notes: Stem bark useful for stomache-ache (N.P. Singh & Sharma, 1998).

Grewia tiliifolia Vahl, Symb. Bot. 1: 35. 1790; Mast. in Hook.f., Fl. Brit. India 1: 386. 1874 (‘tiliaefolia’); Cooke, Fl. Pres. Bombay 1: 150. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1:393. 2000. ‘Dhaman’, ‘Rodgi’, ‘Sonsaman’, ‘Tadsal’.

Trees 5–10 m tall; branches pubescent. Leaves $2-10 \times 3.2-5.0$ cm, ovate, acuminate at apex, obliquely cordate at base. Flowers yellow in axillary, umbellate cymes. Drupes globose or 2-lobed, sparsely hairy.

Fl. & Fr.: April–September.

Illus.: Talb. For. Fl. Bombay Pres. & Sind 1: 161, f. 98. 1909.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Fruits are edible. Leaves and shoots also eaten by wild animals (S.K. Malhotra & K.M. Rao, 1980). Stem fibre used for cordage, stem useful for dysentery (N.P. Singh & Sharma, 1998).

Triumfetta L.

Key to the species

- | | |
|---|----------------------|
| 1a. Fruits (including spines) 1 cm across or more | T. annua |
| 1b. Fruits (including spines) less than 0.7 cm across | 2 |
| 2a. Leaves orbicular | T. malabarica |
| 2b. Leaves rhomboid, 3–5 lobed | T. rhomboidea |

Triumfetta annua L. Mant. 1: 73. 1767; Mast. in Hook.f., Fl. Brit. India 1: 396. 1874; Daniel & Chandrab. in Sharma & al. Fl. India 3: 518. 1993; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 388. 2000.

Erect herbs, up to 1 m tall. Leaves $4-8 \times 1.5-3.5$ cm, ovate-lanceolate, glabrous or sparsely hairy. Flowers yellow in extra-axillary or leaf opposed cymes. Capsules globose, 4-loculed. Seeds brown, glabrous.

Fl. & Fr.: September–October.

Triumfetta malabarica Koen. ex Rottb., Pl. Hort. Univ. Rar. Prog. 4. 1773; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 398. 2000. *Triumfetta rotundifolia* Lam., Encycl. 3: 421. 1792; Mast. in Hook.f., Fl. Brit. India 1: 395. 1874; Cooke, Fl. Pres. Bombay 1: 156. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22:4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981.

Suffrutescent herbs, 30–40 cm tall; young branches densely hairy. Leaves $1.2-3.0 \times 1.0-1.3$ cm, obovate-orbicular, acute at apex, obovate to rounded at base, margins irregularly serrate, grey tomentose beneath. Flowers yellow, in leaf-opposed cymes. Capsules ovoid or sub-globose; spines pubescent, with hooked tips.

Fl. & Fr.: July–December.

Distrib.: Common in open places and along roadsides, Nawegaon, Nagzira.

Triumfetta rhomboidea Jacq., Enum. Pl. Carib. 22. 1760; Mast. in Hook.f., Fl. Brit. India 1: 395. 1874; Cooke, Fl. Pres. Bombay 1: 156. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 399. 2000. '*Thinjhira*', '*Anduali*'.

Herbs or undershrubs, 0.5–1.5 m tall; branchlets stellate-pubescent. Lower leaves palmately 3 lobed, 3–7 cm across, rhomboid to elliptic, acute to acuminate at apex, truncate at base, margins irregularly serrate, with simple and stellate hairs. Flowers bright yellow, in leaf-opposed cymes. Fruits tomentose, prickly.

Fl. & Fr.: August–April.

Illus.: Tadul. & Venkat. Handb. S. Indian weeds 116, f. 46. 1955.

Distrib.: Common in open forests. Nawegaon, Nagzira.

Note: Bark is used to check diarrhoea.

MALPIGHIACEAE

Key to the genera

1a. Leaves alternate; styles 3

Aspidopterys

1b. Leaves opposite; style 1, rarely 2

Hiptage

Aspidopterys A. Juss.

Aspidopterys cordata (Heyne ex Wall.) A. Juss. in Ann. Sci. Nat. Bot. 2, 13: 267. 1840; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 168. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 417. 2000. *Hiraea cordata* Heyne ex Wall., Pl. As. Rar. 1: 13. 1830. '*Bokadvel*'.

Scandent shrubs, woody; young parts white-tomentose. Leaves 2.5–12.0 × 0.8–12.5 cm, at apex acuminate, glabrous above, silky-tomentose beneath. Flowers green or creamy-yellow, in terminal and axillary panicles. Samaras membranous, orbicular, reticulately veined.

Fl. & Fr.: September–November.

Illus.: Gandhi in Sald. & Nicols. Fl. Hassan Dt. 409, f. B-b, 1976.

Distrib.: Frequent in dense forest. Nawegaon, Nagzira.

Notes: Stem fibre used for cordage.

Hiptage Gaertn.

Hiptage benghalensis (L.) Kurz in J. Asiat. Soc. Bengal 43: 136. 1874; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 419. 2000. *Banisteria benghalensis* L., Sp. Pl. 427. 1753. *Hiptage madablota* Gaertn., Fruct. 2: 169, t. 116, f. 4. 1791 *nom. illeg.*; Hook.f., Fl. Brit. India 1: 418. 1874; Cooke, Fl. Pres. Bombay 1: 167. 1958 (Repr.). '*Madhumalati*', '*Haladvel*'.

Woody climbers. Leaves 6.5–16 × 2.5–8.5 cm, elliptic, acute at apex, shining above, pubescent beneath. Flowers in terminal racemes, creamy-white, throat yellowish. Mericarps 3-winged, pubescent.

Fl. & Fr.: January–March.

Illus.: Talb. For. Fl. Bombay Pres. & Sind 1: 178, f. 110. 1909.

Distrib.: Common in hilly forests, Nawegaon.

Notes: Leaves useful for scabies.

ZYGOPHYLLACEAE

Tribulus L.

Tribulus terrestris L., Sp. Pl. 387. 1753; Edgew. & Hook.f. in Hook.f., Fl. Brit. India 1: 423. 1874; Cooke, Fl. Pres. Bombay 1: 170. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 427. 2000. '*Gokhru*'.

Prostrate herbs. Leaves 0.3–1.5 × 0.2–0.4 cm, paripinnate; leaflets elliptic oblong. Flowers yellow, solitary, axillary or leaf-opposed. Fruits glabrous, mericarps with 4 spines. Seeds minute, oblong.

Fl. & Fr.: Almost throughout the year.

Illus.: Mahesh., Illus. Fl. Delhi f. 38. 1996.

Distrib.: Common in dry, waste places, Nawegaon.

Notes: Roots are used as an appetizer, young leaves for blood purification and fruits for urinary disorders.

OXALIDACEAE

Key to the genera

- 1a. Leaves palmately compound, 3-foliolate
- 1b. Leaves pinnately compound, more than 3-foliolate

Oxalis
Biophytum

Biophytum DC.

Key to the species

- 1a. Sepals exceeding capsules
- 1b. Sepals not exceeding capsules

B. sensitivum
B. reinwardtii

Biophytum reinwardtii (Zucc.) Klotz. in Peters, Reise Mossamb. Bot. 1: 85. 1862; Edgew. & Hook.f. in Hook.f., Fl. Brit. India 1: 437. 1874; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 436. 2000. *Oxalis reinwardtii* Zucc. in Munch. in Abhand 1: 274. 1848.

Annual herbs, 5–10 cm high. Leaves 4–8 cm long; leaflets 14–20 pairs, largest leaflet 0.6–8.0 × 0.2–0.3 cm, elongate-triangular. Peduncles densely puberulous. Flowers 3–7, yellow, on 2–7 cm long peduncles. Capsules glabrous. Seeds cristate.

Fl. & Fr.: September–December.

Distrib.: Frequent weed in wet fields and open grasslands, Nawegoan, Nagzira.

Biophytum sensitivum (L.) DC., Prodr. 1: 690. 1824; Edgew. & Hook.f. in Hook.f., Fl. Brit. India 1: 436. 1874 p.p.; Cooke, Fl. Pres. Bombay 1: 177. 1958

(Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra state 1: 436. 2000. *Oxalis sensitiva* L., Sp. Pl. 434. 1753. 'Jaharcha'.

Herbs, up to 20 cm tall. Leaves 5–6 cm long; leaflets 5–14 pairs, 0.2–1.2 × 0.1–0.4 cm, oblong, oblique, punctate on upper surface. Flowers yellow, in terminal umbels. Capsules ellipsoid, covered with persistent calyx. Seeds ovoid, brown.

Fl. & Fr.: August–April.

Illus.: Matthew, Illus. Fl. Tamilandu Carnatic 2: 196. 1982.

Distrib.: Common in grasslands, Nawegaon, Nagzira.

Oxalis L.

Oxalis dehradunensis Raiz., Suppl. Duthie's Fl. Upp. Gang. Plain 37. 1976; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 439. 2000. *Oxalis latifolia* H. B. K. Nov. Gen. et Sp. 184, t. 467. 1821; Blatt. in J. Bombay nat. Hist. Soc. 34: 898. 1931. 'Khatta zara'.

Annual herbs, 15–20 cm tall; rootstock bulbous; bulbs conical with few scales. Leaflets 1.2 × 2.5 cm, broadly deltoid, subsessile. Flowers 9–12, yellow, pink to violet, in umbels. Capsules ovoid-cylindrical.

Fl. & Fr.: July–November.

Illus.: B. G. Kulkarni in N.P. Singh & S. Karthik. op. cit. ff. A-G.440. 2000.

Distrib.: Frequent in wet places. Nawegaon.

BALSAMINACEAE

Impatiens L.

Impatiens balsamina L., Sp. Pl. 938. 1753; Hook.f., Fl. Brit. India 1: 453. 1874; Cooke, Fl. Pres. Bombay 1: 184. 1958 (Repr.). var. *balsamina* S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; S.K. Mudaliar & V.P. Prasad in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 445. 2000. 'Terda'.

Herbaceous, succulent annuals, 30–40 cm tall; nodes, internodes, petioles and pedicels reddish. Leaves 9–12 × 2–2.5 cm, linear-lanceolate or elliptic-oblong, serrate on margins. Flowers rosy pink to purple, pedicellate, axillary. Capsules oblong or ellipsoid, densely silky-hairy. Seeds ovoid, black, shining.

Fl. & Fr.: July–October.

Distrib.: Common in open moist places near lake, Nawegaon, Nagzira.

RUTACEAE

Key to the genera

- 1a. Petioles distinctly winged
- 1b. Petioles not as above

Limonia

2

2a. Leaves unifoliate	Atalantia
2b. Leaves tri or many foliolate	3
3a. Plants armed	Aegle
3b. Plants unarmed	4
4a. Leaflets 3–5, equal at base	Glycosmis
4b. Leaflets 3–25 unequal at base	Murraya

Aegle Corr. (*nom. cons.*)

Aegle marmelos (L.) Corr. in Trans. Linn. Soc. London 5: 223. 1800; Hook.f. Fl. Brit. India 1: 516. 1875; Cooke, Fl. Pres. Bombay 1: 204. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 464. 2000. *Crateva marmelos* L., Sp. Pl. 444. 1753. 'Bel'.

Trees, 10–15m tall; branches armed with straight, sharp, axillary single or paired spines. Leaves 3-foliate; leaflets 4–5 × 1–4 cm, lanceolate or elliptic-lanceolate, chartaceous, acuminate at apex, cuneate or rounded at the base. Flowers greenish-white or yellow, fragrant, in axillary panicles. Berries globose, woody, with grey or yellowish rind, pulp orange coloured. Seeds many, oblong.

Fl. & Fr.: March–May.

Illus.: Matthew, Illus. Fl. Tamilandu Carnatic 2: t. 101. 1982.

Distrib.: Common throughout in deciduous forests, also planted, Nawegaon, Nagzira.

Notes: The plant is religious. Tender leaves are antidiabetic while fruits are edible and useful as antidiysenteric and laxative.

Atalantia Corr. (*nom. cons.*)

Atalantia racemosa Wight in Hooker's J. Bot. Kew Gard. Misc. 1: 64, t. 122 (Jan.). 1834; Hook.f., Fl. Brit. India 1: 511. 1875; Cooke, Fl. Pres. Bombay 1: 199. 1958 (Repr.); C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 465. 2000. 'Makhad limbu', 'Ran limbu'.

Trees, 6–8m high. Leaves 4–10 × 2–5cm, ovate or elliptic-oblong, leathery, at apex obtuse. Flowers white, in racemes. Berries globose, creamy when ripe.

Fl. & Fr.: September–June.

Illus.: Matthew, Illus. Fl. Tamilandu Carnatic 2: t. 76. 1982.

Distrib.: The species included based on list by Anjankar & Bardekar (2000). Nagzira.

Glycosmis Corr.

Glycosmis pentaphylla (Retz.) DC., Prodr. 1: 538. 1824; C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 469. 2000. *Limonia pentaphylla* Retz., Obs. Bot. 5: 24. 1788. 'Ambute', 'Kirmira'.

Shrubs or small trees, 4–8m tall. Leaflets 4–15 × 1.5–5cm, oblong-lanceolate, minutely serrate on margins. Flowers white, in axillary panicles. Berries globose.

Fl. & Fr.: February–March.

Illus.: Narayanasw. in Rec. Bot. Surv. India 14(2): 20. f. 6. 1940 (*Glycosmis arborea*).

Distrib.: Infrequent, Nagzira (Anjankar & Bardekar, 2000).

Limonia L.

Limonia acidissima L., Sp. Pl. ed. 2, 1: 554. 1762; C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 471. 2000. *Feronia elephantum* Corr. in Trans. Linn. Soc. London 5:225.1800; Hook.f., Fl. Brit. India 1: 516. 1875; Cooke, Fl. Pres. Bombay 1: 203. 1958 (Repr.). ‘Kavath’.

Moderate sized trees, armed with straight, sharp spines. Leaves imparipinnate; leaflets 3–9, 2–5 × 0.8–2.0 cm, cuneate or obovate, tip crenulate. Flowers numerous, dull red, in lateral or terminal panicles. Berries globose. Seeds embedded in pulp.

Fl. & Fr.: March–July.

Illus.: C.R. Jadhav op. cit. 470. ff. A-G.

Distrib.: In dense forests, frequent, Nagzira.

Notes: The species is also planted for it edible fruits and medicinal value.

Murraya L. (nom. cons.)

Key to the species

- 1a. Leaflets 11–25, aromatic, pubescent; berries ovoid deep violet when ripe **M. koenigii**
- 1b. Leaflets 3–7, glabrous; berries oblong, red when ripe **M. paniculata**

Murraya koenigii (L.) Spr., Syst. 2: 315. 1825; Hook.f., Fl. Brit. India 1: 503. 1875; Cooke, Fl. Pres. Bombay 1: 193. 1958 (Repr.); C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 473. 2000. *Bergera koenigii* L., Mant. 1: 563. 1771. ‘Kadhi limb’, ‘Karipatta’.

Shrubs or small trees, 3–6 m tall; branches brownish, lenticelled. Leaflets elliptic or ovate. Flowers greenish-white, in terminal, corymbose cymes. Berries rough, with pitted glants.

Fl. & Fr.: February–June.

Illus.: Wight, Ic. t. 13. 1838 (*Bergera koenigii*).

Distrib.: Frequent in dense forests of Nagzira usually cultivated, naturalized.

Notes: The roots are used to cure piles, itching, leucoderma and for blood purification (Kothari & S. Moorthy, 1993). Green leaves useful for dysentery and flavouring curries.

Murraya paniculata (L.) Jack, in Mal. Misc. 1(5): 31. 1820; C.R. Jadhav in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 475. 2000. *Chalcas paniculata* L., Mant.

68. 1767. *Murraya exotica* L. Mant. 2: 563. 1771 (Murræa); Hook.f., Fl. Brit. India 1: 502. 1875; Cooke, Fl. Pres. Bombay 1: 193. 1958 (Repr.). 'Chula juti', 'Kunti', 'Kamini', 'Pandhari'.

Small trees, 5–10 m tall; bark yellowish-white. Leaflets $3.5\text{--}7.5 \times 1.0\text{--}4.0$ cm, elliptic-ovate, pale green, coriaceous, acuminate at apex with notched tip. Flowers fragrant, white, solitary or in terminal and axillary corymbose cymes. Berries gland dotted.

Fl. & Fr.: June–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 109. 1982.

Disirib.: frequent in scrub forest, Nagzira.

BALANITACEAE

Balanites Del.

***Balanites aegyptiaca* (L.) Del.** in Descr. Egypt. Hist. Nat. 2: 221, t. 28, f. 1. 1813; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 491. 2000. *Balanites roxburghii* Planch. in Ann. Sci. Nat. 4, 2: 258. 1854; Hook.f., Fl. Brit. India 1: 522. 1875; Cooke, Fl. Pres. Bombay 1: 207. 1958 (Repr.). *Ximenia aegyptiaca* L., Sp. Pl. 1194. 1753. 'Hingan-bet', 'Hingu'.

Small trees, 4–5 m high; younger parts pubescent; spines often with leaves and flowers. Leaves bifoliolate; leaflets $1.2\text{--}4 \times 0.9\text{--}1.8$ cm, elliptic-obovate, at apex acute, base rounded. Flowers greenish-white, 4–12, in axillary, short peduncled cymes or fascicles. Drupes woody, angular, 5-grooved, yellow when ripe. Seeds solitary.

Fl. & Fr.: October–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 116. 1982 (*Balanites roxburghii*).

Distrib.: Frequent in scrub forests, Nawegaon.

Notes: The fruit pulp is foetid smelling, used for cleansing silk and cotton. Bark used as anthelmintic for cattle and its juice used as fish poison (S. Moorthy, *op. cit.*).

BURSERACEAE

Key to the genera

1a. Drupes dehiscent; pyrenes separating

Boswellia

1b. Drupes indehiscent; pyrenes not separating

Garuga

***Boswellia* Roxb. ex Colebr.**

***Boswellia serrata* Roxb. ex. Colebr.** in Asiat. Res. 9: 379, t. 5. 1807; Bennett in Hook.f., Fl. Brit. India 1: 528. 1875; Cooke, Fl. Pres. Bombay 1: 210. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 494. 2000. 'Salai', 'Salphali', 'Sarpal'.

Trees, 4–8 m high; young shoots pubescent. Leaves 12–20 cm long, imparipinnate, apically clustered; leaflets $1.2\text{--}4.0 \times 1.0\text{--}2.0$ cm subopposite, ovate-lanceolate or oblong. Flowers in axillary racemes. Drupes trigonous; pyrenes 3, each single seeded.

Fl. & Fr.: February–June.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic*, 2: t. 118. 1982.

Distrib.: Common throughout in dense forests, Nawegaon, Nagzira.

Notes: Wood used as timber. Flowers and seeds eaten by wild animals. Gum edible. Bark is antiseptic and used to cure cold and stomach pain (Patil & Kothari, 2008).

Garuga Roxb.

Garuga pinnata Roxb., *Pl. Cor.* 3: 5, t. 208. 1819; Bennett in Hook.f., *Fl. Brit. India* 1: 528. 1875; Cooke, *Fl. Pres. Bombay* 1: 211. 1958 (Repr.); S. Moorthy in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 495. 2000. '*Kakkad*'.

Trees, 8–10 m tall, deciduous; stem with bark peeling off. Leaflets 6–10 pairs, 4–10 × 1.5–2.5 cm, ovate or ovate-lanceolate, at apex acuminate, base oblique, pubescent on lower surface. Flowers yellow, in much branched, axillary, tomentose panicles. Drupes greenish-yellow, black when dry, irregularly globular. Seeds 1–5.

Fl. & Fr.: January–May.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 122. 1982.

Distrib.: Frequent throughout in dense forests, Nagzira.

Notes: Leaves edible, used as fodder and medicinally for opacities of conjunctiva. Fruits useful for asthma (N.P. Singh & Sharma, 1998).

MELIACEAE

Key to the genera

- | | |
|--------------------------|--------------------|
| 1a. Leaves 2–3 pinnate | Melia |
| 1b. Leaves 1-pinnate | 2 |
| 2a. Leaves paripinnate | Soymida |
| 2b. Leaves imparipinnate | Azadirachta |

Azadirachta A. Juss.

Azadirachta indica A. Juss. in *Mem. Mus. Hist. Nat. Paris* 19: 220, t. 2, f. 5. 1830; Cooke, *Fl. Pres. Bombay* 1: 220. 1958 (Repr.) S. Moorthy in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 502. 2000. *Melia azadirachta* L. *Sp. Pl.* 385. 1753; Hiern in Hook.f., *Fl. Brit. India* 1: 544. 1875. '*Neem*', '*Nim*', '*Nimb*'.

Trees, c. 10 m tall. Leaves near branch ends, 8–15 cm long; leaflets 3.5–5.5 × 1.3–2 cm, ovate-lanceolate, subopposite. Flowers white, with bluish tinge, in axillary panicles. Drupes oblong or ovoid. Seeds solitary, ellipsoid.

Fl. & Fr.: March–June.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 125. 1982.

Distrib.: Frequent along the roadsides and in open places, Nawegaon, Nagzira.

Notes: Leaf juice is used as biopesticide.

Melia L.

Melia dubia Cav. Diss. 7: 364. 1789.; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 505. 2000. *Melia composita* Willd., Sp. Pl. 2: 559. 1799; Hiern in Hook.f., Fl. Brit. India 1: 545. 1875; Cooke, Fl. Pres. Bombay 1: 218. 1958 (Repr.). 'Kala khajur', 'Maha-neem', 'Nimbara'.

Trees, c. 10–15 m tall; young shoots, stellate-hairy. Leaves upto 24 cm long; leaflets 3.5–5.2 × 1.5–3.2 cm, ovate-lanceolate. Flowers in stellately pubescent panicles. Drupes ovoid. Seeds solitary in each cell.

Fl. & Fr.: April–July.

Illus.: Bedd. Fl. Sylv. T. 12. 1869 (*Melia composita*).

Soymida A. Juss.

Soymida febrifuga (Roxb.) A. Juss. in Mus. Hist. Nat. Paris 19: 251, t. 22, f. 26. 1830; Hiern in Hook.f., Fl. Brit. India 1: 567. 1875; Cooke, Fl. Pres. Bombay 1: 228. 1958 (Repr.); S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 508. 2000. *Swietenia febrifuga* Roxb. in Bot. Descr. Swietenia 1: 1793. 'Rohan'.

Trees, 15–20 m tall. Leaves 20–40 cm long, dark-green, oblique at base, crowded at ends of branches; leaflets 3–6 pairs, 4–12 × 2.2–6.5 cm, elliptic or oblong, penninerved, at apex obtuse. Flowers white in axillary panicles. Fruits obovoid, woody. Seeds compressed, winged.

Fl. & Fr.: February–July.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 246, f. 146. 1909.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: Wood is used as commercial timber.

FLINDERSIACEAE**Chloroxylon DC., (nom. cons.)**

Chloroxylon swietenia DC., Prodr. 1: 625. 1824; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 231. 1958; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 514. 2000. 'Behra', 'Bhirra'.

Trees, 15–20 m tall, bark furrowed, corky. Leaves pinnate, alternate, main rachis densely pubescent; leaflets 20–40, oblong-lanceolate, 1.5–3.2 × 0.6–1.4 cm. Flowers white or yellowish-white, in branched, terminal and axillary panicles. Capsules oblong. Seeds with membranous, falcate wings.

Fl. & Fr.: March–May.

Illus.: Talb., For. Fl. Bombay Pres. & Sind. 1: 251, t. 150. 1909.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: The bark is an astringent. Leaves are applied to wounds and also used in rheumatic pains.

OLACACEAE

Olax L.

Key to the species

- | | |
|--|-----------------------|
| 1a. Straggling shrubs up to 10 m tall; racemes solitary, lax | O. psittacorum |
| 1b. Lianas up to 20 m long; racemes clustered, dense | O. imbricata |

Olax imbricata Roxb., Fl. Ind. 1: 169. 1820; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 515. 2000. *Olax wightiana* Wall. ex Wight & Arn., Prodr. 89. 1834; Mast. in Hook.f., Fl. Brit. India 1: 575. 1875; Cooke, Fl. Pres. Bombay 1: 235. 1958 (Repr.). '*Kukurbit*'.

Woody climbers. Leaves 5–10 × 2–5 cm, oblong-ovate or elliptic-oblong, coriaceous. Flowers white in axillary, short, pubescent racemes. Drupes ovoid, enclosed in calyx except the top, red when mature.

Fl. & Fr.: December–May.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 257, f. 152. 1909.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Olax psittacorum (Willd.) Vahl, Enum. 34, 1804; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 515. 2000. *Fissibia psittacorum* Willd., Sp. Pl. 1: 194. 1797. *Olax scandens* Roxb., Pl. Cor. 2: 2, t. 102. 1798; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 234. 1958 (Repr.); S. K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22:4.1980. '*Aradphul*', '*Haratphari*'.

Shrubs, straggling, much branched, armed with slightly curved prickles on old wood. Leaves elliptic-oblong, at apex obtuse or subacute, base roundish. Flowers white, in short, axillary racemes. Fruits globose, yellow, apiculate, three-fourth enclosed in enlarged calyx.

Fl. & Fr.: August–April.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

CELASTRACEAE

Key to the genera

- | | |
|--|------------------|
| 1a. Fruits indehiscent | Cassine |
| 1b. Fruits dehiscent | 2 |
| 2a. Plants unarmed, with terminal inflorescence; flowers Polygamous | Celastrus |
| 2b. Plants often armed, with axillary or extra axillary inflorescence; flowers hermaphrodite | Maytenus |

Cassine L.

Cassine glauca (Rottb.) O. Ktze., Rev. Gen. Pl. 1: 114. 1891; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 520. 2000. *Mangifera glauca* Rottb. Nye. Samml. Kongel. Norske vid. Selsk. Skr. 2: 534, t. 4, f. 1. 1783. *Elaeodendron glaucum* (Rottb.) Pers., Syn. Pl. 1:241. 1805; Laws. in Hook.f., Fl. Brit. India 1: 623.

1875 p.p.; Cooke, Fl. Pres. Bombay 1: 248. 1958 (Repr.). 'Bhutkas', 'Butya kalas', 'Kanguni'.

Trees, 5–6m high. Leaves $4.5\text{--}8.5 \times 1.5\text{--}4.5$ cm, elliptic or ovate-elliptic. Flowers greenish, numerous in dichotomously branched, axillary, paniculate cymes. Drupes obovoid, stalked, apiculate. Seeds 2.

Fl. & Fr.: February–July.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 275, f. 182. 1909.

Distrib.: Frequent in dense forests, Nagzira.

Celastrus L.

Celastrus paniculatus Willd., Sp. Pl. 1:1125.1798; Law. in Hook.f., Fl. Brit. India 1: 617. 1875; Cooke, Fl. Pres. Bombay 1: 245. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 521. 2000. 'Malkangoni'.

Climbing shrubs; young branches lenticelled. Leaves $2.5\text{--}10.5 \times 4.5$ cm., broadly elliptic, ovate or obovate. Flowers greenish white, in axillary and terminal panicles. Capsules subglobose, 3–4 valved, bright yellow. Seeds 1–6, brown, ovoid.

Fl. & Fr.: October–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnataic 2: t. 142. 1982.

Distrib.: Common in dense deciduous forests, Nawegaon, Nagzira.

Notes: Plant useful medicinally for cold, cough, stomach disorder, piles, rheumatic pains and skin diseases (Kothari & A.N. Londhe, 1999).

Maytenus Molina

Maytenus senegalensis (Lam.) Excell. in Bot. Soc. Brot. 2, 26: 233. 1952; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 525. 2000. *Celastrus senegalensis* Lam. Encycl. 1: 400. 1763. *Maytenus emarginata* (Willd.) Ding Hou in Steenis, Fl. Males 1, 6: 241. 1962; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980. *Gymnosporia montana* Benth. Fl. Austr. 1: 400. 1863; Law. in Hook.f., Fl. Brit. India 1: 621. 1875; Cooke, Fl. Pres. Bombay 1: 247. 1958 (Repr.). 'Yenkal', 'Bharati'.

Shrubs, 1.5–2.5m tall. Leaves $1.5\text{--}6.48 \times 1.5\text{--}4.1$ cm, obovate. Flowers white or yellowish. Capsules concave at tip, purple when ripe. Seeds rugose.

Fl. & Fr.: October–February.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 281. f. 166. 1909 (*Gymnosporia emarginata*).

Distrib.: Common throughout in scrub and deciduous forests, Nawegaon, Nagzira.

Notes: Plant used as fodder.

RHAMNACEAE

Key to the genera

- | | |
|-----------------------|------------------|
| 1a. Fruits winged | Ventilago |
| 1b. Fruits not winged | Ziziphus |

Ventilago Gaertn.

Key to the species

- | | |
|--|-------------------------|
| 1a. Calyx tube adnate to the lower part of the nut | V. denticulata |
| 1b. Calyx tube adnate only to the base of the nut | V. maderaspatana |

Ventilago denticulata Willd. in Ges. Naturf. Fr. Schr. 3: 417. 1801; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 541. 2000. *Ventilago calyculata* Tul. in Ann. Sci. Nat. 4, 8: 124. 1857; Laws. in Hook.f., Fl. Brit. India 1: 631. 1875; Cooke, Fl. Pres. Bombay 1: 254. 1958 (Repr.). 'Lokhandi', 'Tulsane'.

Stragglers; stem extensive. Leaves 4–11 × 2.5–6.0 cm, elliptic-oblong, subacute at apex, oblique, rounded or acute at base, margins crenate-serrate. Flowers greenish-yellow, many in densely pubescent, paniculate spikes. Fruits obovate, pubescent; wings rounded at apex, terminated by style remnants.

Fl. & Fr.: February–April.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 292, f. 174. 1909.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: Symbolic partial headache relieved by tying piece of twig on arm (N.P. Singh & Sharma, 1998).

Ventilago maderaspatana Gaertn., Fruct. 1: 223. t. 49, f. 2, 1788; Laws. in Hook.f., Fl. Brit. India 1: 631. 1875; Cooke, Fl. Pres. Bombay 1: 253. 1958 (Repr.); S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 542. 2000.

Lianas 10–20 m long, branchlets pubescent. Leaves 4–8 × 2–4 cm, lanceolate or elliptic-ovate, subacute at apex, rounded or acute at base, margins entire or slightly crenate, inequilateral, alternate. Flowers yellow, in drooping, axillary or terminal panicles. Fruits winged; nuts with persistent calyx; wings linear-oblong.

Fl. & Fr.: December–March.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Root bark useful for stomach pain, fever, weakness, tonic, itch and other skin troubles. Seeds edible (Kothari & K.M. Rao, 1999)

Ziziphus Mill.

Key to the species

- | | |
|------------------------------|---------------------|
| 1a. Leaves glabrous beneath | Z. caracutta |
| 1b. Leaves tomentose beneath | |

- | | |
|----------------------------------|----------------------|
| 2a. Leaf at apex acute-acuminate | Z. oenoplia |
| 2b. Leaf at apex obtuse-subacute | 3 |
| 3a. Styles 2, distinct | Z. xylopyra |
| 3b. Styles 3, connate | Z. mauritiana |

Ziziphus caracutta Roxb., Fl. Ind. 2: 361. 1824. et Fl. Ind. 1: 612. 1832; S.G.

Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 543. 2000. *Zizipus glaberrima* (Sedgw.) Sant. In J. Bombay nat. Hist. Soc. 51:803. 1953. 'Ghat-bor'.

Shrubs or small trees, 3–5 m high; stem prickly. Leaves 1.8–4 × 1.4–3 cm, ovate-elliptic; stipular prickles when present, in pairs, one straight, other curved. Flowers white, in peduncled cymes. Fruits globose, 3-seeded.

Fl. & Fr.: May–December.

Distrib.: Frequent in dense forests, Nawegaon.

Zizipus mauritiana Lam., Encycl. 3: 319. 1789; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 544. 2000. *Zizipus jujuba* (L.) Gaertn., Fruct. 1: 203. 1788 non Mill. 1768; Laws in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 256. 1958 (Repr.). 'Ber', 'Bor'.

Small trees or large shrubs, 3–5 m high; young branches softly tomentose with straight or recovered, stipular thorns. Leaves 1.5–4.0 × 1.2–3.5 cm, ovate-elliptic, with rounded ends, slightly oblique at base. Flowers greenish-yellow, in axillary cymes. Drupes globose, fleshy, yellow or orange when ripe.

Fl. & Fr.: September–November.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 294, f. 175. 1909 (*Zizipus jujuba*).

Distrib.: Common throughout, Nawegaon, Nagzira.

Notes: Leaves used as a fodder. Fruits are edible.

Zizipus oenoplia (L.) Mill. Gard. Dict. ed. 8, 3. 1768; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 257. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 4. 1980 et in J. Bombay Nat. Hist. Soc. 478. 1981; S.G. Pradhan in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 545. 2000. *Rhamnus oenoplia* L., Sp. Pl. 194. 1753. 'Yeroni'.

Straggling shrubs; branchlets densely tomentose, stipular thorns recurved. Leaves 2.3–5.7 × 1.2–2.5 cm, distichous, ovate or ovate-lanceolate, oblique at base. Flowers greenish, in axillary, umbellate cymes. Drupes globose or obovoid, woody, black when ripe, edible, one seeded.

Fl. & Fr.: August–November.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1:297, f. 176.1909.

Distrib.: Common throughout dense forests, Nawegaon, Nagzira.

Notes: Fruits edible, eaten by wild animals also. Bark useful for wounds, muscular pains and swellings.

Zizipus xylopyra (Retz.) Willd., Sp. Pl. 1: 1104. 1798; Laws. in Hook.f., Fl. Brit. India 1: 634. 1875; Cooke, Fl. Pres. Bombay 1: 258. 1958; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 546. 2000. *Rhamnus xylopyra* Retz. Obs. Bot. 2: 11. 1781. '*Hadkibor*', '*Ghathor*'. (PLATE: F-6).

Straggling shrubs or trees; branchlets tomentose; stipular thorns paired or solitary. Leaves 3–7 × 3–5 cm, elliptic-oblong or suborbicular, obliquely cordate at base, margins serrulate, glabrous above, tomentose beneath. Flowers greenish, in pubescent, paniculate cymes. Drupes globose, tomentose, hard and woody. Seeds 2–3, oblong, sulcate in the middle.

Fl. & Fr.: May–December.

Illus.: Deshpande & al., Fl. Mahabaleshwar 1: 138. 1993.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: Inner starchy portion of seeds edible (N.P. Singh & Sharma, 1998).

VITACEAE

Key to the genera

- | | |
|--|---------------------|
| 1a. Tendrils present in inflorescence | Ampelocissus |
| 1b. Tendrils absent in inflorescence | 2 |
| 2a. Leaves simple (sometime 3 lobed or 3-foliolate; flowers 4-merous | 3 |
| 2b. Leaves usually compound; flowers 5-merous | Cayratia |
| 3a. Leaflets sessile or subsessile | Cyphostemma |
| 3b. Leaflets stalked | Cissus |

Ampelocissus Planch. (*nom. cons.*)

Key to the species

- | | |
|---|---------------------|
| 1a. Stems stout, tomentose; tendrils woody; disc thin; seeds rugose | A. ternata |
| 1b. Stems weak, glabrous; tendrils not woody; disc thick, furrowed; seeds grooved on back, not rugose | A. latifolia |

Ampelocissus latifolia (Roxb.) Planch. in J. Vigne, Amer. 374. 1884; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 549. 2000. *Vitis latifolia* (Lam.) Roxb., Fl. Ind. 1: 652. 1875; Laws in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 269. 1958 (Repr.). '*Dokela*', '*Golenda*', '*Nadena*'.

Climbing shrubs; young parts reddish-tomentose; stem and branches striate with forked tendrils. Leaves 6–15 cm, as broad as long, orbicular, cordate, 3–7 angled or lobed, margins sharply toothed. Flowers dark reddish brown, in pyramidal paniculate cymes. Berries globose, 2–3 seeded, red when ripe. Seeds ellipsoid, smooth, polished.

Fl. & Fr.: June–October.

Illus.: Talb., For. Fl. Bombay Pres. & Sind. 1: 315, f. 186. 1909.

Distrib.: Frequent in dry deciduous forests, Nawegaon, Nagzira.

Notes: Fruits are edible. Root-bark useful for wounds (N.P. Singh & Sharma, 1998).

Ampelocissus ternata (Roth ex Roem. & Schult.) DC., Prodr. 1: 633. 1824; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 549. 2000. *Vitis ternata* Roth ex. Roem. & Schult., 48. Syst. 5: 319. 1819. *Vitis tomentosa* Heyne ex Roth, Nov. Pl. Sp. 157. 1821; Laws. in Hook.f., Fl. Brit. India 1: 650. 1875; Cooke, Fl. Pres. Bombay 1: 268. 1958 (Repr.). *Ampelocissus tomentosa* Heyne ex Roth, Nov. Pl. Sp. 157. 1821; K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981.

Scandent shrubs; stems woody reddish, covered with white tomentum; tendrils 3-forked, stout. Leaves up to 12 cm long, 3–5 angled, orbicular, scabrid, sparsely white tomentose above, woolly beneath. Flower reddish, in leaf opposed, densely woolly cymes. Berries subglobose. Seeds ovoid.

Fl. & Fr.: March–June.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Roots useful for swellings and its bark for piles (N.P. Singh & Sharma, 1998).

Cayratia A.L. Juss. (*nom. cons.*)

Cayratia trifolia (L.) Domin in Biblioth. Bot. 89: 371. 1927; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 552. 2000. *Vitis trifolia* L., Sp. Pl. 203. 1753; Cooke, Fl. Pres. Bombay 1: 271. 1958 (Repr.). *Vitis carnosa* Laws. in Hook.f., Fl. Brit. India 1: 654. 1875; 'Ambat-vel', 'Dhavri'.

Herbaceous climbers or trailers; young shoots pubescent. Leaves 3-foliolate; leaflets 4.5–5.5 × 2.5–3.5 cm, broadly ovate or suborbicular, at apex acute or acuminate, base rounded or cuneate, hairy on nerves. Flowers greenish-white, in axillary, dichotomous cymes. Berries depressed-globose, lobed, red turning black. Seeds pyriform.

Fl. & Fr.: May–October.

Illus.: Mahesh., Illus. Fl. Delhi t. 46. 1966.

Distrib.: In wet situations in the forests, Nawegaon.

Notes: Leaves used as vegetable, for ulcers and veterinary yolk sores of bullocks. Roots useful for boils (N.P. Singh & Sharma, 1998).

Cissus L.

Key to the species

- 1a. Stems fleshy, 4-winged, contracted at nodes
- 1b. Stems not as above

C. quadrangularis
C. repanda

Cissus quadrangularis L. Mant. 1: 39. 1767; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 557. 2000. *Vitis quadrangularis* Wall. ex Wight & Arn., Prodr. 125. 1834; Laws. in Hook.f., Fl. Brit. India 1: 645. 1875; Cooke, Fl. Pres. Bombay 1: 266. 1958 (Repr.). '*Hadzod*'.

Climbing shrubs; stem rambling; rootstock stout, leafless when old; tendrils simple. Leaves 2.5–3.0 × 2.2–3.0 cm, broadly ovate, at apex rounded, base cordate, margins entire or lobed. Flowers greenish-yellow, in shortly peduncled, umbellate cymes. Berries globose, red when ripe. Seeds obovoid.

Fl. & Fr.: January–December.

Illus.: B.G. Kulkarni *op. cit.* 558. Figs. A & B.

Distrib.: Frequent near moist places, Nagzira.

Notes: Stem useful for fracture, joint pains, swellings and its fibre for cordage.

Cissus repanda Vahl, Symb. Bot. 3: 18. 1794; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 559. 2000. *Vitis repanda* (Vahl) Wight & Arn., Prodr. 125. 1834; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 267. 1958 (Repr.). '*Arbatvel*', '*Gendal*'.

Scandent shrubs; stems with corky bark; young parts and leaves rufous tomentose; nodes swollen. Leaves 5–12 × 4–11 cm, broadly ovate, at apex acuminate, base shallowly cordate, silky tomentose beneath. Flowers reddish-pink, in umbellate, dichotomous cymes. Berries pyriform, beaked, dark purple when ripe. Seed 1, obovoid.

Fl. & Fr.: March–April.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 312, figs. 184 & 185. 1909 (*Vitis repanda*).

Cyphostemma (Planch) Alston

Cyphostemma auriculatum (Roxb.) N.P. Singh & Shetty in Taxon 35: 596. 1986; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 561. 2000. *Cissus auriculata* Roxb., Fl. Ind. 1: 430. 1820. *Vitis auriculatta* Wall. Num. List. No. 6031. 1831–32; Laws. in Hook.f., Fl. Brit. India 1: 658. 1875; Cooke, Fl. Pres. Bombay 1: 273. 1958 (Repr.). '*Jangli-kajorni*', '*Kali-vel*'.

Herbaceous climbers; stems succulent, reddish, cylindrical or angular, young parts softly pubescent. Leaves 5-foliolate; leaflets 5–10 × 2.5–8 cm, digitate, obovate to rhomboid, pubescent beneath. Flowers green, in dichotomous cymes. Berries globose, red when ripe.

Fl. & Fr.: May–December.

LEEACEAE

Leea van Royen ex L.

Key to the species

- 1a. Leaves simple, unifoliolate or unipinnate
- 1b. Leaves 2(-3)-pinnate

L. macrophylla

- | | |
|--|----------------------|
| 2a. Stems, rachis and peduncles crispate or winged | L. asiatica |
| 2b. Stems, rachis and peduncles not crispate or winged | 3 |
| 3a. Leaflets glabrous | L. indica |
| 3b. Leaflets hairy | L. guineensis |

Leea asiatica (L.) Ridsd. in Manilal, Bot. Hist. Hort. Malab. 189. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 566. 2000. *Phytolacca asiatica* L., Sp. Pl. 474. 1753. *Leea crispa* van Royen ex L., Syst. Nat. ed. 12, 2: 627. 1767; Laws. in Hook.f., Fl. Brit. India 1: 665. 1875; Cooke, Fl. Pres. Bombay 1: 276. 1958 (Repr.). *Leea edgeworthii* Sant. in Rec. Bot. Surv. India 16: 54. 1953; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78 (3): 478. 1981. 'Dinda', 'Gharbanda'.

Shrubs, 2–3m tall. Leaves 2-pinnate, oblong; leaflets 5.5–12.5 × 2.5–10.5 cm ovate glabrous above, pubescent beneath, base rounded or cordate, shortly acuminate at apex. Flowers white with pinkish tinge, in much branched, trichotomous, pubescent cymes. Berries depressed-globular, purplish-black when ripe, smooth.

Fl. & Fr.: May–November.

Illus.: Sald. in Sald. & Nicols. Fl. Hassan Dt. 355, f. 69A. 1976.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: Fruits are eaten by wild animals.

Leea guineensis G. Don, Gen. Syst. 1: 712. 1831; Ridsd in Blume 22: 92. 1974; Almeida, Fl. Mah. 1: 260. 1996; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 567. 2000.

Shrubs, up to 2m tall. Leaves petiolate, pinnate; leaflets ovate, base cordate, at apex acuminate, sharply serrate along margins, upper surface reddish, pale white beneath. Flowers in axillary panicles.

Fl. & Fr.: July–August.

Distrib.: Frequent in deciduous forests, Nawegaon.

Leea indica (Burm.f.) Merr. in Philip. J. Sci. 14: 245. 1919; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 567. 2000. *Staphylea indica* Burm.f., Fl. Ind. 75, t. 24, f. 2. 1768. *Leea sambucina* (L.) Willd., Sp. Pl. 1: 1177. 1797 *nom. illeg.*; Laws. in Hook.f., Fl. Brit. India 1: 666. 1875 p.p.; Cooke, Fl. Pres. Bombay 1: 277. 1958 (Repr.). 'Dinda', 'Karkani'.

Shrubs, 1–3 m tall; branchlets puberulous, sometimes with aerial or stilt roots during monsoon. Leaves 10–20 cm long; leaflets 2–5 pairs, 5–10 × 2–4 cm, ovate or ovate-oblong, at apex acute or acuminate, margins crenate or dentate. Flowers greenish-white in lateral, subcorymbose-cymes. Berries dorsally compressed, globose.

Fl. & Fr.: July–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 160. 1982.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Leaves edible as vegetable. Roots useful for diarrhoea and dysentery.

Leea macrophylla Roxb. ex Horn. Hort. Hafn. 1: 231. 1813; Laws. in Hook.f., Fl. Brit. India 1: 664. 1875; Cooke, Fl. Pres. Bombay 1: 276. 1958 (Repr.); S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 568. 2000. *Leea talbotii* King ex Talb. For Fl. Bombay Pres. & Sind 1: 329, t. 195. 1909. 'Supad', 'Bendar', 'Dinda', 'Dindo', 'Vhodlo', 'Anderphod'.

Herbs or shrubs, upto 1.5 m tall. Leaflets 15–60 × 10–50 cm, broadly ovate, upper surface glabrous to sparsely hairy, lower surface sparsely to densely hairy, margins serrate. Flowers greenish-white, in much branched compound cymes. Berries depressed-globose, 2–6 lobed, purplish-black, smooth. Seeds usually 6.

Fl. & Fr.: July–October.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 329. t. 195. 1909 (*Leea talbotii*).

Notes: Leaves useful as a vegetable, yields dye and used medicinally for guinea worms (N.P. Singh & Sharma, 1998).

SAPINDACEAE

Key to the genera

- | | |
|--|----------------------|
| 1a. Climbing, tendrillar herbs, leaves biternate | Cardiospermum |
| 1b. Shrubs or trees; leaves not as above | 2 |
| 2a. Leaves simple, viscid | Dodonea |
| 2b. Leaves compound | 3 |
| 3a. Fruits entire, often echinate | Schleichera |
| 3b. Fruits lobed or angled, not echinate | Sapindus |

Cardiospermum L.

Cardiospermum halicacabum L., Sp. Pl. 366. 1753; Hiern in Hook.f., Fl. Brit. India 1: 670. 1875; Cooke, Fl. Pres. Bombay 1: 280. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 571. 2000. 'Ghanphodi', 'Kapalphodi', 'Tejovati'.

Slender, perennial herbs; roots woody. Leaflets 2.5–4 × 1.5–2.5 cm, ovate-lanceolate, margins toothed. Flowers white, 4-merous, in corymbose, tendrilliferous cymes. Capsules trigonous, depressed, pyriform. Seeds globose, arillate.

Fl. & Fr.: August–December.

Illus.: Mahesh., Illus. Fl. Delhi f. 47. 1966.

Distrib.: Common weed in open places, Nawegaon, Nagzira.

Notes: The green parts of plants are eaten as vegetable. Whole plant useful for earache, rheumatic pains and swellings.

Dodonea P. Mill. (*nom. cons.*)

Dodonea viscosa (L.) Jacq., Enum. Syst. Pl. 19. 1760; Hiern in Hook.f., Fl. Brit. India 1: 697. 1875; Cooke, Fl. Pres. Bombay 1: 287. 1958 (Repr.); S.K. Malhotra

& K.M. Rao in Bull. Bot Surv. India 22: 5. 1980; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra. State 1: 572. 2000. *Ptelea viscosa* L., Sp. Pl. 118. 1753. 'Baad', 'Jakhmi'.

Shrubs, 1–2 m tall, much branched; young shoots and leaves covered with bright yellow resin. Leaves subsessile 2.5–6 × 0.8–2.5 cm, oblanceolate. Flowers greenish-yellow in terminal racemes. Capsules membranous, winged, viscid. Seeds subglobose.

Fl. & Fr.: July–March.

Illus.: Talb. For Fl. Bombay Pres. & sind 1:342, f. 202. 1909.

Distrib.: Frequent in deciduous forests, cultivated naturalised, Nawegaon.

Sapindus L.

Sapindus laurifolius Vahl, Symb. Bot. 3: 54. 1794; Cooke, Fl. Pres. Bombay 1: 284. 1958 (Repr.); B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 576. 2000. *Sapindus trifoliatus* auct. non L. 1753; Hiern in Hook.f., Fl. Brit. India 1: 682. 1875 p.p. 'Aritha', 'Ritha'.

Trees, 7–14 m tall, with fissured bark. Leaves abruptly pinnate; leaflets 2–3 pairs, 4.5–11.15 × 2.8–4.8 cm, lanceolate or elliptic oblong, base acute or rounded. Flowers white in terminal, rusty brown panicles. Drupes 2–3-lobed, brownish when ripe. Seeds globose, black.

Fl. & Fr.: November–March.

Illus.: Talbot, For. Fl. Bombay Pres. & Sind 1: 337, f. 199. 1909 (*Sapindus trifoliatus*).

Distrib.: Frequent in deciduous forests, Nagzira.

Notes: Fruits useful to cure asthma, epilepsy, hysteria and as a vermicide (N.P. Singh & Sharma, 1998).

Schleichera Willd. (nom. cons.)

Schleichera oleosa (Lour.) Oken in Allg. Naturgesch. 3(2): 1341. 1841; B.G. Kulkarni in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 577. 2000. *Pistacia oleosa* Lour., Fl. Cochinch. 2: 615. 1790. *Schleichera trijuga* Willd., Sp. Pl. 4 (2): 1096. 1805; Hiern in Hook.f., Fl. Brit. India 1: 681. 1875; Cooke, Fl. Pres. Bombay 1: 283. 1958 (Repr.). 'Kusum', 'Kosab', 'Koshimb'.

Trees, 10–16 m high, Leaves paripinnate; young leaves reddish; leaflets 4–12 × 2.2–4.5 cm, oblong, coriaceous, at apex obtuse or round or acute, base cuneate-subcordate. Flowers greenish-white, in branched racemes. Drupes ovoid, dark brown. Seeds 1–2, oblong.

Fl. & Fr.: March–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 168. 1982.

Distrib.: Frequent in hilly forests, Nawegaon, Nagzira.

Notes: This plant serves as a host for lac insects. Seed-oil is used as an illuminant and also used in soap and perfumery industries. Young fruits are edible.

ANACARDIACEAE

Key to the genera

1a. Leaves simple	2
1b. Leaves compound	5
2a. Carpels 3–4	Semecarpus
2b. Carpel 1	3
3a. Flowers hermaphrodite	Buchanania
3b. Flowers polygamous	4
4a. Fruit a nut, peduncle enlarged in fruit	Anacardium
4b. Fruit a drupe, peduncle not enlarged as above	Mangifera
5a. Leaves with an intramarginal nerve	Spondias
5b. Leaves not as above	Lannea

Anacardium L.

Anacardium occidentale L., Sp. Pl. 383. 1753; Hook.f., Fl. Brit. India 2: 20. 1876; Cooke, Fl. Pres. Bombay 1: 292. 1958 (Repr.); P.V. Prasanna in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 581. 2000. '*Kaaju*'.

Trees, 4–5 m high; branches terete. Leaves 3.5–9.5 × 2.2–6.0 cm, obovate or elliptic, at apex rounded. Flowers yellow, with pink stripes, in terminal panicles. Nuts reniform, on juicy receptacle.

Fl. & Fr.: December–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 170. 1982.

Distrib.: Usually planted, found as an escape or naturalized in Nagzira.

Notes: Fruits are edible. Shell-oil used as a water proofing agent and as a preservative in the painting of boats and light wood work.

Buchanania Spreng.

Buchanania cochinchinensis (Lour.) Almeida., Fl. Mah. 1: 287. 1996; P.V. Prasanna in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 582. 2000. *Toluiifera cochinchinensis* Lour., Fl. Cochinch. 262. 1790. *Buchanania lanzan* Spreng. in J. Bot. (Schr.) 2: 234. 1800; Cooke, Fl. Pres. Bombay 1: 293. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 478. 1981. *Buchanania latifolia* Roxb., Fl. Ind. 2: 385. 1832; Hook.f., Fl. Brit. India 2: 23. 1876. '*Charoli*'. (PLATE: F-3)

Trees, 18–20 m tall; young branches silky tomentose. Leaves 9–18 × 5–8 cm, broadly oblong, at apex emarginate, base rounded, glabrous above, silky pubescent beneath. Flowers white, in terminal and axillary panicles. Drupes subglobose, reddish-purple when ripe; stone hard.

Fl. & Fr.: January–May.

Illus.: Matthew fur. *Illus. Fl. Tamilnadu Carnatic* 4: t. 111. 1988.

Distrib.: Common throughout the dense forests, Nawegaon, Nagzira.

Notes: Fruits are edible and also eaten by wild animals. Seeds purify the blood and considered as brain tonic.

Lannea A. Rich (*nom. cons.*)

Lannea coromandelica (Houtt.) Merr. in J. Arnold Arbor. 19: 353. 1939; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; P.V. Prasanna in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 584. 2000. *Dialium coromandelicum* Houtt. in Nat. Hist. 2, 2: 39, t. 5, f. 2. 1774. *Odina wodier* Roxb. Fl. Ind. 2: 293. 1832; Hook.f., Fl. Brit. India 2: 29. 1876; Cooke, Fl. Pres. Bombay 1: 296. 1958 (Repr.). 'Moya', 'Shimti'.

Trees, 18–20 m tall; young branchlets puberulous. Leaves crowded at end of branches; leaflets 4.5–11.5 × 2.5–4.5 cm, at apex acuminate, base rounded. ovate-oblong. Flowers creamy yellow, with reddish tinge in terminal panicles. Drupes reniform, ripens red.

Fl. & Fr.: January–June.

Distrib.: Throughout in deciduous forests, Nawegaon, Nagzira.

Notes: The stem bark yields gum used in confectionary and its mucilage for making ink. Leaves used as fodder, medicinally for elephantiasis and swellings.

Mangifera L.

Mangifera indica L., Sp. Pl. 200. 1753; Hook.f., Fl. Brit. India 2: 13. 1876; Cooke, Fl. Pres. Bombay 1: 291. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; P.V. Prasanna in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 584. 2000. 'Amba'.

Trees, 12–15 m tall. Leaves 11–24 × 4.8 cm, crowded at apex of branches, oblong-lanceolate, coriaceous. Flowers yellowish, polygamous in pubescent, terminal panicles. Drupes obliquely pyriform or obovoid; stone compressed, fibrous, hard.

Fl. & Fr.: January–June.

Distrib.: Frequent in open scrub forests, Nawegaon, Nagzira.

Notes: Fruits are edible. Commonly cultivated, sometimes found as wild.,

Semecarpus L.f.

Semecarpus anacardium L.f., Suppl. 172. 1781; Hook.f., Fl. Brit. India 2: 30. 1872; Cooke, Fl. Pres. Bombay 1: 296. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; P.V. Prasanna in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 586. 2000. 'Bhilava', 'Bibba'.

Trees, 6–10 m tall. Leaves 6–28 × 4.5–4.2 cm, obovate-oblong, at apex obtuse. Flowers greenish-yellow, in pubescent panicles. Drupes yellowish to orange-black when ripe, seated on a fleshy receptacle.

Fl. & Fr.: January–September.

Distrib.: Frequent in deciduous forests, Nawegaon, Nagzira.

Notes: Seed oil is used as a protection against white ants and also useful medicinally for asthma, piles, rheumatic pains, cuts, leprosy and skin diseases (Kothari & D.L. Shirodkar, 2007).

Spondias L.

Spondias pinnata (L.f.) Kurz. in Prelim. Rep. For. & Veg. Pegu Append. A. 44. & B. 42. 1875; P.V. Prasanna in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 587. 2000. *Mangifera pinnata* L.f. suppl. 156. 1781. *Spondias mangifera* Willd., Sp. Pl. 2: 751. 1799 *nom. illeg.*; Hook.f., Fl. Brit. India 2. 42. 1876; Cooke, Fl. Pres. Bombay 1: 299. 1958 (Repr.). *Spondias acuminata* Roxb. Fl. Ind. 2: 453. 1832. ‘Ambada’.

Trees; 8–14 m tall. Leaves imparipinnate; leaflets 4.5–14.5 × 2.5–5.5 cm, oblong or elliptic, at apex acuminate. Flowers greenish-white, in terminal panicles. Drupes yellow when ripe; stones hard.

Fl. & Fr.: December–July.

Notes: Fruits are edible, used as vegetable and pickle.

MORINGACEAE

Moringa Adans.

Moringa oleifera Lam., Encycl. 1: 398. 1785; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 113. 1981; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra 1: 589. 2000. *Moringa pterygosperma* Gaertn., Fruct. 2: 314. 1791; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 301. 1958 (Repr.).

Trees, 5–10 m tall. Leaves tripinnate; leaflets 1.0–1.5 × 0.4–1.0 cm, lateral leaflets elliptic, terminal obovate. Flowers white, in puberulous panicles. Capsules, 9-ribbed. Seeds 3-angled, angles winged.

Fl. & Fr.: January–April.

Illus.: Matthew Fur. Illus. Fl. Tamilandu Carnatic 4: t. 111. 1988.

Distrib.: Commonly cultivated, found as an escape near lakes, Nawegaon.

FABACEAE (PAPILIONACEAE)

Key to the genera

- | | |
|--|------------------|
| 1a. Plants erect, suberect or parasite but not climbing (except few species of <i>Butea</i> and <i>Dalbergia</i> which may be climbing or scandent shrubs) | 2 |
| 1b. Plants climbing or trailing | 22 |
| 2a. Trees | 3 |
| 2b. Shrubs, undershrubs or erect, diffuse or prostrate herbs | 8 |
| 3a. Leaves 3-foliolate | 4 |
| 3b. Leaves more than 3-foliolate | 6 |
| 4a. Plants armed; pods turgid, torulose | Erythrina |

4b. Plants unarmed; pods flat, not torulose	5
5a. Flowers orange-red or scarlet coloured	Butea
5b. Flowers white	Ougeinia
6a. Leaflets opposite; pods woody	Pongamia
6b. Leaflets alternate; pods not woody	7
7a. Flowers yellow; pods orbicular, winged	Pterocarpus
7b. Flowers creamy-white; pods oblong or strap- shaped, not winged	Dalbergia
8a. Flowers pure yellow, creamy-yellow, white or purple spotted	9
8b. Flowers red, reddish purple ,bluish purple ,mauve or blue	15
9a. Joints of pods turgid	10
9b. Joints of pods flat	11
10a. Leaves gland dotted beneath	Flemingia
10b. Leaves not gland dotted beneath	Crotalaria
11a. Pod joints 2–6, echinante	Zornia
11b. Pod joints 1–2 , not echinate	12
12a. Leaves trifoliolate	Stylosanthes
12b. Leaves more than 3 folioate	13
13a. Pods long (up to 30 cm), narrowly linear, septate between seeds, but not jointed	Sesbania
13b. Pods relatively much shorter, often jointed, if not jointed, pods turgid	14
14a. Joints of pods folded inside calyx	Smithia
14b. Joints of pods not as above; pods exserted	Aeschynomene
15a. Pods jointed	16
15b. Pods not jointed	18
16a. Joints of pods folded as above	Uraria
16b. Joints of pods not folded as above	17
17a. Calyx glumaceous, twice the pedicel length or more, imbricate; pods turgid, straight	Alysicarpus
17b. Calyx not glumaceous, less than half of the pedicel length, valvate; pods flattened, curved	Desmodium
18a. Pods flat	Pseudarthria
18b. Pods not flat, if flat, leaves simple	19
19a. Leaves simple	20
19b. Leaves 3 or more foliolate	21
20a. Inflorescence mostly axillary; pods torulose, cylindric or 4-gonous	Indigofera
20b. Inflorescence mostly leaf opposed, axillary or extra-axillary; pods flat	Tephrosia
21a. Anthers apiculate; hairs medifixed	Indigofera
21b. Anthers muticous; hairs basifixed	Tephrosia
22a. Leaflets modified into tendril	Lathyrus
22b. Leaflets not modified into tendrils	23
23a. Sepals persistent, foliaceous, creamy white or pale yellow	Paracalyx
23b. Sepals not as above	24
24a. Stamens monadelphous	25
24b. Stamens diadelphous	26

25a. Stamens 9 (the 10 th stamen absent)	Abrus
25b. Stamens 10	Teramnus
26a. Pods 1-seeded	Spatholobus
26b. Pods many-seeded	27
27a. Pods linear or oblong	28
27b. Pods strap shaped	29
28a. Pods constricted between seeds; seeds 2–5	Millettia
28b. Pods not constricted; seeds 10–12	Sphenostylis
29a. Scandent shrubs	Derris
29b. Herbs or erect shrubs	30
30a. Flowers creamy-yellow; yellow or tinged red	31
30b. Flowers white, bright rosy-purple, reddish mauve, bluish-purple, violet or blue	32
31a. Leaves gland-dotted beneath	Rhynchosia
31b. Leaves not gland dotted beneath	Vigna
32a. Pods turgid or flat, constricted between seeds	33
32b. Pods not turgid, if flat not constricted between seeds	34
33a. Flowers bright rosy-purple, pods flat	Canavalia
33b. Flowers bluish-purple; pods turgid	Pueraria
34a. Racemes congested mostly at apex	Dolichos
34b. Racemes lax	Mucuna

Abrus Adans.

Abrus precatorius L., Syst. Nat. ed. 2, 2: 472. 1767; Baker in Hook.f., Fl. Brit. India 2: 175. 1876; Cooke, Fl. Pres. Bombay 1: 382. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 597. 2000. ‘*Gunj*’. (PLATE:D-5)

Twining, perennial up to 4 m long. Leaves paripinnate; leaflets opposite, 1–2 × 0.5–0.8 cm, oblong or elliptic-oblong, glabrous above, appressed-hairy beneath, apiculate at apex, obtuse at base. Flowers pinkish-purple, fading white, in racemes. Pods pilose, thinly septate, wrinkled, linear-oblong, beaked. Seeds subglobose, bright red, with black lateral spot around hilum.

Fl. & Fr.: September–December.

Illus: Mahesh., Illus. Fl. Delhi, f. 71. 1966.

Distrib.: Common throughout on hedges, Nawegaon, Nagzira.

Notes: Leaves useful for cold and roots for dysentery. Its red seeds like eye balls is of Botanical interest.

Aeschynomene L.

Aeschynomene indica L., Sp. Pl. 713. 1753; Baker in Hook.f., Fl. Brit. India 2:151. 1876; Cooke, Fl. Pres. Bombay 1:363. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 598. 2000.

Erect herbs; stem glandular hispid. Leaves hairy; leaflets subfalcate, ciliate, apiculate, base oblique. Flowers in racemes; petals yellow with purplish lines. Pods glandular, hispidulous, muricate, reticulately veined.

Fl. & Fr.: October–December.

Distrib.: Frequent along road sides in marshy places.

Alysicarpus Neck ex Desv. (*nom. cons.*)

Key to the species

- | | |
|--|--------------------------|
| 1a. Calyx shorter or slightly longer than first joint of pods | 2 |
| 1b. Calyx much longer than first joint of pods | 4 |
| 2a. Pods moniliform, veinless or faintly reticulately veined | A. monilifer |
| 2b. Pods not moniliform, prominently veined | 3 |
| 3a. Calyx equalling or slightly longer than first joint of pod; mature pods blackish | A. vaginalis |
| 3b. Calyx shorter than first joint of pods; mature pods not as above | A. hamosus |
| 4a. Teeth of calyx imbricate in fruiting stage | 5 |
| 4b. Teeth of calyx not imbricate in fruiting stage | A. racemosus |
| 5a. Pods slightly moniliform, smooth | A. bupleurifolius |
| 5b. Pods not moniliform, transversely ribbed | A. heyneanus |

Alysicarpus bupleurifolius (L.) DC., Prodr. 2: 352. 1825; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 370. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 600. 2000. *Hedysarum bupleurifolium* L., Sp. Pl. 745. 1753.

Herbs, 25–50 cm long, prostrate to ascending. Leaves unifoliate; leaflets 1–5 × 0.3–0.5 cm, linear-lanceolate or elliptic-oblong. Flowers pink to pale violet, in lax, axillary and terminal racemes. Pods cylindric, apiculate, smooth, 3–6 jointed. Seeds spherical, smooth.

Fl. & Fr.: June–December.

Illus.: Mahesh., Illus. Fl. Delhi f. 70. 1966.

Distrib.: Among grasses in plains, common, Nawegaon, Nagzira.

Alysicarpus hamosus Edgew. in J. Asiat. Soc. Bengal 21: 171. 1853; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 368. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 601. 2000.

Herbs, prostrate or procumbent, hairy; branches radially spreading or diffuse. Leaves 1–3 × 1.2–2.5 cm, broadly ovate-oblong or suborbicular, hairy on nerves beneath. Flowers purple or pink, few, in axillary racemes. Pods linear, compressed, 2–6 jointed, hairy.

Fl. & Fr.: August–October.

Distrib.: Common in open spaces of forests, Nawegaon.

Alysicarpus heyneanus Wight & Arn., Prodr. 1: 234. 1834; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 601. 2000. *Alysicarpus rugosus* var. *heyneanus* (Wight & Arn.) Baker in Hook.f., Fl. Brit. India 2: 159. 1876; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 371. 1958 (Repr.).

Herbs, 16–40 cm, suberect or diffuse. Leaves unifoliate; leaflets $1.6\text{--}4.5 \times 0.5\text{--}2.2$ cm, elliptic-oblong or obovate-oblong, pubescent beneath. Flowers reddish-purple, in terminal and axillary racemes. Pods apiculate, 3–5-jointed, joints suborbicular, rugose. Seeds ellipsoid, brown.

Fl. & Fr.: August–December.

Distrib.: Frequent in open situations, Nawegaon.

Notes: Seeds edible as a vegetable.

Alysicarpus monilifer (L.) DC., Prodr. 2: 353. 1825; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 368. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 603. 2000. *Hedysarum moniliferum* L., Mant. Pl. 1: 102. 1767.

Herbs, prostrate, hairy. Leaves $0.3\text{--}1.8 \times 0.2\text{--}1.0$ cm, elliptic-oblong or obovate, hairy on nerves beneath. Flowers pinkish-purple, few in axillary and terminal racemes. Pods 2–7-jointed, hairy. Seeds subglobose or oblong, brownish.

Fl. & Fr.: August–October.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 113. 1988.

Distrib.: In plains amidst herbaceous vegetation, frequent, Nawegaon, Nagzira.

Alysicarpus racemosus Benth. in Linnaea 24: 642. 1851; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 605. 2000. *Alysicarpus belgaumensis* var. *racemosus* Baker in Hook.f., Fl. Brit. India 2: 160. 1876; Cooke, Fl. Pres. Bombay 1: 373. 1958 (Repr.).

Herbs up to 20 cm tall. Leaves mostly 1-foliate, at times 3-foliate above; leaflets $0.7\text{--}2.5 \times 0.4\text{--}1.8$ cm, obovate-orbicular, appressed pubescent beneath, at apex obtuse, base subcordate. Flowers pink, many, in terminal or axillary racemes. Pods 3–4 jointed, joints turgid to subcompressed. Seeds orbicular, dark grey.

Fl. & Fr.: September–November.

Distrib.: Common on hill slopes, Nagzira.

Notes: Endemic to Maharashtra.

Alysicarpus vaginalis (L.) DC., Prodr. 2: 353. 1825; Baker in Hook.f., Fl. Brit. India 2: 158. 1876; Cooke, Fl. Pres. Bombay 1: 369. 1958 (Repr.); Malhotra & Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 609. 2000. *Hedysarum vaginale* L., Sp. Pl. 746. 1753.

Herbs, diffuse or suberect, sparsely hairy. Leaves $1.2\text{--}4.2 \times 0.8\text{--}3.2$ cm, ovate-oblong or nearly orbicular. Flowers violet, in terminal and axillary racemes. Pods 6–8-jointed, reticulately veined. Seeds ellipsoid, brown.

Fl. & Fr.: July–October.

Illus.: Matthew, *Fur. Illus. Fl. Tamilnadu Carnatic* 4: t. 114. 1988.

Distrib.: Common along edges of deciduous forests, Nawegaon, Nagzira.

Notes: Roots are used to check cough.

Butea Roxb. ex Willd. (*nom. cons.*)

Key to the species

1a. Trees

B. monosperma

1b. Climbing shrubs or extensive lianas

B. superba

Butea monosperma (Lam.) Taub. in Engl. & Prantl., *Pflanzenfam.* 3(3): 365. 1894; Malhotra & Rao in *Bull. Bot. Surv. India* 22: 5. 1980 et in *J. Bombay Nat. Hist. Soc.* 78(3): 479. 1981; Kothari in Singh & S. Karthik., *Fl. Maharashtra State* 1: 610. 2000. *Erythrina monosperma* Lam., *Encycl.* 2: 391. 1785. *Butea frondosa* Roxb. ex Willd. *Sp. Pl.* 3: 917. 1802 *nom superfl.*; Baker in Hook.f., *Fl. Brit. India* 2: 194. 1876; Cooke, *Fl. Pres. Bombay* 1: 395. 1958 (Repr.). ‘*Palas*’. (PLATE:D-1)

Trees, 8–10 m tall; bark rough; branches densely tomentose. Leaves 3-foliolate; leaflets $10\text{--}20 \times 8\text{--}15$ cm, obovate, ovate-rhomboid, acute at the apex, cuneate at the base, Flowers orange, in compact racemes on leafless branches. Pods oblong, sandy-brown, hairy, stalked. Seeds solitary.

Fl. & Fr.: January–June.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 184. 1982.

Distrib.: Common in deciduous forests, Nawegaon, Nagzira.

Notes: Flowers are applied as poultice to heal swellings, leaves serve as plates and petals are useful to obtain natural dye.

Butea superba Roxb. ex Willd., *Sp. Pl.* 3: 917. 1802; Baker in Hook.f., *Fl. Brit. India* 2: 195. 1876; Cooke, *Fl. Pres. Bombay* 1: 396. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 611. 2000. ‘*Palas-vel*’.

Lianas up to 25 m long; stem woody, branchlets velvety-tomentose. Leaves 3-foliolate; leaflets $10\text{--}22 \times 8\text{--}18$ cm, ovate-rhomboid or elliptic-oblong, coriaceous, obtuse at apex, cuneate at base. Flowers red-orange, in rigid racemes or panicles. Pods oblong, curved at lower side, brown, hairy, reticulately veined, thickened at sutures. Seeds solitary.

Fl. & Fr.: February–April.

Illus.: Ic. Roxb. *Fasc.* 5, t. 24. 1971 (Repr.).

Distrib.: Frequent in dense forest, hilly places, Nawegaon, Nagzira.

Notes: Roots useful for stomach pain and its bark for cordage.

Cajanus DC. (*nom. cons.*)

Cajanus scarabaeoides (L.) du Petit-Thours in Dict. Sci. Nat. 6: 617. 1817; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 614. 2000. *Dolichos scarabaeoides* L., Sp. Pl. 726. 1753. *Atylosia scarabaeoides* (L.) Benth. in Miq., Pl. Jungh. 242: 1852; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Baker in Hook.f., Fl. Brit. India 2: 217. 1876; Cooke, Fl. Pres. Bombay 1: 409. 1958 (Repr.); '*Ran-tur*'.

Herbaceous twiners. Leaflets 1.5–5 × 1–3 cm, oblong-obovate, sessile. Flowers pale brown-yellow, solitary or few in axillary racemes. Pods oblong, brown, densely hairy. Seeds 4–5, rectangular, black.

Fl. & Fr.: June–February.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 117. 1988.

Distrib.: Common throughout scrub forests, Nawegaon, Nagzira.

Notes: Whole plant useful for diarrhoea and leaves for swellings.

Canavalia Adans. Emend. DC., (*nom. cons.*)

1a. Leaflets obtuse to acute; hilum less than ½ as long as seed, seeds ivory or white

C. ensiformis

1b. Leaflets strongly acuminate; hilum more than half as long as seed, seeds brown

C. Africana

Canavalia africana Dunn. in Pipers & Dunn, Bull. Misc. Inf. Kew 1922: 135. 1922; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 615. 2000. *Canavalia ensiformis* (L.) DC., var. *virosa* (Roxb.) Baker in Hook.f., Fl. Brit. India 2: 196. 1876; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 396. 1958 (Repr.). '*Gowara*'.

Extensive climbers, perennials or biennials; stem pubescent. Leaves compound, 10–20 cm long; leaflets 4–12 × 3–10 cm, broadly ovate or ovate-orbicular. Flowers bluish-white, in lax racemes. Pods linear-oblong, flat, beaked, sparsely hairy. Seeds oblong-ellipsoid.

Fl. & Fr.: September–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 187. 1982.

Distrib.: In moist forests along stream, common, Nawegaon.

Notes: Roots and bark useful for diarrhoea.

Canavalia ensiformis (L.) DC., Prodr. 2: 404. 1825; Baker in Hook.f., Fl. Brit. India 2: 195. 1876; Cooke, Fl. Pres. Bombay 1: 397. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 616. 2000. '*Abai*'.

Twiners, biennials or perennials, glabrous. Leaves trifoliolate; leaflets $4-11 \times 3-9$ cm, ovate, glabrescent, acute at apex, rounded at base. Flowers pink, in axillary racemes. Pods straight, flat, glabrescent. Seeds compressed, brown.

Fl. & Fr.: September–November.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 404, f. 228. 1909.

Distrib.: Frequent along the open forests, Nagzira.

Notes: Leaves used as a vegetable.

Crotalaria L.

Key to the species

- | | |
|--|-----------------------|
| 1a. Racemes all lateral, leaf opposed, few, often only 1-flowered | 2 |
| 1b. Racemes terminal, many flowered, rarely opposite the leaves | 3 |
| 2a. Pods glabrous | C. prostrata |
| 2b. Pods hairy | C. hirta |
| 3a. Pods glabrous | 4 |
| 3b. Pods hairy | 8 |
| 4a. Pods exserted, longer than calyx | 5 |
| 4b. Pods included or scarcely exserted | 7 |
| 5a. Plants erect; stipules present | 6 |
| 5b. Plants erect or diffuse; stipules absent | C. albida |
| 6a. Stipules and bracts minute, subulate or linear | C. retusa |
| 6b. Stipules and bracts foliaceous | C. spectabilis |
| 7a. Herbs; stipules present; calyx fulvous pubescent, upper teeth of calyx oblanceolate | C. calycina |
| 7b. Herbs or undershrubs; stipules absent; calyx silky, upper teeth of calyx connate or lanceolate | C. linifolia |
| 8a. Erect herbs | C. juncea |
| 8b. Diffuse herbs | C. pusilla |

Crotalaria albida Heyne ex Roth, Nov. Pl. Sp. 333. 1821; Baker in Hook.f., Fl. Brit. India 2: 71. 1886; Cooke, Fl. Pres. Bombay 1: 315. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 623. 2000.

Herbs or undershrubs, 20–30 cm high. branches many. Leaves $0.5-2.0 \times 0.2-0.8$ cm, linear-oblong or obovate, appressedly pubescent, apiculate at apex, cuneate at base. Flowers yellow, few in lax racemes. Pods sessile, oblong-cylindric. Seeds brownish-black, compressed, subreniform, shining.

Fl. & Fr.: December–March.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 122. 1988.

Distrib.: Frequent in scrub forests, Nawegaon, Nagzira.

Crotalaria calycina Schrank, Pl. Rar. Hort. Monac. t. 12. 1819; Baker in Hook.f., Fl. Brit. India 2: 72. 1876; Cooke, Fl. Pres. Bombay 1: 317. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 625. 2000.

Herb, 30–60 cm tall, erect, silky-pubescent. Leaves $2.0\text{--}8.5 \times 0.3\text{--}1.4$ cm, linear-lanceolate or oblong-lanceolate, appressed hairy beneath, acute. Flowers yellow with purple veins, in terminal racemes. Pods oblong. Seeds 30–35, shining.

Fl. & Fr.: September–October.

Distrib.: Occasional in open forests, Nagzira.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 124. 1988.

Crotalaria hirta Willd. in Ges. Naturf. Fr. Berlin Neue Schr. 4: 217. 1803; Baker in Hook.f., Fl. Brit. India 2: 70. 1876; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 631. 2000.

Herbs, c. 1.5 m tall; stem erect or diffuse, silky hairy. Leaves $1.2\text{--}3.8 \times 0.3\text{--}0.9$ cm, oblong or oblanceolate, glabrescent above, hairy beneath, at apex obtuse or mucronate. Flowers yellow, in terminal, subcapitate heads. Pods oblong. Seeds yellowish-brown, kidney shaped, shining.

Fl. & Fr.: August–April.

Distrib.: Frequent in scrub forests, Nagzira.

Crotalaria juncea L., Sp. Pl. 714. 1753; Baker in Hook.f., Fl. Brit. India 2: 78. 1876; Cooke, Fl. Pres. Bombay 4: 320. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 633. 2000. ‘Tagada’, ‘Tag’.

Herbs, 0.5–1.5 m tall; stem erect, branched, silky-pubescent. Leaves $3\text{--}8 \times 0.8\text{--}1.2$ cm, sub-sessile, simple, linear-lanceolate or elliptic-lanceolate, appressed-pubescent. Flowers yellow, in terminal and lateral racemes. Pods obovoid-oblong. Seeds subreniform, yellowish-brown.

Fl. & Fr.: November–January.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 127. 1988.

Distrib.: Frequent, in dense forests.

Notes: Usually cultivated for its fibre, found as an escape, Nawegaon.

Crotalaria linifolia L.f., Suppl. 322. 1781; Baker in Hook.f., Fl. Brit. India 2: 72. 1876; Cooke, Fl. Pres. Bombay 1: 317. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 635. 2000.

Undershrubs, 35–80 cm tall, suffruticose. Leaves $1\text{--}5 \times 0.3\text{--}1.2$ cm, obovate-oblong or lanceolate, silvery hairy, obtuse, apiculate at apex, cuneate at base. Flowers yellow, in terminal racemes. Pods ovoid-oblong, deflexed. Seeds pale-brown, reniform.

Fl. & Fr.: August–November.

Illus.: Kothari *op. cit.* 636. ff. 1–6. 2000.

Distrib.: Frequent in scrub forests, Nagzira.

Notes: Plant eaten by Wild animals.

Crotalaria prostrata Rottl. in Willd., Enum. Hort. Berol. 2: 747. 1809; Baker in Hook.f., Fl. Brit. India 2: 74. 1876; Cooke, Fl. Pres. Bombay 1: 312. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 643. 2000.

Herbs, prostrate or diffuse. Leaves $1.3\text{--}3.7 \times 0.3\text{--}1.5$ cm, oblong-obovate, silky-pubescent. Flowers yellow, in lateral racemes. Pods oblong. Seeds brown, subreniform.

Fl. & Fr.: September–April.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 139. 1988.

Distrib.: In open situations, among grasses, common, Nawegaon, Nagzira.

Crotalaria pusilla Heyne ex DC., Prodr. 2: 128. 1825; Baker in Hook.f., Fl. Brit. India 2: 70. 1876; Cooke, Fl. Pres. Bombay 1: 315. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 643. 2000.

Herbs, 7–9 cm tall; branches many, silky-hairy. Leaves $0.5\text{--}2.5 \times 0.2\text{--}0.3$ cm, subsessile, linear-oblong, densely silky-pubescent. Flowers yellow, in lateral racemes. Pods oblong. Seeds brown, subreniform.

Fl. & Fr.: August–October.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: 141. 1988.

Distrib.: Occasional in open forests, Nawegaon..

Crotalaria retusa L., Sp. Pl. 715. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 2: 75. 1876; Cooke, Fl. Pres. Bombay 1: 318. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 645. 2000. ‘*Dingala*’.

Undershrubs 0.6–1 m tall; stem erect. Leaves $2.5\text{--}6.0 \times 1\text{--}2$ cm, obovate-oblong or oblanceolate-oblong, pubescent beneath, apiculate at apex, cuneate at base. Flowers bright yellow, many, in compact, terminal racemes. Pods linear-oblong, stalked.

Fl. & Fr.: September–March.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 142. 1988.

Distrib.: Common throughout in open situation and as forest undergrowth, Nagzira.

Notes: Stem fibre used as cordage.

Crotalaria spectabilis Roth, Nov. Pl. Sp. 341. 1821; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State.1: 647. 2000. *Crotalaria sericea* Retz., Obs. Bot. 5: 26. 1789 non Burm.f. 1768; Baker. in Hook.f., Fl. Brit. India 2: 75. 1876; Cooke, Fl.

Pres. Bombay 1: 319. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980. '*Jangli san*'.

Undershrubs, 1–1.5 m tall. Leaves 3.5–12.5 × 0.8–5.5 cm, oblong-lanceolate, at apex acute or mucronate. Flowers yellow, in terminal and axillary racemes. Pods linear-oblong. Seeds 20–30, dark brown or black, reniform.

Fl. & Fr.: October–February.

Illus.: Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 646. 2000.

Distrib.: Frequent in scrub forests, Nawegaon.

Dalbergia L.f. (*nom. cons.*)

Key to the species

1a. Stamens monodelphous, usually 9

D. latifolia

1b. Stamens diadelphous, 5+5

D. lanceolaria

Dalbergia lanceolaria L.f., Suppl. 316. 1781; Baker in Hook.f., Fl. Brit. India 2: 235. 1876; Cooke, Fl. Pres. Bombay 1: 425. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 655. 2000. '*Dhobin*'.

Trees, 10–15 m tall; bark grayish-white. Leaves compound; leaflets 11–15, 2–3 × 1.5–2.0 cm, elliptic-oblong or ovate-obovate, obtuse at apex, cuneate at base. Flowers white or pinkish, in axillary or terminal, leafless panicles. Pods strap shaped, stipitate, 1–3 seeded.

Fl. & Fr.: March–May.

Illus.: Mattew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 148. 1988.

Distrib.: Frequent in dense forests and on hill slopes.

Dalbergia latifolia Roxb., Pl. Cor. 2: 7, t. 113. 1799; Baker in Hook.f., Fl. Brit. India 2: 235. 1876; Cooke, Fl. Pres. Bombay 1: 422. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22:5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 657. 2000. '*Shisham*', '*Shisav*', '*Kala-Rukh*'.

Trees, 15–18 m tall; bark grey-ash coloured. Leaves compound, 10–15 cm long. leaflets 5–7, 2.5–6.8 × 2.0–5.5 cm, elliptic-obovate or ovate-suborbicular, apex emarginate or rounded. Flowers creamy-white, in axillary panicles. Pods oblong-lanceolate, reticulately veined, 1–3 seeded.

Fl. & Fr.: August–December.

Illus.: Talb., For Fl. Bombay Pres. & Sind 1: 424, f. 239. 1909.

Distrib.: Frequent in moist deciduous dense forests, Nawegan.

Notes: The black heart wood of the '*Shisham*' tree is much valued for furniture, carving, agricultural implements etc.

Derris Lour. (*nom. cons.*)**Key to the species**

- | | |
|---------------------------------|----------------------|
| 1a. Pods thin, strap shaped | D. scandens |
| 1b. Pods oblong to suborbicular | D. trifoliata |

Derris scandens (Roxb.) Benth. in J. Linn. Soc. Bot. 4(Suppl.): Baker in Hook.f., Fl. Brit. India 2: 240. 1878; Cooke, Fl. Pres. Bombay 1: 430. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 667. 2000. *Dalbergia scandens* Roxb., Pl. cor. 2: 29, t. 192. 1805.

Lianas up to 10 m long. Leaves compound, 5–8.5 cm long; leaflets 5–6 pairs, 3.5–8 × 1–5 cm, elliptic-oblong or obovate-oblong, puberulous beneath, at apex retuse, base rounded. Flowers white to pink, in axillary and terminal racemes. Pods narrowly oblong, reticulately veined, winged, silky hairy. Seeds reddish-brown.

Fl. & Fr.: May–September.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2:t. 193. 1982.

Distrib.: Occasional near moist palces, Nawegaon.

Notes: Roots useful for lactation.

Derris trifoliata Lour., Fl. Cochinch. 2. 433. 1790. *Derris uliginosa* (Willd.) Benth. In Miq. Pl. Jungh. 1: 252. 1852; Baker in Hook.f., Fl. Brit. India 2: 241. 1878; Cooke, Fl. Pres. Bombay 1: 431. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 667. 2000. ‘*Kajar-vel*’.

Scandent shrubs. Leaves 8–20 cm long; leaflets 5–12 × 2.5–7 cm, ovate-oblong, at apex shortly acuminate, base rounded. Flowers rosy-pink, in axillary racemes. Pods oblong, reticulately veined. Seeds ovate-orbicular.

Fl. & Fr.: April–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: 194. 1982.

Desmodium Desv. (*nom. cons.*)**Key to the species**

- | | |
|-------------------------------------|------------------------|
| 1a. Leaves unifoliolate | D. velutinum |
| 1b. Leaves trifoliolate | 2 |
| 2a. Herbs | 3 |
| 2b. Shrubs or undershrubs | D. heterocarpon |
| 3a. Stipules foliaceous, auriculate | D. dichotomum |
| 3b. Stipules not as above | D. triflorum |

Desmodium dichotomum (Willd.) DC., Prodr. 2: 336. 1825; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 670. 2000. *Hedysarum dichotomum* Willd. Sp. Pl. 3: 1180. 1802. *Desmodium diffusum* (Willd.) DC., Prodr. 2: 336. 1825; Baker in Hook.f., Fl. Brit. India 2: 169. 1876; Cooke, Fl. Pres. Bombay 1: 377. 1958 (Repr.). ‘*Chikta*’.

Herbs, 30–60 cm tall, straggling; branchlets pubescent. Leaves compound; leaflets 2.5–8.0 × 1–4 cm, ovate-obovate, elliptic or obovate, obtuse at base and at apex, hairy on both surfaces. Flowers pink, in terminal and axillary racemes. Pods sessile, faintly reticulate, shortly horned, hairy.

Fl. & Fr.: September–December.

Illus.: Wight, Ic. t. 298. 1839 (*Desmodium diffusum*).

Distrib.: Common throughout in open situations and as forest undergrowth, Nagzira.

Notes: Whole plant useful for stomach pains.

Desmodium heterocarpon (L.) DC., Prodr. 2: 337. 1825; Malhotra & Rao in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in Singh & Karthik., Fl. Maharashtra State 1: 670. 2000. *Hedysarum heterocarpon* L., Sp. Pl. 747. 1753. *Desmodium polycarpon* (Poir.) DC., Prodr. 2: 334. 1825; Baker in Hook.f., Fl. Brit. India 2: 171. 1876; Cooke, Fl. Pres. Bombay 1: 337. 1958 (Repr.).

Undershrubs, 50–120 cm, tall. Leaves trifoliate; leaflets 3–6 × 1–2 cm, obovate-oblong, hairy beneath, at apex rounded, base cuneate. Flowers bluish-purple, in dense axillary and terminal, subsessile racemes. Pods linear-oblong, flat, pubescent, 5–8 jointed.

Fl. & Fr.: August–December.

Distrib.: Frequent in scrub forests, Nawegaon, Nagzira.

Desmodium triflorum (L.) DC., Prodr. 2: 334. 1825; Baker in Hook.f., Fl. Brit. India 2: 173. 1876; Cooke, Fl. Pres. Bombay 1: 378. 1958 (Repr.); Malhotra & Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1980; Kothari in Singh & S. Karthik., Fl. Maharashtra State 1: 677. 2000. *Hedysarum triflorum* L., Sp. Pl. 749. 1753. ‘*Ran-methi*’.

Herbs; stem prostrate, pilose. Leaflets 0.3–0.6 × 0.4–0.5 cm; lateral ones equilateral, obovate, membranous, hairy beneath, obtuse at apex, cuneate at base. Flowers pinkish, in axillary fascicles. Pods compressed, 4–6 jointed, pubescent. Seeds broadly oblong.

Fl. & Fr.: September–October.

Illus.: Mahesh., Illus.Fl. Delhi f. 67. 1966.

Distrib.: Common throughout in open situations, Nawegaon, Nagzira.

Notes: Plant eaten by wild animals. Leaves useful for diarrhoea and healing wounds.

Desmodium velutinum (Willd.) DC., Prodr. 2: 328. 1825; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 679. 2000. *Hedysarum velutinum* Willd., Sp. Pl. 3: 117. 1803.

Desmodium latifolium (Roxb.) DC., Prodr. 2: 327. 1825; Baker in Hook.f., Fl. Brit. India 2: 168. 1876; Cooke, Fl. Pres. Bombay 1: 380. 1958 (Repr.). 'Lipti'.

Undershrubs, up to 1m tall; branches fulvous-pubescent, Leaves 5–11 × 3.5–7.5 cm, ovate, obtuse, acute at apex, truncate and oblique at base. Flowers pinkish or purplish, fascicled, in terminal and axillary racemes. Pods densely hairy, 3–6 jointed.

Fl. & Fr.: July–December.

Illus.: Wight, Ic. t. 270. 1840 (*Desmodium latifolium*).

Distrib.: Common in open and hilly forests., Nawegaon, Nagzira.

Dolichos L.

Dolichos trilobus L., Sp. Pl. 726. 1753 p.p.; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 114. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 680. 2000. *Dolichos falcatus* Klein ex Willd. Sp. Pl. 3: 1047. 1803; Baker in Hook.f., Fl. Brit. India 2: 211. 1876.

Herbs, diffuse, twining. Leaflets 1.4–7.5 × 0.8–6.2 cm, ovate, ovate-rhomboid or lanceolate, at apex acuminate, base rounded. Flowers purple, in axillary fascicles. Pods linear-oblong, subfalcate. Seeds reddish-brown, ellipsoid-oblong.

Fl. & Fr.: September–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 196. 1982.

Distrib.: Frequent in deciduous forests, Nagzira.

Erythrina L.

Erythrina variegata L. in Stickm. Herb. Amboin. 10. 1754; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 683. 2000. *Erythrina indica* Lam. Encycl. 2: 391. 1876; Baker in Hook.f., Fl. Brit. India 2: 188. 1876; Cooke, Fl. Pres. Bombay 1: 390. 1958 (Repr.). 'Pangara'.

Trees, 6–12 m tall, deciduous. Leaves 20–30 cm long; leaflets 2–15 × 3–13 cm, ovate or ovate-rhomboid, membranous, at apex acute or acuminate, base truncate. Flowers bright-red, in dense racemes. Pods subcylindric, black when mature, stalked. Seeds reddish-brown, subreniform.

Fl. & Fr.: January–June.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 401, t. 225. 1909 (*Erythrina indica*).

Distrib.: Fairly frequent in deciduous forests, Nawegaon, Nagzira.

Notes: Leaves and young shoots edible as vegetable.

Flemingia Roxb. ex W. Ait. & W.T. Ait.

Key to the species

- 1a. Leaves 1-foliolate
- 1b. Leaves 3-foliolate

F. strobilifera
F. macrophylla

Flemingia macrophylla (Willd.) O. Ktze. ex Merr. in Philipp. J. Sci. Bot. 5: 130. 1910; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 686. 2000. *Crotalaria macrophylla* Willd., Sp. Pl. 3: 982. 1802. 'Daudala'.

Shrub, 1–1.5 m tall. Leaflets 8.5–15.5 × 3.5–5.5 cm, elliptic-ovate, subcoriaceous, silky on nerves beneath, at apex acute, lateral ones oblique at base; petiole winged. Flowers purplish-yellow, in dense, axillary racemes; calyx gland dotted, pilose. Pods oblong, rusty-tomentose.

Fl. & Fr.: January–February.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 201. 1982.

Distrib.: Frequent in deciduous forests, Nawegaon, Nagzira.

Flemingia strobilifera (L.) Ait. & Ait.f. Hort. Kew. ed. 2, 4: 350. 1812; Baker in Hook.f., Fl. Brit. India 2: 227. 1876; Cooke, Fl. Pres. Bombay 1: 416. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 688. 2000. *Hedysarum strobiliferum* L., Sp. Pl. 746. 1753. (PLATE-B-5)

Shrubs, up to 1.5 m tall. Leaflets 5.5–14.5 × 2.2–6.5 cm, ovate-lanceolate or oblong, acute at apex, rounded or subacute at base, silky pubescent beneath. Flowers in axillary and terminal racemes. Pods oblong, mucronate, densely pubescent. Seeds dark-brown or black.

Fl. & Fr.: August–April.

Illus.: Talb. For Fl. Bombay Pres. & Sind 1:418, f. 236. 1909.

Distrib.: Common in scrub forests, Nagzira.

Notes: Leaves eaten by wild animals, roots for body pains by local inhabitants.

Indigofera L.

Key to the species

1a. Leaves simple	I. linifolia
1b. Leaves compound, imparipinnate	2
2a. Flowers in axillary, sessile or shortly peduncled heads	3
2b. Flowers in axillary racemes	4
3a. Leaves trifoliolate, nigro-punctate beneath	I. glandulosa
3b. Leaves 5–11-foliolate, not nigro-punctate beneath	I. linnaei
4a. Leaflets 7–11	5
4b. Leaflets 13–21	I. cassioides
5a. Pods cylindric	I. tinctoria
5b. Pods tetragonous	6
6a. Pods densely pubescent, not torulose, deflexed	I. astragalina
6b. Pods thinly hairy, torulose, not deflexed	I. constricta

Indigofera astragalina DC., Prodr. 2: 228. 1825; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra

State 1: 695. 2000. *Indigofera hirsuta* auct. non L. 1753; Baker in Hook.f., Fl. Brit. India 2: 98. 1876; Cooke, Fl. Pres. Bombay 1: 339. 1958 (Repr.). ‘*Ran-methi*’.

Herbs or undershrubs, 40–80 cm tall, hairy. Leaflets opposite, $2.5\text{--}6.0 \times 1.4\text{--}2.4$ cm, elliptic-oblong or ovate-oblong, appressed hairy on both surfaces. Flowers bright-scarlet to purple, in terminal and axillary, compact racemes. Pods deflexed, mucronate. Seeds 6–8, cubical, black or brown.

Fl. & Fr.: August–December.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 167. 1988.

Distrib.: Common on hill slopes, Nawegaon, Nagzira.

Indigofera cassioides Rottl. ex DC., Prodr. 2: 225. 1825; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 695. 2000. *Indigofera pulchella* Roxb., Fl. Ind. 3: 382. 1832; Cooke, Fl. Pres. Bombay 1: 341. 1958 (Repr.). ‘*Baroli*’, ‘*Chimnati*’.

Shrubs, 1.2–1.5 m tall. Leaflets $1\text{--}2.5 \times 0.8\text{--}1.4$ cm, elliptic-oblong or obovate, hairy on both surfaces, base acute. Flowers bright rosy-purple, in short racemes. Pods turgid, cylindric. Seeds reddish-brown, ellipsoid.

Fl. & Fr.: September–April.

Illus.: Kothari op. cit. 697. 2000.

Distrib.: Common in hilly forests and open grasslands, Nawegaon, Nagzira.

Notes: Flowers and buds edible as vegetable.

Indigofera constricta (Thw.) Trim., Cat. Ceyl. Pl. 23. 1885; Baker in Hook.f., Fl. Brit. India 2: 93. 1876; Cooke, Fl. Pres. Bombay 1: 340. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 701. 2000. *Indigofera flaccida* Koen. var. *constricta* Thw., Enum. Pl. Zeyl. 411. 1864.

Shrubs, 1.0–1.5 m tall; branchlets divaricate, terete. Leaflets opposite, $2.0\text{--}2.5 \times 1.0\text{--}1.4$ cm, elliptic-oblong, appressed pubescent, apiculate. Flowers red or green with pink tinge, many in axillary racemes. Pods linear, slightly curved, 4-gonous, constricted between seeds, hairy. Seeds 8–12, brownish.

Fl. & Fr.: July–October.

Illus.: Sanj. in Nayar & Sastry, Red Data Book of Ind. Pl. 2: 127. f. 1988; Kothari op. cit. 1: 700, figs. A–C. 2000.

Distrib.: Rare in deciduous forests, Nagzira.

Notes: This species is rare and threatened (Sanj. op. cit.).

Indigofera glandulosa Wendl., Bot. Beob. 55. 1748; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 705. 2000. *Indigofera glandulosa* Roxb. ex Willd., Sp. Pl. 3:

1227. 1803; Baker in Hook.f., Fl. Brit. India 2: 94. 1876; Cooke, Fl. Pres. Bombay 1: 332. 1958 (Repr.). '*Bargadan*'.

Herbs, 75–80 cm tall, erect; branchlets pubescent. Leaflets $0.7\text{--}2.3 \times 0.4\text{--}1.4$ cm, elliptic-obovate or oblanceolate, obtuse at apex, cuneate at base, punctate beneath. Flowers red, in short, sessile heads. Pods linear-oblong, angled, densely hairy. Seeds brown, subreniform or ovoid.

Fl. & Fr.: August–December.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 172. 1988.

Distrib.: Common throughout among grasses in plains and hilly forests, Nawegaon.

Notes: Fresh plants are eaten by wild animals.

Indigofera linnaei Ali in Bot. Notis. 111: 549. 1958; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 707. 2000. *Indigofera enneaphylla* L., Mant. Pl. 2: 272. 1771 & Append. 571. 1771 *nom. illeg.*; Baker in Hook.f., Fl. Brit. India 2: 94. 1872; Cooke, Fl. Pres. Bombay 1: 332. 1958 (Repr.). '*Bhuiguli*'.

Herbs, grey-pubescent, spreading. Leaflets $0.5\text{--}2.2 \times 0.2\text{--}1.5$ cm, obovate, hairy. Flowers red, in axillary clusters. Pods subovoid, apiculate, hairy. Seeds brown, globose.

Fl. & Fr.: July–December.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 174. 1988.

Distrib.: Common in moist open places, near lake, Nawegaon.

Indigofera linifolia (L.f.) Retz., Obs. Bot. 4: 29. 1786; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 707. 2000. *Hedysarum linifolium* L.f., Suppl. 331. 1781. '*Pandarphali*'.

Herbs, prostrate; branchlets silvery hairy. Leaves $0.5\text{--}2.3 \times 0.2\text{--}0.5$ cm, linear, appressed-hairy, acute at apex, cuneate at base. Flowers red, axillary, solitary or few in short racemes. Pods globose, silky-hairy. Seeds 1, globose, brownish-black.

Fl. & Fr.: July–October.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 173. 1988.

Distrib.: Common throughout in open grassland and rocky soils, Nawegaon, Nagzira.

Indigofera tinctoria L., Sp. Pl. 751. 1753; Baker in Hook.f., Fl. Brit. India 2: 99. 1876; Cooke, Fl. Pres. Bombay 1: 339. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 115. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 714. 2000. '*Nil*'.

Shrubs, 0.5–1.5 m tall. Leaves alternate; leaflets 7–11, $0.4\text{--}2.5 \times 0.2\text{--}6.0$ cm, oblong, obovate or oblanceolate, hairy beneath. Flowers red, many, in axillary, spicate racemes. Pods linear, falcate, deflexed. Seeds brown, cylindric, truncate at both ends.

Fl. & Fr.: August–February.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4:t. 179. 1988.

Distrib.: Common throughout in open scrub forests, Nagzira, Nawegaon.

Notes : Plant yields ‘blue dye’. Whole plant useful for ulcer.

Lathyrus L.

Lathyrus sativus L., Sp. Pl. 730. 1753; Baker in Hook.f., Fl. Brit. India 2: 179. 1876; Cooke, Fl. Pres. Bombay 1: 384. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 115. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 718. 2000. ‘*Kasaris lang*’.

Herbs, diffuse or ascending. Leaflets linear-lanceolate. Flowers violet or bluish-purple. Pods winged.

Fl. & Fr.: December–January.

Illus.: Anon. Wealth of India 6: 37, ff. 19-20. 1962.

Distrib.: Frequent as an escape, Nazira.

Millettia Wight & Arn.

Millettia extensa (Benth.) Baker in Hook.f., Fl. Brit. India 2: 109. 1876; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 721. 2000; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980. *Otosema extensa* Benth. in Miq., Pl. Jungh. 249. 1852. *Millettia auriculata* Baker ex Brandis, For. Fl. Ind. 138. 1874.

Climbers, woody. Leaflets 7–9, 9.5–22.5 × 4.5–10.5 cm, obovate-oblong. Flowers yellow, in racemes at ends of axillary branches. Pods brown-tomentose. Seeds dark-brown, rounded, compressed.

Fl. & Fr.: July–March.

Illus.: Chavan & Bedi in J. Bombay Nat. Hist. Soc. 63: 779. t. 2. 1966.

Distrib.: Rare in deciduous forests, Nawegaon.

Mucuna Adans (nom. cons.)

Mucuna pruriens (L.) DC., Prodr. 2: 405. 1825; Baker in Hook.f., Fl. Brit. India 2: 187. 1876; Cooke, Fl. Pres. Bombay 1: 389. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 724. 2000. *Dolichos pruriens* L. in Stickman, Diss. Herb. Amb. 23: 1754. ‘*Khaj-kuilee*’, ‘*Kavach*’.

Herbaceous twiners; branches pubescent. Leaves up to 14 cm long.; leaflets 3, 4.5–14 × 2–9.5 cm, ovate-triangular, rhomboid-ovate, at apex subacute, base cuneate or inequilateral, appressed silky-hairy. Flowers purple-mauve to black, in axillary, pendulous cymes. Pods falcately curved on both ends, densely bristly. Seeds ellipsoid, dark-brown, spotted black.

Fl. & Fr.: August–January.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 207. 1982.

Distrib.: Common along hedges in deciduous forests, Nawegaon, Nagzira.

Notes: Seeds useful for skin diseases, cough and scorpion bites. Locals use the twiner for tying purpose.

Ougeinia Benth.

Ougeinia oojeinensis (Roxb.) Hochr. in *Bull. Soc. Bot. Geneva* 13 & 14: 51. 1909 ('*oogenensis*'); Kothari in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 727. 2000. *Dalbergia oojeinensis* Roxb., *Fl. Ind.* 3: 220. 1832. *Qugeinia dalbergioides* Benth. in *Miq., Pl. Jungh.* 216. 1862; Baker in *Hook.f., Fl. Brit. India* 2: 161. 1876; Cooke, *Fl. Pres. Bombay* 1: 373. 1958 (Repr.). '*Tinsa*', '*Tiwas*'.

Trees, 8–15 m tall; bark blakish Leaflets 5.5–9.5 × 3.5–9.5 cm, terminal broadly elliptic or roundish, glabrous, laterals obliquely ovate, cordate. Flowers in short, compact, fascicled racemes. Pods jointed, flat, reticulately veined.

Fl. & Fr.: February–May.

Illus.: Wight, *Ic. t.* 391. 1840 (*Dalbergia oojeinensis*).

Distrib.: Common throughout in deciduous forests, Nawegaon, Nagzira.

Notes: Flowers and pods are edible. Bark used for fish poison.

Paracalyx Ali

Paracalyx scariosus (Roxb.) Ali in *Univ. Studies Karachi* 5(3): 95. 1968; Kothari in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 727. 2000. *Cylista scariosa* Roxb., *Pl. Cor.* 1: 64. t. 92. 1798; Baker in *Hook.f., Fl. Brit. India* 2: 219. 1876; Cooke, *Fl. Pres. Bombay* 412. 1958 (Repr.). '*Ran-ghevda*'.

Herbaceous extensive; twiners, branchlets densely pubescent. Leaves trifoliolate; leaflets 3–9 × 2–6 cm, terminal rhomboid, laterals obliquely ovate, velvety pubescent. Flowers yellow, arranged in peduncled racemes. Pods ellipsoid, oblique, flat, pubescent. Seeds solitary, reniform.

Fl. & Fr.: November–April.

Illus.: Talb., *For. Fl. Bombay Pres. & Sind* 1: 415. f. 234. 1909.

Notes: Listed by Anjankar & Bardekar (2000), Nagzira.

Pongamia Vent. (nom.cons.)

Pongamia pinnata (L.) Pierre, *For. Fl. Cochinch.* t. 385. 1899; Kothari in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 728. 2000. *Cytisus pinnatus* L., *Sp. Pl.* 741. 1753 non *Derris pinnata* Lour. *Pongamia glabra* Vent. *Jard. Mal.* t. 28. 1803; Baker in *Hook.f., Fl. Brit. India* 2: 240. 1876; Cooke, *Fl. Pres. Bombay* 1: 429. 1958 (Repr.). '*Karanj*'. (PLATE:F-1)

Trees. Leaflets, 5–9, broadly ovate or elliptic. Flowers white with purple tinge in axillary, drooping racemes. Pods elliptic-oblong, thick, compressed. Seeds reddish-brown, reniform, rugose.

Fl. & Fr.: February–May.

Distrib.: Common throughout along the lake in dense forests, Nawegaon, Nagzira.

Notes: Seeds oil used for skin diseases. Pods over-exploited commercially for bio-diesel.

Pseudarthria Wight & Arn.

Pseudarthria viscida (L.) Wight & Arn., Prodr. 209. 1834; Baker in Hook.f., Fl. Brit. India 1: 154. 1876; Cooke, Fl. Pres. Bombay 1: 366. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 729. 2000. *Hedysarum viscidum* L., Sp. Pl. 747. 1753.

Scandent undershrubs; stem, viscidly-pubescent. Leaflets 3, $2.5\text{--}7.5 \times 1.2\text{--}4.5$ cm, ovate-oblong or ovate-obovoid, hairy, at apex acute, base rounded, ciliate on margins. Flowers reddish-purple, in terminal and axillary racemes. Pods linear-oblong, compressed, beaked. Seeds subreniform, dark-brown.

Fl. & Fr.: August–December.

Distrib.: Frequent in scrub forests, Nawegaon, Nagzira.

Notes: Plant used to cure piles.

Pterocarpus Jacq. (*nom. cons.*)

Pterocarpus marsupium Roxb., Pl. Cor 2: 9, t. 116. 1799; in Hook.f., Fl. Brit. India 2: 239. 1876; Cooke, Fl. Pres. Bombay 1: 427. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 729. 2000. '*Asana*', '*Bibla*'.

Trees, 15–20 m tall; branchlets pubescent. Leaves imparipinnate, 15–20 cm long. Leaflets 5–7, $4\text{--}6 \times 4\text{--}9$ cm, oblong or elliptic-ovate, base rounded, emarginate at apex. Flowers yellow, in terminal panicles. Pods orbicular, flat, winged, 1-seeded.

Fl. & Fr.: December–March.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 431, f. 242. 1909.

Distrib.: Common in deciduous forests, Nawegaon, Nagzira.

Notes: Wood is used for furniture etc. Flowers and seeds are eaten by wild animals. Gum extracted from bark used medicinally for diarrhoea and leaves for boils and skin diseases.

Pueraria DC.

Pueraria tuberosa (Roxb. ex Willd.) DC., in Ann. Sci. Nat. 4: 97. 1825; Baker in Hook.f., Fl. Brit. India 2: 197. 1876; Cooke, Fl. Pres. Bombay 1: 399. 1958 (Repr.);

Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 731. 2000. *Hedysarum tuberosum* Roxb. ex Willd., Sp. Pl. 3: 1197. 1802. 'Khalvel', 'Pithana', 'Bankumra'.

Shrubby, extensive, perennial twiners with tuberous roots. Leaves 3-foliolate, terminal one 8–15 × 6–12 cm, broadly ovate, laterals ovate-oblong, inequilateral. Flowers pale violet, in axillary, terminal racemes. Pods oblong-ellipsoid, turgid, pubescent. Seeds reddish-brown, ellipsoid.

Fl. & Fr.: February–April.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 217. 1982.

Notes: The species has become rare because of its tubers being eaten by wild animals in the area.

Rhynchosia Lour. (*nom. cons.*)

Rhynchosia minima (L.) DC., Prodr. 2: 385. 1825 Baker. in Hook.f., Fl. Brit. India 2: 223. 1876; Cooke, Fl. Pres. Bombay 1: 414. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78: 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 733. 2000.

Herbs; stems twining or trailing. Leaves trifoliolate; leaflets 1.5–2.5 × 1.0–2.2 cm, obovate-rhomboid, lanceolate-rhomboid or nearly orbicular, apiculate at apex, cuneate at base, pubescent beneath. Flowers reddish-yellow, in lax, axillary racemes. Pods falcate, pubescent. Seeds 1–2, globose.

Fl. & Fr.: September–November.

Distrib.: Common along the hedges in moist deciduous forests, Nawegaon, Nagzira.

Sesbania Scop. (*nom. cons.*)

Key to the species

- | | |
|---|-----------------------|
| 1a. Trees, unarmed, 8–10 m tall; flowers creamy white | S. grandiflora |
| 1b. Herbs or undershrubs, armed, 1–2 m tall; flowers yellow | S. bispinosa |

Sesbania bispinosa (Jacq.) W.F. Wight in U.S. Dept. Agr. Bur. Pl. Ind. Bull. 137: 15. 1909; S.K. Malhotra in J. Econ. Tax. Bot. 1: 115. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 735. 2000. *Aeschynomene bispinosa* Jacq., Ic. Pl. Rar. 3: 13. t. 564. 1792. *Sesbania aculeata* (Willd.) Poir. in Lam., Encycl. 7: 128. 1806. (*Sesban aculeatus*) nom. illeg.; Baker in Hook.f., Fl. Brit. India 2: 114. 1876; Cooke, Fl. Pres. Bombay 1: 350. 1958 (Repr.). 'Ransevari'.

Undershrubs, 1–2 m tall. Leaflets 10–25 pairs, 0.5–1.5 × 0.2–0.3 cm, linear-oblong, at apex obtuse or apiculate, base rounded. Flowers 3–6, in axillary, lax racemes. Pods falcate, torulose, beaked.

Fl. & Fr.: September–December.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 197. 1988.

Distrib.: Frequent in moist places, Nagzira.

Sesbania grandiflora (L.) Poir. in Lam., *Encycl.* 7: 127. 1806; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 190. 1872; Cooke, *Fl. Pres. Bombay* 1: 360. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 774. 2000. *Robinia grandiflora* L., *Sp. Pl.* 722. 1753. 'Agasta', 'Agati', 'Hadga'.

Small trees, 8–10 m tall. Leaves 15–30 cm long; leaflets oblong or slightly obovate, glabrous. Flowers creamy white, in axillary racemes. Pods woody, pendulous, beaked. Seeds oblong-ellipsoid, brown.

Fl. & Fr.: November–February.

Illus.: Anon. *Wealth of India* 9: 295, ff. 94-95. 1972.

Distrib.: Frequent along roadside near villages, usually cultivated often found as an escape, Nawegaon.

Notes: Flowers used as vegetable, in headache and for religious purpose.

Smithia Ait. (*nom. cons.*)

Key to the species

- | | |
|--|---------------------|
| 1a. Calyx rigid, veins close, parallel, simple | 2 |
| 1b. Calyx membranous, veins distinctly anastomosing | S. hirsuta |
| 2a. Flowers solitary or in pairs in axils of crowded leaves at branch ends | S. conferta |
| 2b. Flowers in short racemes | S. sensitiva |

Smithia conferta J.E. Sm. in Rees. *Cyclop.* 33: no. 2. 1816; Baker in Hook.f., *Fl. Brit. India* 2: 149. 1876; Cooke, *Fl. Pres. Bombay* 1: 358. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 739. 2000. 'Kasai', 'Nalchi Bhaji'.

Straggling herbs, 50–150 cm tall. Leaflets in 5 pairs, 0.4–1.5 × 0.2–0.5 cm, linear-oblong, bristly on margins. Flowers yellow. Pods 3–6 jointed, joints turgid, papillose.

Fl. & Fr.: August–December.

Distrib.: Common in moist open places, Nawegaon, Nagzira.

Notes: Leaves edible as vegetable.

Smithia hirsuta Dalz. in Hook. *J. Bot. & Kew Gard. Misc.* 3: 135. 1851; Cooke, *Fl. Pres. Bombay* 1: 361. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 740. 2000. *Smithia blanda* Wall. Ex Wight & Wight & Arn. var. *racemosa*; Baker in Hook.f., *Fl. Brit. India* 2: 151. 1876. p.p.

Herbs. Leaflets 6–8, oblanceolate, sparsely hairy beneath, at apex rounded, bristle tipped, base cuneate, oblique, ciliate on margins. Flowers bright yellow. Pods 4–7 jointed; joints reticulately veined.

Fl. & Fr.: September–October.

Notes: Listed by Anjankar & Bardekar (2000), Nagzira.

Smithia sensitiva Ait. Hort. Kew. ed. 1, 3: 496. 1789; Baker in Hook.f., Fl. Brit. India 2: 148. 1876; Cooke, Fl. Pres. Bombay 1: 357. 1958 (Repr.); Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 743. 2000.

Herbs. Leaves pinnate; leaflets 3–10 pairs, linear-oblong, at apex obtuse, bristle pointed, base rounded. Flowers yellow, in axillary racemes. Pods flattened, 3–6-jointed; joints orbicular, reddish-brown.

Fl. & Fr.: August–May.

Spatholobus Hassk.

Spatholobus parviflorus (Roxb. ex DC.) O. Ktze., Rev. Gen. Pl. 1: 205. 1891; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 745. 2000. *Butea parviflora* Roxb. ex DC., Prodr. 2: 415. 1825. *Spatholobus roxburghii* Benth. in Miq., Pl. Jungh. 3: 238. 1852 nom. illeg.; Baker in Hook.f., Fl. Brit. India 2: 193. 1876; Cooke, Fl. Pres. Bombay 1: 394. 1958 (Repr.). ‘*Phalsani*’.

Lianas. Leaflets 4.2–8.5 × 3.5–7.5 cm, obovate-rhomboid or broadly elliptic, glabrous above, thinly silky pubescent beneath. Flowers in terminal and axillary racemes or panicles. Pods brown, stalked, hairy, reticulately veined.

Fl. & Fr.: January–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 185. 1982.

Distrib.: Frequent in moist deciduous forests, Nawegaon.

Notes: Plants eaten by wild animals.

Sphenostylis E. Mey.

Sphenostylis bracteata (Baker) Gillett in Kew Bull. 20: 103. 1966; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 747. 2000. *Dolichos bracteatus* Baker in Hook.f., Fl. Brit. India 2: 210. 1876 non Wall. 1831–32. *Dolichos ghaticus* Sant. & Panthaki in J. Bombay Nat. Hist. Soc. 53: 502. 1955; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 406. 1958 (Repr.). ‘*Bhendri*’, ‘*Thapti-sing*’. (PLATE: Q-2)

Extensive climbers. Leaflets ovate, deltoid, oblique, at apex rounded, base cuneate. Flowers bluish-purple, in racemes. Pods linear, flat, turgid.

Fl. & Fr.: September–October.

Illus.: Kothari *op. cit.* 746.

Distrib.: Rare in moist deciduous forests. Nawegaon, Nagzira.

Notes: This species is endemic to Maharashtra State, vulnerable.

Stylosanthes Sw.

Stylosanthes fruticosa (Retz.) Alst.in Trim., Handb. Fl. Ceylon 6: (Suppl.) 77. 1931; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 747. 2000.

Arachis fruticosa Retz., Obs. Bot. 5: 26. 1788. *Stylosanthes mucronata* Willd. Sp. 3:1166. 1802 nom. Illeg.; Baker in Hook.f., Fl. Brit. India. 2:148. 1876.

Herbs or undershrubs. Leaflets *c.* 2.4 × 0.5 cm, lanceolate, at apex mucronate, base subacute. Flowers yellow, solitary, axillary. Pods oblong.

Fl. & Fr.: September–October.

Illus.: Matthew, Illus Fl. Tamilnadu carnatic 2: t. 224. 1982.

Distrib.: Frequent amidst grasses, escape, Nagzira.

Tephrosia Pers. (*nom. cons*)

Tephrosia purpurea (L.) Pers., Syn. Pl. 2: 329. 1807; Baker in Hook.f., Fl. Brit. India 2: 112. 1876 p.p.; Cooke, Fl. Pres. Bombay 1: 346. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 752. 2000. *Cracca purpurea* L., Sp. Pl. 752. 1753. ‘*Surpunka*’, ‘*Sarp Mukha*’, ‘*Unhali*’.

Herbs or undershrubs, 60–80 cm tall. Leaflets 13–21, 0.5–3.0 × 0.2–0.6 cm, oblanceolate, at apex-obtuse, retuse or mucronate, base cuneate. Flowers bright rosy-purple or violet, in leaf opposed pseudoracemes. Pods linear, slightly curved or falcate. Seeds 5–7, ovoid.

Fl. & Fr.: Almost throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 225. 1982.

Distrib.: Common throughout in plains with herbaceous vegetation, Nawegaon, Nagzira.

Notes: Plants eaten by wild animals. Whole plant useful as a brain tonic and roots for snake bite.

Teramnus P. Br.

Teramnus labialis (L.f.) Spreng., Syst. Veg. 3: 235. 1826; Baker in Hook.f., Fl. Brit. India 2: 184. 1876; Cooke, Fl. Pres. Bombay 1: 387. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 755. 2000. *Glycine labialis* L.f., Suppl. 325. 1781. ‘*Ran-udid*’.

Herbs; stem twining; branchlets hairy. Leaves trifoliolate, 5–6 cm, long; leaflets 1.5–9 × 0.8–5.4 cm, ovate-elliptic or oblong, appressed-hairy beneath. Flowers violet-purple, in axillary and terminal racemes. Pods linear, flat, slightly curved, turgid, beaked. Seeds 8–12, oblong.

Fl. & Fr.: September–December.

Distrib.: Common throughout over hedges and undershrubs in the forests, Nawegaon, Nagzira.

Notes: Leaves are eaten by wild animals.

Uraria Desv.

Key to the species

- | | |
|--|-------------------------|
| 1a. Leaves 5–7 foliolate; leaflets usually linear-lanceolate | U. picta |
| 1b. Leaves 1 and 3-foliolate, mixed; leaflets not as above | 2 |
| 2a. Leaf at apex mucronate; flowers pink | U. lagopus |
| 2b. Leaf at apex obtuse; flowers purple | 3 |
| 3a. Pods 1–2 jointed, joints not hispid | U. lagopodioides |
| 3b. Pods 4–8-jointed, joints hispid | U. rufescens |

Uraria lagopus DC., in Ann. Sci. Nat. 4: 100. Jan. 1825 & Prodr. 2: 324. 1825; Baker in Hook.f., Fl. Brit. India 2: 287. 1876; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 757. 2000. *Uraria alopecuroides* (Roxb.) Wight, Ic. t. 290. 1840.

Herbs, suffruticose; stem clothed with hooked hairs. Leaflets *c.* 7 × 5 cm, ovate, elliptic or oblong, base rounded or subcordate. Flowers in axillary and terminal, dense racemes. Pods 1–2 jointed, hidden in bracts. Seeds greenish-yellow.

Fl. & Fr.: July–September.

Illus.: Wight, Ic. t. 290. 1840 (*Uraria alopecuroides* (Roxb.) Wight).

Distrib.: Rare, as an undergrowth in scrub forests, Nagzira.

Uraria lagopodioides (L.) Desv. Mem. Soc. Linn. Paris 4: 309. 1826; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 757. 2000. *Hedysarum lagopodioides* L., Sp. Pl. 1198. 1753. *Uraria lagopoides* (Burm.f.) DC. Prodr. 2: 324. 1825; Baker in Hook.f., Fl. Brit. India 2: 156. 1876. ‘*Dowala*’.

Herbs, suberect; branches many, slender. Leaves 1–3 foliolate; leaflets 2.5–6.5 × 3.5–4.5 cm, orbicular-oblong, obovate, base rounded, tomentose beneath. Flowers in short, dense, cylindric spikes. Pods brown.

Fl. & Fr.: August–September.

Illus.: Matthew, Illus. Fl. Palni Hills t. 213. 1996.

Distrib.: Rare, as undergrowth in deciduous forests and open plains, Nawegaon, Nagzira.

Uraria picta (Jacq.) Desv. ex DC., Prodr. 2: 324. 1825; Baker in Hook.f., Fl. Brit. India 2: 155. 1876; Cooke, Fl. Pres. Bombay 1: 367. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 758. 2000. *Hedysarum pictum* Jacq. Coll. Bot. 2: 262. 1788. ‘*Pithvan*’.

Undershrubs, 1–2 m tall; stems covered with hooked hairs. Leaves imparipinnate; upper leaflets 5–7, 3.5–22 × 1.3–2.6 cm, acute at apex, base rounded. Flowers purple or white, in close fascicles and racemes. Pods 3–6 jointed, glabrous, placed one above the other. Seeds yellowish or reddish-brown, reniform.

Fl. & Fr.: August–September.

Distrib.: Frequent in dense, scrub forests, Nawegaon, Nagzira.

Notes: Fruits are used as an antiseptic.

Uraria rufescens (DC.) Schindl. in Feddes, Rep. 21: 14. 1925; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 758. 2000; *Desmodium refescens* DC. in Ann. Sci. Nat. Hist. Paris 4: 101. 1825. *Uraia hamosa* Wall. ex Brit. Wight & Arn. Prodr. 222. 1834; Baker in Hook.f., Fl. Brit. India 2: 156. 1876.

Undershrubs, 0.5–1.0 m tall; stem straggling, pubescent. Leaves 1 & 3-foliolate mixed; leaflets 4–9, 2.5–7.5 × 1–5 cm, ovate or elliptic, oblong, pubescent beneath, obtuse at apex, truncate or obtuse at base. Flowers bright purple, in terminal and axillary paniculate racemes. turgid, joints 4–8, annular, hairy. Seeds yellowish-brown, globose or subreniform.

Fl. & Fr.: September–February.

Illus.: Matthew, Ilus. Fl. Palni Hills t. 214. 1996.

Distrib.: As an undergrowth, in dense forests, frequent, Nawegaon, Nagzira.

Vigna Savi

Key to the species

- | | |
|---|---------------------|
| 1a. Keel spirally twisted | 2 |
| 1b. Keel not as above | V. vexillata |
| 2a. Leaflets shallowly or deeply lobed; pods usually cylindric; stipules foliaceous | V. trilobata |
| 2b. Leaflets entire or obscurely lobed; pods sub-compressed; stipules not as above | V. umbellata |

Vigna trilobata (L.) Verdc. in Taxon 17: 172. 1968; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 763. 2000. *Dolichos trilobatus* L., Mant. Pl. 101. 1767. *Phaseolus trilobus* Ait., Hort. Kew ed. 1, 3: 30. 1811 non *Dolichos trilobus* L. 1753; Baker in Hook.f., Fl. Brit. India 2: 201. 1876; Cooke, Fl. Pres. Bombay 1: 401. 1958 (Repr.). ‘*Jangli math*’ ‘*Jangli methi*’, ‘*Mukni*’.

Herbs; stems suberect or trailing angular. Leaves trifoliolate; leaflets palmately 3-lobed, middle one larger, lateral ones oblique, 1.5–4.0 × 0.8–4.3 cm, with middle lobe largest, spatulate, laterals spatulate with subacute or obtuse at apex, hairy on both surfaces. Flowers yellow in subcapitate racemes. Pods subterete, turgid, pubescent, slightly curved. Seeds 6–9, blackish-brown.

Fl. & Fr.: August–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 227. 1982.

Distrib.: Common in open plains, Nawegaon.

Notes: Plants eaten by wild animals. Leaves useful as a tonic and fruits in eye complaints.

Vigna umbellata (Thunb.) Ohwi & Ohashi in J. Jap. Bot. 44: 31. 1969; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 764. 2000. *Dolichos umbellatus* Thunb. in Trans. Linn. Soc. London 2: 339. 1794. *Phaseolus calcaratus* Roxb., Fl. Ind. 3: 289. 1832; S. K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 115. 1981; Baker in Hook.f., Fl. Brit. India 2: 203. 1876.

Prostrate herbs, sometime twining. Leaflets 3, 4.5–8.5 × 3.5–7 cm, ovate-elliptic or ovate-rhomboid, hairy, at apex acuminate, base rounded. Flowers yellow, in racemes. Pods compressed, subcylindric. Seeds 14–16, dark-green.

Fl. & Fr.: May–October.

Illus.: Matthew, Illus. Fl. Palni Hills t. 221. 1996.

Distrib.: Rare on hill slopes, Nagzira.

Vigna vexillata (L.) A. Rich in Hist. Fis. Polit. Nat. 1: 11. 191. 1845; Baker in Hook.f., Fl. Brit. India 2: 206. 1876; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 765. 2000. *Phaseolus vexillatus* L., Sp. Pl. 724. 1753. *Vigna capensis* (L.) Walp. in Linnaea 13: 533. 1839; Cooke, Fl. Pres. Bombay 1: 404. 1958 (Repr.).

Herbs, twining or trailing sparsely pubescent, Leaflets 1.8–7.5 × 1.5–5.5 cm, ovate, ovate-rhomboid or lanceolate, hairy. Flowers pinkish or bluish-purple, few in capitates racemes. Pods linear, hairy beaked. Seeds subreniform, compressed, black.

Fl. & Fr.: August–December.

Illus.: Matthew, Illus. Fl. Palni Hills t. 222. 1996.

Distrib.: Frequent along hills in deciduous forests, Nawegaon.

Notes: Tuberous roots and seeds are edible.

Zornia J.F. Gmel.

Zornia gibbosa Span. in Linnaea 15: 192. 1841; Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980; Kothari in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 767. 2000. '*Landgu*'.

Herbs, prostrate, diffuse or suberect, 10–30 cm tall. Leaflets 1–2 × 0.2–1 cm, linear-lanceolate or ovate-lanceolate, black-dotted beneath. Flowers yellow, in terminal and axillary, spicate racemes. Pods concealed by leafy, peltate bracts. Seeds yellowish-brown.

Fl. & Fr.: July–February.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 214. 1988.

Distrib.: Amidst grasses in open places, infrequent, Nawegaon.

Notes: Plants eaten by wild animals.

CAESALPINIACEAE

Key to the genera

- | | |
|---|--------------------|
| 1a. Leaves bi-foliolate; leaflets not distinct, usually united into one | Bauhinia |
| 1b. Leaves 1–2 pinnate; leaflets distinct | 2 |
| 2a. Leaves bipinnate | Caesalpinia |
| 2b. Leaves unipinnate | 3 |
| 3a. Calyx tube elongate more than 1 cm long | Tamarindus |
| 3b. Calyx tube short, less than 0.5 cm long | Cassia |

Bauhinia L.

Key to the species

- | | |
|---|----------------------|
| 1a. Fertile stamens 35 | 2 |
| 1b. Fertile stamens 10 | 4 |
| 2a. Erect trees | 3 |
| 2b. Climbers | B. vahlII |
| 3a. Flowers large, petals purple, pink or white | B. purpurea |
| 3b. Flowers small, petals yellow or yellow with purple streak | B. semla |
| 4a. Calyx spathaceous | B. racemosa |
| 4b. Calyx limb divided into 5-segments | B. malabarica |

Bauhinia malabarica Roxb., Fl. Ind. 2: 321. 1832; Baker in Hook.f., Fl. Brit. India 2: 277. 1878; Cooke, Fl. Pres. Bombay 1: 460. 1958 (Repr.); S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 779. 2000; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981. *Piliostigma malabaricum* (Roxb.) Benth. in Miq., Fl. Jungh. 261. 1852; 'Chamel'.

Trees, 6–10 m tall. Leaves 3–8 × 3.5–8.5 cm, deeply bifid at apex into 2 obtuse lobes, cordate at base. Flowers white-reddish, subsessile, in axillary racemes. Pods stalked, turgid. Seeds 20–30, globose-ovoid.

Fl. & Fr.: September–February.

Illus.: S. Moorthy, *op. cit.* 778.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Bauhinia purpurea L., Sp. Pl. 375. 1753; Baker in Hook.f., Fl. Brit. India 2: 284. 1878; Cooke, Fl. Pres. Bombay 1: 461. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 5. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 780. 2000. 'Raktakanchan'.

Trees, c. 15 m tall. Leaves 3.5–13 × 3.5–15 cm, suborbicular, at apex obtuse, subacute, base cordate. Flowers pink or white, in terminal racemes. Pods flat, pointed at both ends, reddish-brown, obliquely oriented. Seeds 12–16, oblong-ellipsoid.

Fl. & Fr.: October–January.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 215. 1988.

Distrib.: Frequent in deciduous forests, Nawegaon, Nagzira.

Notes: Flowers and fruits are edible.

Bauhinia racemosa Lam., Encycl. 1: 390. 1785; Baker in Hook.f., Fl. Brit. India 2: 284. 1878; Cooke, Fl. Pres. Bombay 1: 459. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 780. 2000. 'Apta'.

Trees, 3–5 m tall. Leaves 2.5–5.5 × 3–4.5 cm, at apex obtuse, mucronate, glabrous above, whitish tomentose beneath. Flowers white or yellow in elongate, slender racemes. Pods stalked, flat, turgid. Seeds ovoid.

Fl. & Fr.: April–June.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 229. 1982.

Distrib.: Frequent throughout in dense forest and along roads, Nawegaon, Nagzira.

Notes: Fruits and seeds are edible. A religious plant.

Bauhinia semla Wunderlin in Taxon 25: 362. 1976; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 781. 2000. *Bauhinia retusa* Roxb., Fl. Ind. 3: 322. 1832. Non Poir. 1811 nec Roxb. Ex DC. 1825; Baker in Hook.f., Fl. Brit. India 2: 279. 1878.

Trees. Leaves broader than long, 9-nerved, glabrous, base deeply cordate. Flowers yellow, in terminal panicles. Pods 1.5 × 4 cm, glabrous, flattened, gradually widening to an obtuse tip.

Fl. & Fr.: September–March.

Distrib.: Infrequent in open forests, Nawegaon.

Bauhinia vahlii Wight & Arn., Prodr. 297. 1834; Baker in Hook.f., Fl. Brit. India 2: 279. 1878; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 781. 2000.(PLATE:L-3)

Lianas; barnchlets terminating in pair of opposite revolute tendrils. Leaves large, deeply 2-lobed, base cordate. Flowers white, in terminal corymbs. Pods woody, flat, velvety.

Fl. & Fr.: April–June.

Illus.: de Wit in Reinwardtia 3:478, f. 18.1956.

Distrib.: Common in moist deciduous forests, Nawegaon, Nagzira.

Notes: Pods used as vegetable and bark for fibre.

Caesalpinia L.

Key to the species

- 1a. Pods bristly or prickly
- 1b. Pods smooth

C. bonduc

2

- 2a. Leaflets 2–3 pairs
2b. Leaflets 8–10 pairs

C. crista
C. decapetala

Caesalpinia bonduc (L.) Roxb., Fl. Ind. 2: 362. 1832 *p.p. excel.* Pl. descr. emend. Dandy & Excell in J. Bot. 76: 179. 1938; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 782. 2000. *Guilandina bonduc* L., Sp. Pl. 381. 1753. *Caesalpinia bonducella* (L.) Fleming in Asiat. Res. 11: 159. 1810 *nom. illeg.*; Baker in Hook.f., Fl. Brit. India 2: 254. 1878; Cooke, Fl. Pres. Bombay 1: 437. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot., Surv. India 22: 6. 1980. ‘*Sogargota*’, ‘*Gaja*’.

Shrubs; stems and branchlets straggling, armed with hooked & straight prickles. Leaves 15–40 cm, long; petioles armed with prickles; pinnae 6–8 pairs; leaflets 1.5–2 × 1–1.2 cm, elliptic-oblong, truncate or rounded at base. Flowers yellow, in terminal and supra-axillary racemes, dense at top and lax at bottom. Pods ellipsoid, dehiscent, beaked. Seeds 1–2, globose to subglobose, smooth, lead coloured.

Fl. & Fr.: August–February.

Illus.: Matthew, Fl. Tamilnadu Carnatic 2: t. 230. 1982.

Distrib.: Frequent in dense scrub forests and on hedges, Nawegaon, Nagzira.

Notes: Seeds used medicinally for fever.

Caesalpinia crista L., Sp. Pl. 380. 1753 (*p.p. excl. Syn. Pluk. Et Breyn.*) emend. Dandy & Excell in J. Bot. 76: 179. 1938; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 783. 2000. *Caesalpinia nuga* (L.) Ait.f. Hort. Kew. ed. 2, 3: 32. 1811; Baker Hook.f., Fl. Brit. India 2: 255. 1878; Cooke, Fl. Pres. Bombay 1: 438. 1958 (Repr.).

Extensive, armed climbers. Leaflets 3–5 × 2–2.6 cm, ovate or elliptic, glabrous above. Flowers yellow, in terminal racemes. Pods obliquely ellipsoid, beaked. Seeds ovoid.

Fl. & Fr.: December–February.

Illus.: Wight, Ic. t. 36. 1838 (*Caesalpinia paniculata*).

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Pods useful for piles and seeds for fever and stomach disorder.

Caesalpinia decapetala (Roth) Alst. in Trim. Hand. Fl. Ceylon (Suppl.) 6: 89. 1931; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 783. 2000. *Reichardia decapetala* Roth, Nov. Pl. Sp. 212. 1821. *Caesalpinia sepiaria* Roxb., Fl. Ind. 2: 360. 1832; Baker in Hook.f., Fl. Brit. India 2: 255. 1878; Cooke, Fl. Pres. Bombay 1: 439. 1958 (Repr.). ‘*Chilhar*’.

Scandent shrubs. Petioles armed with recurved, hooked prickles, pinnae c. 7 pairs; leaflets 1–2.2 × 0.5–0.9 cm, oblong. Flowers yellow, in simple racemes. Pods ovoid-oblong, flat, turgid. Seeds ellipsoid, greenish.

Fl. & Fr.: February–May.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 219. 1988.

Cassia L.

Key to the species

- | | |
|---|------------------------|
| 1a. Pods 30–60 cm long, terete | C. fistula |
| 1b. Pods less than 30 cm long, more or less flattened | 2 |
| 2a. Fertile stamens 5; staminodes absent | C. absus |
| 2b. Fertile stamens more than 5; staminodes present | 3 |
| 3a. Fertile stamens 7 | 4 |
| 3b. Fertile stamens 10 | C. mimosoides |
| 4a. Glands inserted beneath the leaflets | C. occidentalis |
| 4b. Glands inserted between one or more pairs of leaflets | 5 |
| 5a. Plants foetid; stalk of the pod 0.8–1 cm | C. tora |
| 5b. Plants not foetid; stalk of the pod 1–2.2 cm | C. obtusifolia |

Cassia absus L., Sp. Pl. 376. 1753; Baker in Hook.f., Fl. Brit. India 2: 265. 1878; Cooke, Fl. Pres. Bombay 1: 451. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78 (3): 479. 1981; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 785. 2000. ‘*Chankan*’, ‘*Chimar*’.

Herbs, 10–35 cm tall, glandular-pubescent. Leaflets 0.8–2.5 × 0.5–1.2 cm, obliquely elliptic or obovate. Flowers reddish-yellow, few in terminal or leaf opposed, racemes. Pods flat, setose hairy. Seeds 4–6, compressed, broadly ovoid, black, shining.

Fl. & Fr.: August–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 231. 1982.

Distrib.: Frequent along the open grass lands, Nawegaon, Nagzira.

Notes: Leaves are used against burns and skin diseases. Pods are edible.

Cassia fistula L., Sp. Pl. 377. 1753; Baker in Hook.f., Fl. Brit. India 2: 261. 1878; Cooke, Fl. Pres. Bombay 1: 444. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 479. 1981; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 786. 2000. ‘*Bahva*’, ‘*Amaltas*’.(PLATE:D-2)

Trees, 5–10 m high. Leaves 20–30 cm long; leaflets 4–8 pairs, 3–12 × 2–6 cm, ovate or ovate oblong, acute. Flowers bright yellow, in 24–40 cm long, lax, drooping racemes. Pods 2–2.5 cm across, cylindric, smooth, indehiscent. Seeds numerous, embedded in dark coloured pulp.

Fl. & Fr.: March–June.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 2: t. 224, 1988.

Distrib.: Common throughout in deciduous forest, Nawegaon, Nagzira.

Notes: Leaves are used against skin diseases. Pod pulp and roots are good laxative. Wood used for timber.

Cassia mimosoides L., Sp. Pl. 379. 1753; Baker in Hook.f., Fl. Brit. India 2: 266. 1878; Cooke, Fl. Pres. Bombay 1: 453. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 787. 2000.

Perennial herbs, 20–30 cm tall, diffuse or erect. Leaflets 0.5–1.0 × 0.1–0.2 cm, linear-oblong. Flowers yellow, solitary in the upper axils. Pods linear, appressed hairy. Seeds obliquely obovoid, brown, shining.

Fl. & Fr.: July–December.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 229. 1988.

Distrib.: In moist places near lakes, frequent, Nawegaon.

Cassia obtusifolia L., Sp. Pl. 377. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 447. 1958 (Repr.); S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 789. 2000. *Cassia tora* sensu Baker in Hook.f., Fl. Brit. India 2: 263. 1878 p.p. non L. 1753. ‘*Tarvad*’, ‘*Takla*’.

Herbs, annual. Leaflets 3 pairs, 1.5–2.5 × 0.5–1.5 cm, obovate-oblong, glabrous above, appressedly hairy beneath. Flowers yellow, subsessile in pairs in leaf axils. Pods subterete. Seeds 30–35, rhomboidal.

Fl. & Fr.: September–October.

Distrib.: Frequent as an undergrowth in deciduous forests, Nawegaon.

Cassia occidentalis L., Sp. Pl. 377. 1753; Baker in Hook.f., Fl. Brit. India 2: 262. 1878; Cooke, Fl. Pres. Bombay 1: 445. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 789. 2000. ‘*Tarwad*’, ‘*Takla*’.

Undershrubs. Leaflets 1.5–8.5 × 1.8–3.5 cm, ovate-lanceolate. Flowers yellow, 2–6, in short peduncled, corymbose racemes forming a terminal panicle. Pods transversely septate, distinctly torulose. Seeds 20–30, ovoid.

Fl. & Fr.: August–December.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 232. 1988.

Distrib.: Occasional in scrub forests or plains, Nawegaon.

Notes: Leaves and seeds are edible and useful for skin diseases.

Cassia tora L., Sp. Pl. 376. 1753; Baker in Hook.f., Fl. Brit. India 2: 263. 1878; Cooke, Fl. Pres. Bombay 1: 447. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 791. 2000. ‘*Tarota*’, ‘*Takla*’.

Herbs, 30–60 cm tall. Leaflets 1.5–3.5 × 0.8–2.5 cm, obovate-oblong, glaucous. Flowers yellow, axillary, solitary or in pairs. Pods obliquely septate. Seeds 25–30, rhomboid.

Fl. & Fr.: August–February.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 238. 1988.

Distrib.: Common throughout among grasses and wet places, Nagzira, Nawegaon.

Notes: The leaves, pods and seeds are used medicinally for skin diseases. Leaves and stem are eaten as vegetable.

Cultivated Species:

Bauhinia variegata L., Sp. Pl. 375. 1753; Baker in Hook.f., Fl. Brit. India 2: 284. 1878; Cooke, Fl. Pres. Bombay 1: 462. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 795. 2000. '*Chamol*', '*Kanchan*', '*Kachnar*'.

Trees, c. 15 m tall; young parts grey-puberulous. Leaves 6–14 cm across, broadly ovate, often broader than long, divided to 1/3, base cordate, apical lobes broadly rounded. Flowers variegated, white or purplish, few in very short, terminal or axillary racemes or corymbs. Pods nearly smooth, variegated with reddish-brown streaks. Seeds flat, orbicular, brown.

Fl. & Fr.: Throughout the year.

Distrib.: Planted in garden, Nawegaon.

Tamarindus L.

Tamarindus indica L., Sp. Pl. 34. 1753; Baker in Hook.f., Fl. Brit. India 2: 273. 1878; Cooke, Fl. Pres. Bombay 1: 457. 1958 (Repr.); S. K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; S. Moorthy in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 794. 2000. '*Chinch*'.

Trees, 15–20 m tall. Leaves 5–10 cm long; leaflets 10–20 pairs, 1.0–1.5 × 0.3–0.4 cm, linear oblong. Flowers yellow, few in lax racemes at tips of branchlets. Pods subcompressed, thick, slightly curved, brown. Seeds obovoid-oblong, truncate, smooth, shining, brown.

Fl. & Fr.: February–June.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 460-61, ff. 260 & 261. 1909.

Distrib.: As an escape in the outskirts of forests and also found planted near village, Nawegaon, Nagzira.

Notes: Leaves and fruits are edible, eaten by wild animals. Its wood also used for agricultural implements.

MIMOSACEAE

Key to the genera

1a. Lianas	Entada
1b. Herbs, shrubs or trees	2
2a. Stamens monadelphous	Albizia
2b. Stamens free	3

3a. Stamens indefinite	Acacia
3b. Stamens definite, 5–10	4
4a. Flowers in spikes	Prosopis
4b. Flowers in globose heads	5
5a. Trees	Xtlia
5b. Herbs or undershrubs	Mimosa

Acacia Willd.

Key to the species

1a. Pods moniliform or more or less constricted between seeds	A. nilotica
1b. Pods not as above	2
2a. Flowers in globose heads	3
2b. Flowers spicate	8
3a. Erect trees or shrubs	4
3b. Climbing shrubs	5
4a. Flowers white; pods ligulate	A. tomentosa
4b. Flowers yellow; pods not ligulate	A. leucophloea
5a. Leaflets 40–50 pairs	A. pennata
5b. Leaflets 12–30 pairs	6
6a. Main rachis armed with hooked prickles, glabrous	7
6b. Main rachis not armed with hooked prickles, pubescent	A. caesia
7a. Pods thick, fleshy, wrinkled when dry	A. concinna
7b. Pods thin, flat, coriaceous	A. torta
8a. Pinnae 10–40 pairs	9
8b. Pinnae 1–6 pairs	A. ferruginea
9a. Calyx, petals and rachis glabrous	A. chundra
9b. Calyx, petals and rachis pubescent	A. catechu

Acacia caesia (L.) Willd., Sp. Pl. 4: 1090. 1806; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 807. 2000. *Mimosa caesia* L. Sp. Pl. 522. 1753 p.p., *Acacia intsia* (L.) Willd. var. *caesia* (L.) Wight & Arn. ex. Baker in Hook.f., Fl. Brit. India. 2: 297. 1878.

Climbing shrubs; young branches, petioles and inflorescence densely pubescent. Pinnae 6–8 pairs,; leaflets 7–15 pairs, c. 1 × 0.3 cm, pilose; petiolar gland solitary, columnar. Heads 30–40-flowered, bracteates. Pods elongated.

Fl. & Fr.: April–September.

Distrib.: Occasional on hill slopes, Nagzira.

Acacia catechu (L.f.) Willd., Sp. Pl. 4: 1079. 1806; Baker in Hook.f., Fl. Brit. India 2: 295. 1878 ; Cooke, Fl. Pres. Bombay 1: 476. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 808. 2000. *Mimosa catechu* L.f., Suppl. Pl. 439. 1781. ‘*Khair*’, ‘*Babhal*’, ‘*Son-Khair*’.

Trees, 5–10 m high, armed with thorns. Leaves bipinnate, 10–18 cm long, pinnae 10–30 pairs; leaflets 30–50 pairs, c. 0.5 × 0.1 cm, linear, subacute at apex, truncate

at base. Flowers pale yellow or greenish-white, in spikes. Pods flat, brown, stalked, beaked, reticulately veined. Seeds 3–10.

Fl. & Fr.: July–February.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 83. 1966.

Distrib.: Common in dense scrub forests, Nawegaon, Nagzira.

Notes: Stem bark is medicinally important, used in ‘Pan’ and to cure Asthma, bronchitis, mouth sore and chest pains.

Acacia chundra (Roxb. ex Rottl.) Willd., *Sp. Pl.* 4: 1078. 1806; S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 6. 1980 et in *J. Bombay Nat. Hist. Soc.* 78(3): 480. 1981; A.N. Londhe in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 808. 2000. *Acacia sundra* (Roxb., ex Rottl.) DC. *Prodr.* 2:458. 1825; Baker in Hook.f., *Fl. Brit. India* 2:295.1878 ‘(*sundra*)’. *Acacia catechu* var. *sundra* (Roxb.) Prain in *J. Asiat. Soc. Bengal* 66: 508. 1897; Cooke, *Fl. Pres. Bombay* 1: 477. 1958 (Repr.). ‘*Khair*’, ‘*Lal-khair*’.

Trees, 5–8 m tall; bark dark coloured. Leaflets 20–50 pairs, 0.1–0.4 cm long, elliptic, subacute at apex, oblique at base; stipular thorns hooked. Flowers white, in axillary spikes. Pods flat, brownish, beaked at apex. Seeds 4–6, ovoid.

Fl. & Fr.: August–November.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 85.1966.

Distrib.: Common in dense scrub forests, Nawegaon, Nagzira.

Notes: This species is often confused with *Acacia catechu* Willd. from which it differs in having pubescent rachis, calyx and corolla.

Acacia concinna (Willd.) DC., *Prodr.* 2: 464. 1825; Baker in Hook.f., *Fl. Brit. India* 2: 296. 1878; Cooke, *Fl. Pres. Bombay* 1: 479. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 809. 2000. *Mimosa concinna* Willd., *Sp. Pl.* 4: 1039. 1806. *Acacia rugata* (Lam.) Voigt, *Hort. Sub. Cal.* 263. 1845; S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 6. 1980. ‘*Shikakai*’

Climbing shrubs; prickly branches grooved, dark brown. Main rachis armed with hooked prickles. Pinnae 4–8 pairs; leaflets 0.4–1 × 0.1–0.2 cm, linear-oblong. Flowers red. Pods linear-oblong. Seeds 6–10.

Fl. & Fr.: Throughout the year.

Illus.: A.N. Londhe *op. cit.* 810.

Distrib.: Occasional on hill slopes, Nawegaon.

Notes: Pods of the species are economically important and used in hair shampoo and cosmetics.

Acacia ferruginea DC., *Prodr.* 2: 458. 1825; Baker in Hook.f., *Fl. Brit. India* 2: 295. 1878; Cooke *Fl. Pres. Bombay* 1: 477. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., *Fl. Maharashtra State* 1: 811. 2000. ‘*Kanti*’, ‘*Pandhara-khair*’.

Trees, 5–10 m high, bark rough, rusty brown. Leaves bipinnate, pinnae distant; leaflets 10–25 pairs, $0.5\text{--}1.2 \times 0.1\text{--}0.2$ cm, linear-oblong. Flowers creamy-white, sessile, densely arranged in spikes. Pods brown, reticulately veined, beaked.

Fl. & Fr.: May–October.

Acacia leucophloea (Roxb.) Willd., Sp. Pl. 4: 1083. 1806; Baker in Hook.f., Fl. Brit. India 2: 294. 1878; Cooke, Fl. Pres. Bombay 1: 475. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 811. 2000. *Mimosa leucophloea* Roxb., Pl. Cor. 2: 27, t. 150. 1800. ‘*Hivar*’.

Trees, 3–8 m high. Pinnae 4–12 pairs; leaflets 10–20 pairs with cup shaped gland between each pair of pinnae. Flowers whitish-yellow, in terminal, paniculate heads. Pods linear-oblong, flat, yellowish-brown, tomentose.

Fl. & Fr.: August–February.

Illus.: Mahesh., Illus. Fl. Delhi f. 80. 1966.

Distrib.: Common throughout in scrub forests, Nawegaon, Nagzira.

Notes: Wood is used as timber.

Acacia nilotica (L.) Willd. ex Del. ssp. **indica** (Benth.) Brenan in Kew Bull. 12: 84. 1957; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 813. 2000. *Acacia arabica* (Lam.) Willd. var. *indica* Benth. in Hook London J. Bot. 1: 500. 1842. *Acacia arabica* auct. non (Lam.) Willd. 1806; Baker in Hook.f., Fl. Brit. India 2: 293. 1878; Cooke, Fl. Pres. Bombay 1: 472. 1958 (Repr.). ‘*Babul*’.

Trees, 6–10 m tall; bark longitudinally cracked. Pinnae 4–9 pairs; leaflets 10–25 pairs, $0.4\text{--}0.6 \times 0.2$ cm, linear-oblong, rounded at apex, oblique at base; stipular thorns straight, white. Flowers yellow, in globose heads. Pods green, flat, moniliform, beaked at apex, shortly stalked. Seeds 2–12 per pod.

Fl. & Fr.: August–April.

Illus.: Talbot, for Fl. Bombay Pres. & Sind 1: 480. f. 272. 1909.

Distrib.: Frequent along edges of scrub forests, Nagzira.

Notes: Gum is edible and used for burns, throat infection and as masticatory. Wood used as fuel.

Acacia pennata (L.) Willd., Sp. Pl. 4: 1090. 1806; Baker in Hook.f., Fl. Brit. India 2: 297. 1878; Cooke, Fl. Pres. Bombay 1: 480. 1958; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 813. 2000; *Mimosa pennata* L., Sp. Pl. 522. 1753. ‘*Chilar*’, ‘*Ghattad-khair*’, ‘*Shembi*’, ‘*Shembati*’.

Scandent shrubs, armed with hooked spines on stem. Pinnae 5–11 pairs; leaflets *c.* 1×0.1 cm, linear, obtuse. Flowers white or pale yellow. Pods stalked, strap-shaped, brown. Seeds 6–10.

Fl. & Fr.: August–March.

Distrib.: Frequent in deciduous forests, Nawegaon, Nagzira.

Notes: Leaves are useful to check the bleeding of gums and for sore throat. Whole plant useful for fencing.

Acacia tomentosa Willd., Sp. Pl. 4: 1087. 1806; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 2: 294. 1878; Cooke, Fl. Pres. Bombay 1: 475. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 814. 2000. ‘*Anjan*’.

Trees; bark grey-black. Leaves crowded on axillary branches; pinnae c. 10 pairs; leaflets 8–16 pairs, 0.2–0.4 × 0.15–0.2 cm. Flowers deep red, in axillary, pedunculate heads. Pods ligulate, thin, flat, slightly falcate, dehiscent along both sutures, shortly stalked. Seeds oval, flat, brownish-green, aerolate.

Fl. & Fr.: December–March.

Distrib.: Rare in scrub forests, Nawegaon.

Acacia torta (Roxb.) Craib in Kew Bull. Misc. Inf. 1915.: 410. 1915; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 814. 2000. *Acacia intsia* auct. non Willd. 1806; Baker in Hook.f., Fl. Brit. India 2: 297. 1878; Cooke, Fl. Pres. Bombay 1: 479. 1958 (Repr.). *Mimosa torta* Roxb., Fl. Ind. 2: 566. 1832. ‘*Chilar*’.

Climbing shrubs; branches grooved, yellow or dark brown. Leaves bipinnately compound, pinnae 4–10 pairs; leaflets 9–25 pairs, c. 0.4 × 0.1 cm, linear-oblong. Flowers yellowish-white. Pods linear, dark brown to pale brown, flat, apiculate.

Fl. & Fr.: February–October.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 493, f. 279. 1909 (*Acacia intsia*).

Distrib.: Frequent in scrub forests, Nawegaon.

Albizia Durazz.

Key to the species

- | | |
|---|------------------------|
| 1a. Stamens 4 times as long as corolla | A. chinensis |
| 1b. Stamens twice or less than 2 times as long as corolla | 2 |
| 2a. Heads in umbels; flowers pedicelled | A. lebbeck |
| 2b. Heads in panicles; flowers sessile | 3 |
| 3a. Filaments connate at base into a tube, as long as corolla tube; seeds pale brown | A. procera |
| 3b. Filaments connate at base into a tube, half as long as corolla tube; seeds yellow | A. odoratissima |

Albizia chinensis (Osborne) Merr. in Amer. J. Bot. 3: 575. 1916; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 815. 2000. *Mimosa chinensis* Osb., Deg. Ostind. Resa 233. 1757. *Albizia stipulata* (Roxb.) Boiv. Encycl. 19, Aicle 2: 33. 1934; Baker in Hook.f., Fl. Brit. India 2: 300. 1878; Cooke, Fl. Pres. Bombay 1: 483. 1958 (Repr.). ‘*Phalara*’, ‘*Pharadi*’, ‘*Udal*’.

Medium sized trees, 12–15 m tall; young branches, rachis and inflorescence yellow pubescent. Leaves bipinnate, large, sessile; glands on petiole; leaflets 10–30 pairs, $1.1\text{--}2.5 \times 0.2\text{--}0.3$ cm, linear-oblong. Flowers yellowish-white, in heads. Pods oblong, pale brown, flat, reticulately veined, glabrous.

Fl. & Fr.: April–November.

Distrib.: Frequent on hill slopes, Nagzira.

Albizia lebbeck (L.) Benth. in Hook. London J. Bot. 3: 87. 1844; Baker in Hook.f., Fl. Brit. India 2: 298. 1878; Cooke, Fl. Pres. Bombay 1: 481. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 816. 2000. *Mimosa lebbeck* L., Sp. Pl. 516. 1753. '*Kalasiris*', '*Siras*'.

Trees, 15–20 m tall. Leaves bipinnately compound; pinnae 2–3 pairs; leaflets 4–8 pairs, $1.5\text{--}5 \times 1.2\text{--}2.5$ cm, basal elliptic-oblong, terminal ovate-oblong. Flowers greenish-yellow, in heads, fragrant. Pods pale yellow. Seeds 4–12.

Fl. & Fr.: March–June.

Distrib.: Common in deciduous forests, also planted on roadsides, Nawegaon, Nagzira.

Notes: Wood is useful for furniture and fuel. Roots and seeds useful to cure leprosy.

Albizia odoratissima (L.f.) Benth. in Hook., London J. Bot. 3: 88. 1844; Baker in Hook.f., Fl. Brit. India 2: 298. 1878; Cooke, Fl. Pres. Bombay 1: 482. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 817. 2000. *Mimosa odoratissima* L.f., SupPl. Pl. 437. 1781. '*Chichva*'.

Medium sized trees, 5–10 m tall. Leaves abruptly 2-pinante; leaflets 7–15 pairs, obliquely oblong, at apex rounded. Flowers white, in panicles. Pods flat, yellow, stalked. Seeds 3–8, ovoid, compressed, yellowish brown.

Fl. & Fr.: April–October.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 1: 498, f. 283. 1909.

Distrib.: Frequent, in dense forests, Nawegaon, Nagzira.

Albizia procera (Roxb.) Benth. in Hook., London J. Bot. 3: 89. 1844; Baker in Hook.f., Fl. Brit. India 2: 299. 1878; Cooke, Fl. Pres. Bombay 1: 482. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 817. 2000. *Mimosa procera* Roxb., Pl. Cor. 2: 12, t. 121. 1799. '*Safed-siras*', '*Kinhi*'.

Trees, 12–20 m tall. Leaves 2-pinnate; leaflets 6–12 pairs, $2\text{--}4 \times 1.5\text{--}2$ cm, ovate-oblong or elliptic-oblong. Flowers greenish-yellow. Pods oblong, flat, green or brown. Seeds spherical, compressed, 5–10.

Fl. & Fr.: May–November.

Distrib.: Common in dense forests. Nawegaon, Nagzira.

Notes: Seeds useful for body pain and bark powder for tooth-ache.

Entada Adans. (*nom. cons.*)

Entada rheedei Spreng. Syst. Veg. 2: 325. 1825; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 819. 2000. *Entada scandens* auct. non Benth. 1841; Baker in Hook.f., Fl. Brit. India 2: 287. 1878; Cooke, Fl. Pres. Bombay 1: 465. 1958 (Repr.). '*Garambi*'.

Lianas, c. 30 m long. Leaves bipinnate; pinnae 2 pairs; leaflets 4 pairs, 2–5 × 1.5–2.5 cm, ovate-obovate, at apex obtuse, base subacute. Flowers cream coloured, polygamous, in pendulous spikes. Pods 50–70 × c. 8 cm, woody, segmented. Seeds 6–15, orbicular-oblong, compressed, hard.

Fl. & Fr.: March–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 243. 1982.

Notes: In Nagzira this species has become rare and threatened due to over exploitation.

Mimosa L.

Mimosa pudica L., Sp. Pl. 518. 1753; Baker in Hook.f., Fl. Brit. India 2: 291. 1878; Cooke, Fl. Pres. Bombay 1: 470. 1958 (Repr.); A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 822. 2000. '*Lajalu*', '*Lajari*'.

Herbs, woody, diffuse, prickly. Leaflets sessile, 12–20 pairs, coriaceous, sensitive, acute. Flowers pink, in globose heads. Pods flat, sutures clothed with yellowish bristles. Seeds 3–5.

Fl. & Fr.: September–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 246. 1982.

Distrib.: Common in open moist places, Nawegaon.

Notes: Leaves useful medicinally for hydrocele.

Prosopis L.

Prosopis juliflora (Swartz) DC., Prodr. 2: 447. 1825; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 117. 1981; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 824. 2000. *Mimosa juliflora* Swartz., Prodr. 85. 1788.

Scandent shrubs or small trees. Leaves compound; pinnae 1–3 pairs; leaflets 18–20 pairs. Flowers light green or pale yellow, in dense, axillary, pendulous spikes. Pods oblong, flat.

Fl. & Fr.: February–May.

Illus.: Mahesh., Illus. Fl. Delhi f. 78. 1966.

Distrib.: Frequent along bank of lakes, Nawegaon.

Xylia Benth.

Xylia xylocarpa (Roxb.) Taub. in Bot. Centralbl. 67: 395. 1891; A.N. Londhe in N.P. Singh & S. Karthik. Fl. Maharashtra State 1: 824. 2000. *Mimosa xylocarpa* Roxb. Pl. Cor. t. 100. 1798. *Xylia dolabriformis* Benth. in Hook., London J. Bot. 4: 417. 1845; Baker in Hook.f., Fl. Brit. India 2: 286. 1878; Cooke, Fl. Pres. Bombay 1: 485. 1958 (Repr.). ‘Surya’.

Large trees, 15–20 m tall; young parts tomentose. Leaves pinnately compound, pinnae oblong, lanceolate, acute, glabrous; leaflets 3.5–14 × 2.3–6.1 cm, oblong-elliptic, at apex acute. Flowers yellowish or creamy white. Pods oblong, falcate, flat, woody, rusty tomentose, dehiscent. Seeds brown, smooth, oblong.

Fl. & Fr.: March–April.

Distrib.: Frequent throughout in dense forests, Nawegaon, Nagzira.

Notes: The wood is hard, durable and resistant to white ants.

Cultivated Species:

Pithecellobium dulce (Roxb.) Benth. in Hook., London J. Bot. 3: 199. 1844; C.B. Cl. in Hook.f., Fl. Brit. India 2: 413. 1878; Cooke, Fl. Pres. Bombay 1: 485. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; A.N. Londhe in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 828. 2000. *Mimosa dulcis* Roxb., Pl. Cor. 1: 67, t 99. 1798. ‘Vilayati amlī’, ‘Vilayati chinch’.

Moderate sized trees with stipulate spines. Leaves bipinnate; leaflets obovate-oblong, glabrous. Flowers greenish white, in terminal panicles of globose heads. Pods twisted, fleshy, dehiscent. Seeds black, with aril.

Fl. & Fr.: January–June.

Distrib.: Frequent along roadsides. Nagzira.

Notes: A native of Arid regions of Mexico and Central America, planted or naturalized. The white or pink aril is edible.

CRASSULACEAE

Kalanchoe Adans.

Kalanchoe pinnata (Lam.) Pres. Syn. 446. 1805; A. Godbole & S. Das Das in N.P. Singh & S. Karthik., Fl. Maharashtra State 1: 842. 2000. *Cotyledon pinnata* Lam., Encycl. 2: 141. 1786. *Bryophyllum calycinum* Salisb., Parad. London t. 3. 1805; Cooke, Fl. Pres. Bombay 1: 494. 1958 (Repr.). ‘Ghaipat’, ‘Panphuti’.

Succulent herbs, 0.5–1 m tall; branches terete, reddish, speckled with white. Leaves simple or 3–5 lobed, elliptic-oblong, obtuse, rounded or narrowed at base, c. 10 × 5 cm, margins crenate-serrate. Flowers reddish purple, in lax panicles. Fruits enclosed in persistent, papery calyx and corolla. Seeds numerous, minute, oblong, ellipsoid.

Fl. & Fr.: January–February.

Distrib.: Frequent in moist places, Nawegaon.

Notes: A native of tropical Africa usually planted in gardens for ornamental purpose, occasionally naturalized. A medicinal plant, also used for making threads..

COMBRETACEAE

Key to the genera

1a. Petals present	Combretum
1b. Petals absent	2
2a. Trees; leaves alternate	3
2b. Straggling shrubs; leaves opposite	Calycopteris
3a. Inflorescence of spikes or racemes	Terminalia
3b. Inflorescence of heads	Anogeissus

Anogeissus (DC.) Guill. & Perr.

Anogeissus latifolia (Roxb. ex DC.) Wall. ex Guill. & Perr., Fl. Seneg. Tent. 1: 280. 1832; C.B. Cl. in Hook.f., Fl. Brit. India 2:450. 1878; Cooke, Fl. Pres. Bombay 1: 512. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 1. 2001. *Conocarpus latifolia* Roxb. ex DC., Prodr. 3: 17. 1828. 'Dhawda', 'Dhawra'(PLATE: A-5).

Deciduous trees, 15–20 m tall. Leaves 5–11 × 2.5–5.5 cm, ovate to oblong-elliptic. Flowers yellow, sessile, in dense axillary heads. Fruits with persistent calyx stalk, orbicular; wings entire; beaked, clustered. Seeds ellipsoid.

Fl. & Fr.: March–July.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: Leaves are used for tanning and as an antidote to snake-bites for cattle. Gum is edible.

Calycopteris Lam.

Calycopteris floribunda (Roxb.) Poir. in Lam., Encycl. Suppl. 2: 41. 1811; C.B. Cl. in Hook.f., Fl. Brit. India 2: 449. 1878; Cooke, Fl. Pres. Bombay 1: 512. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; Diwakar in N.P. Singh & al., Fl. Maharashtra 2: 2. 2001. *Getonia floribunda* Roxb., Pl. Cor. t. 87. 1798. 'Baguli', 'Ukshi'.

Scandent shrubs; young parts rusty puberulous. Leaves 4.5–8 × 2.5–4 cm, elliptic-oblong or ovate-lanceolate, pubescent and glandular punctate beneath. Flowers yellowish-green, in terminal, drooping panicles. Fruits samaroid, 5-ribbed, with persistent calyx, tomentose.

Fl. & Fr.: February–May.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 21, f. 300. 1911.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Wood and leaves are burnt to prepare ash-manure locally known as 'Rab' for rice fields. Wood also used for furniture.

Combretum Loebl. (*nom. cons.*)

Key to the species

- | | |
|---|-------------------|
| 1a. Flowers with 5-calyx lobes; fruits 5-winged | C. album |
| 1b. Flowers with 4-calyx lobes; fruits 4-winged | C. albidum |

Combretum albidum G. Don in Trans. Linn. Soc. London 15: 429. 1824; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 3. 2001. *Combretum ovalifolium* Roxb., Fl. Ind. 2: 226. 1832; C.B. Cl. in Hook.f., Fl. Brit. India 2: 458. 1878; Cooke, Fl. Pres. Bombay 1: 515. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980. 'Madbel', 'Piwarbhal'.

Lianas; branches divaricate. Leaves 4–8 × 3.5–4.2 cm, decussate, elliptic or ovate. Flowers greenish-yellow, in axillary paniculate spikes. Fruits indehiscent, ovoid, angular, 4-winged. Seeds solitary.

Fl. & Fr.: January–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 263. 1982.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: The branches are used for making walking-sticks.

Combretum album Pers., Syn. Pl. 1: 411. 1805; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 3. 2001. *Combretum decandrum* Roxb., Pl. Cor. 1: 43, t. 59. 1796 non Jacq. 1760; C.B. Cl. in Hook.f., Fl. Brit. India 2: 452. 1878; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980. 'Punk'.

Large, scandent shrubs; bark grayish-white, corky. Leaves oblong. Flowers white, in terminal panicles, with large conspicuous bracts turning creamy-white. Fruits indehiscent, oblong, 5-winged.

Fl. & Fr.: January–May.

Distrib.: Occasional in dense forests, Nawegaon.

Notes: Stem used for making baskets.

Terminalia L. (*nom. cons.*)

Key to the species

- | | |
|--|---------------------|
| 1a. Drupes winged; spikes panicled | 2 |
| 1b. Drupes not winged; spikes simple or sparsely branched | 3 |
| 2a. Wings of fruits hard, lines on wings curved upwards | T. cuneata |
| 2b. Wings of fruits papery, lines on wings straight | T. elliptica |
| 3a. Leaves clustered at apices of branches, eglandular | T. bellirica |
| 3b. Leaves not clustered at apices of branches, frequently glandular on petiole or at base of midrib | T. chebula |

Terminalia bellirica (Gaertn.) Roxb., PL. Cor. 2: 54, t. 198. 1805; C.B. Cl. in Hook.f., Fl. Brit. India 2: 445. 1878; Cooke, Fl. Pres. Bombay 1: 508. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 4. 2001. *Myrobalanus bellirica* Gaertn., Fruct. 2: 90, t. 97. 1791. '*Behda*'. (PLATE:C-5)

Large trees, 8–12 m tall; bark grey ash coloured, young parts rufous pubescent. Leaves 7–15 × 4–7 cm, obovate or broadly elliptic, tomentose. Flowers yellowish-brown, in axillary spikes. Drupes subglobose, softly tomentose, brown.

Fl. & Fr.: February–June.

Distrib.: Common throughout in dense forests, Nawegaon, Nagzira.

Notes: Fruits medicinally used as a component of Ayurvedic '*Triphala*' churna. Fruits are eaten by wild animals. Wood used as timber.

Terminalia chebula Retz., Obs. Bot. 5: 31. 1788; C.B. Cl. in Hook.f., Fl. Brit. India 2: 446. 1878; Cooke, Fl. Pres. Bombay 1: 509. 1958 (Repr.); Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 4. 2001. '*Hirda*', '*Hirad*'.

Trees, 6–10 m tall. Leaves 5–12 × 4.5–10 cm, elliptic-oblong, glabrous. Flowers creamy-yellow, in simple spikes. Drupes ellipsoid or ovoid, young ones green, with yellow spots, 5-ribbed when dry.

Fl. & Fr.: February–May.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: The dried fruit known as Chebulic myrobalan, yields a valuable tanning material and yellow dye. The fruits are also useful medicinally.

Terminalia cuneata Roth, Nov. Pl. Sp. 379. 1821; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 5. 2001. *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn., Prodr. 314. 1834; C.B. Cl. in Hook.f., Fl. Brit. India 2: 447. 1878; Cooke, Fl. Pres. Bombay 1: 509. 1958 (Repr.). '*Arjun sadada*', '*Kahu*', '*Sadada*'.

Trees, 10–25 m tall; bark greenish white. Leaves elliptic-oblong, leathery, 4–11 × 2.5–9 cm, at apex obtuse, base rounded or cordate. Flowers yellowish in paniculate cymes. Drupes ovoid or obovoid, brownish, drooping.

Fl. & Fr.: February–June.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 17, f. 296. 1911 (*Terminalia arjuna*).

Distrib.: Common near moist places in the forests, Nawegaon, Nagzira.

Notes: The powder of bark and leaves is used for healing burns and wounds by local people.

Terminalia elliptica Willd., Sp. Pl. 4: 969. 1806; Diwakar in N.P. Singh & al., Fl. Maharashtra State 1: 5. 2000. *Terminalia tomentosa* (Roxb. ex DC.) Wight & Arn., Prodr. 314. 1834 non Mart. 1829; C.B. Cl. in Hook.f., Fl. Brit. India 2: 447. 1878; Cooke, Fl. Pres. Bombay 1: 510. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull.

Bot. Surv. India 22: 6. 1980; et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981. '*Ain*', '*Asna*', '*Saja*'.

Trees, 10–20 m tall; bark rough blackish, deeply cracked. Leaves 5–15 × 2.5–6.5 cm, elliptic-lanceolate or elliptic-oblong, tomentose when young. Flowers yellowish-brown or greenish-yellow, in terminal panicles. Drupes obovoid-oblong or globose, dark brown or reddish, winged.

Fl. & Fr.: April–October.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: The bark is used medicinally as diuretic and fruits are used for dyeing and tanning.

MYRTACEAE

Key to the genera

- 1a. Calyx closed entirely in buds, bursting irregularly; fruits many-seeded **Psidium**
 1b. Calyx open in buds; fruits 1–2 seeded **Syzygium**

Psidium L.

Psidium guajava L., Sp. Pl. 470. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 529. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 8. 2001. '*Jamb*', '*Peru*'.

Shrubs, 3–5 m tall. Leaves oblong-elliptic, pubescent on both surfaces, at apex acute, obtuse or rounded, base rounded. Flowers white, axillary, solitary. Berries ovoid, pulpy.

Fl. & Fr.: November–June.

Distrib.: Usually cultivated. Often found as an escape or naturalized. Nawegaon.

Notes: A native of Tropical America, cultivated for its edible fruits.

Syzygium Gaertn. (*nom. cons.*)

Syzygium cumini (L.) Skeels in U.S. Dept. Agric. Bur. Pl. Industr. Bull. 248. 25. 1912; B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 10. 2001. *Myrtus cumini* L., Sp. Pl. 471. 1753. *Eugenia jambolana* Lam., Encycl. 3: 198. 1789; Duthie in Hook.f., Fl. Brit. India 2: 499. 1879; Cooke, Fl. Pres. Bombay 1: 523. 1958 (Repr.). '*Jambhal*'.

Trees, 9–15 m tall; bark grey brown. Leaves 4–12 × 2.2–3.5 cm, elliptic-oblong or ovate, at apex acute to acuminate or subobtuse, base narrowed, pellucid punctate. Flowers white, sessile or shortly pedicelled, in paniculate cymes. Fruits oblong or ovoid, purple, fleshy, shining.

Fl. & Fr.: March–July.

Distrib.: Frequent in dense forests, Nagzira.

Note: Fruits are eaten by wild animals.

LECYTHIDACEAE

Careya Roxb. (*nom. cons.*)

Careya arborea Roxb., Pl. Cor. 3: 14, t. 218. 1819; C.B. Cl. in Hook.f., Fl. Brit. India : 511. 1879; Cooke, Fl. Pres. Bombay 1: 528. 1958 (Repr.); S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 22. 2001. '*Kumbhi*'.

Trees, 8–16 m tall, deciduous. Leaves 10.5–15 × 7–10 cm, obovate or oblong-obovate, acuminate at apex, tapering at base, margins crenate-denticulate. Flowers yellowish-white, fleshy, sessile, in terminal spikes. Fruits globose.

Fl. & Fr.: January–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 274. 1982.

Distrib.: In moist deciduous forests, infrequent, Nawegaon, Nagzira.

Notes: Barks, dry calyx (Vakumbha) and fruits used medicinally for stomach disorders. Bark also used for tanning and dyeing, leaves for bidis. Seeds are edible (Kothari & S. Moorthy, 1993).

BARRINGTONIACEAE

Barringtonia J.R. & G. Forst. (*nom. cons.*)

Barringtonia acutangula (L.) Gaertn., Fruct. 2: 97, t. 101. 1791; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 528. 1958 (Repr.); S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra state 2: 23. 2001. *Eugenia acutangula* L., Sp. Pl. 421. 1753.

Trees, 8–12 m tall. Leaves 3.5–16.6 × 1.6–6.1 cm, obovate-oblong, subacute at apex, cuneate at base, margins minutely dentate. Flowers dark scarlet, in drooping spikes. Fruits green, with apical crown of persistent calyx.

Fl. & Fr.: September–October.

Illus.: Matthew, Fl. Tamilnadu Carnatic 2: t. 273. 1982.

Notes: Nagzira, Wood useful for boat building.

MELASTOMATACEAE

Memecylon L.

Memecylon umbellatum Burm.f., Fl. Ind. 87. 1768; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 26. 2001. Cooke, Fl. Pres. Bombay 1: 535. 1958 (Repr.). *Memecylon edule* Roxb., Pl. Cor. 1: 59. t. 82. 1795; C.B. Cl. in Hook.f., Fl. Brit. India : 563. 1879; '*Anjan*'.

Small trees, 5–6 m tall. Leaves 3.2–7.5 × 1.3–3.5 cm, subacute or shortly acuminate at apex, attenuate or rounded at base. Flowers bluish, many, in umbellate cymes from axils of fallen leaves on old branches. Berries globose, balckish when ripe.

Fl. & Fr.: January–April.

Illus.: Talb., For. Fl. Bombay Pres. Sind 2: 52 & 53, f. 318 & f. 319. 1911 (*Memecylon edule*).

Distrib.: Frequent in scrub forests.

Notes: Listed by Anjankar & Bardekar (2000), Nagzira.

LYTHRACEAE

Key to the genera

- | | |
|--|----------------------|
| 1a. Trees or shrubs | 2 |
| 1b. Herbs, usually aquatic | 3 |
| 2a. Capsules loculicidal; seeds winged | Lagerstroemia |
| 2b. Capsules irregularly dehiscent; seeds not winged | Woodfordia |
| 3a. Capsules dehiscent septically | Rotala |
| 3b. Capsules indehiscent or dehiscent irregularly | Ammannia |

Ammannia L.

Key to the species

- | | |
|---|----------------------|
| 1a. Styles distinct; petals caducous | A. multiflora |
| 1b. Styles absent or nearly so; petals absent | A. baccifera |

Ammannia baccifera L., Sp. Pl. 120. 1753 & ed. 2, 1: 175. 1762; C.B. Cl. in Hook.f., Fl. Brit. India 2: 569. 1879; Cooke, Fl. Pres. Bombay 1: 541. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 30. 2001. '*Bharjambhal*'.

Erect, annual herbs, 15–50 cm tall; stem and branches slender. Leaves 1.6–4.5 × 0.4–1.3 cm, elliptic-oblong or lanceolate, at apex acute, base cuneate. Flowers reddish, in axillary clusters or in short cymes. Capsules depressed globose, red. Seeds turgid, obovoid, brownish.

Fl. & Fr.: December–March.

Distrib.: Common along moist habitats, Nawegaon, Nagzira.

Notes: Plant is used to check rheumatic pains. Fresh leaves used for skin diseases.

Ammannia multiflora Roxb., Fl. Ind. 1: 447. 1820; C.B. Cl. in Hook.f., Fl. Brit. India 2: 576. 1879; Cooke, Fl. Pres. Bombay 1: 541. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 31. 2001.

Erect herbs, 15–30 cm tall. Stem 4-gonous or slightly winged. Leaves 0.4–3 × 0.1–0.5 cm, linear-oblong or elliptic-oblong. Flowers violet, in axillary cymes. Capsules globose, deep red. Seeds many, minute, red.

Fl. & Fr.: August–March.

Distrib.: Common in moist places, Nagzira.

Lagerstroemia L.

Key to the species

- | | | |
|-----|--|----------------------|
| 1a. | Calyx ridges as many as sepals or reduced to warts or auricles | 2 |
| 1b. | Calyx ridges twice the number of sepals | L. reginae |
| 2a. | Leaves distinctly petiolate; fruiting calyx tube 0.2 cm | L. microcarpa |
| 2b. | Leaves sessile or subsessile; fruiting calyx tube 0.6–0.9 cm | L. parviflora |

Lagerstroemia microcarpa Wight, Ic. t. 109. 1839; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 32. 2001. *Lagerstroemia lanceolata* Wall. ex C.B. Clarke in Hook.f., Fl. Brit. India 2: 576. 1879; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 545. 1958 (Repr.). ‘*Nana-bondara*’.

Trees, 9–15 m tall, deciduous. Leaves 3.5–6.8 × 1.8–2.5 cm, elliptic-ovate, acute at apex, greenish-hoary tomentose beneath. Flowers white or creamy, in terminal and axillary panicles. Capsules ellipsoid, brownish-red. Seeds winged.

Fl. & Fr.: March–December.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 63. f. 324. 1911 (*Lagerstroemia lanceolata*).

Distrib.: Frequent in moist places in dense forests, Nawegaon, Nagzira.

Notes: The wood is used in the construction of houses. Stem bark useful for colic pains.

Lagerstroemia parviflora Roxb., Pl. Cor. 1: 47. t. 66. 1795; C.B. Clarke in Hook.f., Fl. Brit. India 2: 575. 1879; Cooke, Fl. Pres. Bombay 1: 545. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; Diwakar in N.P. Singh & al., in Fl. Maharashtra State 2: 33. 2001. ‘*Bondara*’, ‘*Sena*’, ‘*Lendia*’.

Trees, 9–15 m tall. Leaves 4–8 × 2–4 cm, elliptic or ovate-lanceolate, glabrous above, greyish-hairy beneath. Flowers white, in terminal and axillary panicle. Capsules ovoid or ellipsoid, dehiscent by 3–4 valves. Seeds winged.

Fl. & Fr.: May–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 279. 1982.

Distrib.: Frequent along dense forests, Nawegaon, Nagzira.

Notes: Gum is edible. Leaves used as fodder and fibre extracted from stem used for cordage.

Lagerstroemia reginae Roxb., Pl. Cor. 1: 46. t. 65. 1795; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 33. 2001. *Lagerstroemia flos-reginae* Retz., Obs. Bot. 5. 25. 1788; C.B. Clarke in Hook.f., Fl. Brit. India 2: 577. 1879; Cooke, Fl. Pres. Bombay 1: 546. 1958 (Repr.). ‘*Mota-bondara*’, ‘*Tamas*’.

Trees, 10–20 m tall; branches spreading. Leaves 8–15 × 3–5 cm, elliptic-oblong or lanceolate. Flowers pink-purple, showy, in large, terminal panicles. Capsules green, subglobose or ellipsoid, shortly apiculate. Seeds pale brown, winged.

Fl. & Fr.: April–August.

Illus.: Wight, Ic. t. 413. 1843.

Distrib.: Infrequent in dense forests, Nagzira.

Notes: Wood used as a timber.

Rotala L.

Key to the species

1a. Leaves with distinct cartilaginous margins.

R. indica

1b. Leaves without cartilaginous margins

R. serpyllifolia

Rotala indica (Willd.) Koehne in Engl., Bot. Jahrb. 1: 172. 1880; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 118. 1981; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 36. 2001. *Peplis indica* Willd., Sp. Pl. 2: 244. 1799. *Ammannia peploides* Spreng., Syst. Veg. 1: 444. 1824; C.B. Clarke in Hook.f., Fl. Brit. India 2: 566. 1879; Cooke, Fl. Pres. Bombay 1: 538. 1958 (Repr.).

Herbs, erect, 20–30 cm tall, rooting at lower nodes. Leaves $0.4\text{--}1.5 \times 0.3\text{--}6$ cm, obovate or narrowly oblong. Flowers pink, axillary solitary or in terminal spikes. Capsules ellipsoid, many seeded.

Fl. & Fr.: November–February.

Illus.: C.D.K. Cook, in Boissiera 29: 108. f. 25. a-f. 1979.

Distrib.: Infrequent in damp places, Nagzira.

Rotala serpyllifolia (Roth) Bremek. in Acta Bot. Neerl. 3: 149. 1954; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 118. 1981; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 38. 2001. *Micranthus serpyllifolius* Roth, Nov. Pl. Sp. 282. 1821. *Ammannia tenuis* (Wight) C.B. Clarke in Hook.f., Fl. Brit. India 2: 567. 1879; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 538. 1958 (Repr.).

Herbs, annual, tiny, erect, 5–15 cm tall. Leaves $0.5\text{--}1 \times 0.3\text{--}0.7$ cm, broadly ovate to elliptic. Flowers reddish, in terminal spikes. Capsules ellipsoid.

Fl. & Fr.: October–March.

Illus.: C.D.K. Cook, in Boissiera 29: 61, f. 11 F-H. 1979.

Distrib.: Frequent in wet places, Nawegaon.

Woodfordia Salisb.

Woodfordia fruticosa (L.) Kurz. in J. Asiat. Soc. Bengal 40: 56. 1871; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 39. 2001. *Lythrum fruticosum* L., Sp. Pl. ed. 2: 641. 1762. *Woodfordia floribunda* Salisb., Parad. Lond. t. 42. 1806; C.B. Cl. in Hook.f., Fl. Brit. India 2: 572. 1879; Cooke, Fl. Pres. Bombay 1: 543. 1958 (Repr.). ‘*Dhayati*’, ‘*Chulbuli*’, ‘*Dhauri*’.

Straggling shrubs or undershrubs, 1.5–3 m tall. Leaves oblong-lanceolate. Flowers deep red, in axillary or fascicled cymes. Capsules long, ellipsoid, brown, enclosed by persistent calyx tube. Seeds obovoid, smooth.

Fl. & Fr.: December–May.

Distrib.: In open scrub forests, Nawegaon, Nagzira.

Notes: Flowers used for dyeing and its paste used medicinally for injuries, dysentery etc. by local people.

Cultivated & Introduced species:

Lagerstroemia indica L., Syst. Nat. ed. 10. 1076. 1759; C.B. Cl. in Hook.f., Fl. Brit. India 2: 575. 1879; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; Diwakar in N.P. Singh & al., Fl. Maharashtra 2: 39. 2001. '*Chinaimendhi*', '*Lendia*'.

Handsome shrubs, 2–3 m tall. Leaves 3–10 × 2–4 cm, simple, elongate. Flowers white, pink or red, in short, paniculate cymes. Capsules globose, acute at apex. Seeds compressed, winged at one end.

Fl. & Fr.: May–August.

Distrib.: Nawegaon.

Notes: A native of China, cultivated for ornamental purpose.

Lawsonia inermis L., Syst. Nat. ed. 10: 1076. 1759; Cooke, Fl. Pres. Bombay 1: 544. 1958 (Repr.); Diwakar in N.P. Singh & al., Fl. Maharashtra State 2: 40. 2001.

Lawsonia alba Lam. Encycl. 3: 106. 1789; C.B. Cl. in Hook.f., Fl. Brit. India 2: 573. 1879.

Shrubs, spiny. Leaves elliptic-lanceolate. Flowers white, fragrant, in paniculate cymes. Capsules globose. Seeds minute, brown.

Fl. & Fr.: May–August.

Distrib.: It is native of China commonly cultivated for ornamental and cosmetic purpose. Frequent as hedge plant in Nawegaon and Nagzira.

ONAGRACEAE

Ludwigia L.

Key to the species

- | | |
|---|------------------------|
| 1a. Stamens 4; capsules stout, oblong | L. perennis |
| 1b. Stamens 8; capsules narrowly linear | 2 |
| 2a. Flowers less than 1 cm across; seeds embedded in endocarp | L. hyssopifolia |
| 2b. Flowers more than 2 cm across; seeds not as above | L. octovalvis |

Ludwigia hyssopifolia (G. Don) Exell in Garcia de Orta 5: 471. 1957; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; P. Venkanna & P.V.

Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 43. 2001. *Jussiaea hyssopifolia* G. Don, Gen. Syst. 2: 693. 1832.

Suffrutescent herbs, 20–60 cm tall. Leaves $2-8 \times 6.3-3$ cm, elliptic-oblong, lanceolate, at apex acute, base cuneate. Flowers yellow, solitary, axillary. Capsules cylindric, thin walled. Seeds ellipsoid.

Fl. & Fr.: August–October.

Distrib.: Frequent near moist places, Nawegaon.

Ludwigia octovalvis (Jacq.) Raven ssp. **sessiliflora** (Micheli) Raven in Kew Bull. 15: 476. 1962; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; P. Venkanna & P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 44. 2001. *Jussiaea octonervia* var. *sessiliflora* Micheli in Mart., Fl. Bras. 13: 180. 1875. *Jussiaea suffruticosa* L., Sp. Pl. 388. 1753 non *Ludwigia suffruticosa* Walt. 1788; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 1: 549. 1958 (Repr.). ‘Panlavang’.

Undershrubs, to 1.5 m tall; stems erect, woody below, much branched. Leaves sessile, lanceolate-oblong. Flowers solitary, yellow. Capsules long, angled, tapering towards base, 8-ribbed. Seeds ovoid, brown, pluriserial in each cell.

Fl. & Fr.: August–March.

Distrib.: Frequent in marshy places, Nawegaon, Nagzira.

Ludwigia perennis L., Sp. Pl. 119. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; P. Venkanna & P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 45. 2001. *Ludwigia parviflora* Roxb., Fl. Ind. 1: 440. 1820; C.B. Clarke. in Hook.f., Fl. Brit. India 1: 588. 1879; Cooke, Fl. Pres. Bombay 1: 550. 1958 (Repr.).

Annual, erect herbs, 20–60 cm tall. Leaves $1-8 \times 0.3-2.5$ cm, narrowly elliptic to lanceolate, base cuneate; petioles winged. Flowers yellow, solitary, 4-merous. Capsules long, thin walled, 4-ribbed, 4-angled, irregularly dehiscent. Seeds many, pluriserial in each locule, free.

Fl. & Fr.: May–August.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 286. 1982.

Distrib.: Frequent in wet places, Nawegaon.

CUCURBITACEAE

Key to the genera

1a. Petals fimbriate	Trichosanthes
1b. Petals not as above	2
2a. Calyx with scales; male flowers with spathaceous bracts	Momordica
2b. Calyx without scales; male flowers not as above	3
3a. Tendrils branched	4
3b. Tendrils unbranched	5

- | | |
|--|--------------------|
| 4a. Male flowers in racemes | Luffa |
| 4b. Male flowers solitary or clustered | Diplocyclos |
| 5a. Anther cells flexuose | 6 |
| 5b. Anthers cells not flexuose | Mukia |
| 6a. Corolla 5 partite, divided up to $\frac{3}{4}$ the length or up to base; filaments of anthers free | Cucumis |
| 6b. Corolla campanulate, divided up to $\frac{1}{2}$ the length; filaments of anthers connate | Coccinia |

Coccinia Wight & Arn.

Coccinia grandis (L.) Voigt, Hort. Suburb. Calc. 59. 1845; Chakr. in Fasc. Fl. India 11:24. F. 1-9. 1982; K.M. Rao in N.P. Singh & al., Fl. Maharashtra State 2: 53. 2001. *Bryonia grandis* L., Mant. Pl. 1: 126. 1767. *Coccinia indica* Wight & Arn., Prodr. 347. 1833; Cooke, Fl. Pres. Bombay 1: 572. 1958 (Repr.). *Cephalandra indica* (Wight & Arn.) Naud in Ann. Nat. Bot. 5, 5: 621. 1879; C.B. Clarke. in Hook.f., Fl. Brit. India 2: 621. 1879. 'Tondli'.

Climbers, slender, herbaceous. Leaves 4–8 × 5–8 cm, ovate or ovate-triangular, entire or palmately lobed. Flowers white, unisexual, axillary, solitary. Fruits ovoid, pulp red, rounded at both ends. Seeds compressed, oblong-ovoid, yellowish, papillose.

Fl. & Fr.: August–September.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 293. 1982.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Tender shoots and fruits used as vegetables. Roots, stem and leaves are used in medicine against skin diseases, bronchitis, diabetes etc.

Cucumis L.

Cucumis melo L., Sp. Pl. 1011. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; K.M. Rao in N. P. Singh & al., Fl. Maharashtra State 2: 56. 2001. *Cucumis pubescens* Willd. Sp. Pl. 4:614. 1805; C.B. Clarke in Hook.f., Fl. Brit. India 2: 619. 1879. *Cucumis trigonus* Roxb. Fl. Ind. 3: 722. 1832; C.B. Clarke in Hook.f. op. cit.; Cooke, Fl. Pres. Bombay 1: 569. 1958 (Repr.). *Cucumis melo* var. *agrestis* Naud. in Ann. Sci. Nat. 4. 11: 73. 1859.

Climbing, monoecious herbs, perennial, prostrate; stem angular, rigid hairy. Leaves 3–6 × 4–5 cm, suborbicular, 3–7 lobed, hairy, margins dentate. Flowers yellow, male and female flowers solitary. Berries polymorphous, oblong or obovoid, green or yellow. Seeds numerous, flat, oblong or ellipsoid, white, smooth.

Fl. & Fr.: July–December.

Distrib.: Frequent on hill slopes, Nawegaon.

Notes: The fruits are much smaller and bitter in taste, used as a medicine by local people.

Diplocyclos (Endl.) van Post & O. Ktze.

Diplocyclos palmatus (L.) C. Jeffrey in Kew Bull. 15: 352. 1962; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; K.M. Rao in N.P. Singh & al., Fl.

Maharashtra State 2: 58. 2001. *Bryonia laciniosa* L., Sp. Pl. 1013. 1753. *Bryonopsis laciniosa* (L.) Naud in Ann. Sci. Nat. 4, 12: 141. 1859; Cooke, Fl. Pres. Bombay 1: 568. 1958 (Repr.). 'Shivalingi', 'Shankar-vel'.

Extensive tendril climbers, monoecious. Leaves 3–7 × 4–9 cm, elliptic-oblong, palmately 3–5 lobed, glabrous. Flowers yellow or creamy white, unisexual, in axillary male or female in axillary fascicles. Fruits globose-ovoid, green to pale yellow with white streaks. Seeds obovoid, belted in the central portion.

Fl. & Fr.: December–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 297. 1982.

Distrib.: Common on hill slopes and hedges, Nawegaon.

Notes: Leaves edible as vegetable by local people.

Luffa Mill.

Luffa acutangula (L.) Roxb., Fl. Ind. 3: 713. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 2: 615. 1879; Cooke, Fl. Pres. Bombay 1: 556. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; K.M. Rao in N.P. Singh & al., Fl. Maharashtra State 2: 59. 2001. *Cucumis acutangula* L., Sp. Pl. 1: 1011. 1753. 'Ran-dodka'.

Annuals, climbers, stem extensive, slender. Leaves 12 × 18 cm broadly ovate, 3–7 angled or sublobate, solitary. Berries linear-obovoid, angled, tapering towards base. Seeds black, ovoid, flat.

Fl. & Fr.: June–November.

Illus.: K.M. Rao *op. cit.* 60. ff. A-G.

Distrib.: Common on hedges and bushes in dense forests, Nawegaon, Nagzira.

Notes: Fruits are edible as vegetable.

Momordica L.

Momordica dioica Roxb., ex Willd. Sp. Pl. 4: 605. 1805; C.B. Clarke in Hook.f., Fl. Brit. India 2: 617. 1879(excl. syn); Cooke, Fl. Pres. Bombay 1: 563. 1958 (Repr.); K.M. Rao. in N.P. Singh & al., Fl. Maharashtra State 2: 59. 2001. 'Kartoli', 'Kartoll'.

Herbaceous, slender climbers, with tuberous roots; stems slender. Leaves 3–5 lobed, cordate at base, lobes triangular, ovate or oblong, margins denticulate. Flowers unisexual; male flowers solitary, yellow, on slender peduncles, bracteate; female flowers with ebracteate peduncles. Fruits baccate, ellipsoid, shortly beaked, densely echinate; spines soft. Seeds many, enclosed in a red pulp.

Fl. & Fr.: June–November.

Distrib.: Frequent in dense forests., Nawegaon.

Notes: Fruits used as vegetable and for stomach pains. Roots are useful for Jaundice and bleeding piles.

Mukia Arn.

Mukia maderaspatana (L.) Roem., Syn. Monogr. 2: 47. 1846; K.M. Rao in N.P. Singh & al., Fl. Maharashtra State 2: 64. 2001. *Cucumis maderaspatanus* L., Sp. Pl. 1012. 1753. *Mukia scabrelia* (L. f.) Arn. in Hook. J. Bot. 3: 276; C.B. Clarke in Hook.f., Fl. Brit. India 2: 623. 1879. *Melothria maderaspatana* (L.) Cogn. in A & C. DC., Monogr. Phan. 3: 363. 1881; Cooke, Fl. Pres. Bombay 1: 573. 1958 (Repr.). 'Chirbut', 'Ghugri'.

Herbs, annual, prostrate or climbing; stem slender, hispid. Leaves 3–13 × 2–12 cm, 3–5 lobed, deltoid-ovate, entire. Flowers yellow, unisexual, axillary, fascicled, female sometimes solitary, almost sessile. Fruits globose, sessile, red when ripe. Seeds ovoid or ellipsoid, flat.

Fl. & Fr.: July–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 302. 1982.

Distrib.: Frequent, on hedges and low shrubs, Nawegaon.

Notes: Fruits are edible. The roots are masticated to relieve toothache. Tender shoots are used in vertigo.

Trichosanthes L.

Key to the species

1a. Bracts in male racemes minute

T. cucumerina

1b. Bracts in male racemes large

T. tricuspidata

Trichosanthes cucumerina L., Sp. Pl. 1008. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 2: 609. 1879; Cooke, Fl. Pres. Bombay 1: 560. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; K.M. Rao in N.P. Singh & al., Fl. Maharashtra State 2: 66. 2001. 'Jangli padvel'.

Extensive climbers, sparsely hispid. Leaves 5–10 × 6–11 cm, denticulate, 5–7-lobed. Flowers white; male in long racemes; female solitary. Berries ovoid-fusiform, beaked, yellow green, ribbed. Seeds ovoid, compressed, rugose.

Fl. & Fr.: July–October.

Illus.: Mahesh., Illus. Fl. Delhi f. 88. 1966.

Distrib.: Frequent on hedges and low bushes in open deciduous forests, Nawegaon.

Notes: The fruits are used as vegetable by local people.

Trichosanthes tricuspidata Lour., Fl. Cochinch. 589. 1790. *Trichosanthes palmata* Roxb., Fl. Ind. 3: 704. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 2: 606. 1879; Cooke, Fl. Pres. Bombay 1: 560 1958 (Repr.); K.M. Rao. in N.P. Singh & al., Fl. Maharashtra State 2: 67. 2001. 'Padval', 'Mukal'.

Climber; stem extensive up to 10 m long, woody at base, branches sulcate. Leaves 12–18 × 8–12 cm, broadly ovate, subentire or palmately 3–5 lobed, margin denticulate.

Flowers whitish, unisexual; male flowers in axillary, racemes; female flowers axillary, solitary. Fruits globose, red when ripe. Seeds numerous, ellipsoid, white.

Fl. & Fr.: August–October.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: tt. 304 & 971a. 1982.

Distrib.: Frequent as an undergrowth and on hill slopes, Nagzira.

Notes: Roots are useful medicinally for inflammation of lungs while seeds for snake-bite.

BEGONIACEAE

Begonia L.

Begonia crenata Dryand. in *Trans. Linn. Soc. Lond.* 1: 164. t. 14. f. 3. 1791; C.B. Clarke in *Hook.f., Fl. Brit. India* 2: 651. 1879; Cooke, *Fl. Pres. Bombay* 1: 584. 1958 (Repr.); K.M. Rao in N.P. Singh & al., *Fl. Maharashtra State* 2: 77. 2001. '*Ambadi*', '*Kapru*', '*Mutia*'.

Succulent herbs, 7–20 cm tall. Leaves 2.2–6 × 6–2 cm, ovate or suborbicular. Flowers pinkish, in terminal cymes. Capsules membranous, 3-winged, crowned by accrescent perianth. Seeds minute, ellipsoid.

Fl. & Fr.: September–October.

Notes: Juice of leaves after treating with cow's urine, applied on swellings etc.

CACTACEAE

Opuntia Mill.

Opuntia elatior Mill., *Gard. Dict.* ed. 8, n. 4. 1768; S.Y. Kamble & P.V. Prasanna in N.P. Singh & al., *Fl. Maharashtra State* 2: 83. 2001. *Opuntia nigricans* Woodr. in *Rec. Bot. Surv. India* 1: 89. 1895 non Haw. 1819; Cooke, *Fl. Pres. Bombay* 1: 587. 1958 (Repr.). '*Nirdung*'.

Shrubs, 1–2 m tall; stem a phylloclade, succulent, leafless, with ovate-oblong limbs having 2–5 spines on each areole; spines straight, slender, tawny or brownish in colour. Flowers yellow, turning to pink or bright red later. Berries fleshy, bright red or reddish-purple when mature.

Fl. & Fr.: January–July.

Illus.: S.Y. Kamble & P.V. Prasanna *op. cit.* 84. f. A-B.

Distrib.: Frequent in scrub forests, Nawegaon.

Notes: Fruits are edible. Stem useful for burns, muscular swellings and wounds.

AIZOACEAE

Trianthema L.

Trianthema portulacastrum L., *Sp. Pl.* 223. 1753; C.B. Clarke in *Hook.f., Fl. Brit. India* 2: 660. 1879; Cooke, *Fl. Pres. Bombay* 1: 589. 1958 (Repr.); S.Y. Kamble & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra* 2: 89. 2001. '*Ghol*'.

Herbs, 40–50 cm long, succulent prostrate; stems procumbent or ascending, spreading, glabrous or pubescent. Leaves $0.3\text{--}5.0 \times 0.3\text{--}1.5$ cm, sessile, subfleshy, opposite, one pair much smaller, other petiolate, stipulate, entire. Flowers pinkish or white, hidden partly by sheathing leaf bases, hermaphrodite. Capsules moniliform. Seeds with concentric, muricate lines.

Fl. & Fr.: July–September.

Illus.: Mahesh. *Illus. Fl. Delhi* f. 93. 1966.

Distrib.: Frequent in wet places, Nagzira.

MOLLUGINACEAE

Key to the genera

- | | |
|---|----------------|
| 1a. Calyx tube 5-partite; capsules locilicidal | Glinus |
| 1b. Calyx not as above; capsules circumscissile | Mollugo |

Glinus L.

Key to the species

- | | |
|---------------------------------------|--------------------------|
| 1a. Plants densely stellate pubescent | G. lotoides |
| 1b. Plants nearly glabrous | G. oppositifolius |

Glinus lotoides L., *Sp. Pl.* 463. 1753; S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 119. 1981; S.Y. Kamble & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra State* 2: 92. 2001. *Mollugo hirta* Thunb., *Prodr. Fl. Cap.* 24. 1794; C.B. Clarke in *Hook.f., Fl. Brit. India* 2: 622. 1879; Cooke, *Fl. Pres. Bombay* 1: 593. 1958 (Repr.). ‘*Dasara-sag*’, ‘*Kotrak*’.

Herbs, prostrate. Leaves $1.2\text{--}3.5 \times 0.4\text{--}2$ cm, opposite or apparently verticillate, obovate, apiculate. Flowers whitish. Capsules ovoid, enclosed in persistent calyx.

Fl. & Fr.: February–May.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 90. 1966.

Distrib.: Frequent in moist places, near lake, Nawegaon.

Glinus oppositifolius (L.) A. DC., in *Bull. Herb. Boiss.* 2, 1: 559. 1902; S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 119. 1981; S.Y. Kamble & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra State* 2: 93. 2001. *Mollugo oppositifolia* L., *Sp. Pl.* 89. 1753. *Mollugo spargula* L., *Syst. Nat.* ed. 10, 881. 1759; C.B. Clarke *Hook.f. & Thoms. in Hook.f., Fl. Brit. India* 1: 190. 1872; Cooke, *Fl. Pres. Bombay* 1: 593. 1958 (Repr.).

Decumbent herbs, with radially spreading branches. Leaves 1–6 cm long, whorled, obovate or oblanceolate. Flowers greenish or pinkish white, fascicled at nodes. Capsules ellipsoid, included in tepals. Seeds minute, reniform, appendaged, dark brown.

Fl. & Fr.: Frequent in open places.

Illus.: Jeffrey in C.E. Hubb & Milne Redhead, Fl. Trop. East. Afr. Aizoaceae 14, f. 5(8-9). 1961.

Distrib.: Frequent in open places, Nagzira.

Mollugo L.

Mollugo pentaphylla L., Sp. Pl. 89. 1753; Cooke, Fl. Pres. Bombay 1: 594. 1958 (Repr.); S.Y. Kamble & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 95. 2001. *Mollugo stricta* sensu C.B. Clarke in Hook.f., Fl. Brit. India 2: 663. 1879 'Jharasi'.

Herbs, 20–30 cm tall, much branched; stems erect or ascending to diffuse, slender, 4-angled. Leaves 1.4–4 × 0.4–1.2 cm, cauline, 3–5, whorled, obovate, mucronate. Flowers white or greenish, numerous, in lax, corymbose, terminal cymes. Capsules oblong. Seeds many, reniform, dark reddish-brown, shining.

Fl. & Fr.: July–December.

Distrib.: Frequent in open, stony localities, Nawegaon.

APIACEAE (UMBELLIFERAE)

Key to the genera

1a. Mericarps without vittae

Centella

1b. Mericarps with 2–3 vittae

Pimpinella

Centella L. (*nom. cons.*)

Centella asiatica (L.) Urban in Mart., Fl. Bras. 11: 287, t. 78. f. 1. 1879; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra 2: 97. 2001. *Hydrocotyle asiatica* L., Sp. Pl. 234. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 2: 668. 1879; Cooke, Fl. Pres. Bombay 1: 598. 1958 (Repr.). 'Brahmi'.

Herbs; prostrate; stems slender, with elongated internodes, rooting at nodes. Leaves 1.3–4 cm across, orbicular or reniform, cordate at base. Flowers pink, in axillary umbels. Fruits ovoid, rugose, with persistent corolla-crown; mericarps with 7–9 ridges.

Fl. & Fr.: May–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 35. 1982.

Distrib.: Frequent in moist places, Nagzira.

Notes: The plant is used medicinally for skin diseases and as tonic.

Pimpinella L.

Pimpinella heyneana (Wall ex. DC.) Kurz., J. Asiat. Soc. Bengal 46: 115. 1877; C.B. Clarke in Hook.f., Fl. Brit. India 2: 684. 1879; Cooke, Fl. Pres. Bombay 1: 601. 1958 (Repr.); S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 101. 2001. *Helosciadium heyneanum* Wall. ex DC., Prodr. 4: 106. 1830.

Herbs, upto 1 m tall; roots fusiform. Leaves trifoliolate, gradually becoming smaller upwards, lateral leaflets ternate, terminal leaflets usually simple seldom ternate, lower cauline, 2–4 × 0.3–1 cm, ovate-lanceolate, margins serrate. Flowers white, 4–12 in umbels. Fruits subglobose, didymous.

Fl. & Fr.: August–November.

Illus.: Gandhi in Sald. & Nicols. Fl. Hassan Dt. 415, f. A-AC. 1976.

Distrib.: Frequent in open places among grasses, Nagzira.

ALANGIACEAE

Alangium Lam. (*nom cons.*)

Alangium salviifolium (L.f.) Wangerin in Engl., Pflanzenr. 41: 9, f. 2A-E. 1910; Rajkondawar in Mang. Pl. Nawegaon Nat. Park. App. IX: 23. 1995; A.N. Londhe in N.P. Singh & al. Fl. Maharashtra 2: 114. 2001. *Grewia salviifolia* L.f., Suppl. 409. 1781.ssp. *salvifolium*. ‘Ankul’, ‘Ankwal’, ‘Ansaroli’.

Trees; 3–10 m high. Leaves 4.5–11.5 × 1.8–2.5 cm, ovate, lanceolate. Flowers cream coloured, in axillary fascicles, few. Berries ellipsoid or ovoid.

Fl. & Fr.: February–April.

Illus.: Wight, Ic. T. 194. 1839.

Distrib.: Frequent in deciduous forests, Nawegaon.

RUBIACEAE

Key to the genera

- | | |
|---|----------------------|
| 1a. Ovules more than 2, usually numerous in each cell | 2 |
| 1b. Ovules solitary in each cell | 9 |
| 2a. Flowers crowded in dense globose heads | 3 |
| 2b. Flowers not in dense heads | 4 |
| 3a. Calyx-limb 5-lobed; stigma clavate | Haldina |
| 3b. Calyx truncate; stigma mitriform | Mitragyna |
| 4a. Fruits capsular | 5 |
| 4b. Fruits berries | 6 |
| 5a. Trees or shrubs | Hymenodictyon |
| 5b. Herbs | Hedyotis |
| 6a. Ovary 2-celled | 7 |
| 6b. Ovary 1-celled | 8 |
| 7a. Leaves 20–25 cm long; berries ovoid | Tamilnadia |
| 7b. Leaves up to 8 cm long; berries globose | Catunaregam |
| 8a. Unarmed shrubs or trees | Gardenia |
| 8b. Armed shrubs or trees | Ceriscoides |
| 9a. Radicles superior | 10 |
| 9b. Radicles inferior | 11 |
| 10a. Fruit of 2 mericarps, separating from columella; herbaceous plants | Knoxia |
| 10b. Fruit a drupe with 2-many, free or cohering pyrenes; shrubs or trees | Meyna |

11a. Corolla lobes twisted	Ixora
11b. Corolla lobes valvate	12
12a. Calyx tube confluent	Morinda
12b. Calyx tube not as above	13
13a. Ovules basilar, erect, anatropous	permadictyon
13b. Ovules attached to septum, amphitropous	Spermacoce

Catunaregam Adans ex V. Wolf

Catunaregam spinosa (Thunb.) Tirveng. in Bull. Mus. Hist. Nat. Paris 3, 35: 13. 1978; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 121. 2001. *Gardenia spinosa* Thunb., Diss. Gard. no. 7. 1780. *Randia dumetorum* (Retz.) Poir. in Lam., Encycl. Suppl. 2: 829. 1811; Hook.f., Fl. Brit. India 3: 110. 1880; Cooke, Fl. Pres. Bombay 2: 27. 1958 (Repr.). ‘*Gehela*’, ‘*Gel*’.

Trees up to 5 m high; armed with strong, straight, opposite spines. Leaves 2–3 × 1.5–2 cm, ovate or obovate at apex obtuse, attenuate, young ones hirsute. Flowers white, turning yellow at maturity, axillary, solitary or 2–3 together, fragrant. Berries globular, crowned with calyx lobes. Seeds flat, embedded in pulp.

Fl. & Fr.: January–June.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 99 & 100, f. 341 & 342. 1911 (*Randia dumetorum*).

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Mature seeds are roasted, eaten and also used against body-ache and its paste applied on pimples. Fresh fruits used as fish-poison. Roots yield a dye and wood is used as fuel.

Ceriscoides (Hook.f.) Tirveng.

Ceriscoides turgida (Roxb.) Tirveng. in Bull. Mus. natn. Hist. nat. Paris, 3e 521. Bot. 35: 15. 1978; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 123. 2001. *Gardenia turgida* Roxb. Fl. Ind. 2: 557. 1832; Hook.f., Fl. Brit. India 3: 118. 1880; Cooke, Fl. Pres. Bombay 2: 29. 1958 (Repr.). ‘*Phetra*’.

Small trees, 3–5 m high; bark bluish grey, smooth, with stout, leaf bearing opposite spines. Leaves 5–8 × 3–6 cm, obovate, velvety tomentose beneath, at apex obtuse, base tapering into petiole. Flowers greenish white, in axil of leaf scars, dimorphic; male ones in fascicles; female flowers solitary. Berries foetid smelling, globose, woody. Seeds smooth.

Fl. & Fr.: March–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 971. 1982.

Distrib.: Infrequent in dense forests, Nawegaon, Nagzira

Gardenia J. Ellis (*nom. cons.*)

Key to the species

1a. Leaves petioled; calyx teeth erect	G. resinifera
1b. Leaves sessile or subsessile; calyx teeth not as above	2

- 2a. Calyx teeth minute, equal, triangular
2b. Calyx teeth long, unequal, recurved

G. gummifera
G. latifolia

Gardenia gummifera L.f., Suppl. 164, 1781; Hook.f., Fl. Brit. India 3: 116. 1880; Cooke, Fl. Pres. Bombay 2: 31. 1958 (Repr.). S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 125. 2001. '*Dikemali*', '*Kurmudi*'.

Shrubs or small trees, 2–4 m high. Leaves 2–8 × 2–3 cm; sessile, elliptic-obovate, shining, apex obtuse. Flowers white, subsessile, 1–3 together. Berries oblong-ellipsoid, beaked.

Fl. & Fr.: August–September.

Distrib.: Common throughout the dense forest, hill slopes, Nawegaon, Nagzira..

Notes: Ripe berries edible. Gum useful as antiseptic.

Gardenia latifolia Soland in Ait., Hort. Kew (ed. 1) 294. 1789; Hook.f., Fl. Brit. India 3: 116. 1880; Cooke, Fl. Pres. Bombay 2: 30. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 126. 2001. '*Kala hatera*'.

Trees, up to 10 m tall. Leaves subsessile, opposite or 3-nately whorled broadly elliptic, oblong, obovate, coriaceous. Flowers white changing to yellow, fragrant, solitary or 2 together, subsessile. Berries globose, with persistent calyx crown. Seeds rugose.

Fl. & Fr.: March–May.

Distrib.: Frequent in deciduous forests, Nawegaon, Nagzira.

Notes: Wood used for making toys.

Gardenia resinifera Roth, Nov. Pl. Sp. 150. 1821; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 126. 2001. *Gardenia lucida* Roxb., Fl. Ind. 2: 553. 1824; Hook.f., Fl. Brit. India 3: 115. 1880; Cooke, Fl. Pres. Bombay 2: 30. 1958 (Repr.). '*Dikemali*', '*Dikemali*'.

Shrubs, 3–5 m tall; bark greenish-grey. Leaves 7–15 × 4–7 cm, elliptic or elliptic-oblong, shining, at apex acute, attenuate at base. Flowers white, turning yellow, fragrant, solitary, axillary. Berries ellipsoid or subglobose with crown of calyx, woody. Seeds compressed, rectangular or subreniform.

Fl. & Fr.: March–September.

Distrib.: Common in deciduous forests, Nawegaon, Nagzira.

Notes: The species is a source of *Dikemali* resin used to prepare tooth medicine for children. Resin also useful for bronchitis, constipation and dyspepsia.

Haldina Ridsd.

Haldina cordifolia (Roxb.) Ridsd. in Blumea 24: 361. 1978; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 127. 2001. *Nauclea cordifolia*

Roxb., Pl. Cor. 1: 40. t. 53. 1796. *Adina cordifolia* (Roxb.) Hook.f. ex Brandis, For. Fl. 263. t. 33. 1874; Hook.f., Fl. Brit. India 3: 24. 1880; Cooke, Fl. Pres. Bombay 2: 7. 1958 (Repr.). 'Hedi', 'Hedu'.

Trees, 8–15 m tall; bark thick, grey. Leaves 7–25 × 6.5–24 cm, orbicular, densely pubescent beneath, acuminate at apex, cordate at base. Flowers yellow, in globose heads. Capsules obconical, pubescent below, acuminate, cordate at base. Flowers yellow, in globose head. Capsules long, pubescent, breaking into two follicular cocci. Seeds brown, oblong, winged, hairy.

Fl. & Fr.: May–October.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 333. 1982.

Distrib.: Frequent in dense forests, Nagzira.

Notes: The bark is used by local people for stomach disorders and leaf juice for snake bite. The timber is used for furniture and agricultural implements.

Hedyotis L.

Key to the species

- | | |
|--|---------------------|
| 1a. Capsules dehiscent at top only | H. trinervia |
| 1b. Capsules septically or loculicidally dehiscent | 2 |
| 2a. Flowers pedicelled, usually in pairs or threes | H. corymbosa |
| 2b. Flowers sessile or subsessile, solitary | H. diffusa |

Hedyotis corymbosa (L.) Lam., *Encycl.* 1: 272. 1792; Mudaliar & V.P. Prasad in N.P. Singh & al., *Fl. Maharashtra* 2: 130. 2001. *Oldenlandia corymbosa* L., *Sp. Pl.* 119. 1753; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 190. 1872; Cooke, *Fl. Pres. Bombay* 2: 15. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 7. 1980. 'Pitpapda'.

Annual herbs, 20–30 cm long; stem spreading or erect, reddish. Leaves 2–3.5 × 0.3–0.4 cm, whorled, linear-obovate or lanceolate, margins recurved and scabrous. Flowers white, minute, in axils. Capsules globose, didymous. Seeds trigonous, minute, brownish.

Fl. & Fr.: August–December.

Illus.: Sivar. & Biju in *Taxon* 39. 671, t. 10. 1990.

Distrib.: Common throughout in dense forests. Nawegaon, Nagzira.

Hedyotis diffusa Willd., *Sp. Pl.* 1(2): 566. 1798; Sivar. & Biju in *Taxon* 39. 672. 1990; Mudaliar & V.P. Prasad in N.P. Singh & al., *Fl. Maharashtra State* 2: 131. 2001. *Oldenlandia diffusa* (Willd.) Roxb., *Fl. Ind.* 1: 444. 1820; Hook.f., *Fl. Brit. India* 3: 64. 1880 p.p.; Cooke, *Fl. Pres. Bombay* 2: 16. 1958 (Repr.).

Annual herbs; stem diffuse, prostrate. Leaves 2.5–3.5 × 0.3–0.4 cm, subsessile, linear-lanceolate, acute at apex, glabrous. Flowers white or purplish, solitary or rarely in pairs, sessile or subsessile. Capsules loculicidal, with persistent calyx lobes. Seeds angular, reticulate.

Fl. & Fr.: April–December.

Distrib.: Moist soil near lakes, infrequent, Nawegaon.

Hedyotis trinervia (Retz.) Roem. & Schult., Syst. 3: 197. 1819; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 137. 2001; Hook.f., Fl. Brit. India 3: 66. 1880; Cooke, Fl. Pres. Bombay 2: 17. 1958 (Repr.). *Oldenlandia trinervia* Retz., Obs. Bot. 4: 23. 1786.

Annual herbs; stem flaccid, diffuse, rooting near base. Leaves subsessile, 0.5–1.3 × 0.4–0.9 cm, ovate-elliptic or orbicular, at apex acute, 3-nerved from base. Flowers white or purplish, sessile, solitary or in clusters, axillary. Capsules globose, hairy, didymous, crowned by calyx-teeth.

Fl. & Fr.: September–October.

Distrib.: Common in moist places, Nawegaon, Nagzira.

Hymenodictyon Wall.

Hymenodictyon orixense (Roxb.) Mabb. in Taxon 31: 66. 1982; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 138. 2001. *Cinchona orixensis* Roxb., Bot. Descr. Swietenia 21. 1793. *Hymenodictyon excelsum* (Roxb.) Wall. in Roxb., Fl. Ind. 2: 149. 1824; Hook.f., Fl. Brit. India 3: 35. 1880; Cooke, Fl. Pres. Bombay 2: 9. 1958 (Repr.). ‘*Bhorsal*’, ‘*Kala kaddu*’, ‘*Potur*’.

Trees, 8–12 m high. Leaves 8–18 × 6–9 cm, crowded at end of branches, ovate-elliptic to oblanceolate, at apex acuminate, attenuate at base, pubescent beneath. Flowers greenish, fragrant, in fascicles or umbels on a thyrsoïd panicle. Capsules brown, yellow spotted, ellipsoid, 4-locular. Seeds brown, many winged.

Fl. & Fr.: March–September.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 336. 1982.

Distrib.: Frequent in deciduous forests, Nagzira.

Ixora L.

Key to the species

1a. Leaves and inflorescence turning black on drying

I. nigricans

1b. Leaves and inflorescence not as above

I. pavetta

Ixora nigricans R.Br. ex Wight. & Arn., Prodr. 428. 1834; Hook.f., Fl. Brit. India 3: 148. 1880; Cooke, Fl. Pres. Bombay 2: 38. 1958 (Repr.); Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 141. 2001. ‘*Kat-kuda*’.

Large shrubs, 1–4 m tall. Leaves 8–18 × 3–7 cm, dark green, glabrous, elliptic-oblong or lanceolate, at apex acutely acuminate, cuneate at base. Flowers white, odorous, in brachiate cymes. Drupes globose, didymous.

Fl. & Fr.: Almost throughout the year.

Distrib.: Frequent in deciduous forests, Nagzira.

Ixora pavetta Andr., Bot. Rep. t. 78. 1799; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 141. 2001. *Ixora parviflora* Vahl, Symb. 3: 11, t. 52. 1794 non Lam. 1791; Hook.f., Fl. Brit. India 3: 142. 1880; Cooke, Fl. Pres. Bombay 2: 39. 1958 (Repr.). ‘*Bakors*’, ‘*Lokhandi*’.

Woody evergreen shrubs, 2–4 m tall. Leaves 7–20 × 2.5–8 cm, elliptic-obovate or oblong, shining, obtuse at apex, rounded or cordate at base. Flowers white, odorous, small, numerous in dense, terminal, corymbose cymes. Drupes reddish-green, 2-lobed.

Fl. & Fr.: January–April.

Distrib.: Infrequent in deciduous forests, Nagzira.

Knoxia L.

Knoxia mollis R.Br. in Wall. Cat. 820. 1828; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 142. 2001. *Knoxia corymbosa* Willd., Sp. Pl. 1: 582. 1797; Hook.f., Fl. Brit. India 3: 128. 1880; Cooke, Fl. Pres. Bombay 2: 33. 1958 (Repr.). *Knoxia sumatrensis* sensu Bhattacharjee & Deb in J. Econ. Tax. Bot. 6: 89. 1985 non (Retz.) DC., 1830; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981.

Perennials, up to 1 m tall; stem branched at top, quadrangular. Leaves petioled, elliptic-lanceolate, 7–12 cm long, pubescent on both surfaces. Flowers bluish, in lax, axillary or terminal corymbose cymes. Fruits quadrangular, white, oblong-ellipsoid. Seeds granulate.

Fl. & Fr.: August–January.

Illus.: Wight, Illus. 2: t. 128. 1850 (*Knoxia corymbosa*).

Distrib.: Frequent in moist habitats, Nawegaon, Nagzira.

Meyna Roxb. ex Link

Meyna laxiflora Robyns in Bull. Jard. Bot. Brux. 11: 228. 1928; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 145. 2001. *Vangueria spinosa* Roxb., Fl. Ind. 2: 172. 1824 p.p. excl. type; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 2: 36. 1958 (Repr.). ‘*Alu*’.

Large shrubs or small trees with long spines. Leaves 3–10 × 2–6.3 cm, ovate-elliptic or oblong, at apex acute-acuminate, base cuneate. Flowers greenish-yellow, in axillary clusters. Drupes fleshy, obovoid, ribbed, chocolate-coloured when ripe.

Fl. & Fr.: March–June.

Illus.: Talb. For. Fl. Bombay Pres. & Sind 2: 110. f. 348. 1911 (*Vangueria spinosa*).

Notes: Young fruits eaten as vegetable.

Mitragyna Korth. (nom. cons.)

Mitragyna parvifolia (Roxb.) Korth. Obs. Naucl. Ind. 19. 1839; Cooke, Fl. Pres. Bombay 2: 8. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7.

1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 145. 2001. *Nauclea parvifolia* Roxb., Pl. Cor. 1: 40. t. 52. 1795. '*Kadam*'.

Trees, 12–15 m tall; bark grey-blackish. Leaves 4–14 × 3–9 cm, suborbicular, obovate, elliptic, acute or rounded at apex, cuneate at base. Flowers greenish-yellow, fragrant in terminal or axillary, globose heads. Fruits oblong-cuneate, bluntly ribbed. Seeds many, flat, winged.

Fl. & Fr.: May–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 340. 1982.

Distrib.: Frequent throughout in deciduous forests, Nawegaon, Nagzira.

Notes: Wood used for making Agricultural implements. Leaves eaten by wild animals.

Morinda L.

Morinda pubescens J.E. Sm. in Rees. Cyclop. 24, n. 3. 1813; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 146. 2001. *Morinda tomentosa* Hyene ex Roth, Nov. Pl. Sp. 147. 1821; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980. *Morinda tinctoria* Roxb. var. *tomentosa* (Heyne ex Roth) Hook.f., Fl. Brit. India 3: 156. 1880; Cooke, Fl. Pres. Bombay 2: 43. 1958 (Repr.).

Medium sized trees, 3–7 m high; branches 4-angled. Leaves 10–15 × 3–11 cm, opposite, decussate, broadly elliptic, tomentose. Flowers white, in globose heads, fragrant. Fruits (syncarps of pyrenes) ellipsoid, fleshy. Seeds oblong-obovoid.

Fl. & Fr.: March–November.

Distrib.: Infrequent in dense forests, Nawegaon.

Notes: The juice of the leaves is used in intestinal disorders. Bark yields a dye.

Spermacoce L.

Key to the species

- 1a. Septum detaching from the coccus, remains entire, closing one or both cocci partially **S. articularis**
- 1b. Septum not detaching from coccus, splitting longitudinally or irregularly **S. pusilla**

Spermacoce articularis L.f., Suppl. 119. 1782; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 164. 2001. *Borreria articularis* (L.f.) F.N. Williams in Bull. Bot. Herb. Boiss. 2, 5: 956. 1905; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980. *Spermacoce hispida* auct. mult. non L. 1753; Hook.f., Fl. Brit. India 3: 200. 1881; Cooke, Fl. Pres. Bombay 2: 53. 1958 (Repr.). '*Madanghanti*'.

Annual herbs, 30–50 cm tall; branches hispid, diffuse. Leaves 1–4 × 0.5–2 cm, elliptic or oblong-lanceolate. Flowers white or pale pink to bluish pink, in axillary fascicles. Capsules oblong, ellipsoid, hairy in upper half. Seeds 2, ellipsoid.

Fl. & Fr.: August–November.

Distrib.: Common in open scrub forests, Nawegaon, Nagzira.

Notes: The roots used as a substitute of sarsaparilla as purgative and blood purifier. The seeds have cooling effect and are used as coffee beans in dysentery and bladder disorders.

Spermacoce pusilla Wall. in Roxb., Fl. Ind. 1: 379. 1820; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 165. 2001. *Spermacoce stricta* L.f., Suppl. Pl. 120. 1781 (non *Borreria stricta* G.F. W. Mey 1818); Hook.f., Fl. Brit. India 3: 200. 1881; Cooke, Fl. Pres. Bombay 2: 52. 1958 (Repr.). *Borreria pusilla* (Wall.) DC., Prodr. 4: 543. 1830; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 6. 1980.

Annual herbs, 15–40 cm high; stem 4-angled. Leaves 2–5 × 0.4–1 cm, linear, oblong-lanceolate, whorled, with acute at apex, scabrid. Flowers white, in terminal, globose heads. Capsules oblong, ovoid, upper half densely hairy. Seeds 2, brown, oblong-ellipsoid, vertically grooved.

Fl. & Fr.: September–November.

Illus.: Deb & R. Dutta in J. Econ. Tax. Bot. 5: 1058. f. 8. A-H. 1984.

Distrib.: Frequent in deciduous forests, Nawegaon.

Spermadictyon Roxb.

Spermadictyon suaveolens Roxb. Pl., Cor. 3: 32. t. 236. 1815; Mudaliar & al. in N.P. Singh, Fl. Maharashtra State 2: 167. 2001. *Hamiltonia suaveolens* Roxb., Fl. Ind. 1: 554. 1832; Hook.f., Fl. Brit. India 3: 197. 1880; Cooke, Fl. Pres. Bombay 2: 51. 1958 (Repr.). '*Bhowarmal*'.

Shrubs, 2–4 m tall; branches trichotomous; bark peeling off in papery flakes. Leaves 5–15 × 4–12 cm, opposite, elliptic-ovate or lanceolate, acute at apex. Flowers numerous, white in trichotomously branched panicles. Capsules ellipsoid, 5-valved. Seeds 5, 3-cornered, black, arillate.

Fl. & Fr.: October–February.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 135, f. 364. 1911 (*Hamiltonia suaveolens*).

Distrib.: Frequent in dense forests, Nawegaon.

Tamilnadia Tirveng. & Sastre

Tamilnadia uliginosa (Retz.) Tirveng. & Sastre in Mauritius Inst. Bull. 8(4): 85. 1979; Mudaliar & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 167. 2001. *Gardenia uliginosa* Retz., Obs. Bot. 2: 14. 1781. *Randia uliginosa* (Retz.) DC., Prodr. 4: 386. 1830; Hook.f., Fl. Brit. India 3: 110. 180; Cooke, Fl. Pres. Bombay 2: 27. 1958 (Repr.). *Xeromphis uliginosa* (Retz.) Mahesh. in Bull. Bot. Surv. India 3: 92. (1961) 1962; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78: 480. 1981. '*Karingud*', '*Pandhara*'.

Small trees, 6–9 m high; bark scaly reddish-brown, branches 4 angled, thorny. Leaves 6–12 × 4–7 cm, elliptic or oblanceolate, at apex obtuse, tapering at base. Flowers white, solitary, fragrant. Berries ovoid, yellowish brown. Seeds compressed embedded in pulp.

Fl. & Fr.: March–June.

Illus.: Wight, Ic. t. 397. 1840 (*Randia uliginosa*).

Distrib.: Frequent in hill slope and dense forests, Nagzira.

Notes: Bark used medicinally in diarrhoea.

ASTERACEAE (COMPOSITAE)

Key to the genera

- | | |
|--|---------------------|
| 1a. Achenes paired; heads unisexual; anthers free; female florets apetalous | Xanthium |
| 1b. Achenes not paired; heads homo-heterogamous; anthers connate; female florets petalous | 2 |
| 2a. Heads exclusively homogamous, ligulate or disciform, florets all bisexual | 3 |
| 2b. Heads exclusively heterogamous, outer florets female, inner bisexual | 9 |
| 3a. Heads spinescent | Goniocaulon |
| 3b. Heads not spinescent | 4 |
| 4a. Heads 1–5 flowered, subtended by bract like leaves | 5 |
| 4b. Heads more than 5-flowered, not subtended by bract like leaves | 6 |
| 5a. Heads 3-5 flowered; bracts biseriate, free | Elephantopus |
| 5b. Heads 1-flowered; bracts uniseriate, connate below | Lagasea |
| 6a. Leaves alternate | 7 |
| 6b. Leaves opposite | 8 |
| 7a. Leaves radical or cauline, base auriculate; bracts uniseriate; achenes angular | Emilia |
| 7b. Leaves cauline, base not auriculate; bracts many seriate; achenes not as above | Vernonia |
| 8a. Pappus absent; florets yellow; heads solitary | Spilanthes |
| 8b. Pappus present; florets not yellow; heads not solitary | Ageratum |
| 9a. Female bracts tubular, more than bisexual florets | 10 |
| 9b. Female bracts radiate, less than bisexual florets | 15 |
| 10a. Heads globose, involucre intact throughout | 11 |
| 10b. Heads campanulate; involucre reflexed after fruiting | 13 |
| 11a. Branchlets winged; florets pink or purple | Sphaeranthus |
| 11b. Branchlets not winged; florets creamy to yellowish | 12 |
| 12a. Prostrate herbs | Grangea |
| 12b. Erect herbs | Cyathocline |
| 13a. Heads densely aggregated in clusters; involucre bracts hyaline, woolly | Gnaphalium |
| 13b. Heads laxly aggregated, spreading; involucre bracts scarious to herbaceous, variously pubescent | 14 |
| 14a. Anther base tailed; involucre bracts slender | Blumea |
| 14b. Anther base not tailed; involucre bracts rigid | Lagera |
| 15a. Heads subsessile, axillary or at forks of dichotomy | 16 |
| 15b. Heads stalked, solitary or in panicles | 18 |
| 16a. Heads not prickly; achenes lacerate-winged, not enclosed by inner involucre bracts | |

	Synedrella
16b. Heads prickly; achenes smooth, enclosed by inner involucre bracts	17
17a. Pappus present	Amberboa
17b. Pappus absent	Acanthospermum
18a. Leaf blade pinnatifid	Parthenium
18b. Leaf blade entire (rarely deeply lobed)	19
19a. Leaves trifoliate	Bidens
19b. Leaves simple	20
20a. Rays yellow	21
20b. Rays not yellow	23
21a. Leaves opposite	Tridax
21b. Leaves alternate	22
22a. Bracts few, uniseriate; pappus biseriate	Pulicaria
22b. Bracts many-seriate; pappus uniseriate	Pentanema
23a. Leaves alternate; receptacle epaleaceous	Caesulia
23b. Leaves opposite; receptacle paleaceous	Eclipta

Acanthospermum Schrank

Acanthospermum hispidum DC., Prodr. 5: 522. 1836; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 179. 2001.

Annual herbs, up to 60 cm tall, dichotomously branched, hispid. Leaves 4–6 × 1.2–2.4 cm, opposite, elliptic, oblanceolate or obovate. Heads bright yellow, solitary, axillary, at fork of branches; ray florets ligulate; disc florets tubular, 5-lobed. Achenes triangular, covered with stiff, hooked bristles and with divergent awns at apex.

Fl. & Fr.: September–October.

Illus.: Matthew, Illus. Fl. Tamilandu Carnatic 2: t. 350. 1982.

Distrib.: Frequent in moist places, Nawegaon.

Ageratum L.

Ageratum conyzoides L., Sp. Pl. 839. 1753; Hook.f., Fl. Brit. India 3: 243. 1881; Cooke, Fl. Pres. Bombay 2: 70. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 181. 2001. '*Burandu*', '*Osadi*', '*Sahadevi*'.

Annual herbs, 30–90 cm high, erect, hairy. Leaves 2.5–6 × 1.6–3.5 cm, broadly ovate, more or less hairy on both surfaces, at apex subacute. Heads small, in dense terminal corymbs, white or pale blue. Achenes sharply 5-angled, slightly curved, black, sparsely spiculate on angles.

Fl. & Fr.: July–March.

Illus.: Matthew, Illus. Fl. Tamilandu Carnatic 2: t. 352. 1982.

Distrib.: Common throughout along roadside, waste places and forest edges, Nawegaon, Nagzira.

Notes: Leaves used for healing of wounds. Whole plant useful for skin diseases.

Amberboa (Pers.) Less (*nom. cons.*)

Amberboa ramosa (Roxb.) Jafri in Scientist 3: 29. 1959; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 119. 1981; D.L. Shirodkar & P. Lakshmin. in N.P. Singh & al., Fl. Maharashtra State 2: 181. 2001. *Cardus ramosus* Roxb., Fl. Ind. 3: 407. 1832. *Volutarella divaricata* (DC.) Benth. & Hook.f., Gen. Pl. 2: 476. 1873; Hook.f., Fl. Brit. India 3: 383. 1881; Cooke, Fl. Pres. Bombay 2: 115. 1958 (Repr.). '*Lih-katmanda*'.

Annual herbs, straggling or erect; stem rough, branched, white tomentose. Leaves variable, obovate to oblanceolate, lobed. Heads purple, bottle shaped, tipped with weak spinules. Achenes dull brown, 3–4 angled.

Fl. & Fr.: January–March.

Illus.: Hajra in Hajra & al. Fl. India 12: 154. f. 44. 1995.

Distrib.: Frequent in open places along grasses, Nagzira.

Bidens L.

Bidens biternata (Lour.) Merr. & Sherff. in Bot. Gaz. 88: 293. 1929; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 184. 2001. *Coreopsis biternata* Lour., Fl. Cochinch. 508. 1790. *Bidens pilosa* auct. non L. 1753; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 2: 101. 1958 (Repr.).

Annual herbs, upto 1 m high, erect; stem quadrangular, ribbed, hairy. Leaves ternate or once pinnate-bipinnate; leaflets trilobed ovate, acute. Heads yellow, solitary, terminal or on leaf opposed peduncles. Achenes linear, spindle shaped, black, with brown awns.

Fl. & Fr.: August–October.

Distrib.: Common in open and wet places, Nawegaon, Nagzira.

Notes: Leaves eaten by wild animals.

Blumea DC. (*nom. cons.*)

Key to the species

- | | |
|--|------------------------|
| 1a. Plants densely white-woolly | B. malcolmii |
| 1b. Plants glabrous or variously pubescent, never white woolly | 2 |
| 2a. Achenes ribbed or angled | 3 |
| 2b. Achenes neither ribbed nor angled | 8 |
| 3a. Receptacles glabrous | 4 |
| 3b. Receptacles pilose | B. laciniata |
| 4a. Heads sessile | B. sessiliflora |
| 4b. Heads pedunculate or subsessile | 5 |
| 5a. Corolla purple | B. mollis |
| 5b. Corolla yellow | 6 |

- | | | |
|--|------------------------|---|
| 6a. Female florets pubescent | B. eriantha | |
| 6b. Female florets glabrous | | 7 |
| 7a. Leaves not membranous | B. virens | |
| 7b. Leaves membranous | B. membranacea | |
| 8a. Stems unbranched | B. belangeriana | |
| 8b. Stems branched | | 9 |
| 9a. Erect herbs; female florets glabrous | B. obliqua | |
| 9b. Prostrate or decumbent herbs, female florets pubescent | B. oxyodonta | |

Blumea belangeriana DC., Prodr. 5: 444. 1836; Hook.f., Fl. Brit. India 3: 266. 1881; Cooke, Fl. Pres. Bombay 2: 78. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 187. 2001.

Herbs up to 40 cm tall, erect; stem terete densely hairy, often purple. Leaves 3–6 × 1.5–3 cm, obovate, hairy on both surfaces. Heads dense; involucre bracts longer than florets. Achenes terete, oblong, pubescent.

Fl. & Fr.: December–March.

Distrib.: Infrequent in moist habitats, Nagzira.

Notes: This species is endemic to India.

Blumea eriantha DC., in Wight, Contrib. Bot. Ind. 15. 1834; Hook.f., Fl. Brit. India 3: 266. 1881; Cooke, Fl. Pres. Bombay 2: 78. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980. D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 188. 2001. ‘*Nimurdi*’.

Erect herbs, up to 40 cm tall, perennial. Leaves 3–6 × 2–3 cm, upper ones sessile to subsessile, elliptic-oblong, silky-pubescent, lower obovate, petioled, margins serrate. Heads yellow, in pedunculate cymes. Pappus white. Achenes minutely hairy, angled.

Fl. & Fr.: December–March.

Distrib.: Common in open places, Nagzira.

Notes: It is endemic to India.

Blumea laciniata (Roxb.) DC., Prodr. 5: 436. 1836; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 3: 263. 1881; Cooke, Fl. Pres. Bombay 2: 80. 1958 (Repr.); D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 189. 2001. *Conyza laciniata* Roxb., Fl. Ind. 3: 428. 1832. ‘*Burada*’.

Erect or ascending herbs, 20–40 cm high, covered with dense glandular pubescence. Stems hollow. Leaves 5–30 cm long, lyrate lobed. Heads in corymbs. Achenes 8–10 ribbed.

Fl. & Fr.: November–March.

Illus.: S. Kumar in Hajra & al. Fl. India 13: 129. f. 39. 1995; D.L. Shirodkar & P.P. Lakshmi. *op. cit.* 190.

Distrib.: Scattered along banks of nallahs, streams and moist places, Nagzira.

Blumea malcolmii (C.B. Clarke) Hook.f., Fl. Brit. India 3: 266. 1881; Cooke, Fl. Pres. Bombay 2: 78. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 120. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 191. 2001. *Pluchea malcolmii* C.B. Clarke. Comp. Ind. 95. 1876.

Herbs, 1–1.5 m tall, decumbent or ascending, strongly aromatic. Leaves 2.2–9.5 × 1.2–4.5 cm, obovate, sessile. Heads terminal, fasciculate, subsessile. Achenes dark brown, angled, pubescent.

Fl. & Fr.: October–May.

Distrib.: Frequent among grasses in dense forests, Nagzira.

Notes: Leaves useful for healing cuts and wounds while whole plant is repellent of honeybees. The species is also endemic to India.

Blumea membranacea DC., Prodr. 5: 440. 1836; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 3: 265. 1881; Cooke, Fl. Pres. Bombay 2: 77. 1958 (Repr.); D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 191. 2001. '*Maharbir*'.

Annual herbs, 1–2 m tall; glandular pubescent.. Leaves 6–12 × 2.2–4.2 cm, obovate, often lyrate, membranous, at apex acute, base tapering. Heads numerous, on slender, glandular hairy peduncles in much branched, open panicles. Achenes oblong, ribbed, pubescent.

Fl. & Fr.: March–June.

Distrib.: Common in moist places, Nawegaon, Nagzira.

Blumea mollis (D. Don) Merr. in Philip. J. Sci. (Bot.) 5: 395. 1910; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 193. 2001. *Erigeron molle* D. Don., Prodr. 172. 1825. *Blumea wightiana* DC., in Wight, Contrib. Bot. Ind. 14. 1884; Hook.f., Fl. Brit. India 3: 261. 1881; Cooke, Fl. Pres. Bombay 2: 75. 1958 (Repr.).

Aromatic, erect herbs; stems and branches villous. Leaves 2–6.5 × 1.5–3.2 cm, ovate-oblong, densely hairy, base tapering into petiole, margins dentate-serrate. Heads in spiciform panicles; florets purple. Achenes 5-angled, oblong, pubescent.

Fl. & Fr.: December–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: f. 357, 1982.

Distrib.: Common along stream banks in forests, Nagzira.

Blumea obliqua (L.) Druce, Rep. Bot. Exch. Club. Brit. Is. 4: 609. 1916; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 195. 2001. *Erigeron obliquum* L., Mant. 2: 573. 1771. *Blumea amplexans* DC. in Wight, Contrib. Bot. Ind. 13. 1834; Hook.f., Fl. Brit. India 3: 260. 1881; Cooke, Fl. Pres. Bombay 2: 75. 1958 (Repr.).

Annual herbs, 20–40 cm high; stems hairy, terete, aromatic. Leaves 2–4 × 0.6–1 cm, sessile, obovate, often deeply dissected, upper oblanceolate-lanceolate. Heads pink, few, terminal. Achenes minute, oblong; pappus pinkish.

Fl. & Fr.: December–March.

Illus.: D.L. Shirodkar & P. Lakshmi. *op. cit.* 194.

Distrib.: Frequent along roadsides and open places, Nawegaon.

Blumea oxydonta DC., in Wight, Contrib. Bot. Ind. 15. 1834; Hook.f., Fl. Brit. India 3: 266. 1881; Cooke, Fl. Pres. Bombay 2: 77. 1958 (Repr.); D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 195. 2001.

Herbs, up to 20 cm long, prostrate or decumbent, branched. Branches whitish-silky hairy. Upper leaves 0.5–0.8 × 0.4–0.5 cm, obovate to obovate-oblong, silky hairy on both surfaces, lower leaves much larger 8–12 × 2.5–4.5 cm, elliptic-oblong. Heads yellow. Involucral bracts villous, glandular. Achenes oblong, pubescent.

Fl. & Fr.: November–May.

Distrib.: Common along road sides, Nagzira.

Blumea sessiliflora Decne. in Nouv. Ann. Mus. Rar. 3: 140. 1834; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 196. 2001.

Erect, pubescent herbs. Leaves obovate to oblanceolate, radical, lyrate, shortly petioled, sharply dentate. Heads yellow, clustered in axils of bractiform leaves. Achenes pilose, 5-angled.

Fl. & Fr.: December–February.

Distrib.: Rare in open moist places, Nawegaon.

Notes: Naik & Bhogaonkar (1990) reported this rare species from Amaravati. After 18 years the same species recollected from Nawegaon.

Blumea virens DC., in Wight, Contrib. Bot. Ind. 14. 1834; Hook.f., Fl. Brit. India 3: 264. 1881; Cooke, Fl. Pres. Bombay 2: 77. 1958 (Repr.); D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 196. 2001.

Annual herbs, 30–90 cm tall, stems striate. Leaves 1.7–11.5 × 0.8–5.5 cm, oblanceolate, obovate or lyrate lobed, glabrous above, sparsely glandular-hairy beneath. Heads yellow, in lax panicles. Achenes oblong, hairy, ribbed.

Fl. & Fr.: December–March.

Distrib.: Common as undergrowth in forests, Nagzira.

Caesulia Roxb.

Caesulia axillaris Roxb. Pl. Cor. 1: 64, t. 93. 1795; Hook.f., Fl. Brit. India 3: 291. 1881; Cooke, Fl. Pres. Bombay 2: 92. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 197. 2001. '*Maka*'.

Herbs, 15–40 cm high, stems succulent, prostrate or suberect. Leaves sessile, oblong-lanceolate, acute at apex, narrowed at base. Heads white or purplish, axillary, compound, globose. Pappus of 2 ovate scales. Achenes flat, obovate, slightly notched at apex, hairy.

Fl. & Fr.: September–March.

Illus.: S. Kumar & P.C. Pant in Hajra & al. Fl. India 13: 3, f. 1. 1995.

Distrib.: Frequent in marshy places, Nawegaon.

Cyathocline Cass.

Cyathocline purpurea (Buch.-Ham. ex D. Don) O. Ktze. Rev. Gen. Pl. 333. 1891; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 203. 2001. *Tanacetum purpureum* Buch.-Ham. ex D. Don, Prodr. Fl. Nepal. 181. 1825. *Cyathocline lyrata* Cass. in Ann. Sci. Nat. 1, 17: 420. 1829; Hook.f., Fl. Brit. India 3: 246. 1881; Cooke, Fl. Pres. Bombay 2: 71. 1958 (Repr.).

Suberect herbs, 20–40 cm high, stem viscid and glandular, silky hairy. Basal leaves radical and cauline, sessile, segments toothed. Heads purple, in terminal corymbose-panicles. Achenes oblong, minute, faintly ribbed.

Fl. & Fr.: October–March.

Distrib.: Frequent in open wet places, Nagzira, Nawegaon.

Eclipta L. (*nom. cons.*)

Eclipta prostrata (L.) L., Mant. 2: 286. 1771; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 480. 1981; D. L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 207. 2001. *Verbesina prostrata* L., Sp. Pl. 902. 1753. *Eclipta alba* (L.) Hassk., Fl. Jav. Rar. 528. 1848; Hook.f., Fl. Brit. India 3: 304. 1881. *Eclipta erecta* L., Mant. 2: 286. 1771; Cooke, Fl. Pres. Bombay 2: 112. 1958 (Repr.). ‘*Bhangra*’, ‘*Maka*’.

Annual herbs; stem erect or prostrate. Leaves 2–6 × 1–2.5 cm, sessile, oblong-lanceolate or elliptic. Heads yellow, solitary or paired on axillary peduncles. Achenes oblong-obovate, tubercled all over, trigonous, brown to black.

Fl. & Fr.: July–March.

Distrib.: Common in wet places, Nawegaon, Nagzira.

Notes: Whole plant useful in leucoderma and skin rash.

Elephantopus L.

Elephantopus scaber L., Sp. Pl. 814. 1753; Hook.f., Fl. Brit. India 3: 242. 1881; Cooke, Fl. Pres. Bombay 2: 68. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 208. 2001. ‘*Pathari*’, ‘*Ran-tambaku*’. (PLATE: B-3)

Herbs erect, 15–40 cm high, softly pubescent. Leaves radical, obovate-oblong, serrate-dentate, cauline, few. Heads bluish-deep purple, in terminal, dichotomous cymes. Achenes oblong, 10-ribbed, hairy in between ribs, truncate.

Fl. & Fr.: August–November.

Illus.: Uniyal in Hajra & al. Fl. India 13: 334, f. 102. 1995.

Distrib.: Common under shade of trees, Nawegaon, Nagzira.

Notes: This species is useful medicinally for stomach disorder, swellings, toothache, eczema and snakebite.

Emilia Cass.

Emilia sonchifolia (L.) DC. in Wight, Contrib. Bot. Ind. 24. 1834; Hook.f., Fl. Brit. India 3: 336. 1881; Cooke, Fl. Pres. Bombay 2: 107. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; D.L. Shirodkar & P. Lakshmin. in N.P. Singh & al., Fl. Maharashtra 2: 209. 2001; *Cacalia sonchifolia* L., Sp. Pl. 836. 1753. ‘*Sadamandi*’, ‘*Dhamapan*’.

Herbs, 15–40 cm high; stem erect or diffuse. Leaves variable, radical or cauline, upper lanceolate to oblong, acute, lower ovate, lyrate. Heads purplish, in terminal, lax corymbose panicles. Achenes narrow, 5-ribbed, brown, oblong, pubescent along angles.

Fl. & Fr.: August–December.

Illus.: R. Mathur in Hajra & al. Fl. India 13: 214, f. 67. 1995.

Distrib.: Frequent along cultivated fields and open places, Nawegaon, Nagzira.

Gnaphalium L.

Gnaphalium polycaulon Pers., Syn. Pl. 2: 421. 1807; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 217. 2001. *Gnaphalium indicum auct non* L. 1753; Hook.f., Fl. Brit. India 3: 288. 1881; Cooke, Fl. Pres. Bombay 2: 87. 1958 (Repr.).

Herbs, 25–30 cm tall, densely white-pilose. Leaves 2.5×1.4 cm, narrowly linear-obovate. Heads in clusters of terminal spikes. Achenes oblong, papillose.

Fl. & Fr.: December–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 373. 1982.

Distrib.: Frequent along roadsides, open places, Nagzira.

Goniocaulon Cass.

Goniocaulon indicum (Klein ex Willd.) C.B. Clarke, Comp. Ind. 236. 1876; D. L. Shirodkar & P. Lakshmin. in N.P. Singh & al., Fl. Maharashtra 2: 218. 2001. *Serratula indica* Klein ex Willd., Sp. Pl. 3: 1642. 1803. *Goniocaulon glabrum* Cass. in Bull. Soc. Philom. 1817: 34. 1817; Hook.f., Fl. Brit. India 3: 377. 1881; Cooke, Fl. Pres. Bombay 2: 113. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 120. 1981. ‘*Kadkusumba*’.

Annual herbs c. 40 cm tall. Leaves linear or oblong-obovate. Heads with rose coloured flowers. Pappus paleaceous; scales unequal, linear-obovate. Achenes closely ribbed, subcylindric.

Fl. & Fr.: September–January.

Distrib.: Infrequent in moist places, Nagzira.

Grangea Adans.

Grangea maderaspatana (L.) Poir. in Lam., *Encycl.* (Suppl. 2) 825. 1812; Hook.f., *Fl. Brit. India* 3: 247. 1881; Cooke, *Fl. Pres. Bombay* 2: 72. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78(3): 481. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra State* 2: 218. 2001. *Artemisia maderaspatana* L., *Sp. Pl.* 849. 1753. ‘*Mashipatri*’.

Annual herbs, up to 30 cm high; branches prostrate, glandular-pubescent. Leaves 0.4–0.8 × 0.2–0.4 cm, subsessile, at apex apiculate, decurrent at base, margins entire. Heads yellowish, globose, solitary, axillary and terminal. Pappus tubular, with fimbriate margins. Achenes 3–5 gonous, glandular, truncate, oblong,

Fl. & Fr.: December–April.

Distrib.: Frequent in moist places, Nawegaon, Nagzira.

Lagascea Cav. (*nom. cons.*)

Lagascea mollis Cav. in *Anal. Sci. Nat.* 6: 332, t. 44. 1803; Hook.f., *Fl. Brit. India* 3: 302. 1881; Cooke, *Fl. Pres. Bombay* 2: 93. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 7. 1980; D. L. Shirodkar & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra State* 2: 222. 2001. ‘*Tharvad*’.

Annual herbs, up to 90 cm tall; stems slender, laxly branched, villous. Leaves 2.5–4 × 0.8–2 cm, ovate-lanceolate, hairy on both surfaces, acute, serrulate. Heads whitish, clustered at end of branches on long peduncles. Achenes compressed, 3-angled, obconical, pubescent.

Fl. & Fr.: Mostly throughout the year.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 378. 1982.

Distrib.: Common in open places, Nawegaon.

Notes: Leaves useful in ear complaints.

Laggera Sch-Bip. ex Koch.

Laggera alata (D. Don) Sch-Bip. ex Oliver in *Trans. Linn. Soc. Lond.* 29: 94. 1873; Hook.f., *Fl. Brit. India* 3: 271. 1881; Cooke, *Fl. Pres. Bombay* 2: 80. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 121. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra State* 2: 223. 2001. *Erigeron alatum* D. Don, *Prodr. Fl. Nepal.* 171. 1825.

Annual herbs, 40–80 cm tall, erect, suffruticose. Leaves oblong-decurrent, elliptic-ovate. Heads axillary and terminal on leafy peduncles, pink rose with unequal involucre bracts. Pappus white. Achenes cylindrical, ribbed, hairy.

Fl. & Fr.: December–March.

Illus.: Wight, Ic. t. 1101. 1846.

Distrib.: Infrequent. Among grasses in open places, Nagzira.

Parthenium L.

Parthenium hysterophorus L., Sp. Pl. 988. 1753; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 227. 2001. '*Gajargavat*'.

Herbs up to 90 cm tall; stems angular, hairy. Leaves alternate, irregularly much dissected. Heads white, in terminal or axillary panicles. Achenes compressed, triquetrous, puberulous along sides.

Fl. & Fr.: September–January.

Illus.: Matthew, Illus. Fl. Tamilandu Carnatic 2: t. 2382. 1982.

Distrib.: Common in open areas and waste places, Nawegaon, Nagzira.

Notes: Native of tropical America, naturalized and has become a troublesome weed.

Pentanema Cass.

Pentanema indicum (L.) Ling in Acta phyt. Sin. 10: 179. 1965; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 229. 2001; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981. *Inula indica* L., Sp. Pl. ed. 2, 1236. 1763. *Vicoa indica* (L.) DC., in Wight, Contrib. Bot. Ind. 10. 1834. *Vicoa auriculata* Cass. in Ann. Sci. Nat. Paris 1, 17: 418. 1829; Hook.f., Fl. Brit. India 3: 297. 1881; Cooke, Fl. Pres. Bombay 2: 38. 1958 (Repr.). '*Sonkadi*'.

Perennial herbs, 30–80 cm tall; stem erect, rigid, terete. Leaves sessile, linear or linear-lanceolate, appressed hairy, auricled at base. Heads yellow, on slender peduncles. Pappus of disc florets scanty. Achenes brown, sparsely hairy, narrowed.

Fl. & Fr.: October–February.

Distrib.: Common in moist habitats, Nawegaon, Nagzira.

Notes: Plant used medicinally for stomach disorder.

Pulicaria Gaertn.

Pulicaria angustifolia DC., Prodr. 4: 476. 1836; Hook.f., Fl. Brit. India 3: 299. 1881; Cooke, Fl. Pres. Bombay 2: 90. 1958 (Repr.); D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 235. 2001.

Diffusely branched herbs, 15–30 cm tall, softly pubescent; branches ascending. Leaves sessile, linear-oblong, pubescent, base amplexicaul, margins serrulate. Heads bright yellow. Achenes terete, pappus in 2 series, white to reddish.

Fl. & Fr.: August–January.

Distrib.: Occasional on grassy hill slopes, Nawegaon.

Sphaeranthus L.

Sphaeranthus indicus L., Sp. Pl. 1314. 1753; Hook.f., Fl. Brit. India 3: 275. 1881; Cooke, Fl. Pres. Bombay 2: 84. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 242. 2001. 'Gorakhmun', 'Gorakhmundi'.

Herbs, 20–50 cm tall; stems tallly branched, spreading. Leaves 2–5 × 1–2.5 cm, obovate-oblong, glandular hairy. Heads purple-reddish, globose, solitary on glandular peduncles; Achenes oblong, glabrous, stalked.

Fl. & Fr.: November–March.

Distrib.: Common throughout in wet places, Nawegaon, Nagzira.

Notes: Whole plant useful in digestive disorder and its decoction to check cough.

Spilanthes Jacq.

Key to the species

1a. Pappus bristles present

S. paniculata

1b. Pappus bristles absent

S. calva

Spilanthes calva DC., in Wight., Contrib. Bot. Ind. 19. 1834. *Spilanthes acmella* auct. non Murr. 1774; Hook.f., Fl. Brit. India 3: 307. 1881; Cooke, Fl. Pres. Bombay 2: 99. 1958 (Repr.); D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 243. 2001. 'Akkalkara'.

Herbs, suberect. Leaves opposite, c. 4 × 3 cm, ovate, at apex acute, base tapering. Heads yellow, solitary or in subpanicles. Achenes oblong or obovoid, truncate, much compressed, glabrous.

Fl. & Fr.: September–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 387. 1982.

Distrib.: Common in herbaceous vegetation, near moist places. Nagzira.

Notes: Fruits are edible and also used as pickle.

Spilanthes paniculata Wall. ex DC. in Wight, Contrib. Bot. Ind. 18. 1834; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 244. 2001. *Spilanthes acmella* var. *paniculata* (DC.) C.B. Clarke, Comp. Ind. 139. 1876; Hook.f., Fl. Brit. India 3: 307. 1881 'Akkalkhari', 'Akkalkara'.

Herbs, 60–90 cm tall, stems decumbent, glabrescent. Leaves ovate, base narrowed into petiole. Heads yellow, in panicles. Achenes obovoid, sparsely scabrid.

Fl. & Fr.: September–January.

Distrib.: Frequent in wet fields under shade of trees, Nawegaon, Nagzira.

Synedrella Gaertn. (*nom. cons.*)

Synedrella nodiflora (L.) Gaertn., Fruct. 2: 456, t. 171, f. 7. 1791; Hook.f., Fl. Brit. India 3: 308. 1881; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 244. 2001. *Verbesina nodiflora* L., Cent. Pl. 1: 28. 1755.

Herbs, 30–50 cm high, erect. Leaves *c.* 4 × 2 cm, hairy, ovate or elliptic, at apex acute, base cuneate, margins serrate. Heads yellow, axillary and terminal, solitary or clustered. Pappus of ray florets, paleaceous, toothed, papus of disc florets 2-awned, scabrid. Achenes of ray florets ribbed, lacerate and those of disc florets subtrigonal, tubercled, with 2–4 terminal awns.

Fl. & Fr.: August–February.

Distrib.: Frequent in open places, Nagzira.

Tridax L.

Tridax procumbens L., Sp. Pl. 900. 1753; Hook.f., Fl. Brit. India 3: 311. 1881; Cooke, Fl. Pres. Bombay 2: 102. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 247. 2001. ‘*Dagadi pala*’, ‘*Ekdandi*’.

Herbs, annual or perennials, 20–30 cm high; stems erect or procumbent. Leaves 2.5–4.5 × 1.5–2.5 cm, opposite, ovate or lanceolate, margins serrate, hairy. Heads yellowish-white, heterogamous, produced on erect, sparsely glandular peduncles, terminal, solitary. Achenes narrowly obconical, blackish, ribbed, hairy.

Fl. & Fr.: Mostly throughout the year.

Distrib.: Common as weed in open places, Nawegaon, Nagzira.

Notes: Leaf juice is used in diarrhoea and eye infections. Whole plant applied on cuts and wounds as an antiseptic and healing.

Vernonia Schreb. (*nom. cons.*)**Key to the species**

- | | |
|--------------------------|-------------------------|
| 1a. Achenes 10 ribbed | V. indica |
| 1b. Achenes not as above | 2 |
| 2a. Achenes 5-angled | V. anthelmintica |
| 2b. Achenes 2–4 angled | 3 |
| 3a. Pappus uniseriate | V. divergens |
| 3b. Pappus biseriate | V. cinerea |

Vernonia anthelmintica (L.) Willd., Sp. Pl. 3: 1634. 1803; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 3: 236. 1881; Cooke, Fl. Pres. Bombay 2: 66. 1958 (Repr.); D. L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 248. 2001. *Conyza anthelmintica* L., Sp. Pl. ed. 2, 1207. 1763. ‘*Kale-jire*’, ‘*Kadujira*’.

Annual herbs, 60–80 cm high. Leaves 6–8 × 2–4 cm, elliptic-lanceolate or obovate, tapering at base. Heads subsolitary, leaf opposed, terminal, corymbose. Pappus, reddish in two whorls. Achenes oblong-cylindric, black, ribbed, pubescent.

Fl. & Fr.: September–February.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 393. 1982.

Distrib.: Frequent in moist, open places, Nagzira.

Notes: Seeds useful medicinally in Bronchitis.

Vernonia cinerea (L.) Less. in *Linnaea* 4: 291. 1829; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 3: 233. 1881; Cooke, *Fl. Pres. Bombay* 2: 65. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 7. 1980 et in *J. Bombay Nat. Hist. Soc.* (78) 3: 481. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra State* 2: 248. 2001. *Conyza cinerea* L., *Sp. Pl.* 862. 1753. ‘*Sahadevi*’, ‘*Osari*’.

Herbs, 20–50 cm high; stems erect, slightly pubescent. Leaves 2–4 × 1–2 cm, elliptic or lanceolate, pubescent on both surfaces. Heads bright purple, in terminal, corymbose cymes. Pappus white. Achenes terete, oblong, slightly brownish, angled, narrowed at base.

Fl. & Fr.: July–February.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 101. 1966.

Distrib.: Common as a weed in open places, Nawegaon, Nagzira.

Notes: Fruits used in fever.

Vernonia divergens (Roxb.) Edgew. in *J. Asiat. Soc. Bengal* 21: 172. 1853; Hook.f., *Fl. Brit. India* 3: 234. 1881; Cooke, *Fl. Pres. Bombay* 2: 67. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 121. 1981; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra State* 2: 248. 2001. *Eupatorium divergens* Roxb., *Fl. Ind.* 3: 414. 1832. ‘*Bundar*’.

Shrubs, 1–2 m tall. Leaves 5.5–10 × 2.6–4.2 cm, elliptic, acute at apex, scabrid beneath. Heads purple, in terminal and axillary branched corymbs. Achenes minute, 10-ribbed glabrous.

Fl. & Fr.: December–May.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 247. 1982.

Distrib.: Frequent in damp, moist places, Nawegaon.

Vernonia indica Wall. ex. C.B. Clarke, *Comp. Ind.* 16. 1876; Hook.f., *Fl. Brit. India* 3: 238. 1881; Cooke, *Fl. Pres. Bombay* 2: 67. 1958 (Repr.); D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., *Fl. Maharashtra State* 2: 249. 2001.

Shrubs, 1–1.5 m tall, hairy. Leaves 3–8 × 1–4 cm, elliptic, margins serrate. Heads 0.6–0.8 cm across; bracts below head lanceolate; involucre bracts ovate-oblong, mucronate, purple tipped. Achenes oblong, subcompressed, ribbed.

Fl. & Fr.: October–November.

Distrib.: Occasional on grassy hill slopes, Nawegaon.

Notes: It is also endemic to India.

Xanthium L.

Xanthium indicum Koen. in Roxb., Fl. Ind. 3: 601. 1832. *Xanthium strumarium* L., Sp. Pl. 987. 1753; Hook.f., Fl. Brit. India 3: 303. 1881; Cooke, Fl. Pres. Bombay 2: 94. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; D.L. Shirodkar & P. Lakshmi. in N.P. Singh & al., Fl. Maharashtra State 2: 251. 2001. 'Shankeshwar'.

Undershrubs, 40–120 cm tall; stem stout, branched, hairy. Leaves 5–6 × 3–7 cm, broadly ovate, triangular, suborbicular, trilobed, hairy. Heads green, in terminal and axillary spikes; male heads in the upper part of the inflorescence. Achenes oblong or ovoid, compressed, black.

Fl. & Fr.: October–May.

Distrib.: Frequent in open places, Nawegaon.

CAMPANULACEAE

Wahlenbergia Schard. ex Roth (*nom. cons.*)

Wahlenbergia marginata (Thunb.) A. DC., Monogr. Campanulaceae 143. 1830; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 121. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 273. 2001. *Campanula marginata* Thunb., Fl. Jap. 89. 1784; C.B. Clarke in Hook.f., Fl. Brit. India 2: 428. 1881; Cooke, Fl. Pres. Bombay 2: 133. 1958 (Repr.).

Herbs, 20–40 cm tall. Leaves 1–3.5 × 0.4–1 cm, linear-oblong. Flowers blue, in lax, cymose panicles. Capsules turbinate.

Fl. & Fr.: December–March.

Illus.: A.N. Londhe *op. cit.* 274.

Distrib.: Rare in open situations, Nagzira.

LOBELIACEAE

Lobelia L.

Lobelia alsinoides Lam., Encycl. 3: 588. 1792; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. (78) 3: 481. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 275. 2001. *Lobelia trigona* Roxb., Fl. Ind. 2: 111. 1824; C.B. Clarke in Hook.f., Fl. Brit. India 3: 423. 1881; Cooke, Fl. Pres. Bombay 2: 130. 1958 (Repr.).

Herbs, 30 cm long; stems prostrate, rooting at nodes. Leaves 1–2 × 0.5–1.5 cm, ovate or elliptic, at apex acute or obtuse, base cordate, margins serrate. Flowers blue forming lax, terminal, leafy racemes. Capsules minute, ribbed. Seeds trigonous.

Fl. & Fr.: August–October.

Illus.: A.N. Londhe *op. cit.* 276.

Distrib.: Common in open wet places, Nawegaon, Nagzira.

PLUMBAGINACEAE

Plumbago L.

Plumbago zeylanica L., Sp. Pl. 151. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 3: 480. 1882; Cooke, Fl. Pres. Bombay 2: 136. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. (78)3: 481. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 282. 2001. '*Chitrak*', '*Chitramula*'.

Perennial undershrubs, 1–1.5 m tall, erect or subscandent. Leaves 2.5–5 × 2–3 cm, ovate or ovate-lanceolate. Flowers white, in terminal spikes. Capsules oblong, pointed and enclosed in stalked, glandular, persistent calyx. Seeds oblong, smooth.

Fl. & Fr.: August–October.

Illus.: A.N. Londhe *op. cit.* 283.

Distrib.: Common along the hill tops and in waste places in plains, Nawegaon, Nagzira.

Notes: Roots useful medicinally in diarrhoea, piles, swellings and skin diseases. Its milky juice useful for scabies.

MYRSINACEAE

Embelia Burm.f. (*nom. cons.*)

Embelia basaal (Roem. & Schult.) A. DC., in Trans. Linn. Soc. 17: 131. 1837; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 287. 2001. *Ardisia basaal* Roem. & Schult. Syst. Veg. 4: 517. 1819. *Embelia robusta* auct. plur. non Roxb. 1820; C.B. Clarke Hook.f., Fl. Brit. India 3: 515. 1882 p.p. quoad *Embelia basal*; Cooke, Fl. Pres. Bombay 2: 143. 1958 (Repr.) p.p. Quoad *E. basal*. '*Ambati*', '*Baibarang*', '*Vowding*'.

Shrubs or small trees. Leaves broadly elliptic, acuminate, gland dotted beneath. Flowers pentamerous, greenish-yellow, in axillary, rusty-puberulous racemes. Fruits globose, apiculate with style, green-red.

Fl. & Fr.: Throughout the year.

Illus.: A.N. Londhe *op. cit.* 288.

Distrib.: Common throughout in the dense forests, Nagzira.

Notes: Fruits are edible. Medicinally, roots used as an antidote for snake bite and scorpion sting.

SAPOTACEAE

Key to the genera

- | | |
|-----------------------------------|---|
| 1a. Corolla lobes 18–24 | 2 |
| 1b. Corolla lobes not more than 8 | 3 |

2a. Calyx segments 8; staminodes hairy	Mimusops
2b. Calyx segments 6; staminodes glabrous	Manilkara
3a. Staminodes present; flowers white	Xantolis
3b. Staminodes absent; flowers cream-coloured	Madhuca

Madhuca J.F. Gmel.

Madhuca longifolia (Koen.) Mac Bride var. **latifolia** (Roxb.) Chev. in Rev. Bot Appl. 23: 149. 1943; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 293. 2001. *Bassia latifolia* Roxb., Pl. Cor.1: 20. 1795; C.B. Clarke in Hook.f., Fl. Brit. India 3: 544. 1882; Cooke, Fl. Pres. Bombay 2: 152. 1958 (Repr.). ‘*Mohva*’, ‘*Mahua*’. (PLATE: H-2)

Trees, 12–15 m tall. Leaves 5.5–18.5 × 2.5–8.5 cm, elliptic or elliptic-oblong, shortly acuminate at apex, rounded or acute at base, densely woolly when young, glabrous at maturity. Flowers cream-coloured, in dense fascicles near tip of branches. Berries ovoid, fleshy, markedly hairy at base. Seeds 1–4, brownish-black.

Fl. & Fr.: February–May.

Illus.: Talb., For. Fl. Bombay Pres. & Sind. 2: 157, f. 372. 1911 (*Bassia latifolia*).

Distrib.: Common in moist deciduous forests, Nawegaon, Nagzira.

Notes: Flowers and fleshy pericarp edible. Oil extracted from the seeds used in soap industry. Flowers also yield spirit. The sweet juice obtained from petals is good tonic.

Manilkara Adans. (*nom. cons.*)

Manilkara hexandra (Roxb.) Dub. in Ann. Mus. Col. Mars. 3, 3: 9, f. 2. 1915; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 294. 2001. *Mimusops hexandra* Roxb., Pl. Cor. 1: 16. t. 15. 1795; C.B. Clarke in Hook.f., Fl. Brit. India 3: 549. 1882; Cooke, Fl. Pres. Bombay 2: 155. 1958 (Repr.). ‘*Amdavadi Meva*’, ‘*Bakul*’, ‘*Khirni*’.

Trees, evergreen, 12–18 m tall; bark deeply furrowed. Leaves 4.0–15.0 × 2.2–5.0 cm, obovate to obovate-oblong, rounded or emarginate at apex, acute at base, dark glossy green above. Flowers whitish, solitary, axillary or in fascicles of 2–6. Berries ovoid, greenish, at length yellow. Seeds solitary, ovoid, reddish, shining.

Fl. & Fr.: September–November.

Illus.: Wight, Ic. t. 1587. 1850.

Notes: Seedlings are used as root stock in grafting of *Achras zapota* (Chiku) and fruits for indigestion.

Mimusops L.

Mimusops elengi L., Sp. Pl. 349. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 3: 548. 1882; 1: 190. 1872; Cooke, Fl. Pres. Bombay 2: 155. 1958 (Repr.); S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 294. 2001. ‘*Bakul*’, ‘*Borsali*’.

Trees, evergreen, 12–16 m tall. Leaves $4.5\text{--}8.5 \times 2.8\text{--}4.5$ cm, elliptic, shortly acuminate or acute. Flowers white, fragrant, solitary or in clusters. Berries ovoid, yellow when ripe. Seeds solitary, compressed, ovoid, shining, brown.

Fl. & Fr.: January–March.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Ripe fruits are edible. Bark is used in native medicines and as tonic and wood for furniture. Oil extracted from seeds is also useful medicinally.

Xantolis Raf.

Xantolis tomentosa (Roxb.) Raf., Sylv. Tell. 36. 1838; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 295. 2001. *Sideroxylon tomentosum* Roxb., Pl. Cor. t. 28. 1795; C.B. Clarke in Hook.f., Fl. Brit. India 3: 538. 1882; Cooke, Fl. Pres. Bombay 2: 150. 1958 (Repr.). ‘*Kate-kumbhal*’.

Trees, medium sized; twigs spiny. Leaves $4.2\text{--}8.5 \times 1.8\text{--}9.0$ cm, elliptic or obovate, subacute, rounded or retuse. Flowers white, in heads. Berries yellowish-green. Seeds solitary, polished.

Fl. & Fr.: May–January.

EBENACEAE

Diospyros L.

Key to the species

- | | |
|---|-----------------------|
| 1a. Anthers awned | D. montana |
| 1b. Anthers acute, acuminate; but not awned | 2 |
| 2a. Stamens 40 or more | D. peregrina |
| 2b. Stamens up to 22 | D. melanoxylon |

Diospyros melanoxylon Roxb., Pl. Cor. 1: 36, t. 46. 1795; C.B. Clarke in Hook.f., Fl. Brit. India 3: 564. 1882; Cooke, Fl. Pres. Bombay 2: 159. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78 (3): 481. 1981; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 301. 2001. ‘*Tendu*’, ‘*Temru*’, ‘*Tam rang*’, ‘*Tamraj*’. (PLATE: N-1)

Trees, 10–15 m tall, deciduous. Leaves $6\text{--}15 \times 2.5\text{--}7$ cm, alternate or subopposite, elliptic to oblong. Flowers unisexual; male flowers in axillary, drooping, paniculate cymes; female flowers solitary, subsessile. Fruits globose, with persistent calyx, yellow when ripe. Seeds blackish, 2–8, flat.

Fl. & Fr.: November–April.

Distrib.: Most common throughout the dense forests, Nawegaon, Nagzira.

Notes: Leaves are used as wrappers for bidis. Fruits are eaten by wild animals like bears.

Diospyros montana Roxb., Pl. Cor. 1: 37t. 48. 1795; C.B. Clarke in Hook.f., Fl. Brit. India 3: 555. 1882; Cooke, Fl. Pres. Bombay 2: 165. 1958 (Repr.); S.G. Pradhan in Singh & al., Fl. Maharashtra State 2: 301. 2001. ‘*Bistendu*’, ‘*Kudal*’.

Small trees, 5–8 m tall; young parts softly pubescent. Leaves $4-8 \times 2-5$ cm, ovate, oblong or elliptic. Flowers greenish-white, unisexual; male flowers in few-flowered panicles; female flowers solitary, axillary. Fruits globular, with persistent calyx lobes reflexed, reddish-brown. Seeds 2–8.

Fl. & Fr.: January–April.

Illus.: S.G. Pradhan *op. cit.* 300.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: The wood is said to be useful commercially and roots used as fish poison.

Diospyros peregrina (Gaertn.) Guerke in Engl. & Prantl., *Pflanzenf.* 4(1): 164. 1891; S.G. Pradhan in N.P. Singh & al., *Fl. Maharashtra State* 2: 302. 2001. *Embryopteris peregrina* Gaertn., *Fruct.* 1: 145. t. 29, f. 2. 1788. *Diospyros embryopteris* Pers., *Syn.* 2: 624. 1807; C.B. Clarke in Hook.f., *Fl. Brit. India* 3: 544. 1882; Cooke, *Fl. Pres. Bombay* 2: 167. 1958 (Repr.). ‘*Temburni*’.

Trees, 12–15 m tall. Leaves $8-20 \times 2-6$ cm, oblong-lanceolate. Male flowers 2–7-in drooping cymes; female flowers solitary, axillary. Fruits globose, with reflexed, accrescent calyx.

Fl. & Fr.: March–May.

Illus.: Talb., *For. Fl. Bombay Pres. & Sind.* 2: 171. f. 378. 1911.

Distrib.: Frequent in dense forests, Nagzira.

Notes: Fruits are eaten by wild animals.

OLEACEAE

Key to the genera

- | | |
|--|-------------------|
| 1a. Corolla tube orange-red; fruits capsular | Nyctanthes |
| 1b. Corolla tube and fruits not as above | 2 |
| 2a. Fruits drupaceous | Olea |
| 2b. Fruit a berry | Jasminum |

Jasminum L.

Key to the species

- | | |
|---------------------------|-----------------------|
| 1a. Bracts foliaceous | J. multiflorum |
| 1b. Bracts not foliaceous | J. malabaricum |

Jasminum malabaricum Wight, *Ic.* t. 1250. 1848; C.B. Clarke in Hook.f., *Fl. Brit. India* 3: 594. 1882; Cooke, *Fl. Pres. Bombay* 2: 172. 1958 (Repr.); S.G. Pradhan in N.P. Singh & al., *Fl. Maharashtra State* 2: 309. 2001. ‘*Kusar*’, ‘*Jai*’.

Climbing shrubs; stems woody. Leaves opposite, $3-8 \times 2-5$ cm, deltoid-elliptic, acuminate at apex, cordate at base. Flowers white, many, in lax, trichotomous, terminal cymes. Berries ovoid-globose, purplish-black.

Fl. & Fr.: March–June.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 187, f. 384. 1911.

Notes: Flowers are fragrant and fruits are edible.

Jasminum multiflorum (Burm.f.) Andr., Bot. Rep. 8, t. 486. 1807; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 309. 2001. *Nyctanthes multiflora* Burm.f., Fl. Ind. 5. t. 3, f. 1. 1768. *Jasminum pubescens* Willd., Sp. Pl. 1: 37. 1797; C.B. Clarke in Hook.f., Fl. Brit. India 3:592.1882; Cooke, Fl. Pres. Bombay 2: 173. 1958 (Repr.). ‘*Ran-mogra*’, ‘*Ranjai*’.

Scandent shrubs; branchlets velvety pubescent. Leaves 3–6 × 1–3 cm, ovate, elliptic or deltoid-ovate, acute at apex, truncate at base. Flowers white, sessile in terminal, capitate cymes. Berries 1–2, globose.

Fl. & Fr.: November–March.

Notes: Listed by Anjankar & Bardekar (2000) from Nagzira.

Nyctanthes L.

Nyctanthes arbor-tristis L., Sp. Pl. 6. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 3: 603. 1882; Cooke, Fl. Pres. Bombay 2: 176. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull Bot. Surv. India 22 : 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 311. 2001. ‘*Parijatak*’.

Trees or shrubs, up to 4 m high; branches quadrangular, hairy. Leaves 4–8 × 2–4 cm, ovate, rounded or cuneate at base. Flowers white, bracteates, in axillary and terminal, trichotomous cymes. Capsules obcordate, compressed. Seeds orbicular.

Fl. & Fr.: Almost throughout the year.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Flowers are used for making orange coloured dye.

Olea L.

Olea dioica Roxb., Fl. Ind. 1: 106. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 3: 612. 1882; Cooke, Fl. Pres. Bombay 2: 129. 1958 (Repr.); S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 311. 2001. ‘*Parjambhul*’.

Trees, up to 10 m high. Leaves elliptic-lanceolate, leathery, acute to acuminate at apex, rounded or acute at base. Flowers reddish, polygamous, in axillary panicles. Drupes ellipsoid, pointed. Seeds ellipsoid, rugose.

Fl. & Fr.: January–April.

SALVADORACEAE

Salvadora L.

Salvadora persica L. var. **wightiana** (Planch. ex Thw.) Verdc. in Kew Bull. 19: 150. 1964; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra 2: 316. 2001. *Salvadora wightiana* Planch. ex Thw., Enum. Pl. Zeyl. 190. 1860. *Salvadora persica* sensu Roxb.,

Fl. Ind. 1: 389. 1837 non L. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 3: 619. 1882; Cooke, Fl. Pres. Bombay 2: 182. 1958 (Repr.). 'Khakan', 'Khatau', 'Pilu', 'Pivla'.

Shrubs or trees 3–4 high with drooping branches. Leaves 3–5.5 × 0.5–2.5 cm, ovate or elliptic-lanceolate, mucronate at apex, acute or rounded at base. Flowers greenish-yellow, in axillary and terminal panicles. Drupes globose, 1 seeded, ripening red.

Fl. & Fr.: November–March.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 425. 1982.

APOCYNACEAE

Key to the genera

1a. Fruits drupaceous or berries	2
1b. Fruits follicular	3
2a. Corolla lobes overlapping to right	Carissa
2b. Corolla lobes overlapping to left	Rauvolfia
3a. Corolla with fimbriate corona	Wrightia
3b. Corolla without such corona	4
4a. Filaments spirally coiled	Parsonsia
4b. Filaments not as above	5
5a. Anthers spurred at base	Quirivelia
5b. Anthers not spurred at base	6
6a. Stamens inserted near base of corolla tube	Holarrhena
6b. Stamens inserted near top of corolla tube	Alstonia

Alstonia R.Br. (*nom. cons.*)

Alstonia scholaris (L.) R.Br. in Mem. Wern. Nat. Hist. Soc. 1: 76. 1811; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 2: 194. 1958 (Repr.); S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 318. 2001. *Echites scholaris* L., Mant. Pl. 53. 1767. 'Satvin'.

Trees, 15–25 m tall. Leaves whorled, 8–18 × 2.5–5 cm, obovate-oblong, obtuse or shortly acuminate at apex, tapering at base. Flowers cream coloured, in umbellately branched, capitate cymes. Follicles cylindric, pendulous. Seeds linear-oblong, flat, with hairy fringe at both ends.

Fl. & Fr.: December–March.

Distrib.: Frequent in dense forests, Nagzira.

Notes: Roots are useful medicinally in biliousness.

Carissa L. (*nom. cons.*)

Carissa congesta Wight, Ic. t. 1289. 1848; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 320. 2001. *Carissa carandas* auct. non L. 1767; C.B. Clarke in Hook.f., Fl. Brit. India 3: 642. 1882; Cooke, Fl. Pres. Bombay 2: 186. 1958 (Repr.).

var. *congesta*. 'Karvand'.

Shrubs, 2–3 m tall, evergreen; stems with stout, horizontal spines. Leaves 2.5–6 × 2–4 cm, elliptic or obovate, coriaceous, obtuse and mucronate at apex, subacute at base. Flowers white, in terminal, corymbose cymes. Fruits ellipsoid, dark purplish when ripe, 4 or more seeded.

Fl. & Fr.: January–April.

Illus.: Talb., For. Fl. Bombay Pres. & Sind. 2: 206, f. 393. 1911 (*Carissa carandas*).

Distrib.: Frequent in dense forests, Nagzira.

Notes: Fruits are edible. A good hedge plant.

Holarrhena R.Br.

Holarrhena pubescens (Buch.-Ham.) Wall. ex G. Don, Gen. Syst. 4: 78. 1837; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 322. 2001. *Echites pubescens* Buch.-Ham. in Trans. Linn. Soc. London 13: 521. 1821. *Holarrhena antidyserterica* (Roth) Wall. ex A. DC., in DC., Prodr. 8: 413. 1844; C.B. Clarke in Hook.f., Fl. Brit. India 3: 364. 1882; Cooke, Fl. Pres. Bombay 2: 195. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981. 'Kuda', 'Pandharakuda'.

Trees or large shrubs, 3–5 m high. Leaves 8–18 × 4–2.5 cm, ovate to elliptic, acuminate at apex, obtuse at base. Flowers white, in terminal and axillary corymbose cymes. Follicles cylindric, dotted with white spots. Seeds linear-oblong, tipped with silky brown coma.

Fl. & Fr.: February–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 430. 1982 (*Holarrhena antidyserterica*).

Distrib.: Common throughout in dense forests, Nawegaon, Nagzira.

Notes: Leaves used as bidi wrappers in some parts of Maharashtra and Goa (Kaul, 1982). Bark and seeds are used in preparation of valuable drugs for dysentery. Locally, leaves used as a tonic.

Parsonsia R.Br. (*nom. cons.*)

Parsonsia alboflavescens (Dennst.) Mabb. in Taxon 26: 532. 1977; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra 2: 323. 2001. *Periploca alboflavescens* Dennst. Schluss. 12, 23, 35. 1818. *Parsonsia spiralis* Wall. ex G. Don, Gen. Syst. 4: 80. 1837–38; C.B. Clarke in Hook.f., Fl. Brit. India 3: 650. 1882; Cooke, Fl. Pres. Bombay 2: 198. 1958 (Repr.). 'Nagalkuda'.

Twining shrubs up to 4 m long. Leaves 7.5–10 × 2.5–5 cm, elliptic to elliptic-oblong, acuminate at apex, rounded or acute at base. Flowers greenish, in paniculately corymbose cymes. Follicles cylindric, pointed coriaceous. Seeds oblong, straight, linear, silky.

Fl. & Fr.: March–May.

Notes: Listed by Anjankar & Bardekar (2000), Nagzira.

Quirivelia Poir.

Quirivelia frutescens (L.) M.R. & S.M. Almeida in J. Bombay Nat. Hist. Soc. 90: 427. (1993) 1994; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 325. 2001. *Apocynum frutescens* L., Sp. Pl. 213. 1753. *Ichnocarpus frutescens* (L.) R.Br. Mem. Wern. Nat. Hist. Soc. 1: 62. 1811; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 2: 205. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981. 'Kantabharr', 'Kalidudhi', 'Krishnasazwa'.

Climbing shrubs. Leaves 5–7 × 2–3 cm, oblong to elliptic, acute at apex, rounded at base. Flowers greenish-white, in paniculately branched cymes. Follicles cylindric. Seeds linear; coma white, scanty.

Fl. & Fr.: November–December.

Distrib.: Infrequent along the hedges, Nawegaon, Nagzira.

Notes: Stem fibre used for cordage.

Rauvolfia L.

Key to the species

- 1a. Herbs c. 50 cm tall; calyx bright red; corolla tube inflated near middle; fruits purplish-black when ripe **R. serpentina**
- 1b. Shrubs c. 3 m tall; calyx not as above; corolla tube inflated near mouth; fruits reddish when ripe **R. verticillata**

Rauvolfia serpentina (L.) Benth. ex Kurz, For. Fl. Brit. Burma 2: 171. 1877; Hook.f., Fl. Brit. India 3: 632. 1882; Cooke, Fl. Pres. Bombay 2: 188. 1958 (Repr.); S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 325. 2001. *Ophioxylon serpentinum* L., Sp. Pl. 1043. 1753. 'Hadki', 'Sarpagandha'. (PLATE: Q-1)

Herbs, 25–50 cm high. Leaves whorled, 3–4 at each node, 3–15.5 × 1.5–4.3 cm, lanceolate, acute to acuminate at apex, tapering at base. Flowers white, with reddish-purple tinge, in terminal, corymbose-cymes. Drupes of 2 pyrenes, green to purple-black at maturity.

Fl. & Fr.: March–May.

Illus.: S.G. Pradhan *op. cit.* 324; Wight, Ic. t. 849. 1844 (*Ophioxylon serpentinum*).

Distrib.: Infrequent near lake side, Nagzira.

Notes: Roots useful in Blood Pressure. Whole plant used for hypertension and mental disorder. The plant is threatened due to commercial over-exploitation.

Rauvolfia verticillata Baillon in Bull. Soc. Linn. Paris. 1: 768. 1888; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 326. 2001. *Rauvolfia densiflora* (Wall.) Benth. ex Hook.f., Fl. Brit. India 3: 633. 1882; Cooke, Fl. Pres. Bombay 2: 189. 1958 (Repr.).

Shrubs, 2–4 m high. Leaves 3–4, whorled, 6–18 × 2–5 cm, obovate or oblanceolate, acuminate at apex, tapering at base. Flowers white or pinkish, in lax corymbose-cymes. Drupes ellipsoid, solitary or in pairs.

Fl. & Fr.: March–April.

Distrib.: Frequent in open places, Nagzira.

Wrightia R.Br.

Wrightia tinctoria R.Br. in Mem. Wern. Nat. Soc. 1: 74. 1811; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 3: 653. 1882; Cooke, Fl. Pres. Bombay 2: 200. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 327. 2001. '*Kala kuda*'. (PLATE: C-6)

Large shrubs or small trees, 3–5 m tall. Leaves 6–12 × 2.2–3.5 cm, lanceolate acuminate at apex, rounded at base, pubescent along midrib below, occasionally glabrous. Flowers white, fragrant, in terminal corymbose cymes. Follicles paired, drooping, cylindric, apices connate. Seeds pointed.

Fl. & Fr.: March–October.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Bark and seeds are used medicinally by tribal people for stomach disorders, fever, epilepsy and labour complaints. Flowers and fruits yield a blue dye.

Cultivated Species:

Tabernaemontana divaricata (L.) R.Br. in Roem. & Schult, Syst. Veg. 4: 427. 1819; S.G. Pradhan in N.P. Singh & al., Fl. Maharashtra State 2: 334. 2001. *Nerium divaricatum* L., Sp. Pl. 209. 1753.

Shrubs up to 2 m tall. Leaves dull green, obovate-lanceolate or elliptic-oblong, acuminate at base, shining above. Flowers white, in terminal cymes. Fruits lanceolate, curved, beaked. '*Nagkuda*'.

Fl. & Fr.: Throughout the year.

Distrib.: Cultivated in gardens as an ornamental plant, Nagzira.

ASCLEPIADACEAE

Key to the genera

- | | |
|--|-------------------|
| 1a. Pollinia erect or horizontal | 2 |
| 1b. Pollinia pendulous | 3 |
| 2a. Corolla rotate | Wattakaka |
| 2b. Corolla campanulate | Gymnema |
| 3a. Stems erect; corolla valvate | 4 |
| 3b. Stems twining; corolla tubes more or less over-lapping in bud | Pergularia |
| 4a. Leaves oblong, obovate or panduriform, glaucous, cordate at base | Calotropis |
| 4b. Leaves linear or lanceolate, not glaucous, base not cordate | Asclepias |

Asclepias L.

Asclepias curassavica L., Sp. Pl. 215. 1753; Hook.f., Fl. Brit. India 4: 18. 1883; Cooke, Fl. Pres. Bombay 2: 245. 1958 (Repr.); Jagtap & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 336. 2001. '*Kurki*'.

Undershrubs, 80–90 cm tall, erect; stems branched from base, branches purplish-red. Leaves 7.5–11.5 × 1–2.5 cm, lanceolate, at apex and base acute. Flowers 8–10, in umbellate cymes. Follicles in pairs, lanceolate, beaked.

Fl. More-less throughout the year. *Fr.*: February–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 436. 1982.

Distrib.: Frequent near lakes, Nagzira.

Notes: A native of West-Indies, naturalized. Medicinally, roots are useful in piles, while leaves and flowers for healing of wounds.

Calotropis R.Br.

Key to the species

- 1a. Corona lobes hairy, shorter than staminal column, apex rounded, with 2 obtuse auricles just below it **C. gigantea**
- 1b. Corona lobes glabrous, equal to or exceeding staminal column, at apex bifid and without auricles **C. procera**

Calotropis gigantea (L.) R.Br. in Ait. Hort. Kew ed. 2, 2: 78. 1811; Hook.f., Fl. Brit. India 4: 17. 1883; Cooke, Fl. Pres. Bombay 2: 214. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; Jagtap & S. Das Das in N.P. Singh & al., Fl. Maharashtra state 2: 341. 2001. *Asclepias gigantea* L., Sp. Pl. 214. 1753. '*Madar*'.

Shrubs, 2–3 m tall; stems woody, terete, branched. Leaves glaucous green, subsessile, 7–15 × 3.5–7 cm, broadly obovate or elliptic-oblong, pubescent on both surfaces, base cordate. Flowers pale purple, in lateral, umbellate or subcorymbose cymes. Follicles in pairs, ellipsoid or ovate with hooked tip, cottony pubescent. Seeds broadly ovoid, flattened; coma silky.

Fl. & Fr.: July–October.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 240. f. 408 & 409. 1911.

Distrib.: Frequent along road sides and waste places, Nagzira.

Notes: Floss obtained from seeds used for stuffing. Medicinally, roots useful in diarrhoea and dysentery, latex for skin diseases and flowers for asthma, cough and mental disorders.

Calotropis procera (Ait.) R.Br. in Ait., Hort. Kew ed. 2, 2: 78. 1811; Hook.f., Fl. Brit. India 4: 18. 1883; Cooke, Fl. Pres. Bombay 2: 215. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; Jagtap & S. Das Das in N.P.

Singh & al., Fl. Maharashtra State 2: 342. 2001. *Calotropis procera* (Ait.) Ait.f. subsp. *hamiltonii* (Wight) Ali in notes R.B.G. Edinb. 38(2): 287-290. 1980. 'Rui'.

Erect shrubs, 2–3 m tall; young parts white tomentose; stem woody, cylindrical, branched. Leaves sessile or shortly petiolate, $8-15 \times 4.5-8$ cm, broadly ovate, obovate or obovate-oblong, fugaciously cottony on both surfaces, base cordate. Flowers light purple, in lateral, umbellate cymes. Follicles ovoid or ellipsoid, in pairs, recurved. Seeds ovoid, numerous, compressed, tomentose; coma silky white.

Fl. & Fr.: Throughout the year.

Illus.: Talb. For. Fl. Bombay Pres. & Sind. 2: 242, f. 410. 1911.

Distrib.: Frequent on road sides and open places, Nawegaon.

Gymnema R.Br.

Gymnema sylvestre (Retz.) R.Br. ex Schultes in Roem.&Schult., Syst. Veg. 6: 57. 1819; Hook.f., Fl. Brit. India 4: 29. 1883; Cooke, Fl. Pres. Bombay 2: 224. 1958 (Repr.); Jagtap & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 362. 2001. 'Pitani'.

Twining shrubs; stems cylindrical, pubescent. Leaves $3-5 \times 2.4-3.4$ cm, ovate or elliptic-lanceolate, pubescent, at apex acute, base rounded. Flowers minute, in lateral, corymbose cymes. Follicles terete, lanceolate, beaked.

Fl. & Fr.: July–October.

Illus.: Matthew, Illus. Fl. Tamilandu Carnatic 2: t. 445. 1982; Jagtap & S. Das Das, *op. cit.* 363.

Distrib.: Common in scrub forests, Nawegaon, Nagzira.

Notes: Medicinally, leaves useful in diabetes and urinary complaints.

Pergularia L.

Pergularia daemia (Forssk.) Choiv., Result. Sc. Miss. Stefan. Paoli Somal. Ital. 1: 115. 1916; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; Jagtap & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 375. 2001. *Asclepias daemia* Forssk., Fl. Aeg-Arab. 51. 1775. *Daemia extensa* R.Br. in Mem. Wern. Soc. 5(1): 50. 1811; Hook.f., Fl. Brit. India 4: 20. 1883; Cooke, Fl. Pres. Bombay 2: 219. 1958 (Repr.). 'Utarni'.

Herbaceous twiners; stem terete, branched, densely pubescent. Leaves $5-8 \times 3-6$ cm, ovate, pubescent on lower surface, acuminate at apex. Flowers pale yellowish-green, in drooping corymbs or racemes; peduncles hairy, Follicles paired, lanceolate, basally swollen. Seeds ovoid.

Fl. & Fr.: March–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 453. 1982.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Juice of the leaves is applied in rheumatism.

Wattakaka Hassk.

Wattakaka volubilis (L.f.) Stapf in Bot. Mag. 148: sub t. 8976. 1923; Jagtap & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 381. 2001. *Asclepias volubilis* L.f., suppl. 170. 1781. *Dregea volubilis* (L.f.) Bth. Ex Hook.f., Fl. Brit. India. 4: 46. 1883. *Marsdenia volubilis* T. Cooke, Fl. Pres. Bombay 2: 166. 1904 [2: 230. 1958 (Repr.)]. 'Hirandodi'.

Large climbing shrubs; stems cylindrical, softly pubescent. Leaves 6–7 × 4–5 cm, petiolate, broadly ovate, sparsely pubescent, abruptly acuminate at apex, cordate or rounded at base. Flowers yellowish-green, many, in lateral umbellate cymes. Follicles in pairs, ovoid, tapering to a very blunt point, fugaciously brown, tomentose.

Fl.: April–July & *Fr.*: November–March.

Distrib.: Frequent in deciduous forests, Nawegaon.

Notes: Leaves are useful in boils and skin diseases.

PERIPLOCACEAE

Key to the genera

- 1a. Leaves with many lateral nerves united intra-marginally; corolla lobes overlapping to the right **Cryptolepis**
- 1b. Leaves with few (6–8) lateral nerves not united intra-marginally; corolla lobes valvate **Hemidesmus**

Cryptolepis R.Br

Cryptolepis buchanani Roem. & Schult., veg. Syst. 4: 409. 1819; Hook.f., Fl. Brit. India 4: 5. 1883; Cooke, Fl. Pres. Bombay 2: 210. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; Jagtap & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 384. 2001. 'Bokab-bel', 'Nagbel'.

Straggling shrubs; stems terete, glabrous or subglabrous. Leaves 5–9 × 2.5–4.5 cm, elliptic-oblong, at apex acute, base obtuse. Flowers greenish-yellow, in axillary, short, paniculate cymes. Follicles paired, lanceolate, ridged, tapering to a point at apex. Seeds many, ovate.

Fl. & Fr.: June–October.

Illus.: Jagtap & S. Das Das *op. cit.* 385.

Distrib.: Frequent on hedges in dense forests, Nawegaon

Notes: The plant is useful in fever and for blood purification.

Hemidesmus R.Br.

Hemidesmus indicus (L.) Ait., Hort.Kew. ed. 2. 2: 75. 1811; Hook.f., Fl. Brit. India 4: 5. 1883; Cooke, Fl. Pres. Bombay 2: 210. 1958 (Repr.); S.K. Malhotra &

K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; Jagtap & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 386. 2001. *Periploca indica* L., Sp Pl. 211. 1753. 'Anantvel'.

Undershrubs, prostrate or twining; stems terete, swollen at nodes. Leaves 5–10 × 5–3 cm, linear-lanceolate, elliptic-oblong or obovate-oblong, at apex acute, base rounded. Flowers in axillary, subsessile cymes. Follicles in pairs, cylindric, tapering towards at apex. Seeds elliptic-oblong, compressed with silky coma.

Fl. & Fr.: Almost throughout the year.

Illus.: Talb., For. Fl. Bombay & Sind. 2: 233. f. 403. 1911.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Roots are used medicinally by local people for fever, stomach troubles, rheumatic pains and as a tonic.

LOGANIACEAE

Key to the genera

- | | |
|---|-------------------|
| 1a. Annual herbs | 2 |
| 1b. Trees | Strychnos |
| 2a. Flowers 4-merous; leaves 1-nerved | Mitrasacme |
| 2b. Flowers 5-merous; leaves more than 3-nerved | Mitreola |

Mitrasacme Labill.

Mitrasacme indica Wight, Ic. t. 1601. 1850; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22. 7. 1980; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 390. 2001. *Mitrasacme alsinoides* auct. non R.Br. 1810; C.B. Clarke in Hook.f., Fl. Brit. India 4: 80. 1883; Cooke, Fl. Pres. Bombay 2: 247. 1958 (Repr.).

Tiny herbs, 5–10 cm high; stems ribbed. Leaves 0.5–0.9 × 0.3–0.4 cm, ovate-lanceolate, acute at apex. Flowers white, solitary in axil of upper leaf. Capsules subglobose.

Fl. & Fr.: September–November.

Illus.: Wight, *op. cit.*

Distrib.: In open situations, infrequent, Nawegaon.

Mitreola L.

Mitreola petiolata (J.F. Gmel.) Torr. & A. Gray, Fl. N. America 2: 45. 1845; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 390. 2001. *Cynoctonum petiolatum* J.F. Gmel. Syst. Nat. ed. 13, 2: 443. 1791. *Mitreola oldenlandioides* Wall. ex DC., Prodr. 9: 9. 1845; C.B. Clarke in Hook.f., Fl. Brit. India 4: 79. 1883; Cooke, Fl. Pres. Bombay 2: 246. 1958 (Repr.).

Annual herbs, 10–30 cm tall. Leaves 1.5–6 × 1–4 cm, ovate-elliptic, ovate-oblong or elliptic-lanceolate, membranous, sub-acuminate at apex. Flowers white or blue, in

forked, terminal or axillary cymes, often unilateral. Capsules laterally compressed, wedge-shaped, green. Seeds oblong, numerous, minute.

Fl. & Fr.: August–October.

Illus.: Bhogaonkar & Devarkar Add. Fl. Melghat 35, f. A-G. 1999; C.R. Jadhav, *op. cit.* 391.

Distrib.: Frequent in moist and shady localities, Nagzira.

Strychnos L.

Strychnos nux-vomica L., Sp. Pl. 189. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 90.1883; Cooke, Fl. Pres. Bombay 2: 250. 1958 (Repr.). C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 392. 2001. '*Kajra*', '*Kasarkamora*'.

Trees, 12–15 m tall; young parts glabrescent. Leaves 5.5–11.5 × 4.2–5.5. cm, broadly elliptic or elliptic-ovate, bluntly acuminate or obtuse at apex. Flowers many, greenish-white, in axillary or terminal cymes. Berries globose, Seeds compressed, discoid, with grey-silky hairs radiating from centre.

Fl. & Fr.: February–November.

Illus.: Bedd. Fl. Sylv. t. 243. 1872.

Notes: Listed by Anjankar & Bardekar (2000), reputed medicinal plant.

Distrib.: Frequent in scrub forest, Nagzira.

GENTIANACEAE

Key to the genera

- | | |
|---|-------------------|
| 1a. Flowers regular; corolla lobes equal | 2 |
| 1b. Flowers irregular; corolla lobes unequal | 3 |
| 2a. Ovary 2-celled | Exacum |
| 2b. Ovary 1-celled | Centaurium |
| 3a. Flowers yellow; stigma obscurely lobed | Hoppea |
| 3b. Flowers not yellow; stigma distinctly lobed | Canscora |

Canscora Lam.

Key to the species

- | | |
|---|----------------------|
| 1a. Calyx winged | C. decussata |
| 1b. Calyx not winged | 2 |
| 2a. Pedicels 4-winged; stems not quadrangular | C. pauciflora |
| 2b. Pedicels not winged; stem quadrangular | C. diffusa |

Canscora decussata (Roxb.) J.A. & J.H. Schl., Mant. 3: 229. 1827; C.B. Clarke in Hook.f., Fl. Brit. India 4: 104.1883; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 400. 2001. *Pladera decussata* Roxb., Fl. Ind. 1: 418. 1820.

Annual herbs, 20–40 cm tall, erect; stems 4-winged. Leaves opposite, sessile, ovate to elliptic, acute at apex, 3–5 nerved at base. Flowers white, in terminal or axillary dichasial cymes. Capsules oblong. Seeds angular.

Fl. & Fr.: August–October.

Distrib.: Rare in open moist places, Nagzira.

Canscora diffusa (Vahl) R.Br. ex Roem. & Schult., Syst. Veg. 3: 301. 1818; C.B. Clarke in Hook.f., Fl. Brit. India 4: 103. 1883; Cooke, Fl. Pres. Bombay 2: 257. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 400. 2001. *Gentiana diffusa* Vahl, Symb. Bot. 3: 47. 1794.

Annual herbs, 15–50 cm high, much branched. Leaves upper sessile, broadly ovate, much smaller; lower 1.5–2.5 × 0.5–1.5 cm, petiolate, elliptic. Flowers pink, in lax, paniculate cymes. Capsules membranous, narrowly oblong. Seeds rounded, minutely rugose.

Fl. & Fr.: September–March.

Illus.: Wight, Ic. t. 1327. 1848 (*C. lawii*).

Distrib.: Common in moist habitats, Nawegaon, Nagzira.

Notes: Plant is used as a laxative.

Canscora pauciflora Dalz. in Hook., J. Bot. & Kew Gard. Misc. 2: 136. 1850; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; C.B. Clarke in Hook.f., Fl. Brit. India 4: 104. 1883; Cooke, Fl. Pres. Bombay 2: 258. 1958 (Repr.); C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 403. 2001.

Herbs, 10–20 cm high. Leaves sessile, oblong-ovate or obovate, 3 nerved. Flowers pale pink to purple, in lax, dichotomous cymes. Bracts small, linear, acute. Capsules narrowly oblong.

Fl. & Fr.: September–October.

Illus.: C.R. Jadhav *op. cit.* 404.

Distrib.: Scattered along grassy slopes, Nagzira.

Notes: Endemic to Maharashtra.

Centaurium Hill.

Centaurium meyeri (Bunge) Druce in Rep. Bot. Exch. Club Brit. Isles 4: 613. 1917; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 405. 2001. *Erythraea meyeri* Bunge in Ledeb., Fl. Altai 1: 220. 1829. *Erythraea roxburghii* D. Don in Lond. & Edinb. Phill. Mag. & J. Sci. 8: 77. 1836; C.B. Clarke in Hook.f., Fl. Brit. India 4: 102. 1883; Cooke, Fl. Pres. Bombay 2: 255. 1958 (Repr.). ‘*Luntak*’.

Herbs, 8–20 cm high, erect. Radical leaves 1.2–2.4 × 0.2–0.5 cm, rosulate, obovate or oblong; cauline leaves linear-oblong. Flowers pink, pedicellate, in dichotomous cymes. Capsules linear-oblong.

Fl. & Fr.: February–May.

Illus.: C.R. Jadhav *op. cit.* 406.

Notes: Listed by Anjankar & Bardekar (2000), Nagzira.

Exacum L.**Key to the species**

- 1a. Corolla lobes more than 1.5 cm long **E. tetragonum**
 1b. Corolla lobes less than 1 cm long **E. pumilum**

Exacum pumilum Griseb. in DC., Prodr. 9: 46. 1845; C.B. Clarke in Hook.f., Fl. Brit. India 4: 98. 1883; Cooke, Fl. Pres. Bombay 2: 254. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 481. 1981; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra state 2: 408. 2001.

Herbs, 10–20 cm tall, annual, erect; stems tetragonal. Lower leaves linear, acute at apex, 1-nerved, upper leaves $1.2-2 \times 0.4-0.6$ cm, lanceolate, 3-nerved. Flowers blue, in lax, axillary or terminal cymes. Capsules subglobose or ovoid. Seeds numerous.

Fl. & Fr.: August–October.

Illus.: Bhogaonkar & Devarkar, Add. Fl. Melghat 38, f. A-F. 1999.

Distrib.: Frequent in moist places among grasses, Nawegaon, Nagzira.

Exacum tetragonum Roxb., Fl. Ind. 1: 413. 1820; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 408. 2001. *Exacum bicolor* Roxb., Fl. Ind. *op. cit.*; C.B. Clarke in Hook.f., Fl. Brit. India 4: 96. 1883; Cooke, Fl. Pres. Bombay 2: 252. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980. ‘*Udichirayet*’.

Herbs, *c.* 60 cm tall; stems erect, quadrangular. Leaves $3-10 \times 1-5$ cm, ovate, elliptic or lanceolate, acute or obtuse at apex, sometimes apiculate. Flowers white, with violet-blue patches, in terminal cymes. Capsules ellipsoid or obovoid, smooth, shining, tipped with remains of style, yellowish-brown. Seeds globose or angular, finely reticulate.

Fl. & Fr.: August–December.

Illus.: Bhogaonkar & Devarkar, Add. Fl. Malghat 36, f. A-E. 1999 (*E. bicolor*).

Distrib.: Frequent in open places, Nawegaon.

Hoppea Willd.

Hoppea dichotoma Heyne ex Willd. in Ges. Neturf. Fr. Neue Schr. 3: 435. 1801; C.B. Clarke in Hook.f., Fl. Brit. India 4: 100. 1883; Cooke, Fl. Pres. Bombay 2: 256. 1958 (Repr.); C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 409. 2001.

Herbs, 5–12 cm high, erect, dichotomously branched; stems winged, quadrangular. Leaves $0.3-0.5 \times 0.2-0.3$ cm, ovate, sessile, glabrous. Flowers pale yellow, in lax, dichasial cymes. Capsules globose, enclosed in persistent sepals. Seeds many, minute, obscurely reticulate.

Fl. & Fr.: September–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 465. 1982.

Note: Listed by Anjankar & Bardekar (2000), Nagzira.

MENYANTHACEAE

Nymphoides Seguiet

Key to the species

- | | |
|---|-----------------------|
| 1a. Corolla lobes densely fimbriate on inner surface; heterostylous | N. indicum |
| 1b. Corolla lobes not fimbriate; homostylous | N. hydrophylla |

Nymphoides hydrophylla (Lour.) O. Ktze., Rev. Gen. Pl. 429. 1891; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 413. 2001. *Menyanthes hydrophylla* Lour., Fl. Cochinch. 1: 129. 1790. *Limnanthemum cristatum* (Roxb.) Griseb., Gen. Sp. Gent. 342. 1839; C.B. Clarke in Hook.f., Fl. Brit. India 4: 131. 1883; Cooke, Fl. Pres. Bombay 2: 261. 1958 (Repr.). '*Kumudini*'.

Aquatic, small herbs; rhizomes short, erect; branches slender. Leaves floating, ovate-orbicular, pale green above, purplish, beneath, apex rounded, base deeply cordate-hastate, margins shallowly crenate. Flowers white, in dense, umbellate clusters. Capsules broadly ovoid. Seeds globose, tubercled, yellowish-white.

Fl. & Fr.: December–March.

Illus.: Subr. Aq. Ang. 24. f. 16. 1962.

Distrib.: Common along margins of lake, Nawegaon, Nagzira.

Nymphoides indicum (L.) O. Ktze. Rev., Gen. Pl. 429. 1891; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 7. 1980; B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 414. 2001. *Menyanthes indica* L., Sp. Pl. 145. 1753. *Limnanthemum indicum* Griseb. in DC., Prodr. 9: 131. 1845; C.B. Clarke in Hook.f., Fl. Brit. India 4: 98. 1883; Cooke, Fl. Pres. Bombay 2: 261. 1958 (Repr.). (PLATE:E-6)

Floating herbs, aquatic, rhizomatous; rhizomes covered with scaly leaves. Floating leaves, 5–20 cm across, ovate-orbicular, at apex rounded, base deeply cordate, margins coarsely crenate. Flowers white, with yellow throat, in umbels. Capsules obovoid. Seeds globose, yellowish-white, smooth.

Fl. & Fr.: March–April.

Illus.: Subr. Aq. Ang. 24, t. 2, f. 17. 1962.

Distrib.: In streams and lakes, frequent, Nawegaon.

BORAGINACEAE

Key to the species

- | | |
|---|--------------------|
| 1a. Trees or shrubs, above 3 m high | 2 |
| 1b. Herbs or undershrubs, up to 2 m high | 3 |
| 2a. Styles dichotomously twice branched, calyx accrescent in fruits | Cordia |
| 2b. Styles once divided; calyx not accrescent in fruits | Ehretia |
| 3a. Styles 2, divaricate; flowers usually solitary | Coldenia |
| 3b. Styles single; flowers usually not solitary | 4 |
| 4a. Ovary entire or slightly 4-lobed | 5 |
| 4b. Ovary deeply 4-lobed | Trichodesma |

- 5a. Stems virgate; stamens exserted beyond corolla
 5b. Stems not virgate; stamens within included

Rotula
Heliotropium

Coldenia L.

Coldenia procumbens L., Sp. Pl. 125. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 144. 1883; Cooke, Fl. Pres. Bombay 2: 271. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; B.G. Kulkarni in N.P. Singh & al., Fl. Maharsashtra state 2: 416. 2001. 'Tripanki'.

Herbs, prostrate or procumbent, white hairy. Leaves $0.9-2.5 \times 0.4-1.5$ cm, ovate-oblong or obovate-oblong, hairy on both surfaces crisped, at apex obtuse-oblong, base acute, oblique, margins crenate-dentate. Flowers white, subsessile, solitary. Drupes beaked, 4-lobed breaking into 4-pyrenes.

Fl. & Fr.: September–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 468. 1982.

Distrib.: Common in open moist situations in dried lakes, Nawegaon, Nagzira.

Notes: Fresh leaves are used against rheumatic swellings. Paste of plant-ash mixed with castor oil is used for eczema by local people.

Cordia L.

Key to the species

- 1a. Fruiting calyx ribbed
 1b. Fruiting calyx not ribbed

C. macleodii
C. dichotoma

Cordia dichotoma Forst.f., Prodr. 18. 1786; B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 417. 2001. *Cordia myxa* auct. plur. non L. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 136. 1883; Cooke, Fl. Pres. Bombay 2: 265. 1958 (Repr.). 'Bhokar'.

Medium sized trees, 5–8 m tall. Leaves variable, $5-11 \times 3-10$ cm, broadly ovate, at apex obtuse, base rounded or cordate. Flowers white, polygamous; male flowers larger than bisexual ones, in cymose-panicles. Berries ovoid, yellow or pink, glossy, supported by calyx, pulp mucilaginous.

Fl. & Fr.: February–June.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 270. f. 422. 1911.

Distrib.: Frequent on hill slopes and in open forests, Nawegaon, Nagzira.

Notes: Fruits are edible and pickled. Leaves are also eaten by wild animals.

Cordia macleodii (Griff.) Hook.f. & Thoms., in J. Linn. Soc. 2: 128. 1858; C.B. Clarke in Hook.f., Fl. Brit. India 4: 139. 1883; Cooke, Fl. Pres. Bombay 2: 266. 1958 (Repr.); B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 419. 2001. *Hemigymnia macleodii* Griff. in Calc. J.Nat.Hist.3:363.1843 'Dahivan'.

Trees, 5–8 m tall; bark corky, grey. Leaves as long as broad, ovate, base cordate, margins crenate-dentate, scabrous, above, densely tomentose beneath. Flowers white, in short, terminal and axillary corymbs. Drupes ovoid, acuminate at apex, seated on persistent calyx.

Fl. & Fr.: February–August.

Illus.: Talb., Fl. Bombay Pres. & Sind 2:272.f.423.1911; B.G. Kulkarni, *op. cit.* 418.

Distrib.: Frequent in dense forest, Nawegaon.

Notes: Bark is useful in ‘Jaundice’. It is mixed with fodder to feed the cattle for lactation and as a stimulant (Kothari & S. Moorthy, 1993).

Ehretia L.

Ehretia laevis Roxb., Pl. Cor. 1: 42. t. 55. 1795 & Fl. Ind. 2: 341. 1824; C.B. Clarke in Hook.f., Fl. Brit. India 4: 141. 1883; Cooke, Fl. Pres. Bombay 2: 269. 1958 (Repr.); B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 424. 2001.

Small trees. Leaves ovate-elliptic or obovate or suborbicular, at apex acute or emarginated, base truncate to attenuate, glabrous above, glandular pubescent beneath. Flowers white, sessile or subsessile, in unilateral, compound spikes. Drupes 2-lobed, orange when mature.

Fl. & Fr.: March–July.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 471. 1982.

Distrib.: Frequent along hill slopes.

Heliotropium L.

Key to the species

1a. Leaves more than 2.5 cm broad

H. indicum

1b. Leaves less than 2.5 cm broad

H. ovalifolium

Heliotropium indicum L., Sp. Pl. 130. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 152. 1883; Cooke, Fl. Pres. Bombay 2: 273. 1958 (Repr.); B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 425. 2001. ‘*Bhurundi*’.

Erect or sometimes decumbent-ascending herbs; branches hirsute. Leaves 2.5–7.5 × 1.5–3.5 cm, ovate-elliptic or ovate-oblong, at apex acute, base contracted into partially winged petiole, sparsely hairy on both surfaces. Flowers white or bluish-white, sessile, in dense, scorpioid cymes. Fruits deeply bifid; nutlets beaked, angled.

Fl. & Fr.: Almost throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t.473.1982.

Distrib.: Frequent in open, moist places, Nawegaon.

Notes: Whole plant useful in boils, sore throat, ulcer and insect bite.

Heliotropium ovalifolium Forssk., Fl. Aeg-Arab. 38. 1775; C.B. Clarke in Hook.f., Fl. Brit. India 4: 150. 1883; Cooke, Fl. Pres. Bombay 2: 278. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3). 482. 1981; B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 427. 2001.

Prostrate or suberect, densely hairy herbs, 8–30 cm tall. Leaves $0.5\text{--}2.0 \times 0.3\text{--}0.8$ cm, elliptic, ovate or oblanceolate, at apex rounded or obtuse, appressed hairy on both surfaces, base acute or obtuse. Flowers white, in terminal, scorpioid cymes. Fruits convex on back, hairy, breaking in to 4 equal nutlets.

Fl. & Fr.: June–March.

Illus.: Matthew, further Illus. Fl. Tamilnadu Carnatic 4: t. 377. 1988.

Distrib.: Frequent in open places, Nawegaon, Nagzira.

Rotula Lour.

Rotula aquatica Lour., Fl. Cochinch. 121. 1790; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 123. 1981; B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra state 2: 433. 2001. *Rhabdia lycicoides* Mart., Nov. Gen. & Sp. 2: 137, t. 195. 1826; C.B. Clarke in Hook.f., Fl. Brit. India 4: 145. 1883; Cooke, Fl. Pres. Bombay 2: 272. 1958 (Repr.).

Undershrubs, woody; branches black, many, glabrate. Leaves $0.5\text{--}2.4 \times 0.2\text{--}0.5$ cm, oblong-lanceolate, at apex apiculate or rounded, base cuneate. Flowers pink to purple, few in cymes. Fruits subglobose, 4-lobed, 4-seeded.

Fl. & Fr.: November–February.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 474. 1982

Distrib.: Frequent along bank of lakes and streams, Nagzira.

Trichodesma R.Br. (*nom. cons.*)

1a. Glandular spots on corolla lobes; calyx hastate or cordate

T. indicum

1b. Glandular spots absent on corolla lobes; calyx rounded

T. zeylanicum

Trichodesma indicum (L.) Lehm., Pl. Fam. Asperif. 193. 1818; C.B. Clarke in Hook.f., Fl. Brit. India 4: 153. 1883; Cooke, Fl. Pres. Bombay 2: 281. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Eco. Tax. Bot. 2: 123. 1981; B.G. Kulkarni in N.P. Singh & al., Fl. Maharashtra State 2: 435. 2001. *Borago indica* L., Sp. Pl. 137. 1753. *Trichodesma amplexicaule* Roth, Nov. Sp. Pl. 104. 1821; C.B. Clarke in Hook.f. op. cit. p.p. *Trichodesma indicum* var. *amplexicaule* (Roth) T. Cooke, Fl. Pres. Bombay 2: 215. 1904 [2: 282. 1958 (Repr.)]. ‘*Chota-kalpa*’.

Annual herbs, 20–60 cm tall, erect hairy. Leaves $2.5\text{--}7.5 \times 0.5\text{--}4.5$ cm, ovate-oblong or ovate-lanceolate, at apex acute, base auriculate, hairy on both surfaces. Flowers pale blue, solitary or few in terminal cymes, corolla infundibuliform. Nutlets ovoid, smooth on outer face rugosely pitted on inner face.

Fl. & Fr.: October–February.

Illus.: Mahesh. *Illus. Fl. Delhi* f. 134. 1966 (*Trichodesma amplexicaule*).

Distrib.: Frequent in open situations, Nagzira.

Notes: Whole plant useful in swelling and urinary disorders.

Trichodesma zeylanicum (Burm.f.) R.Br., *Prodr.* 496. 1810; C.B. Clarke in Hook.f., *Fl. Brit. India* 4: 154. 1883; Cooke, *Fl. Pres. Bombay* 2: 282. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soci.* 78. 482. 1981; B.G. Kulkarni in N.P. Singh & al., *Fl. Maharashtra State* 2: 436. 2001. *Borago zeylanica* Burm.f., *Fl. Ind.* 41. t. 14, f. 2. 1768. '*Jalshirasi*'.

Erect, strigose herbs, 30–60 cm tall. Leaves $3.5-9 \times 1.2-2.4$ cm, oblong-lanceolate, acute at apex, narrowed at base, hispid hairy on both surfaces. Flowers bluish, in terminal, paniculate cymes. Nutlets ovoid, sub obtuse faintly margined, inner face spotted or rugose.

Fl. & Fr.: November–February.

Distrib.: Frequent weed on plains and on edges of forest, Nagzira.

Notes: Paste of the leaves is applied to cure swellings by local people.

CONVOLVULACEAE

Key to the genera

- | | |
|---|--------------------|
| 1a. Styles 2, free or united near base | 2 |
| 1b. Style 1, entire or with 2 minute branches, concealed by stigmas | 3 |
| 2a. Corolla lobed, campanulate; capsules 2-valved | Volvulopsis |
| 2b. Corolla entire, subentire or divided half way down, infundibuliform; capsules 4-valved | Evolvulus |
| 3a. Fruits indehiscent | Argyrea |
| 3b. Fruits dehiscent | 4 |
| 4a. Stems and leaves with stellate trichomes | 5 |
| 4b. Stems and leaves without stellate trichomes or glabrous | 6 |
| 5a. Leaf base mostly hastate or sagittate; sepals obtuse; stigmas oblong or linear; capsules 4-valved | Convolvulus |
| 5b. Leaf base truncate, rounded or slightly cordate; sepals acute or acuminate; stigma elliptic; capsules 8-valved | Acquemontia |
| 6a. Corolla usually campanulate, rarely infundibuliform, usually yellow or yellowish-white | 7 |
| 6b. Corolla infundibuliform, rarely campanulate, variously coloured but often purple | Ipomoea |
| 7a. Leaf blade oblong-lanceolate; calyx subequal; anthers mostly spiralled when dehiscent; seeds rounded to truncate apically | Xenostegia |
| 7b. Leaf blade oblong, ovate or orbicular, calyx unequal; anthers straight when dehiscent; seeds obtuse to rounded apically | Merremia |

Argyrea Lour.

Key to the species

- | | |
|---|-------------------|
| 1a. Leaves deeply cordate at base, densely white- tomentose beneath; bracts large and broad | A. nervosa |
| 1b. Leaves and bracts not as above | A. sericea |

Argyreia nervosa (Burm.f.) Bojer, Hort. Maurit. 224. 1837; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 445. 2001. *Convolvulus nervosus* Burm.f., Fl. Ind. 48. 1768. *Argyreia speciosa* (L.f.) Sweet, Hort. Brit. 289. 1827; C.B. Clarke in Hook.f., Fl. Brit. India 4: 185. 1883; Cooke, Fl. Pres. Bombay 2: 324. 1958 (Repr.). ‘*Samudrashok*’.

Lianas; stems, stout; branches densely white tomentose. Leaves 8–20 × 5–15 cm, ovate, at apex acute, base cordate, persistently white tomentose beneath. Flowers purple, in subcapitate cymes, silky tomentose; bracts large, thin veined; corolla infundibuliform. Berries globose, apiculate. Seeds 2–4.

Fl. & Fr.: July–December.

Illus.: Wight, Ic. t. 851. 1845 (*Argyreia speciosa*).

Notes: Leaves useful for healing of wounds.

Argyreia sericea Dalz. & Gibs. Bombay Fl. 169. 1861; C.B. Clarke in Hook.f., Fl. Brit. India 4: 188. 1883; Cooke, Fl. Pres. Bombay 2: 32. 1958 (Repr.); P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra state 2: 446. 2001. ‘*Gavel*’.

Large twiners; stem silky. Leaves 6–12 × 5–11 cm, broadly ovate, strigose above, densely silky beneath, apex acute, base cordate; nerves 8–10 pairs. Flowers rose-purple, silky pubescent, in capitate or subcapitate cymes. Berries orange coloured, globose, apiculate.

Fl. & Fr.: August–November.

Illus.: P. Venkanna & S. Das Das *op. cit.* 447.

Notes: Leaves useful in scabies.

Convolvulus L.

Convolvulus arvensis L., Sp. Pl. 153. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 219. 1883; Cooke, Fl. Pres. Bombay 2: 303. 1958 (Repr.); P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 449. 2001. ‘*Chandvel*’, ‘*Hiranpag*’.

Herbs, perennial, glabrous or sparsely pubescent. Leaves 1.5–4.5 × 0.8–2.5 cm, ovate or oblong, obtuse at base. Flowers pinkish white, in axillary 1 or 2 or more flowered; corolla broadly infundibuliform. Capsules globose. Seeds 4, subtrigonal, dark reddish-brown.

Fl. & Fr.: December–June.

Illus.: Austin & Ghazanfar in Nasir & Ali, in Fl. W. Pak. 126: 32, f. 5, A-B. 1979.
Distrib.: Frequent, near lake, Nawegaon.

Notes: Roots useful as laxative.

Evolvulus L.

Evolvulus alsinoides (L.) L., Sp. Pl. ed. 2, 2: 392. 1762; C.B. Clarke in Hook.f., Fl. Brit. India 4: 220. 1883; Cooke, Fl. Pres. Bombay 2: 297. 1958 (Repr.); S.K.

Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 453. 2001. *Convolvulus alsinoides* L., Sp. Pl. 157. 1753. 'Shankaveli', 'Vishnukranta'.

Perennial herbs; root stock woody; stems wiry, prostrate or suberect, pubescent. Leaves elliptic-oblong, subsessile, appressed hairy. Flowers white, axillary solitary or in dichasial cymes. Fruits capsular, ovoid, 4-valved. Seeds 4, black, oblong.

Fl. & Fr.: July–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 479. 1982.

Distrib.: Common in grasslands, Nawegaon, Nagzira.

Notes: Whole plant useful in dysentery, vermifuge and as a brain tonic.

***Ipomoea* Jacq.**

1a. Sepals distinctly awned; corolla salver shaped; stamens and styles exerted

I. hederifolia

1b. Sepals not as above; corolla funnel shaped; stamens and styles mostly included 2

2a. Leaves entire, rarely 3–7 lobed 3

2b. Leaves lobed or rarely entire 7

3a. Sepals hispid 4

3b. Sepals glabrous or finely pubescent 5

4a. Leaves as broad as long, white woolly beneath ***I. nil***

4b. Leaves longer than broad, not white woolly beneath ***I. deccana* var. *lobata***

5a. Leaves hastate 6

5b. Leaves not as above ***I. obscura***

6a. Flowers in dischiasial cymes, more than 5 ***I. carnea* ssp. *fistulosa***

6b. Flowers 1–5, cymose ***I. aquatica***

7a. Sepals glabrous ***I. mauritiana***

7b. Sepals hairy ***I. pes-tigridis***

Ipomoea aquatica Forssk., Fl. Aegypt.-Arab. 44: 1775; C.B. Clarke in Hook.f., Fl. Brit. India 4: 210. 1883; Cooke, Fl. Pres. Bombay 2: 315. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 456. 2001. 'Nelichi-bhaji'.

Herbs, marshy or floating, rooting at nodes. Leaves 5–10 × 3–6 cm, ovate, triangular or oblong-lanceolate, much variable in shape and size. Flowers pale-purple, axillary, solitary or few in flowered cymes; corolla funnel shaped. Capsules ovoid, glabrous or grey pubescent. Seeds 3 or 4, minutely pubescent.

Fl. & Fr.: More or less throughout the year.

Illus.: Mahesh., Illus. Fl. Delhi f. 139. 1966.

Distrib.: Common along the margins of tanks and other moist places, Nawegaon, Nagzira.

Notes: Whole plant is edible and used for vegetable and its juice as laxative.

Ipomoea carnea Jacq. subsp. ***fistulosa*** (Mart. ex Choisy) Austin in Taxon 26: 237, f. 2. 1977; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 459. 2001. *Ipomoea fistulosa* Mart. ex Choisy in DC., Prodr. 9: 349. 1845. *Ipomoea carnea* Jacq. Enum. Pl. Carib. 13. 1760; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 2: 321. 1958 (Repr.). ‘Behya’, ‘Besharam’.

Weak, erect shrubs, 1–2.5 m tall; young branches densely pubescent, glabrescent. Leaves 4–20 × 3–8 cm, ovate or ovate-oblong, at apex acuminate, base cordate to truncate; midrib below with 2 small glands at base of the leaf blade. Flowers pink or pale lilac, in axillary and terminal cymes. Capsules ovoid, mucronate, pale brown, 4-valved. Seeds 4 or less, black, minutely-villose.

Fl. & Fr.: Throughout the year.

Distrib.: Naturalised in moist places, Nawegaon, Nagzira.

Notes: Leaves are used as vegetable by local people.

Ipomoea deccana Austin var. ***lobata*** (C.B. Clarke) Johari in J. Econ. Tax. Bot. 5: 432. (1984) 1986; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 462. 2001. *Ipomoea bracteata* Wight var. *lobata* C.B. Clarke in Hook.f., Fl. Brit. India 4: 204. 1883.

Twining herbs; stems pubescent. Leaves 2–5 cm long, ovate, cordate, 3–7 lobed, pubescent. Flowers purplish, in head-like cymose clusters, covered by boat shaped involucral bracts. Capsules papery. Seeds ellipsoid, minutely fulvous silky.

Fl. & Fr.: October–November.

Illus.: Wight, Ic. t. 1374. 1848 non Cav. 1797 (*I. bracteata* Wight var. *lobata*).

Distrib.: Rare in open places, Nagzira.

Notes: Rare weed, endemic to Maharashtra and Kerala (Johari, *op. cit.*).

Ipomoea hederifolia L., Syst. Nat. ed. 10. 925. 1759; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 463. 2001. *Quamoclit coccinea* Moench. Method. 453. 1795; Cooke, Fl. Pres. Bombay 2: 330. 1958 (Repr.).

Twining, slender, glabrescent; stems terete or slightly angular. Leaves 3–8 × 2.5–7.5 cm, ovate to suborbicular, at apex acute to acuminate, base cordate. Flowers red to orange, in umbellate cymes, sometimes solitary. Capsules ovoid. Seeds ellipsoid, dark brown or black, finely reticulate.

Fl. & Fr.: August–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 481. 1982.

Distrib.: Along in the outskirts of dry deciduous forests, ornamental and naturalized, Nawegaon Nagzira.

Ipomoea mauritiana Jacq., Collect. 4: 216. 1791; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 465. 2001. *Ipomoea digitata* auct. non. L.

1763; C.B. Clarke in Hook.f., Fl. Brit. India 4: 202. 1883; Cooke, Fl. Pres. Bombay 2: 318. 1958 (Repr.). '*Bhuikohala*'.

Twiners, sometimes prostrate; roots tuberous. Leaves 8–12 cm long, palmately divided, at apex mucronate, base cordate or truncate. Flowers purple, in corymbose, paniculate cymes. Capsules ovoid, obtuse, glabrous. Seeds 4, black, with long, woolly cottony hairs.

Fl. & Fr.: August–January.

Distrib.: Occasional in dense forest on the bank of lakes, Nagzira.

Ipomoea nil (L.) Roth, Cat. Bot. 1: 36. 1798; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 465. 2001. *Convolvulus nil* L., Sp. Pl. ed. 2. 219. 1762. *Ipomoea hederacea* auct. non Jacq. 1786; C.B. Clarke in Hook.f., Fl. Brit. India 4: 199. 1883.

Cooke, Fl. Pres. Bombay 2: 321. 1958 (Repr.). '*Nilpushpa*'.

Herbaceous twiners; stems bristly-pilose. Leaves 4–8 × 3.5–7.5 cm, 3 lobed, ovate, at apex acuminate, base cordate. Flowers pink-purple, solitary or few in peduncled cymes. Capsules ovoid to globular. Seeds black, with grey pubescen. oblong.

Fl. & Fr.: August–November.

Illus.: Mahesh., Illus. Fl. Delhi f. 145. 1966.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Seeds used as purgative.

Ipomoea obscura (L.) Ker-Gawl. Bot. Reg. 3, t. 239. 1837; C.B. Clarke in Hook.f., Fl. Brit. India 4: 207. 1883; Cooke, Fl. Pres. Bombay 2: 317. 1958 (Repr.); P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 466. 2001. *Convolvulus obscurus* L., Sp. Pl. ed. 2: 220. 1762. '*Pungali*'.

Twiners. Leaves 2.5–8 × 2–7 cm, ovate-cordate to rotundate, at apex acute, acuminate or apiculate, base cordate, sparsely pilose on both surfaces. Flowers pale yellow or white, in axillary cymes. Capsules ovoid, apiculate, crowned by the style-base, straw coloured, 4-valved. Seeds 4, black, oblong, grey pubescent.

Fl. & Fr.: Mostly throughout the year.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 394. 1988.

Distrib.: Common along the thin forests and grasslands, Nawegaon.

Ipomoea pes-tigridis L., Sp. Pl. 162. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 204. 1883 (incl. var. *hepaticaefolia*); Cooke, Fl. Pres. Bombay 2: 320. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra state 2: 468. 2001.

Twiners, annuals; stems patently hairy. Leaves orbicular, palmately divided, 3–5–9 lobed, middle lobes 3.5–4.5 × 1.7–2.2 cm. Flowers white to pink, in involucre cymes. Capsules ovoid, covered by calyx. Seeds grey pubescent.

Fl. & Fr.: August–November.

Illus.: Mahesh., *Illus. Fl. Delhi*. f. 143. 1966.

Distrib.: Common in open areas or hedges, Nawegaon.

Notes: Decoction of leaves used for cough.

Jacquemontia Choisy

Jacquemontia paniculata (Burm.f.) Hall. f. in *Engl. Bot. Jahrb.* 16: 541. 1893; Cooke, *Fl. Pres. Bombay* 2: 303. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78(3): 482. 1980; P. Venkanna & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 473. 2001. *Ipomoea paniculata* Burm.f., *Fl. Ind.* 50, t. 21, f. 3. 1768.

Twining; stems with white tomentum. Leaves 3.5–6.5 × 2–4.5 cm, ovate, at apex acuminate, glabrescent above. Flowers white, in axillary, umbellate, cymose clusters. Capsules globose, brown. Seeds trigonous, brownish to blackish, minutely verrucose on back.

Fl. & Fr.: August–November.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 482. 1982.

Distrib.: A most frequent climber, Nagzira.

Merremia Dennst.

1a. Leaves digitately 5-partite; flowers white

M. aegyptia

1b. Leaves reniform; flowers yellow

M. gangetica

Merremia aegyptia (L.) Urb. *Symb. Antill.* 4: 505. 1910; P. Venkanna & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 474. 2001. *Ipomoea aegyptia* L., *Sp. Pl.* 162. 1753. *Merremia pentaphylla* (L.) Hall.f. in *Bot. Jahrb. Syst.* 16: 552. 1893; Cooke, *Fl. Pres. Bombay* 2: 308. 1958 (Rrpr.). ‘*Utran-vel*’.

Annual, twining herbs, hirsute with long, yellowish trichomes. Leaves digitate; 5, 4–9 × 1.5–3.5 cm, elliptic, at apex acute or acuminate, entire or dentate at margins. Flowers white in lax cymes. Capsules subglobose, partially surrounded by hairy calyx. Seeds brown, shining.

Fl. & Fr.: July–October.

Distrib.: Common on along stream-bank and ghats, Nagzira.

Merremia gangetica (L.) Cufod. in *Bull. Jard. Bot. Brux. Suppl.* 31: 743. 1961; P. Venkanna & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 475. 2001. *Convolvulus gangeticus* L. in *Torner, Cent. Pl.* 2: 9. 1756. *Merremia emarginata* (Burm.f.) Hall. f. in *Bot. Jahrb.* 16: 552. 1893; Hook.f. & Thoms. in *Hook.f., Fl. Brit. India* 1: 190. 1872; Cooke, *Fl. Pres. Bombay* 2: 305. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 8. 1980 et in *J. Bombay Nat. Hist. Soc.* 78(3): 482. 1981. ‘*Undirkani*’.

Herbs, rooting at nodes, sparsely hairy. Leaves 2.2–3.2 cm across, reniform, at apex emarginated, base cordate with broadly rounded lobes. Flowers yellow, axillary, solitary or in 2–3 flowered cymose clusters. Capsules subglobose, crowned by thickened style. Seeds 4, greyish-brown, dotted.

Fl. & Fr.: August–December.

Distrib.: Common in open and water logged areas, Nagzira.

Volvulopsis Roberty

Volvulopsis nummularia (L.) Roberty in Candollea 14: 28. 1952; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 482. 2001. *Convolvulus nummularius* L., Sp. Pl. 157. 1753. *Evolvulus nummularius* (L.) L., Sp. Pl. ed. 2, 391. 1762; C.B. Clarke in Hook.f., Fl. Brit. India 4: 734. 1885.

Perennial herbs; stems prostrate, rooting at nodes, radially spreading, filiform. Leaves 0.3–1.5 cm long, broadly ovate to orbicular, at apex rounded to emarginated, base rounded or subcordate. Flowers cream-coloured, axillary, solitary. Capsules globose. Seeds brown to black, subglobose, slightly muricate.

Fl. & Fr.: July–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic t. 480. 1982 (*Evolvulus nummularius*).

Distrib.: Frequent near moist open places, Nawegaon, Nagzira.

Xenostegia Austin & Staples

Xenostegia tridentata (L.) Austin & Staples in Brittonia 32: 533. 1980; P. Venkanna & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 483. 2001. *Convolvulus tridentatus* L., Sp. Pl. 157. 1753. *Merremia tridentata* (L.) Hall. f. in Bot. Jahrb. Syst. 16: 552. 1893; Cooke, Fl. Pres. Bombay 2: 306. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 124. 1981. ‘Morga’.

Herbs, prostrate with woody rootstock; branches angular, glabrous. Leaves 3.5–18.5 × 0.5–6 mm, at apex acute and mucronate. Flowers yellowish-white 1–2 in cymes. Capsules ovoid, 4-valved, straw coloured. Seeds dull black.

Fl. & Fr.: August–April.

Distrib.: Common on bank of streams and in moist places, Nagzira.

Cultivated Species:

Ipomoea cairica (L.) Sweet, Hort. Brit. 287. 1827; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 123. 1981; P. Venkanna & S. Das Das in N.P. Singh & al. Fl. Maharashtra State 2: 485. 2001. *Convolvulus cairicus* L., Syst. Ed. 10: 922. 1759. ‘Garbel’, ‘Garwell’, ‘Railway creeper’.

Twining herbs; roots tuberous; stems terete, smooth. Leaves 2.5–0.5 × 2.5–9.5 cm, ovate or orbicular in outline, cordate at base, palmately 5–7 lobed. Flowers blue, in axillary, 1-few flowered cymes. Capsules subglobose, 2-celled, 4-valved. Seeds 2–4, ovoid, hairy.

Fl. & Fr.: October–April.

Distrib.: Usually planted in gardens escape, Nawegaon.

Ipomoea quamoclit L., Sp. Pl. 159. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 199. 1883; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 124. 1981;

P. Venkanna & S. Das Das in N.P. Singh & al. Fl. Maharashtra State 2: 486. 2001. '*Ganesh pushpa*'.

Twining herbs; stem glabrous. Leaves pinnatipartite, with 8–20 pairs of linear segments. Flowers dark red, in axillary, 1-few flowered cymes. Capsules ovoid. Seeds ovoid-oblong, dark brown, minutely hairy.

Fl. & Fr.: September–December.

Distrib.: Planted in gardens, naturalized, Nagzira.

CUSCUTACEAE

Cuscuta L.

Cuscuta reflexa Roxb., Pl. Cor. 2: 3, t. 104. 1798; C.B. Clarke in Hook.f., Fl. Brit. India 4: 225. 1883; Cooke, Fl. Pres. Bombay 2: 292. 1958 (Repr.); P. Venkanna & Kothari in N.P. Singh & al., Fl. Maharashtra State. 2: 492. 2001. '*Amarvel*', '*Sonvel*', '*Akashwel*'.

Herbaceous, leafless parasites; stems greenish-yellow, verrucose with red marks. Flowers white, shortly pedicellate, bracteates, in cymose or paniculate clusters. Capsules globose-conical, apiculate, circumscissile. Seeds 1–2, suborbicular, prostrate, minutely foveolate.

Fl. & Fr.: November–May.

Distrib.: Frequent parasite on *Euphorbia* and *Ziziphus* spp, Nawegaon.

Notes: Decoction of stem used in jaundice.

SOLANACEAE

Key to the genera

- | | |
|---|------------------------|
| 1a. Anthers dehiscent by an apical pore or a short slit | <i>Solanum</i> |
| 1b. Anthers dehiscent by a longitudinal long slit | 2 |
| 2a. Fruits enclosed in accrescent calyx | <i>Physalis</i> |
| 2b. Fruits not enclosed by calyx | <i>Datura</i> |

Datura L.

Key to the species

- | | |
|---|--------------------------|
| 1a. Calyx evenly lobed; corolla limb with 5–6 short acute deltoid lobes | <i>D. metel</i> |
| 1b. Calyx unevenly lobed; corolla limb toothed | <i>D. innoxia</i> |

Datura innoxia Mill., Gard. Dict. ed. 8, no. 5. 1768; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981;

Madhusudan in N.P. Singh & al., Fl. Maharashtra State 2: 495. 2000. *Datura metel* sensu Sims in Curtis, Bot. Mag 35: t. 1440. 1812 non L. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 243. 1883; Cooke, Fl. Pres. Bombay 2: 344. 1958 (Repr.). ‘*Dhotra*’.

Undershrubs, 40–70 cm high. Leaves 8–10 × 4–6 cm, ovate, very unequal sided at base, margins dentate. Flowers white, solitary, axillary. Capsules globose, clothed with weak, long spines. Seeds many, reniform, brown.

Fl. & Fr.: July–March.

Distrib.: Common in open waste places, Nawegaon Nagzira.

Notes: Leaves useful in asthma.

Datura metel L., Sp. Pl. 179. 1753; Madhusudan in N.P. Singh & al., Fl. Maharashtra State 2: 496. 2001. *Datura fastuosa* L., Syst. Nat. ed. 10, 2: 932. 1759; C.B. Clarke in Hook.f., Fl. Brit. India 4: 243. 1883; Cooke, Fl. Pres. Bombay 2: 343. 1958 (Repr.). *Datura fastuosa* var. *alba* C.B. Clarke in Hook.f., op. cit.; Cooke, op. cit. 344. ‘*Kala Dhotra*’.

Herbs, 30–85 cm tall, erect, glabrous or subglabrous; stems often muricate and tinged with purple. Leaves 8–12 × 6–10 cm, ovate, triangular, shallowly lobed. Flowers purple, axillary, solitary. Capsules drooping, globose. Seeds numerous yellowish-brown.

Fl. & Fr.: September–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 488. 1982.

Distrib.: Frequent in open places, road sides, Nawegaon.

Notes: Leaves and seeds useful for skin diseases.

Physalis L.

Physalis minima L., Sp. Pl. 183. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 238. 1883; Cooke, Fl. Pres. Bombay 2: 340. 1958 (Repr.); Madhusudan in N.P. Singh & al., Fl. Maharashtra State 2: 499. 2001. ‘*Chirboti*’, ‘*Ran-popati*’.

Annual herbs, c. 20–40 cm high, erect. Leaves 1.5–5 × 1–3.5 cm, elliptic-oblong. Flowers yellow, axillary, solitary. Berries globose or subglobose with accrescent calyx. Seeds numerous, orange-yellow, discoid, muriculate.

Fl. & Fr.: August–April.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 490. 1982.

Distrib.: Frequent in open places among herbaceous vegetation, Nawegaon.

Notes: Whole plant useful in Gonorrhoea.

Solanum L.

Key to the species

- 1a. Plants armed
- 1b. Plants unarmed

2
S. nigrum

2a. Plants prostrate or decumbent; spines straight, usually exceeding 1–2 cm long

S. virginianum

2b. Plants erect; spines recurved, less than 1 cm long

S. anguivi

Solanum anguivi Lam., Encycl. 2: 23. 1794; Madhusudan in N.P. Singh & al., Fl. Maharashtra State 2: 503. 2001. *Solanum indicum* auct. non L. 1753 *p.p.*; C.B. Clarke in Hook.f., Fl. Brit. India 4: 234. 1883; Cooke, Fl. Pres. Bombay 2: 336. 1958 (BSI). ‘Dorli’, ‘Mothiringani’, ‘Ranvangi’, ‘Ringni’.

Undershrubs or shrubs, 0.5–1.5 m tall. Leaves 4–12 × 2–7 cm, broadly elliptic-oblong or ovate, prickly on nerves. Flowers blue, in extra-axillary, racemose cymes. Berries globose, yellowish-red when ripe. Seeds flat, orange, spherical, minutely pitted.

Fl. & Fr.: August–October.

Illus.: Mahesh., Fl. Delhi f. 151. 1966 (*Solanum indicum*).

Distrib.: Frequent in moist open places, Nawegaon.

Notes: Leaves and fruits are used as vegetable by local people.

Solanum nigrum L., Sp. Pl. 186. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 229. 1883; Cooke, Fl. Pres. Bombay 2: 332. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; Madhusudan in N.P. Singh & al., Fl. Maharashtra State 2: 505. 2001. ‘Kangani’.

Herbs, *c.* 25–40 cm high. Leaves 2.5–9 × 2–5 cm, broadly ovate or ovate-lanceolate, membranous, at apex acute. Flowers white, pendulous, in subumbellate cymes. Berries globose, purplish-black when ripe. Seeds discoid, minutely pitted, yellow.

Fl. & Fr.: August–January.

Distrib.: Frequent in open moist places, Nawegaon.

Notes: Leaves and young shoots used as vegetable.

Solanum virginianum L., Sp. Pl. 187. 1753; Madhusudan in N.P. Singh & al., Fl. Maharashtra state 2: 506. 2001. *Solanum surattense* Burm.f., Fl. Ind. 57. 1768; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981. *Solanum xanthocarpum* Schrad. & Wendl. Sert. Hanov. 1: 8, t. 2. 1795; C.B. Clarke in Hook.f., Fl. Brit. India 4: 236. 1883; Cooke, Fl. Pres. Bombay 2: 335. 1958 (Repr.). ‘Bhui-ringni’, ‘Guiri’, ‘Kate-ringni’. (PLATE: B-2)

Herbs, prostrate or decumbent; stems prickly, ascending. Leaves 3.5–8 × 2–5 cm, ovate-elliptic, stellately hairy on both surfaces, prickly on nerves. Flowers purple in extra axillary, few-flowered cymes. Berries yellow. Seeds spherical, minutely rugose.

Fl. & Fr.: November–June.

Illus.: Madhusudan *op. cit.* 507.

Distrib.: Common in sandy open places, Nawegaon, Nagzira.

SCROPHULARIACEAE

Key to the genera

1a.	Corolla distinctly bilabiate; lobes subequal	2
1b.	Corolla not bilabiate; tube enlarged at throat	9
2a.	Fleshy herb; capsule dilated and enclosed in persistent calyx	Dopatrium
2b.	Plants and capsules not as above	3
3a.	Plants suberect, diffusely branched	Lindernia
3b.	Plants erect or ascending	4
4a.	Calyx lobes dissimilar, posterior lobe largest; anther cells parallel	5
4b.	Calyx lobes not as above; anther cells divergent	6
5a.	Anther cells stipitate	Mecardonia
5b.	Anther cells not stipitate	Bacopa
6a.	Calyx winged or keeled	Torenia
6b.	Calyx not as above	7
7a.	Plants root parasites; calyx ribbed	Striga
7b.	Plants not as above; calyx smooth	8
8a.	Filaments appendaged; seeds rugose	Limnophila
8b.	Filaments not appendaged; seeds not rugose	Stemodia
9a.	Perfect stamens 2	Buchnera
9b.	Perfect stamens 4	10
10a.	Corolla 2.5 to 3.5 cm long	Sopubia
10b.	Corolla less than 2 cm long	11
11a.	Calyx spathaceous, splitting on one side	Centranthera
11b.	Calyx tubular, 4–5 partite	Scoparia

Bacopa Aubl. (*nom. cons.*)

Bacopa monnieri (L.) Penn. in Proc. Acad. Nat. Sci. Philadelphia 98: 94. 1946; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 524. 2001. *Lysimachia monnieri* L. in Torner, Cent. Pl. 2: 9. 1756; Hook.f., Fl. Brit. India 4: 272. 1884. *Moniera cuneifolia* Michx., Fl. Bor. Am. 2: 22. 1803; Cooke, Fl. Pres. Bombay 2: 356. 1958 (Repr.]. ‘*Nira-brahmi*’.

Herbs, succulent, prostrate, rooting at nodes. Leaves 0.5–2 × 0.3–0.5 cm, obovate-oblong or spatulate, at apex obtuse. Flowers white to pale-blue, axillary, solitary. Capsules ovoid. Seeds minute, oblong, striate.

Fl. & Fr.: Almost throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 494. 1982.

Distrib.: Frequent in moist places. Nawegaon.

Notes: Leaves used for rheumatic pains and whole plant as a nerve tonic.

Buchnera L.

Buchnera hispida Buch.-Ham. ex D. Don., Prodr. Fl. Nepal. 91. 1825; Hook.f., Fl. Brit. India 4: 298. 1884; Cooke, Fl. Pres. Bombay 2: 373. 1958 (Repr.); S.K.

Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 526. 2001.

Herbs, 20–30 cm high; stems erect, hairy. Leaves $2-4 \times 0.8-2$ cm, crowded, obovate or oblong, upper ones narrower, linear-lanceolate. Flowers pale-purple, in terminal, spike-like racemes. Capsules oblong, shorter than calyx. Seeds reticulate, minute.

Fl. & Fr.: September–December.

Distrib.: Frequent in moist habitats, Nagzira.

Centranthera R.Br.

Centranthera indica (L.) Gamble, Fl. Pres. Madras 971. 1924; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 526. 2001. *Rhinacanthus indica* L., Sp. Pl. 603. 1753. *Centranthera hispida* R.Br., Prodr. 438. 1810; Hook.f., Fl. Brit. India 4: 301. 1884; Cooke, Fl. Pres. Bombay 2: 381. 1958 (Repr.).

Herbs, 10–30 cm high; stems erect or diffuse, scabrid, hispid, 4-angled. Leaves $1-3 \times 0.2-0.8$ cm, sessile, lower oblong-lanceolate, upper linear, hispid on both surfaces. Flowers reddish-purple, axillary, solitary or in terminal, bracteate spikes. Capsules ovoid, rugose, hairy. Seeds conical, striate.

Fl. & Fr.: September–October.

Illus.: Wight, Illus. 2: 194. t. 165. t. 79. 1850.

Distrib.: Frequent in open, moist places among grasses, Nawegaon.

Dopatrium Buch.-Ham.

Dopatrium junceum (Roxb.) Buch.-Ham. ex Benth. Scroph. Ind. 31. 1835; Hook.f., Fl. Brit. India 4: 274. 1884; Cooke, Fl. Pres. Bombay 2: 363. 1958 (Repr.); A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 527. 2001. *Gratiola juncea* Roxb., Pl. Cor. 2: 16, t. 129. 1798.

Herbs, 15–20 cm high, stems erect, fleshy. Leaves $1-2.4 \times 0.5-0.6$ cm, basal, sessile, elliptic-oblong or obovate, upper leaves distant, small. Flowers violet, axillary, solitary. Capsules dialated upward, enclosed in persistent calyx.

Fl. & Fr.: August–October.

Illus.: A. Godbole & V.P. Prasad *op. cit.* 528.

Distrib.: Frequent in moist places, near lakes, Nawegaon.

Limnophila R.Br.

Key to the species

- 1a. Leaves pinnately nerved, and whorled, pinnatifid or multifid **L. aromatica**
- 1b. Leaves with 3–5 parallel nerves running from base totip, lower leaves whorled pinnatifid or multifid

2a. Flowers sessile or subsessile

L. heterophylla

2b. Flowers pedicellate, pedicels usually longer than calyx

L. indica

Limnophila aromatica (Lam.) Merr. Inter. Herb. Amb. 466. 1917; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 124. 1981; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 531. 2001. *Ambulia aromatica* Lam., Encycl. 1: 128. 1783. *Limnophila gratissima* Bl., Bijdr. 749. 1826; Hook.f., Fl. Brit. India 4: 288. 1884; Cooke, Fl. Pres. Bombay 2: 361. 1958 (Repr.).

Herbs, 20–40 cm high; stems decumbent at base, rooting at lower nodes, stout, terete, spongy. Leaves lanceolate, oblong-lanceolate, at apex acute, margins sharply serrate. Flowers purplish, axillary, solitary or in axillary or terminal racemes. Capsules ovoid-oblong, covered by calyx. Seeds truncate at both ends.

Fl. & Fr.: August–December.

Distrib.: Rare along margins of lakes, Nawegaon.

Limnophila heterophylla (Roxb.) Benth., in Scroph. Ind. 25. 1835; Hook.f., Fl. Brit. India 4: 270. 1884; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 532. 2001. *Columnnea heterophylla* Roxb., Fl. Ind. 3: 97. 1832.

Herbs, 10–40 cm high. Upper leaves 1.5×0.9 cm, lanceolate, acute, 3-nerved; lower pinnatifid, segments narrow, linear. Flowers subsessile, axillary, solitary. Capsules subglobose. Seeds small, angular.

Fl. & Fr.: August–December.

Distrib.: Rare in water logged situations, Nagzira.

Limnophila indica (L.) Druce in Rep. Bot. Exch. Cl. Brit. Isles 3: 420. 1914; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78 (3): 482. 1981; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 532. 2001. *Hottonia indica* L., Syst. Nat. ed. 10. 991. 1759. *Limnophila gratioloides* R.Br., Prodr. 442. 1810; Hook.f., Fl. Brit. India 4: 271. 1884; Cooke, Fl. Pres. Bombay 2: 362. 1958 (Repr.).

Herbs, 15–20 cm high, aquatic or marshy, rooting at nodes. Leaves $0.5\text{--}2 \times 0.1\text{--}0.3$ cm, on aerial stems, linear-elliptic or linear-oblong. Flowers pink or pale white, with violet-blue spots, solitary, axillary. Capsules ovoid. Seeds black.

Fl. & Fr.: September–March.

Distrib.: Common in water logged areas or in marshy places, Nawegaon Nagzira.

Notes: Medicinally, leaves and stems useful for elephantiasis.

Lindernia All.

Key to the species

1a. Capsules twice as long as or longer than calyx

2

1b. Capsules as long as or shorter than calyx

L. crustacea

- | | |
|----------------------------|----------------------|
| 2a. Fertile stamens 4 | L. anagallis |
| 2b. Fertile stamens 2 | 3 |
| 3a. Leaves penninerved | L. ciliata |
| 3b. Leaves parallel nerved | L. parviflora |

Lindernia anagallis (Burm.f.) Penn. in J. Arnold Arbor. 24: 252. 1943; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 537. 2001. *Ruellia anagallis* Burm.f., Fl. Ind. 135. 1768. *Vandellia pedunculata* Benth., Scroph. Ind. 37. 1835; Hook.f., Fl. Brit. India 4: 282. 1884; Cooke, Fl. Pres. Bombay 2: 367. 1958 (Repr.).

Herbs; stems decumbent, hairy, rooting at nodes. Leaves 1.3–1.6 × 0.5–0.8 cm, subsessile ovate, margins shallowly serrate. Flowers pale pink, axillary, solitary. Capsules cylindrical, beaked. Seeds truncate, rugose.

Fl. & Fr.: August–November.

Distrib.: Frequent in moist places, Nagzira.

Lindernia ciliata (Colsm.) Penn. in Brittonia 2: 182. 1936; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 537. 2001. *Gratiola ciliata* Colsm., Prodr. Descr. Grat. 14. 1793. *Bonnaya brachiata* Link & Otto, Ic. Pl. Select. 25, t. 11. 1820; Hook.f., Fl. Brit. India 4: 284. 1884; Cooke, Fl. Pres. Bombay 2: 369. 1958 (Repr.).

Annual herbs, 7–15 cm high; stems erect, diffusely branched, pubescent. Leaves 0.5–2 × 0.3–1.5 cm, sessile, suborbicular, oblong or obovate, at apex obtuse. Flowers white or bluish-pink, in lax, terminal racemes. Capsules narrowly oblong, acute. Seeds truncate at both ends.

Fl. & Fr.: August–February.

Notes: Listed by Anjankar & Bardekar (2000) from Nagzira.

Lindernia crustacea (L.) F.V. Muell. Syst. Census Austr. Pl. 1: 97. 1882; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 538. 2001. *Capraria crustacea* L., Mant. 87. 1767. *Vandellia crustacea* (L.) Benth., Scroph. Ind. 35. 1835; Hook.f., Fl. Brit. India 4: 279. 1884; Cooke, Fl. Pres. Bombay 2: 366. 1958 (Repr.).

Herbs, 10–30 cm high, suberect or diffuse. Leaves 1–2 × 0.5–1.5 cm, broadly ovate to elliptic, at apex subacute, margins crenate-serrate or entire. Flowers rosy to purple, axillary, solitary and in terminal racemes. Capsules obovoid, obtuse. Seeds subquadrate or subglobose, rugose.

Fl. & Fr.: September–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 499. 1982.

Distrib.: Common in moist open places, Nawegaon, Nagzira.

Lindernia parviflora (Roxb.) Haines, Bot. Bihar & Orissa 2: 635. 1922 ; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; A. Godbole &

V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 540. 2001. *Gratiola parviflora* Roxb., Pl. Cor. 3: 3. t. 203. 1911. *Ilysanthes parviflora* (Roxb.) Benth. in DC., Prodr. 10: 419. 1846; Hook.f., Fl. Brit. India 4: 283. 1884; Cooke, Fl. Pres. Bombay 2: 368. 1958 (Repr.).

Herbs, 15–20 cm high; stems erect or suberect. Leaves $1-1.5 \times 0.5-0.8$ cm, ovate, at apex acute. Flowers pinkish-white, with two yellow dots in throat, axillary, solitary. Capsules ovoid or ellipsoid. Seeds oblong, minute, granular.

Fl. & Fr.: August–April.

Distrib.: Frequent in moist open places, Nawegaon, Nagzira.

Mecardonia Ruiz & Pavon

Mecardonia procumbens (Mill.) Small, Fl. Southeast U.S. 1065, 1338. 1903; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 544. 2001. *Erinus procumbens* Mill., Gard. Dict. ed. 8 n. 6. 1768.

Herbs, annual, prostrate; stems 4-angled, rooting at nodes. Leaves opposite, 5–10 cm long, ovate, rounded or lanceolate. Flowers lemon-yellow, solitary, axillary. Capsules cylindrical. Seeds reticulate.

Fl. & Fr.: November–December.

Distrib.: Frequent in open situations, Nagzira.

Notes: An introduced species rapidly spreading in open situation, naturalized.

Scoparia L.

Scoparia dulcis L., Sp. Pl. 116. 1753; Hook.f., Fl. Brit. India 4: 289. 1884; Cooke, Fl. Pres. Bombay 2: 383. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 546. 2001.

Herbs, erect, 30–40 cm high. Leaves opposite, $1-1.5 \times 0.3-0.5$ cm, elliptic-lanceolate or obovate, margins coarsely serrate, at apex acute, base cuneate. Flowers white, axillary, 2–3 in fascicles, pedicellate. Capsules globose. Seeds obovoid, brownish, 4-angled, reticulate.

Fl. & Fr.: Throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 504. 1982.

Distrib.: Common along moist places, Nawegaon, Nagzira.

Sopubia Buch.-Ham. ex D. Don

Sopubia delphiniifolia (L.) G. Don, Gen. Syst. 4: 560. 1837; Hook.f., Fl. Brit. India 4: 302. 1884; Cooke, Fl. Pres. Bombay 2: 378. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 547. 2001. *Gerardia delphiniifolia* L. in Juslenius, Cent. Pl. 21. 1756. ‘Dudhali’.

Herbs, 30–40 cm high, erect. Leaves 2–3 cm long, pinnatisect, segments filiform. Flowers pinkish purple, axillary, solitary or in terminal racemes. Capsules ovoid, 2–4 valved, blackish-brown. Seeds cuneate-oblong, striate, many.

Fl.: July–January.

Distrib.: Common in open places among grasses, Nagzira.

Stemodia L.

Stemodia viscosa Roxb., Pl. Cor. 2: 33, t. 163. 1802; Hook.f., Fl. Brit. India 4: 265. 1884; Cooke, Fl. Pres. Bombay 2: 359. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 549. 2001. '*Ambuli*'.

Herbs, 15–50 cm high, aromatic, glandular-hairy. Leaves 1–4 × 0.2–1.2 cm, sessile, oblong or elliptic-oblong, acute at apex, cordate at base. Flowers violet, axillary, solitary. Capsules ovoid-oblong, 2-valved, bifid. Seeds oblong-ellipsoid, minute, blackish, terete.

Fl. & Fr.: November–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 506. 1982.

Distrib.: Frequent along bank of lakes and moist places, Nawegaon.

Notes: Whole plant useful for healing sores.

Striga Lour.

Striga angustifolia (D. Don) Sald. in Bull. Bot. Surv. India 5: 70. 1963; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 549. 2001. *Buchnera angustifolia* D. Don, Prodr. Fl. Nepal. 91. 1825. *Striga euphrasioides* Benth. in Hook. Caomp. Bot. Mag. 1: 364. 1836; Hook.f., Fl. Brit. India 4: 299. 1884; Cooke, Fl. Pres. Bombay 2: 376. 1958 (Repr.).

Herbs, 15–40 cm high; stems erect, branched, scabrid. Leaves 1.5–3.5 × 0.3–0.5 cm, sessile, narrowly linear. Flowers white, sessile, in long, erect spikes; corolla exceeding calyx. Capsules oblong ellipsoid, cuneate. Seeds obovoid, black, striate.

Fl. & Fr.: August–January.

Distrib.: Infrequent among grasses in hilly areas, Nawegaon.

Torenia L.

Torenia indica Sald. in Bull. Bot. Surv. India 8: 126, f. 1. 1967; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 553. 2001. *Torenia cordifolia* Hook. in Bot. Reg. t. 3715. 1839 non Roxb. 1802; Hook.f., Fl. Brit. India 4: 276. 1884; Cooke, Fl. Pres. Bombay 2: 364. 1958 (Repr.).

Herbs, 8–20 cm high; stems sparsely hairy. Leaves $1.5\text{--}2 \times 0.6\text{--}1.2$ cm, ovate-lanceolate. Flowers blue, solitary or in subumbellate cymes. Capsules oblong, acute, enclosed in persistent calyx. Seeds minute, numerous, truncate.

Fl. & Fr.: August–October.

Illus.: Sald. *op. cit.*

Distrib.: Frequent in moist open places, as undergrowth in forests, Nawegaon.

Cultivated Species:

Angelonia salicariifolia Humb. & Bonpl., Pl. Aequinoct. 2: 92, t. 108. (1809) 1812; A. Godbole & V.P. Prasad in N.P. Singh & al., Fl. Maharashtra State 2: 556. 2001.

Erect, perennial herbs, 40–50 cm high; stems much branched, sticky or glandular-pubescent. Leaves subsessile, linear-oblong to lanceolate, often reduced to minute scales. Flowers white, with violet spots on tubular corolla, in long leafy, bracteate racemes.

Distrib.: Planted along lake Nawegaon, Nagzira.

LENTIBULARIACEAE

Utricularia Dalz.

Key to the species

- | | |
|-------------------------------|---------------------|
| 1a. Aquatic herbs | U. stellaris |
| 1b. Terrestrial herbs | 2 |
| 2a. Flowers yellow | U. scandens |
| 2b. Flowers other than yellow | U. striatula |

Utricularia scandens Benj. in Linnaea 20: 309. 1847; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 125. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 566. 2001. *Utricularia wallichiana* Wight, Ic. t. 1572, f. 1. 29. 1992; Clarke in Hook.f., Fl. Brit. India 4: 332.. 1884.

Terrestrial herbs, slender. Leaves 10×1 mm, linear, base attenuate into a capillary petiole. Scapes filiform. Flowers yellow, 1–8, distant, alternating with sterile bracts. Capsules compressed, oblong-ovoid, enclosed in persistent calyx. Seeds broadly ovoid to ellipsoid, smooth.

Fl. & Fr.: September–October.

Illus.: Janarthanam & Henry, Bladderworts of India 97, f. 29. 1992.

Distrib.: Frequent in moist places, Nawegaon.

Utricularia stellaris L.f., Suppl. 86. 1781; Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 2: 389. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 567. 2001.

Aquatic herbs, floating, stoloniferous. Leaves 1.3–3.2 cm, submerged, alternate pinnately cut, pinnae bearing bladders near their bases. Flowers yellow, 5–12 on scape in racemes. Capsules globose, with thick persistent calyx. Seeds winged.

Fl. & Fr.: September–November.

Illus.: Janarthanam & Henry, Bladderworts of India 102. 1992.

Distrib.: Frequent in stagnant water, Nagzira.

Utricularia striatula J.E. Sm. in Rees, Cyclop. 37: no. 17. 1819; Cooke, Fl. Pres. Bombay 2: 393. 1958 (Repr.); A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 567. 2001. *Utricularia orbiculata* Wall. ex A. DC. in DC., Prodr. 8: 18. 1844; C.B. Clarke in Hook.f., Fl. Brit. India 4: 334. 1884.

Herbs, up to 10 cm long, tiny; stolons filiform, creeping, bearing leaves and bladders. Leaves 0.3–0.5 × 1.5–3.5 cm, at base of scapes in rosettes, orbicular or reniform. Scapes filiform, few, 10-flowered, corolla bluish-purple. Capsules subglobose with persistent calyx. Seeds oblong-ovoid, glochidiate.

Fl. & Fr.: August–October.

Illus.: Janarthanam & Henry, Bladderworts of India 106, f. 32. 1992.

Distrib.: In damp places, Nagzira.

BIGNONIACEAE

Key to the genera

- | | |
|---|----------------------|
| 1a. Capsules falcately curved | 2 |
| 1b. Capsules straight | 3 |
| 2a. Inflorescence a few-flowered raceme | Dolichandrone |
| 2b. Inflorescence a lax panicle | Stereospermum |
| 3a. Capsules velvety when young | Heterophragma |
| 3b. Capsules not velvety | Oroxylum |

Dolichandrone (Fenzl) Seem. (*nom. cons.*)

Dolichandrone falcata (Wall. ex DC.) Seem. in J. Bot. 8: 381. 1870; C.B. Clarke in Hook.f., Fl. Brit. India 4: 380. 1884; Cooke, Fl. Pres. Bombay 2: 404. 1958 (Repr.); P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 574. 2001. *Spathodea falcata* Wall. ex DC., Prodr. 9: 206. 1845. ‘*Medh-shingi*’, ‘*Medsing*’.

Trees, 8–15 m tall bark blackish. Leaflets 2–4.2 × 1–3.5 cm, 2–3 pairs, opposite, obovate-suborbicular, at apex obtuse, base cuneate. Flowers white, in terminal racemes. Capsules yellowish-brown, flat, falcate. Seeds rectangular, winged.

Fl. & Fr.: March–June.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 512. 1982.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Bark paste in oil and leaf paste is used for eczema and stomach pains.

Heterophragma DC.

Heterophragma quadriloculare (Roxb.) K. Schum. in Engl. & Prantl, Pflanzenf. 4 (3b): 243. 1895; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 575. 2001. *Bignonia quadrilocularis* Roxb. Pl. Cor. 2: 24, t. 145. 1800. *Heterophragma roxburghii* A. DC., Prodr. 9: 210. 1845; C.B. Clarke in Hook.f., Fl. Brit. India 4: 381. 1884; Cooke, Fl. Pres. Bombay 2: 404. 1958 (Repr.). 'Varas'.

Trees, 5–15 m tall; bark grayish-white. Leaves imparipinnate, leaflets 3–5 pairs with one odd, tomentose when young, 4–10 × 3–5 cm, elliptic-oblong. Flowers white, fragrant, in terminal panicles. Capsules 18–25 × 2–4 cm, linear, pointed, tomentose when young.

Fl. & Fr.: January–April.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 311, f. 437. 1911.

Distrib.: Frequent in dense hilly forests, Nawegaon, Nagzira.

Oroxylum Vent.

Oroxylum indicum (L.) Vent., Dec. Gen. Nov. 8. 1808; C.B. Clarke in Hook.f., Fl. Brit. India 4: 378. 1884; Cooke, Fl. Pres. Bombay 2: 401. 1958 (Repr.); P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 575. 2001. *Bignonia indica* L., Sp. Pl. 625. 1753. 'Shivan', 'Tetu'.

Trees, 8–12 m tall, deciduous. Leaflets 2–4 pairs, 5–10 × 2–8 cm, ovate-elliptic, at apex acuminate, base rounded or cordate. Flowers yellowish-purple, many in c. 50 cm long, pubescent racemes. Capsules flat, woody, tapering at both ends. Seeds winged.

Fl. & Fr.: June–December.

Distrib.: Infrequent in dense forests, Nagzira.

Notes: Medicinally, leaves are used for rheumatic pains and stem bark and seeds for scorpion sting.

Stereospermum Cham.

Key to the species

- 1a. Panicle branches viscid hairy
- 1b. Panicle branches glabrous

S. chelenoides
S. colais

Stereospermum chelenoides (L.f.) DC., Bibl. Univ. Geneve II, 17: 125. 1838 et Prodr. 9: 210. 1845; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 577. 2001. *Bignonia chelenoides* L.f., Suppl. 282. 1781. *Stereospermum suvaveolens* (Roxb.) DC., Prodr. 9: 211. 1845; C.B. Clarke in Hook.f., Fl. Brit. India 4: 382. 1884; Cooke, Fl. Pres. Bombay 2: 406. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981. 'Paral'.

Trees, 12–15 m tall; young parts viscid hairy. Leaves pinnate; leaflets 3–4 pairs with an odd one, ovate-obovate, acuminate at apex, rounded at base. Flowers dull purple, in lax panicle, fragrant. Capsules roughly cylindric with white specks. Seeds furrowed in the middle, winged, compressed.

Fl. & Fr.: March–June.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Stereospermum colais (Buch.-Ham. ex Dillw.) Mabb. in Taxon 27: 553. 1978; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 577. 2001. *Bignonia colais* Buch.-Ham. ex Dillw. Rev. Ref. Hort. Mal. 28. 1839. *Stereospermum chelonoides* auct. non (L.f.) DC., 1845; C.B. Clarke in Hook.f., Fl. Brit. India 4: 382. 1884; Cooke, Fl. Pres. Bombay 2: 405. 1958 (Repr.). ‘*Paral*’.

Trees, 15–20 m tall. Leaves 1-pinnate; leaflets 7–9, 5–12 × 2–5 cm, elliptic-oblong, acuminate at apex, rounded at base. Flowers yellow, in lax, terminal panicles. Capsules terete or 4-gonous twisted, dark-brown, with yellow specks. Seeds compressed, trigonous, winged.

Fl. & Fr.: February–September.

Distrib.: Occasional in hilly forests, Nawegaon, Nagzira.

Notes: The species is useful as an anti-inflammatory.

Cultivated Species:

Millingtonia hortensis L.f., Suppl. 291. 1781; C.B. Clarke in Hook.f., Fl. Brit. India 4: 377. 1884; Cooke, Fl. Pres. Bombay 2: 409. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 582. 2001. ‘*Akash-Neem*’, ‘*Chatakchandni*’.

Trees, 15–20 m tall; bark corky. Leaves 2–3-pinnate; leaflets elliptic-ovate, often oblique. Flowers white, fragrant, in axillary and terminal, corymbose panicles, calyx cupular; corolla tubular, 5-lobed; stamens 4, exserted.

Fl. & Fr.: September–December.

Distrib.: Native of S.E. Asia and Malaysia, extensively planted as avenue tree, Nagzira.

PEDALIACEAE

SESAMUM L.

Sesamum orientale L., Sp. Pl. 634. 1753; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 587. 2001. *Sesamum indicum* L., Sp. Pl. 634. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 387. 1884; Cooke, Fl. Pres. Bombay 2: 413. 1958 (Repr.). *Sesamum mulayanum* Nair in Bull. Bot. Surv. India 5: 251. 1963; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980. ‘*Ran-til*’.

Erect, glabrous, aromatic herbs. Leaves variable, heteromorphic, opposite or alternate. Flowers pale-violet. Capsules quadrangular with a short beak, pubescent. Seeds brownish-black, reticulate, rugose.

Fl. & Fr.: August–October.

Distrib.: Frequent in plain and hilly forests, Nawegaon.

MARTYNIACEAE

Martynia L.

Martynia annua L., Sp. Pl. 618. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 589. 2001. *Martynia diandra* Glox., Obs. 14, t. 1. 1785; C.B. Clarke in Hook.f., Fl. Brit. India 4: 386. 1884; Cooke, Fl. Pres. Bombay 2: 414. 1958 (Repr.). '*Birnak*', '*Vagnaki*', '*Vichucha jhar*'. (PLATE: D-6)

Annual herbs, 40–80 cm tall, viscidly pubescent. Leaves 3–13 × 2–12 cm, broadly ovate or suborbicular, silky viscid-pubescent. Flowers purple, in pendulous, lax racemes. Drupes pubescent, bottle shaped, with 2 sharp, up-turned beaks; endocarp black, ribbed and hooked.

Fl. & Fr.: August–September.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 515. 1982.

Distrib.: Common in plains among grasses, Nawegaon, Nagzira.

ACANTHACEAE

Key to the genera

- | | |
|--|----------------------|
| 1a. Seeds supported on hard, upward curved retinacula | 2 |
| 1b. Seeds not supported on hard retinacula | Elytraria |
| 2a. Corolla without an upper lip; lower lip large, expanded, 3-lobed | 3 |
| 2b. Corolla 2-lipped or with 5 subequal lobes | 4 |
| 3a. Leaves in pseudo-whorls; flowers in various types of inflorescence but never in axils of vegetative leaves | Blepharis |
| 3b. Leaves opposite; flowers solitary or paired in the axils of vegetative leaves | Cynarospermum |
| 4a. Corolla lobes twisted to left in bud | 5 |
| 4b. Corolla lobes imbricate in bud | 12 |
| 5a. Ovules more than 2 in each cell; capsules normally with 6 or more seeds | 6 |
| 5b. Ovules 2 in each cell; capsules with 4 or fewer seeds | 8 |
| 6a. Corolla distinctly 2-lipped | Hygrophila |
| 6b. Corolla subequally 5-lobed | 7 |
| 7a. Flowers axillary, solitary, in triads or cymes | Ruellia |
| 7b. Flowers in spikes | Hemigraphis |
| 8a. Placenta separating elastically from base of ripe capsules | Petalidium |
| 8b. Placenta not separating elastically from base of ripe capsules | 9 |
| 9a. Anthers spurred at abse | Dyschoriste |
| 9b. Anthers not spurred at base | 10 |
| 10a. Corolla tube long, linear, slender; stamens 2 | Eranthemum |
| 10b. Corolla tube narrow below, usually infundibuliform upwards; stamens usually 4 | 11 |
| 11a. Bands on pollen grains punctate | Strobilanthes |
| 11b. Bands septate | Carvia |
| 12a. Ovules 3–10 in each cell | 13 |
| 12b. Ovules 1 in each cell | 14 |

13a. Flowers in unilateral racemes, often paniced, without axillary cladodes	Andrographis
13b. Flowers clustered in the midst of axillary cladodes	Haplanthodes
14a. Stamens 4	Lepidagathis
14b. Stamens 2	15
15a. Placenta separating elastically from the valves	16
15b. Placenta not separating elastically from the valves	17
16a. Flowers in unilateral spikes	Rungia
16b. Flowers clustered in leaf axils or laxly cymose	Dicliptera
17a. Anther cells at least the lower with a basal spur like appendage	18
17b. Anther cells not spurred at base	19
18a. Calyx 5-partite, lobes equal or subequal	Justicia
18b. Calyx 4-partite or if 5, then posterior one much smaller than others	Rostellularia
19a. Bracts and bracteoles small, subequal; corolla white	Rhinacanthus
19b. Bracts larger than bracteoles, in opposite, valvate pairs; corolla rosy or purple	Peristrophe

Andrographis Wall. ex Nees

Andrographis echinoides (L.) Nees in Wall., Pl. Asiat. Rar. 3: 117. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 505. 1884; Cooke, Fl. Pres. Bombay 2: 451. 1958 (Repr.); Karthik. et. Fl. Pl. India 1:2009. *Indoneesiella echinoides* (L.) Sreem. in Phytologia 15: 271. 1967; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 638. 2001. *Justicia echioides* L., Sp. Pl. 16. 1753. '*Pandhra feda*'.

Herbs, 15–45 cm high; stems quadrangular, grooved. Leaves sessile 3–8 × 1–2.5 cm, oblong to oblanceolate, at apex obtuse, base cuneate, more or less sparsely hairy, ciliate on margins, Flowers white or pink, numerous, in axillary racemes. Capsules ellipsoid-lanceolate, compressed, acute at both ends, hairy. Seeds oblong, rugosely pitted.

Fl. & Fr.: August–December.

Illus.: Matthew, Mat. Fl. Tamilnadu Carnatic 1: t. 294. Pl. 89. 1981.

Distrib.: Common in open grasslands around the lakes, Nawegaon.

Andrographis paniculata (Burm.f.) Wall., ex Nees in Wall., Pl. Asiat. Rar. 3: 116. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 501. 1884; Cooke, Fl. Pres. Bombay 2: 451. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 593. 2001. *Justicia paniculata* Burm.f., Fl. Ind. 9. 1768. '*Kalameti*', '*Kalpa*', '*Kreat*'. (PLATE:C-2)

Herbs, up to 1 m tall, annual, erect, branched. Leaves lanceolate, slightly undulate, at apex acute, base tapering. Flowers white, with pinkish tinge, small, solitary, axillary and terminal racemes or panicles. Capsules acute at both ends. Seeds subquadrate, pitted, yellowish brown.

Fl. & Fr.: December–April.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 438. 1988.

Distrib.: Common as forest undergrowth, Nawegaon, Nagzira.

Notes: Leaf decoction. used to cure fever and green leaves as tonic by local people.

Barleria L.

Key to the species

- | | |
|---|----------------------|
| 1a. Plants armed; leaf at apex spine-tipped | B. prionitis |
| 1b. Plants unarmed; leaf-at apex not spine-tipped | 2 |
| 2a. Seeds hairy | B. cristata |
| 2b. Seeds glabrous | 3 |
| 3a. Stems slender; leaves thin | B. prattensis |
| 3b. Stems stout; leaves coriaceous | B. gibsonii |

Barleria cristata L., Sp. Pl. 636. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 488. 1884; Cooke, Fl. Pres. Bombay 2: 460. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 599. 2001. '*Gokarn*'.

Herbs, suffruticose. Leaves 6–10 × 2.5–4.5 cm, elliptic-oblong, at apex acute or acuminate, base tapering, hairy on both surfaces. Flowers in axillary and terminal, short, ovate, dense spikes. Capsules ellipsoid, acute at both ends. Seeds 4, orbicular, compressed, silky hairy.

Fl. & Fr.: December–May.

Illus.: Mahesh. Illus. Fl. Delhi f. 171. 1966.

Distrib.: Common in dense forests Nawegaon, Nagzira.

Barleria gibsoni Dalz. in Hook. Kew. J. Bot. 2: 339. 1850; C.B. Clarke in Hook.f., Fl. Brit. India 4: 487. 1884; Cooke, Fl. Pres. Bombay 2: 464. 1958 (Repr.); S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 600. 2001. '*Gura*'.

Herbs, suffruticose. Leaves 10–18 × 5–10 cm, elliptic, at apex acuminate, base rounded or subacute. Flowers pink. Capsules oblong, acuminate. Seeds ellipsoid, black, glabrous.

Fl. & Fr.: September–March.

Distrib.: Common in dense forests, Nagzira.

Notes: The species is an endemic to Maharashtra.

Barleria prattensis Sant. in Kew Bull. 1948: 487. 1949; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 602. 2001. '*Kalsunda*'.

Herbs, suffruticose; stems and branches terete, quadrangular. Leaves 5–11 × 1.5–4 cm, ovate or elliptic, at apex acuminate, base decurrent into petiole. Flowers rosy-purple. Capsules c. 1.5 cm long. Seeds 4, black, compressed.

Fl. & Fr.: September–February.

Illus.: Sant. in Univ. Bombay Bot. Mem. 2: f. opposite page 64. 1952.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: The species is an endemic to Peninsular India.

Barleria prionitis L., Sp. Pl. 636. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 482. 1884; Cooke, Fl. Pres. Bombay 2: 457. 1958 (Repr.); S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 602. 2001. '*Koranti*', '*Kate-koranta*'.

Shrubs, 1–2 m tall; stems and branches terete or obsoletely quadrangular. Leaves 6–12 × 2–4 cm, elliptic, entire glabrous or less pubescent, at apex acuminate, bristle-tipped, base tapering to petiole. Flowers yellow, sessile, often solitary in lower axils, becoming spicate above. Capsules ovoid, with a long tapering, solid beak. Seeds 2, compressed, orbicular, silky hairy.

Fl. & Fr.: October–March.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 448. 1988.

Distrib.: Frequent along hedges, Nagzira.

Notes: Fresh leaves are chewed to relieve toothache by local people.

Blepharis A.L. Juss.

1a. Leaves petiolate, thin, apiculate

B. maderaspatensis

1b. Leaves subsessile, thick, fleshy, obtuse

B. integrifolia

Blepharis integrifolia (L.f.) E. Mey. ex Schinz in Vierteljahrsschr. Naturf. Ges. Zurich 60: 416. 1915; Karthik. & al. Fl. Pl. India 1: 8. 2009; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 607. 2001. *Acanthus repens* Vahl, Symb. 2: 76. 1791. *Blepharis molluginifolia* Pers. Syn. Pl. 2: 180. 1806; C.B. Clarke in Hook.f., Fl. Brit. India 4: 479. 1884; Cooke, Fl. Pres., Bombay 2: 425. 1958 (Repr.). *Blepharis repens* (Vahl) Roth, Nov. Pl. Sp. 321. 1821. '*Kantemaka*'.

Herbs, prostrate, slender, wiry, more or less hispid. Leaves 0.8–2.5 × 0.4–0.8 cm, oblong-obovate, minutely scabrous, usually obtuse, mucronate, entire. Flowers blue, sessile, solitary, axillary. Capsules ellipsoid, compressed, enclosed in persistent sepals. Seeds 2, broadly ellipsoid, compressed, hairy.

Fl. & Fr.: October–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 523, 1982.

Distrib.: Frequent in dense forest as undergrowth, Nawegaon.

Blepharis maderaspatensis (L.) Roth, Nov. Pl. Sp. 320. 1821; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 607. 2001. *Acanthus maderaspatensis* L., Sp. Pl. 639. 1753. *Blepharis boerhaviifolia* Pers., Syn. Pl. 2: 180. 1806; C.B. Clarke in Hook.f., Fl. Brit. India 4: 478. 1884; Cooke, Fl. Pres. Bombay 2: 424. 1958 (Repr.). '*Kolata*'.

Herbs, prostrate, rooting at nodes; branches pubescent. Leaves unequal, 2.5–5.5 × 1–3 cm, thinly membranous, elliptic or slightly obovate, apiculate at apex, serrate

on margin. Flowers pale blue with yellow spot on lower lip, axillary, solitary or 2–3 together. Capsules 0.8–0.9 cm long, ovoid. Seeds 2, echinate, with obtuse spines.

Fl. & Fr.: October–March.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 449. 1988.

Distrib.: Frequent in scrub forests, Nawegaon, Nagzira.

***Carvia* Bremek.**

Carvia callosa (Wall.) Bremek. in Verh. Nederl. Acad. Wet 2, 40: 187. 1944; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 609. 2001. *Ruellia callosa* Wall. Cat. 2359. 1830. *Strobilanthes callosas* Nees in Wall., Pl. Asiat. Rar. 3: 85. 1832. C.B. Clarke in Hook.f., Fl. Brit. India 4: 451. 1884; Cooke, Fl. Pres. Bombay 2: 444. 1958 (Repr.). ‘*Karvi*’.

Shrubs, erect, 2–4 m tall; stems rigid. Leaves ovate-lanceolate, glabrate, at apex acute-acuminate, base tapering, margins crenate, strongly lineolate above, more or less hairy on nerves beneath. Flowers bluish-purple, in axillary, simple or branched, ovoid, spikes. Capsules obovoid, acute, apiculate, narrow at base. Seeds 2, broadly ovate, acute, densely hairy.

Fl. & Fr.: September–June.

Illus.: S. Moorthy *op. cit.* 608.

Distrib.: Frequent along hill slopes, Nagzira.

***Cynarospermum* Vollesen**

Cynarospermum asperrium (Nees) Vollesen in Kew Bull. 54(1): 173. 1998; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 611. 2001. *Blepharis asperima* Nees in DC., Prodr. 11: 267. 1847; C.B. Clarke in Hook.f., Fl. Brit. India 4: 478. 1884; Cooke, Fl. Pres. Bombay 2: 424. 1988 (Repr.). ‘*Akoada*’, ‘*Dikna*’.

Herbs, suberect or prostrate and rooting at nodes. Leaves 4–7 × 2–4.6 cm, ovate-lanceolate. Flowers blue or white, solitary or paired. Capsules oblong, apiculate. Seeds ovoid, compressed, covered closely with trigonous tubercles.

Fl. & Fr.: October–March.

Illus.: S. Moorthy *op. cit.* 2: 610.

Distrib.: Frequent in dense forests, Nawegaon.

***Dicliptera* A.L. Juss.**

Dicliptera verticillata (Forssk.) C. Chr. in Dansk. Bot. Ark. 4(3): 11. 1923; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 616. 2001. *Dianthera verticillata* Forssk., Fl. Aeg.-Arab. Deser. Pl. 9: 1775. *Dicliptera micranthes* Nees in Wall., Pl. Asiat. Rar. 3: 112. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 553. 1885; Cooke, Fl. Pres. Bombay 2: 481. 1958 (Repr.). ‘*Amphutavani*’.

Herbs, 15–40 cm high, erect. Leaves $3.5\text{--}8.5 \times 1.5\text{--}4.5$ cm, ovate or elliptic, at apex acuminate, base rounded or acute. Flowers purplish, in axillary clusters or in umbel-like cymes. Capsules ellipsoid, compressed, subacute. Seeds 4, orbicular, echinate with tubercles.

Fl. & Fr.: October–May.

Distrib.: Frequent in scrub forests, Nagzira.

Ruellia L.

Key to the species

- | | |
|--|---------------------|
| 1a. Plants prostrate; leaves acute at apex; ovary and capsules pubescent | R. prostrata |
| 1b. Plants erect; leaves obtuse at apex; ovary and capsules glabrous | R. patula |

Ruellia patula Jacq., Misc. Bot. 2: 358. 1781; C.B. Clarke in Hook.f., Fl. Brit. India 4: 412. 1884; Cooke, Fl. Pres. Bombay 2: 432. 1958 (Repr.); Karthik. & al. Fl. Pl. India 1: 37. 2009. *Dipteracanthus patulus* (Jacq.) Nees in Wall., Pl. Asiat. Rar. 3: 82. 1832; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 126. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 616. 2001. ‘*Katmora*’.

Herbs, 30–40 cm high; stems diffuse. Leaves $0.9\text{--}3.5 \times 0.6\text{--}2.5$ cm, ovate, ovate-elliptic or obovate, subacute to obtuse at apex, rounded or narrowed at base. Flowers blue to violet, solitary, axillary. Capsules clavate. Seeds spherical, hairy on margins.

Fl. & Fr.: June–November.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 450. 1988; Karthik. & al., op.cit. xxvi t. 6A.

Distrib.: Frequent in scrub forest, Nagzira.

Ruellia prostrata Poir. in Lam., Encycl. 6: 349. 1804. *Ruellia prostrata* var. *dejecta* C.B. Clarke in Hook.f., Fl. Brit. India 4: 412. 1884; Cooke, Fl. Pres. Bombay 2: 431. 1958 (Repr.); Karthik. & al., Fl. Pl. India : 37. 2009. *D. prostratus* (Poir.) Nees in Wall., Pl. Asiat. Rar. 3: 81. 1832; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 617. 2001. ‘*Karata*’.

Herbs. Leaves $2\text{--}7 \times 1\text{--}3.5$ cm, ovate or elliptic, sparsely hairy. Flowers blue to violet, solitary or few together, axillary. Capsules clavate, pointed. Seeds 15–20, orbicular, glabrous on faces, hairy along margins.

Fl. & Fr.: September–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 525. 1982.

Distrib.: Frequent in moist places in the forests, Nawegaon, Nagzira.

Notes: Leaves are used as a remedy for ear disease.

Dyschoriste Nees

Dyschoriste dalzellii (T. And. ex Bedd.) O. Ktze., Rev. Gen. Pl. 486. 1891; C.B. Clarke in Hook.f., Fl. Brit. India 4: 411. 1884; Cooke, Fl. Pres. Bombay 2: 438.

1958 (Repr.); S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 617. 2001. *Calophanes dalzellii* T. And. ex Bedd., Ic. Pl. Ind. Or 1: 60. t. 248. 1874.

Shrubs, whole plant except capsules glandular-pubescent; stems obtusely subquadrangular. Leaves 2–4 × 1–2.5 cm, ovate, at apex acute, base rounded or subacute. Flowers bluish, solitary or few in axillary cymes. Capsules oblong, pointed. Seeds ellipsoid, clothed by glistening hairs.

Fl. & Fr.: September–November.

Distrib.: Frequent in scrub forests, Nawegaon.

Elytraria Michaux.

Elytraria acaulis (L.f.) Lindau in Engl. & Prantl, Nat. Pflanzenfam. Nachtr. 1: 304. 1897; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 621. 2001. *Justicia acaulis* L.f., Suppl. 84. 1781. *Elytraria crenata* Vahl, Enum. Pl. 1: 106. 1804; C.B. Clarke in Hook.f., Fl. Brit. India 4: 412. 1884. *Tubiflora acaulis* (L.f.) O. Ktze., Rev. Gen. Pl. 500. 1891; Cooke, Fl. Pres. Bombay 2: 420. 1958 (Repr.). ‘*Dasmori*’.

Herbs, acaulescent. Leaves radical, 10–18 × 4.5–6.5 cm, obovate to lanceolate, at apex obtuse, base tapering, margins crenate. Flowers white, with pinkish tinge or pale blue, in simple or compound spikes. Capsules ovoid, acute; valves recurved. Seeds ovoid.

Fl. & Fr.: October–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 528. 1982.

Distrib.: Infrequent in the forests, Nawegaon.

Eranthemum L.

Key to the species

- | | |
|---|------------------------|
| 1a. Bracts white, with green nerves; calyx scarious | E. roseum |
| 1b. Bracts green, rarely whitish when old; calyx not as above | E. purpurascens |

Eranthemum purpurascens Nees in Wall., Pl. Asiat. Rar. 3: 106. 1832; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 623. 2001. *Daedalacanthus purpurascens* T. And. in J. Linn. Soc. 9: 488. 1867; C.B. Clarke in Hook.f., Fl. Brit. India 4: 420. 1884; Cooke, Fl. Pres. Bombay 2: 440. 1958 (Repr.). ‘*Gulshan*’.

Shrubs, 1–1.5 m tall, leafy. Leaves 5–20 × 2.5–8.5 cm, ovate, lineolate, at apex acuminate, base rounded or shortly cordate or decurrent on petiole. Flowers blue, in dense, 2–8 cm long spikes. Capsules clavate-oblong, pointed. Seeds broadly ellipsoid, densely hairy.

Fl. & Fr.: October–March.

Distrib.: Infrequent in dense forests, Nawegaon, Nagzira.

Eranthemum roseum (Vahl) R.Br., Prodr. 1: 477. 1810; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 126. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra

State 2: 623. 2001. *Justicia rosea* Vahl, Enum. Pl. 1: 165. 1804. *Daedalacanthus roseus* T. And. in J. Linn. Soc. 9: 419. 1867; Cooke, Fl. Pres. Bombay 2: 439. 1958 (Repr.). 'Dosamuli'.

Shrubs, 1 m tall. Leaves 10–20 × 3–8 cm, oblanceolate, lineolate, acuminate at apex, tapering at base. Flowers blue, in axillary or terminal spikes, bracts foliaceous, obovate, white, with green nerves; bracteoles linear. Capsules clavate, pointed. Seeds discoid, hairy.

Fl. & Fr.: October–March.

Illus.: S. Moorthy, *op. cit.* 622.

Distrib.: Common throughout in forests, Nawegaon, Nagzira.

Notes: Roots useful in leucorrhoea.

Haplanthodes O. Ktze.

Haplanthodes tentaculatus (L.) R.B. Majumdar in Bull. Soc. Bengal 25: 76. 1971; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 628. 2001. *Ruellia tentaculata* L. in Torner, Cent. Pl. 22. 1756. *Haplanthus tentaculatus* (L.) Nees in DC., Prodr. 11: 513. 1847 *p.p.*; C.B. Clarke in Hook.f., Fl. Brit. India 4: 507. 1884; Cooke, Fl. Pres. Bombay 2: 453. 1958 (Repr.) *p.p.*

Herbs, 40–60 cm high, erect; stems quadrangular; cladodes slender, 1.2–3 cm long. Leaves ovate, acuminate, decurrent into petiole. Flowers bluish or lilac, sessile amidst cladodes. Capsules oblong, pointed, pubescent.

Fl. & Fr.: December–May.

Distrib.: Frequent in dense forests, Nagzira.

Hemigraphis Nees emend T. And.

Hemigraphis latebrosa (Heyne ex Roth) Nees in DC., Prodr. 11: 723. 1847; C.B. Clarke in Hook.f., Fl. Brit. India 4: 423. 1884; Cooke, Fl. Pres. Bombay 2: 434. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22. 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 482. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 631. 2001. *Ruellia latebrosa* Heyne ex Roth, Nov. Pl. Sp. 3. 07. 1821.

Herbs, weak, diffuse; stems slender obtusely subquadrangular. Leaves 2.4–7.5 × 2.2–4.5 cm, ovate, acuminate, coarsely crenate-serrate, sparsely hairy on both surfaces. Flowers bluish, in axillary and terminal spikes. Capsules linear-oblong, minutely pubescent. Seeds 6, broadly ellipsoid or suborbicular, yellowish-brown, covered with white hairs.

Fl. & Fr.: December–April.

Distrib.: Common throughout forest as an undergrowth, Nawegaon, Nagzira.

Hygrophila R.Br.

- 1a. Erect herbs; leaves rather large
1b. Procumbent herbs; leaves small

H. schulli
H. serpyllum

Hygrophila schulli (Buch.-Ham.) M. Roem. & schult., M. Almeida in J. Bombay Nat. Hist. Soc. 83(Suppl.) 221. 1986; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 636. 2001. *Bahel schulli* Buch.-Ham. in Trans. Linn. Soc. Lond. 14: 289. 1825. *Asteracantha longifolia* (L.) Nees in Wall., Pl. As. Rar. 3: 90. 1832; Cooke, Fl. Pres. Bombay 2: 428. 1958 (Repr.). *Hygrophila auriculata* (K. Schum.) Heine in Kew Bull. 16: 172. 1962; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981. 'Kolsunda', 'Talmikhana'.

Herbs, 0.5–1.5 m tall, erect, stout; branches subquadrangular. Leaves sessile, 5–17.5 × 0.6–3 cm, appearing whorled, with 6 sharp, yellow spines, oblong-lanceolate or oblanceolate, hispid on both surfaces. Flowers purple-blue in a whorl at each node. Capsules linear-oblong, pointed. Seeds orbicular.

Fl. & Fr.: November–June.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: 530. 1982.

Distrib.: Frequent in wet open places, Nawegaon, Nagzira.

Hygrophila serpyllum (Nees) T. And. in J. Linn. Soc. 9: 456. 1867; C.B. Clarke in Hook.f., Fl. Brit. India 4: 406. 1884; Cooke, Fl. Pres. Bombay 2: 429. 1958 (Repr.); S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 637. 2001. *Physichilus serpyllum* Nees in Hook., Comp. Bot. Mag. 2: 310. 1836. 'Rantewan'.

Herbs, procumbent; root-stock woody; stems glabrous or sparsely hairy. Leaves 1–3 × 0.5–1.5 cm, ovate-elliptic or suborbicular, more or less hairy on both surfaces, entire. Flowers white or with a slight pinkish tinge, in terminal, dense or lax spikes. Capsules linear-oblong, pointed, hairy in upper half. Seeds ovoid-orbicular.

Fl. & Fr.: September–March.

Distrib.: Frequent in moist places, Nagzira.

Notes: The plant is useful in jaundice and rheumatic pains.

Justicia L.

Key to the species

- | | | |
|--|-----------------------|---|
| 1a. Shrubs; leaves up to 7–20 × 3.5–7 cm long; flowers 2.5 cm long or longer | J. adhatoda | 2 |
| 1b. Herbs or at the most undershrubs; leaves up to 10 cm long; flowers 1–1.5 cm long | | 2 |
| 2a. Undershrubs; bracts inconspicuous | | 3 |
| 2b. Herbs; bracts conspicuous | | 5 |
| 3a. Leaves ovate-elliptic or elliptic-lanceolate | J. latispica | |
| 3b. Leaves orbicular | | 4 |
| 4a. Erect or diffuse herbs; spikes 1–2 cm long | J. orbiculata | |
| 4b. Procumbent herbs; spikes 2–5 cm long | J. nagpurensis | |

- 5a. Bracts green, orbicular-spathulate, glandular-ciliate, more or less pubescent **J. glauca**
 5b. Bracts white, ovate or lanceolate glabrous **J. betonica**
 6a. Cystoliths on leaves long, bent **J. diffusa**
 6b. Cystoliths on leaves minute, straight 2
 7a. Calyx lobes and bracteoles ovate, puberulous; cystoliths on leaves numerous; capsules
 puberulous **J. vahlii**
 7b. Calyx lobes and bracteoles spatulate or oblanceolate, glabrous; cystoliths on leaves
 sparse; capsules glabrous **J. quinqueangularis**

Justicia adhatoda L., Sp. Pl. 15. 1753; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 639. 2001. *Adhatoda zeylanica* Medic. in Hist. & Commentat. Acad. Elect. Sci. Theod. Palast. 6: 393. 1790. *Adhatoda vasica* Nees in Wall. Pl. As. Rar. 3: 103. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 540. 1884; Cooke, Fl. Pres. Bombay 2: 493. 1958 (Repr.). ‘*Adulsa*’. (PLATE:C-4)

Shrubs, bushy, 1–2.5 m tall. Leaves 7–20 × 3.5–7 cm, elliptic-lanceolate, at apex acuminate, base tapering, minutely puberulous when young, glabrous. Flowers white, in short, dense, axillary, pedunculate spikes. Capsules clavate, subacute, shortly and bluntly pointed, pubescent. Seeds orbicular, oblong, tubercular, verrucose, glabrous.

Fl. & Fr.: August–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 519. 1982 (*Adhatoda zeylanica*).

Distrib.: Frequent, as a hedge plant along roadsides, Nagzira.

Notes: Leaf juice is used to prepare cough syrup commercially.

Justicia betonica L., Sp. Pl. 15. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 640. 2001. *Justicia betonica* L. var. *ramosissima* C.B. Clarke in Hook.f., Fl. Brit. India 4: 525. 1885; Cooke, Fl. Pres. Bombay 2: 486. 1958 (Repr.). ‘*Mokandar*’.

Undershrubs, diffusely branched; stems cylindric, striate. Leaves 5–10 × 2–4.5 cm, ovate, at apex acute or acuminate, base rounded, entire, slightly toothed. Flowers white or pale pink, in terminal or rarely axillary spikes. Capsules broadly clavate, pubescent. Seeds suborbicular, tuberculately rugose.

Fl. & Fr.: October–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 534. 1982.

Distrib.: Common in shady, open places, Nawegaon, Nagzira.

Justicia diffusa Willd., Sp. Pl. 4: 87. 1805; C.B. Clarke in Hook.f., Fl. Brit. India 4: 538. 1885; Cooke, Fl. Pres. Bombay 2: 489. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980. *Rostellularia diffusa* (Willd.) Nees in Wall., Pl. As. Rar. 3: 100. 1832; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 664. 2001. Herbs, erect. Leaves 1.8–2.5 × 0.5–1.5 cm, at apex acute-acuminate, base cuneate. Flowers pink, in axillary and terminal spikes. Capsules clavate. Seeds flattened, faintly tuberculate.

Fl. & Fr.: August–May.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 455. 1988.

Distrib.: Frequent in scrub forests among grasses, Nawegaon, Nagzira.

Justicia glauca Rottl. in Ges, Naturf. Neue Schr. 4: 219. 1802; C.B. Clarke in Hook.f., Fl. Brit. India 4: 529. 1885; Cooke, Fl. Pres. Bombay 2: 487. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 126. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 640. 2001.

Herbs, diffusely branched; stems puberulous. Leaves 3–5 × 1.5–2 cm, ovate, at apex subacute, base usually rounded. Flowers spotted with purple, in terminal spikes. Capsules oblong, tip slightly pubescent, pointed. Seeds densely clothed with more or less triangular, acute tubercles.

Fl. & Fr.: August–December.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 458. 1988.

Distrib.: Frequent in open situations among grasses, Nawegaon, Nagzira.

Justicia latispica (C.B. Clarke) Gamble, Fl. Pres. Madras 1080. 1924; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 641. 2001. *Justicia procumbens* L. var. *latispica* C.B. Clarke in Hook.f., Fl. Brit. India 4: 529. 1885.

Herbs, 15–60 cm high, annuals, erect, pubescent. Leaves 3–10 × 0.5–2 cm, narrowed at both ends, entire, pubescent on both surfaces. Flowers pink, in terminal, cylindric spikes. Capsules oblong, acute at apex, glabrous. Seeds 4, ovoid, tubercled, pale brown.

Fl. & Fr.: September–February.

Distrib.: Occasional under shade of trees or gravelly slopes, Nawegaon.

Justicia nagpurensis A.V.M. Grah. in Kew Bull. 43: 597. 1988; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 641. 2001. *Justicia simplex* D. Don var. *serphyllifolia* (Bth.) C.B. Clarke in Hook.f., Fl. Brit. India 4: 539. 1885.

Herbs, small, up to 20 cm long, pubescent, diffuse, prostrate or straggling, often rooting at nodes; branches slender, zigzag. Leaves very small, under 1 cm across, orbicular, obtuse, hairy. Flowers pink, in spikes. Capsules pointed, pubescent at apex. Seeds orbicular.

Fl. & Fr.: October–January.

Distrib.: Rare, on rocky hill slopes, Nagzira.

Notes: Naik (1998) opined that this is probably stunted form of *Justicia japonica* Thunb. with variable leaf shape, size and length of spikes.

Justicia orbiculata Wall. ex T. Anders. in J. Linn. Soc. Bot. 9. 512. 1867; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 642. 2001. *Justicia diffusa* Willd. var. *orbiculata* (Wall. ex T. And.) C.B. Clarke in Hook.f., Fl. Brit. India 4: 538. 1885; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980. ‘*Ranchana*’.

Herbs, up to 50 cm high, erect or diffuse, stems hispid, woody at base. Leaves 0.5–2 cm across, orbicular, at apex rounded, base rounded or cuneate, entire, pubescent. Flowers pink, in terminal, dense spikes. Capsules ellipsoid, acute, pubescent. Seeds pale brown, orbicular, rugose.

Fl. & Fr.: July–December.

Distrib.: Frequent in open places among grasses, Nawegaon.

Justicia quinqueangularis J. Koenig. ex Roxb., Fl. Ind. 1: 134. 1820; C.B. Clarke in Hook.f., Fl. Brit. India 4: 537. 1885; Cooke, Fl. Pres. Bombay 2: 490. 1958 (Repr.). *Rostellularia quinqueangularis* (J. Koenig. ex Roxb.) Nees in Wall., Pl. As. Rar. 3: 101. 1832; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 126. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 667. 2001.

Herbs, 30–45 cm tall; stems 4–5 angular, deeply grooved, lineolate. Leaves 1.5–6.8 × 0.3–0.8 cm, linear-oblong or linear-lanceolate, at apex subobtusate, base rounded or cuneate. Flowers rose coloured, in elongate, terminal spikes. Capsules oblong, acutely pointed, slightly narrowed into a stalk. Seeds 4, reticulately rugose.

Fl. & Fr.: September–March.

Distrib.: Frequent in scrub forests, Nawegaon.

Justicia vahlii Roth, Nov. Pl. Sp. 14. 1821; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 126. 1981. *Justicia diffusa* var. *Vahlii* (Roth) C.B. Clarke in Hook.f., Fl. Brit. India 4: 538. 1885; Cooke, Fl. Pres. Bombay 2: 490. 1958 (Repr.). *Rostellularia vahlii* (Roth) Nees in Wall. Pl. As. Rar. 3: 102. 1832 S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 669. 2001.

Herbs, 60–70 m tall, erect or decumbent. Leaves 1.5–3.2 × 0.5–1 cm, linear-lanceolate, lineolate. Flowers pale purple, in axillary and terminal spikes. Capsules oblong. Seeds slightly flattened, tuberculate.

Fl. & Fr.: October–December.

Distrib.: Frequent in open situations among grasses, Nagzira.

Lepidagathis Willd.

1a. Seeds 2

2

1b. Seeds 4

L. incurva var. **mucronata**

2a. Calyx 4-partite

L. cristata

2b. Calyx 5-partite

L. trinervis

Lepidagathis cristata Willd., Sp. Pl. 2: 400. 1800; C.B. Clarke in Hook.f., Fl. Brit. India 4: 516. 1885; Cooke, Fl. Pres. Bombay 2: 470. 1958 (Repr.); S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 645. 2001. '*Bhuigend*', '*Kumbh*'.

Herbs; root-stock perennial; stems branched, quadrangular. Leaves opposite, sessile, 2–3.5 × 0.3–0.9 cm, linear-oblong or lanceolate-oblong, lineolate above, hairy on nerves beneath. Flowers white or pale pink, dotted with purple spots, in globose

head. Capsules obovoid, subacute. Seeds 2, oblong-ovoid, rounded, densely clothed with long, hygroscopic hairs.

Fl. & Fr.: October–May.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 535. 1982.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Whole plant useful in measles.

Lepidagathis incurva Don var. **mucronata** (Wall.) C.B. Clarke ex T. Cooke, *Fl. Pres. Bombay* 2:397. 1904 (2: 475. 1958 (Repr.); S. Moorthy in N.P. Singh & al., *Fl. Maharashtra State* 2:647. 2001. *Ruellia mucronata* Wall. Cat. 2366. 1830. *Lepidagathis hyalina* Nees var. *mucronata* C.B. Clarke in Hook.f., *Fl. Brit. India* 4:521. 1885; S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 521. 1981.

Herbs, prostrate; stems obtusely quadrangular. Leaves 2.3–5.5 × 10.5–3.5 cm, elliptic, lanceolate, at apex acute, base tapering and decurrent into petiole. Flowers white, in axillary and terminal, hairy spikes. Capsules oblong-lanceolate, acute, pubescent at tip. Seeds 4, broadly ovoid.

Fl. & Fr.: January–June.

Distrib.: Frequent in scrub forests, Nagzira.

Lepidagathis trinervis Wall. ex Nees in Wall., *Pl. As. Rar.* 3: 96. 1832; C.B. Clarke in Hook.f., *Fl. Brit. India* 4: 517. 1885; Cooke, *Fl. Pres. Bombay* 2: 471. 1958 (Repr.); S. Moorthy in N.P. Singh & al., *Fl. Maharashtra State* 2: 649. 2001.

Herbs, suffruticose, diffuse; rootstock woody, branches slender, quadrangular. Leaves sessile, linear, 3-nerved, at apex subacute, base slightly tapering, margins entire, glabrous. Flowers white, spotted with yellow, brown and purple, in axillary, sessile spikes usually two or more together and forming a single head. Capsules ovoid, lanceolate, subacute, compressed. Seeds 2, oblong, rounded at apex clothed with long, mucilaginous, hygroscopic hairs.

Fl. & Fr.: November–May.

Distrib.: Frequent in scrub forests, Nawegaon.

Notes: Roots are used in piles and flowers for swellings and healing of wounds by local people.

Strobilanthes Blume

Strobilanthes barbata Nees in Wall., *Pl. As. Rar.* 3: 85. 1832; C.B. Clarke in Hook.f., *Fl. Brit. India* 4: 437. 1884; Cooke, *Fl. Pres. Bombay* 2: 445. 1958 (Repr.); Karthik & al., *Fl. Pl. India* 1: 44. 2009. *Nilgirianthus barbatus* (Nees) Bremek. in *Verh. Nederl. Akad. Wet* 2, 40: 172. 1944; S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 126. 1981; S. Moorthy in N.P. Singh & al., *Fl. Maharashtra State* 2: 654. 2001. Shrubs 2–4 m, subacandent; stems quadrangular. Leaves 9.5–24.5 × 4.5–9.5 cm, elliptic-lanceolate, shining, densely lineolate above, at apex acuminate, base tapering.

Flowers white in axillary and terminal dense heads or spikes. Capsules clavate. Seeds broadly ellipsoid, at apex acute, thin, yellow.

Fl. & Fr.: October–March.

Illus.: Bedd. Ic. Pl. Ind. Or. 49, t. 212. 1874.

Distrib.: Infrequent in scrub forests, Nagzira.

Notes: The species is an endemic to Peninsular India.

Peristrophe Nees

Peristrophe paniculata (Forssk.) Burm. in Kew Bull. 38. 451. 1983; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 657. 2001. *Dianthera paniculata* Forssk., Fl. Aeg.-Arab. 7. 1775. *Peristrophe bicalyculata* (Retz.) Nees in Wall., Pl. As. Rar. 3: 113. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 554. 1885; Cooke, Fl. Pres. Bombay 2: 495. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981. '*Arial*'.

Herbs, 0.5–1 m tall; stems 6-angled, more or less hairy. Leaves 5–8 × 2.5–23.7 cm, ovate, at apex acuminate, base rounded, densely lineolate, hairy. Flowers rosy, in trichotomous cymes or in large, lax, pubescent panicles. Capsules pointed, pubescent. Seeds 4, orbicular, papillose and slightly rugose.

Fl. & Fr.: October–February.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 538. 1982.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: Plant is used as an antidote to insect bite.

Petalidium Nees

Petalidium barlerioides (Roth) Nees in Wall., Pl. As. Rar. 3: 82. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 416. 1884; Cooke, Fl. Pres. Bombay 2: 435. 1958 (Repr.); S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 659. 2001. *Ruellia barlerioides* Roth, Nov. Pl. Sp. 319. 1821. '*Ranchana*'.

Undershrubs, 1–1.5 m high. Leaves 4.5–9 × 4–5.5 cm, broadly ovate, acuminate at apex, rounded at base, margins crenate-serrate. Flowers white, solitary or crowded, bracteolate; bracteoles foliaceous, ovate, acuminate, scarious. Capsules clavate, pointed, 2-seeded. Seeds 2, orbicular, villous on margins.

Fl. & Fr.: February–April.

Illus.: S. Moorthy *op.cit.* 658. Nagzira.

Rhinacanthus Nees

Rhinacanthus nasutus (L.) Kurz in J. As. Soc. Beng. 39: 79. 1870; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 663. 2001. *Justicia nasuta* L., Sp. Pl. 16. 1753. *Rhinacanthus communis* Nees in Wall., Pl. As. Rar. 3: 109. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 541. 1885; Cooke, Fl. Pres. Bombay 2: 494. 1958 (Repr.). '*Gajkarni*', '*Nagamalli*'.

Undershrubs, 1–2 m tall; stems subterete or obscurely angled. Leaves 6–10 × 3–5 cm or larger sometimes. Flowers white, sessile or subsessile, solitary or 2–3 together, in lax, terminal panicles. Capsules *c.* 1.5 cm long, narrow, pointed, pubescent. Seeds tuberculate, glabrous, black.

Fl. & Fr.: October–May.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 539. 1982.

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Roots are useful medicinally for skin diseases.

Rungia Nees

Key to the species

- | | |
|--|----------------------|
| 1a. Bracts uniform; upper lip of corolla notched or emarginated | 2 |
| 1b. Bracts dimorphic; upper lip of corolla acute, not notched | 3 |
| 2a. Stems erect, densely hairy; capsules obovoid, obtuse | R. elegans |
| 2b. Stems decumbent and rooting at nodes, nearly glabrous, capsules ovoid, acute | R. repens |
| 3a. Floral bracts villous; barren bracts prominently pectinately arranged | R. pectinata |
| 3b. Floral bracts pubescent at apex only; barren bracts not as above | R. parviflora |

Rungia elegans Dalz., in Dalz. & Gibs., *Bombay Fl.* 196. 1861; C.B. Clarke in *Hook.f., Fl. Brit. India* 4: 549. 1885; Cooke, *Fl. Pres. Bombay* 2: 480. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 126. 1981; S. Moorthy in N.P. Singh & al., *Fl. Maharashtra State* 2: 671. 2001.

Herbs, 12–35 cm tall; stems slightly angular. Leaves 3.4–5.2 × 1–3.5 cm, elliptic-lanceolate, at apex acute or acuminate, base usually rounded. Flowers bluish, in sessile, terminal spikes. Capsules truncate, slightly mucronate. Seeds oblong and rounded at apex or suborbicular, rugose, with concentric furrows, yellow or brown.

Fl. & Fr.: September–March.

Distrib.: Common in open situations among grasses, Nagzira.

Rungia parviflora (Retz.) Nees in Wall., *Pl. As. Rar.* 3: 110. 1832 & in DC. *Prodr.* 11: 469. 1847. (excl. Syn.); C.B. Clarke in *Hook.f., Fl. Brit. India* 4: 538. 1885; S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 127. 1981; S. Moorthy in N.P. Singh & al., *Fl. Maharashtra State* 2: 671. 2001. *Rungia longiflora* Bedd. Non Nees; Bedd. *Ic. T.* 266. 1874. *Justicia parviflora* Retz., *Obs. Bot.* 4: 9. 1788.

Herbs, suberect. Leaves 2.3–4.6 × 1.2–2.2 cm, elliptic-lanceolate, at apex rounded, base acute. Flowers blue, in terminal and axillary spikes. Capsules compressed, hairy near top. Seeds orbicular, concentrically ridged.

Fl. & Fr.: November–March.

Illus.: Bedd. *op. cit.*

Distrib.: Frequent among grasses, Nawegaon.

Rungia pectinata (L.) Nees in DC., Prodr. 11: 469. 1847; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 672. 2001. *Justicia pectinata* L. in Torner Cent. II Pl. 3. 1756. *Rungia parviflora* var. *pectinata* (L.) C.B. Clarke in Hook.f., Fl. Brit. India 4: 550. 1885; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 2: 478. 1958 (Repr.). *Rungia parviflora* var. *muralis* C.B. Clarke in Hook.f. *op. cit.*; Cooke, *op. cit.*

Herbs, suberect or straggling, stems subterete. Leaves 1.5–5 × 0.4–4 cm, elliptic-lanceolate or oblong-lanceolate at apex lineolate, base acute. Flowers blue, in terminal and axillary, one sided, subsessile spikes. Capsules ovoid, acute, oblong, compressed. Seeds suborbicular, rugose, with concentric furrows, pale brown.

Fl. & Fr.: November–March.

Illus.: Mahesh., Illus. Fl. Delhi f. 167. 1966.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Rungia repens (L.) Nees in Wall., Pl. As. Rar. 3: 110. 1832; C.B. Clarke in Hook.f., Fl. Brit. India 4: 549. 1885; Cooke, Fl. Pres. Bombay 2: 480. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 672. 2001. *Justicia repens* L., Sp. Pl. 15. 1753. ‘*Ghati pitpapra*’.

Herbs, decumbent, often rooting near base. Leaves 2.5–5 × 1–2 cm, oblong-lanceolate, lineolate, base usually tapering, less commonly rounded and unequal sided. Flowers white, blue or pink with dark spot, in terminal, spikes. Capsules ovoid, oblong, acute, compressed. Seeds suborbicular, rugose, pale brown.

Fl. & Fr.: November–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 541. 1982.

Distrib.: Common in the forests, Nagzira.

Notes: Plant is used to cure cough.

THUNBERGIACEAE

Thunbergia Retz. (*nom. cons.*)

Thunbergia laevis Nees in wall. Pl. As. Rar. 3: 77. 1832; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 685. 2001. *Thunbergia fragrans* auct. non Roxb. nisi partim; C.B. Clarke in Hook.f., Fl. Brit. India 4: 390. 1884; Cooke, Fl. Pres. Bombay 2: 417. 1958 (Repr.).

Herb, perennials; stems long, slender, twining, swollen at nodes, sparingly hairy. Leaves 5–8 × 2.0–3.0 cm, deltoid-ovate, with a single patent lobe on each side at base, at apex acute, margins entire. Flowers white, axillary, solitary or in pairs. Capsules clavate, beaked, puberulous. Seeds 4, hemispheric, orbiculate-rugose.

Fl. & Fr.: August–December.

Distrib.: As an undergrowth near stream banks, Nagzira.

Notes: Roots are useful in cough. Karthik. & al. (2009) included the species under family Acanthaceae.

Cultivated Species:

Thunbergia grandiflora (Roxb. ex Rottl.) Roxb., Fl. Ind. 3: 34. 1932; C.B. Clarke in Hook.f., Fl. Brit. India 4: 392. 1884; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 26. 1981; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 688. 2001. *Flemingia grandiflora* Roxb. ex Rottl. in Ges. Naturf. Neue Schr. 4: 202. 1803.

Shrub with underground stolons; stems twining. Leaves 5.5–15 × 5–15 cm broadly ovate, shallowly or deeply palmatilobed, at apex acute, base cordate, margins dentate. Flowers white, in terminal, lax, long racemes. Capsules shaped like birds head.

Fl. & Fr.: September–October.

Distrib.: Grown in gardens, Nagzira.

Illus.: Karthik. & al., xxvii t. 7c. 2009.

Notes: Karthik. & al. (2009) included the species and family under Acanthaceae.

VERBENACEAE

Key to the genera

- | | |
|---|-----------------------|
| 1a. Inflorescence of cylindric or capitate spikes | 2 |
| 1b. Inflorescence cymose | 4 |
| 2a. Erect shrubs | Lantana |
| 2b. Prostrate or erect undershrubs or herbs | 3 |
| 3a. Stems rooting at nodes; leaves spatulate | Phyla |
| 3b. Stems not as above; leaves obovate-elliptic | Stachytarpheta |
| 4a. Leaves compound | Vitex |
| 4b. Leaves simple | 5 |
| 5a. Corolla bilipped; stamens didynamous | Clerodendrum |
| 5b. Corolla regular; stamens equal | 6 |
| 6a. Flowers c. 3.5 cm long | Gmelina |
| 6b. Flowers c. 0.5 cm long | Tectona |

Clerodendrum L.

Key to the species

- | | |
|--|--------------------|
| 1a. Inflorescence axillary cymes, few flowered | C. inerme |
| 1b. Inflorescence terminal panicles, many flowered | C. serratum |

Clerodendrum inerme (L.) Gaertn. Fruct. Sem. 1: 271, t. 75. 1788; C.B. Clarke in Hook.f., Fl. Brit. India 4: 589. 1885; Cooke, Fl. Pres. Bombay 2: 511. 1958 (Repr.); P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 690. 2001. *Volkameria inermis* L., Sp. Pl. 637. 1753. ‘Baad’, ‘Koynel’, ‘Vanjai’.

Shrubs, 2–3 m tall; branches straggling. Leaves 1.5–5 × 1–2.5 cm, elliptic-obovate, obtuse at apex, cuneate at base. Flowers white, with pink tinge, in axillary, pedunculate cymes. Drupes globose, black when mature, seated on persistent calyx.

Fl. & Fr.: August–January.

Illus.: S.G. Pradhan in Fl Sanjay Gandhi Nat. Park Borivali-Mumbai 502. 2005.
Distrib.: Common, Nagzira.

Clerodendrum serratum (L.) Moon., Cat. Pl. Ceylon 46. no. 382. 1824; C.B. Clarke in Hook.f., Fl. Brit. India 4: 592. 1885; Cooke, Fl. Pres. Bombay 2: 512. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 691. 2001. *Volkameria serrata* L., Mant. 90. 1767. ‘*Bharang*’.

Shrubs 2–3 m tall. Leaves 10–20 × 6–10 cm, oblong-ovate to elliptic-lanceolate, acute to acuminate at apex, serrate on margins. Flowers violet, in terminal paniculate cymes. Drupes obovoid, succulent, 4-lobed.

Fl. & Fr.: August–December.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 468. 1988.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Leaves are used as vegetable. Medicinally, plant used in fever and for healing wounds.

Gmelina L.

Gemlina arborea Roxb., Pl. Cor. 3: 42, t. 246. 1815; C.B. Clarke in Hook.f., Fl. Brit. India 4: 581. 1885; Cooke, Fl. Pres. Bombay 2:504. 1958 (Repr.); P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 692. 2001. ‘*Shivan*’.

Trees, 12–15 m tall, deciduous; young parts fulvous-tomentose. Leaves 5–13 × 5–12 cm, broadly ovate, at apex acuminate, base cordate, tomentose. Flowers brownish-yellow, in axillary, terminal panicles. Drupes obovoid or pyriform, green to yellow when ripe.

Fl. & Fr.: February–July.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 550. 1982.

Distrib.: Frequent in dense forests, Nagzira.

Notes: Fruits are edible.

Lantana L.

Lantana camara L. var. **aculeata** (L.) Moldenke in Torreya 34: 9. 1934; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 693. 2001. *Lantana aculeata* L., Sp. Pl. 627. 1753. *Lantana camara* auct. non L. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 4: 562. 1885; Cooke, Fl. Pres. Bombay 2: 498. 1958 (Repr.). ‘*Ghaneri*’, ‘*Tantani*’.

Shrubs, 1.5–3 m tall; stems straggling. Leaves 2–7 × 2–4 cm, ovate, rounded at base, acute at apex. margins crenulate to crenate. Flowers pink, dark red or orange, aggregated in compact, capitate spikes. Drupes globose, dark green, black when ripe.

Fl. & Fr.: Throughout the year.

Distrib.: Occasional bushes in scrub forests, Nawegaon, Nagzira.

Notes: Decoction of the plant is used in rheumatic pains.

Phyla Lour.

Phyla nodiflora (L.) Greene in Pittonia 4: 46. 1899; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 693. 2001. *Verbena nodiflora* L., Sp. Pl. 20. 1753. *Lippia nodiflora* (L.) A. Rich in Michaux, Fl. Bor. Amer. 2: 15. 1803; C.B. Clarke in Hook.f., Fl. Brit. India 4: 563. 1885; Cooke, Fl. Pres. Bombay 2: 499. 1958 (Repr.). ‘*Gour mundi*’, ‘*Jalpimpli*’, ‘*Ratoliva*’.

Herbs; prostrate, rooting at nodes. Leaves 1.5–3 × 0.9–1.8 cm, orbicular to obovate-spathulate, obtuse at apex, cuneate at base. Flowers purplish-white, sessile, in axillary spikes. Drupes subglobose. Seeds minute.

Fl. & Fr.: Throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 553. 1982.

Distrib.: Frequent in marshy places, Nawegaon.

Stachytarpheta Vahl

Stachytarpheta jamaicensis (L.) Vahl, Enum. Pl. 1: 206. 1804; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 696. 2001. *Verbena jamaicensis* L., sp. pl. 19. 1753. *Stachytarpheta indica* auct. non (L.) Vahl 1804; C.B. Clarke in Hook.f., Fl. Brit. India 4: 564. 1885; Cooke, Fl. Pres. Bombay 2: 501. 1958 (Repr.). *p.p.*

Undershrubs, dichotomously branched, up to 1 m tall. Leaves 2.5–6 × 1.2–3 cm, broadly elliptic, at apex acute, base oblique, margins serrate. Flowers bluish-violet, sessile, in terminal spikes. Drupes oblong, ribbed.

Fl. & Fr.: February–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 556. 1982.

Notes: A native of America, usually planted in gardens as an ornamental, found as an escape in Nagzira.

Tectona L.f. (*nom. cons.*)

Tectona grandis L.f., Suppl. 151. 1781; C.B. Clarke in Hook.f., Fl. Brit. India 4: 562. 1885; Cooke, Fl. Pres. Bombay 2: 503. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 696. 2001. ‘*Sag*’, ‘*Sagwan*’.

Trees, 15–20 m tall, deciduous; branchlets stellately tomentose. Leaves 15–50 × 15–35 cm, broadly elliptic, obtuse to acute at apex, rounded to acute at base, scabrid above, pubescent beneath. Flowers yellowish, shortly pedicellate, in terminal or axillary, dichotomously branched, terminal-panicles. Drupes globose, with spongy epicarp and stony endocarp; calyx persistent in fruits. Seeds oblong.

Fl. & Fr.: June–October.

Illus.: Matthew, *Illus. F. Tamilnadu Carnatic* 2: t. 558. 1982.

Distrib.: Common throughout the forests, Nawegaon, Nagzira.

Notes: Teak Wood is a good timber, used for construction and for making valuable furniture. Medicinally, wood also used in swellings and headache.

Vitex L.

Vitex negundo L., *Sp. Pl.* 638. 1753; C.B. Clarke in *Hook.f., Fl. Brit. India* 4: 583. 1885; Cooke, *Fl. Pres. Bombay* 2: 508. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 8. 1980; P.V. Prasanna in N.P. Singh & al., *Fl. Maharashtra State* 2: 699. 2001. '*Nirgudi*', '*Nirgundi*', '*Nirguri*'.

Large shrubs, 2–5 m tall; branches grayish-white, tomentose. Leaves 3–5 foliolate, white tomentose beneath; leaflets 3–11 × 1–2.5 cm, ovate-lanceolate, acuminate at apex, acute at base. Flowers bluish-purple, in terminal, pyramidal panicles. Drupes purple to black, globose, glabrous.

Fl. & Fr.: May–October.

Distrib.: In moist places, frequent, Nawegaon, Nagzira.

Notes: Leaves are used in headache, rheumatic pains and as hair tonic; roots are used as a tonic, diuretic, in dysentery and in fever. Seeds are cooked and eaten and stem used in preparation of baskets.

LAMIACEAE

Key to the genera

- | | |
|---|---------------------|
| 1a. Calyx lobes/ teeth 6–10 | 2 |
| 1b. Calyx lobes/ teeth 5 or less | 3 |
| 2a. Flowers white | Leucas |
| 2b. Flowers scarlet-red | Leonotis |
| 3a. Calyx 2-lipped | 4 |
| 3b. Calyx not 2-lipped | 7 |
| 4a. Upper lip of calyx simple, lower lobed | 5 |
| 4b. Both the lips of calyx lobed | Plectranthus |
| 5a. Calyx in fruit deflexed | Ocimum |
| 5b. Calyx in fruit not deflexed | 6 |
| 6a. Upper corolla lip 4-lobed, lower entire | Acrocephalus |
| 6b. Upper corolla lip oblong, obtuse, lower lip 3-lobed | Salvia |
| 7a. Corolla subequally 4-lobed | 8 |
| 7b. Corolla 5-lobed | 9 |

8a. Upper lip of corolla 3-lobed, lower flat, spreading	Pogostemon
8b. Upper lip of corolla entire, lower 3-lobed	Anisomeles
9a. Lower lip of corolla solitary	Hyptis
9b. Lower lip of corolla 3-partite	Lavandula

Acrocephalus Benth.

Acrocephalus hispidus (L.) Nicols. & Sivadasan in Taxon 29: 324. 1980; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 711. 2001. *Gomphrena hispida* L., Sp. Pl. ed. 2. 326. 1762. *Acrocephalus capitatus* Benth. in Wall., Pl. As. Rar. 2: 18. 1830; Hook.f., Fl. Brit. India 4: 611. 1885; Cooke, Fl. Pres. Bombay 2: 525. 1958 (Repr.).

Herbs, erect, 15–35 cm tall, pubescent; stem angled. Leaves 1.5–2.5 × 0.2–1.5 cm, narrowly ovate, lanceolate, at apex acute or subacute, base cuneate, margins serrate. Flowers white or tinged with purple, in terminal or axillary whorls with pair of foliar bracts. Nutlets compressed, smooth.

Fl. & Fr.: September–November.

Illus.: Hook., Ic. Pl. t. 456. 1842.

Distrib.: Frequent in open places, Nagzira.

Note: The leaf juice is said to be used in treatment of fever.

Anisomeles R.Br

Key to the species

1a. Calyx in fruit glabrous	A. heyneana
1b. Calyx in fruit hispid	A. indica

Anisomeles heyneana Benth. in Wall., Pl. As. Rar. 1: 59. 1831; Hook.f., Fl. Brit. India 4: 672. 1885; Cooke, Fl. Pres. Bombay 2: 543. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 127. 1981; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 715. 2001.

Herbs or undershrubs, 1–1.5 m tall. Leaves 3.5–9.5 × 1.5–4.5 cm, ovate-lanceolate, at apex acuminate, base cuneate. Flowers white, few in unilateral cymes. Nutlets oblong.

Fl. & Fr.: October–March.

Distrib.: Frequent among grasses, Nagzira.

Notes: Endemic. Leaves used for headache by local people.

Anisomeles indica (L.) O. Ktze., Rev. Gen. Pl. 512. 1891; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 715. 2001. *Nepeta indica* L., Sp. Pl. 571. 1753. *Anisomeles ovata* R.Br. in Ait., Hort. Kew (ed. 2), 2: 364. 1811; Hook.f., Fl. Brit. India 4: 672. 1885; Cooke, Fl. Pres. Bombay 2: 543. 1958 (Repr.). ‘*Gopali*’.

Undershrubs, 50–70 cm high; stem hirsute or pubescent, quadrangular. Leaves $2.7 \times 1\text{--}5.5$ cm, ovate to obovate, acute or shortly acuminate at apex, truncate at base, margins deeply crenate-serrate. Flowers light purple, in whorls, forming long spikes. Nutlets broadly ovoid, obtusely angled, black, shining.

Fl. & Fr.: August–December.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 562. 1982.

Distrib.: Frequent in waste, open places, Nawegaon, Nagzira.

Notes: The plant has insecticidal properties and is good for skin diseases. Seed oil is also used medicinally in uterine infection.

Hyptis Jacq. (*nom. cons.*)

Hyptis suaveolens (L.) Poit. in *Ann. Mus. Nat. Hist. Paris* 7: 472, t. 29, f. 2. 1806; Hook.f., *Fl. Brit. India* 4: 630. 1885; Cooke, *Fl. Pres. Bombay* 2: 560. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 8. 1980; B.G. Kulkarni & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 718. 2001. *Ballota suaveolens* L., *Syst. Nat.* ed. 10. 1100. 1759.

Undershrubs, 0.4–2.6 m tall; branches obtusely 4-gonous, hispid. Leaves $2\text{--}5 \times 1\text{--}3$ cm, ovate, acute at apex, obliquely truncate to acute at base, margins irregularly serrulate, strigose. Flowers bluish-violet, in verticils or shortly stalked cymes. Nutlets 2, ovoid or oblong, blackish-brown.

Fl. & Fr.: October–February.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 567. 1982.

Distrib.: Frequent in open areas, Nawegaon, Nagzira.

Notes: Leaves are used to repel fleas from wounds in cattles.

Lavandula L.

Lavandula bipinnata O. Ktze., *Rev. Gen. Pl.* 521. 1891; B.G. Kulkarni & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 721. 2001. *Lavandula burmanni* Benth. *Lab. Gen. & Sp.* 151. 1833; Hook.f., *Fl. Brit. India* 4: 631. 1885; Cooke, *Fl. Pres. Bombay* 2: 534. 1958 (Repr.). ‘*Ghodeghai*’, ‘*Gorea*’.

Herbs, 40–70 cm tall; stems erect, quadrangular, pubescent. Leaves 2–6 cm long, pinnatipartite, linear, deeply lobed, margins entire or toothed. Flowers blue or white, in axillary or terminal, paniced-spikes. Nutlets ellipsoid, black.

Fl. & Fr.: October–February.

Distrib.: Frequent on hill tops and plains, Nawegaon, Nagzira.

Leonotis R.Br.

Leonotis nepetiifolia (L.) R.Br., *Prodr.* 504. 1810 (‘*nepetaefolia*’); Hook.f., *Fl. Brit. India* 4: 691. 1885; Cooke, *Fl. Pres. Bombay* 2: 555. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 8. 1980 et in *J. Bombay Nat. Hist. Soc.*

78(3): 483. 1981; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 723. 2001. *Phlomis nepetiifolia* L., Sp. Pl. 589. 1753. 'Dipmal', 'Matisul'.

Undershrubs, 1–2 m tall; stems erect, slightly quadrangular, branchlets pubescent. Leaves 2–8 × 1.5 cm, ovate or lanceolate, acute at apex, truncate or cuneate at base, margins deeply crenate to serrate. Flowers scarlet red, in axillary whorls of spiny bracts. Nutlets ovoid, pitted at apex. Seeds oblong.

Fl. & Fr.: September–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 568. 1982.

Distrib.: Occasional among herbaceous vegetation, Nawegaon, Nagzira.

Notes: Natives mix ash of flower heads with curd and apply to cure ring-worm.

Leucas R.Br.

Key to the species

- | | |
|--|----------------------|
| 1a. Whorls lax, 2–4-flowered | L. biflora |
| 1b. Whorls compact, more than 4-flowered | 2 |
| 2a. Mouth of calyx-tube oblique | 3 |
| 2b. Mouth of calyx tube not oblique | L. mollissima |
| 3a. Calyx-tube pubescent inside | 4 |
| 3b. Calyx-tube not pubescent inside | L. aspera |
| 4a. Calyx-tube glabrous below, villous above | L. cephalotes |
| 4b. Calyx-tube uniformly pubescent | L. zeylanica |

Leucas aspera (Willd.) Link, Enum. Hort. Berol. Alt. 2: 113. 1822; Hook.f., Fl. Brit. India 4: 690. 1885; Cooke, Fl. Pres. Bombay 2: 548. 1958 (Repr.); B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 726. 2001. *Phlomis aspera* Willd., Enum. Hort. Berol. 2: 621. 1809.

Herbs, annual, 20–40 cm tall; stems and branches hispid. Leaves 2.5–5 × 0.5–1.2 cm, narrow, oblong-lanceolate, at apex obtuse or acute, base narrowed, margins crenate. Flowers white, in terminal and axillary whorls, bracteate. Nutlets ovoid.

Fl. & Fr.: October–November.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 483. 1988.

Distrib.: Frequent in moist places along with grasses, Nawegaon, Nagzira.

Notes: Whole plant edible as a vegetable. Leaves useful for skin diseases.

Leucas biflora (Vahl) R.Br., Prodr. 504. 1810; Hook.f., Fl. Brit. India 4: 683. 1885; Cooke, Fl. Pres. Bombay 2: 553. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1981 & in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 726. 2001..

Herbs, perennial; stem procumbent, with long internodes. Leaves 1–2.5 × 1–1.5 cm, ovate to elliptic, at apex obtuse to subacute, base truncate or rounded, margins serrate or crenate, hairy on both surfaces. Flowers white, in axillary whorls. Nutlets irregularly tuberculate, brown.

Fl. & Fr.: August–March.

Illus.: Wight, Ic. t. 866. 1844-45.

Distrib.: Frequent as an undergrowth in the forests, Nawegaon, Nagzira.

Leucas cephalotes (Roth) Spreng., Syst. Veg. 2: 743. 1825; Hook.f., Fl. Brit. India 4: 689. 1885; Cooke, Fl. Pres. Bombay 2: 549. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 727. 2001. *Phlomis cephalotes* Roth, Nov. Pl. Sp. 262. 1821. ‘*Deokhumba*’.

Herbs, 15–40 cm high; stems erect hispid. Leaves 3.5–6 × 1.5–2 cm, ovate to ovate-lanceolate, subacute at apex, tapering at base, margins crenate-serrate. Flowers white, sessile, in globose heads; bracts foliaceous. Nutlets obovoid-oblong, brown.

Fl. & Fr.: August–October.

Illus.: Wight, Ic. t. 337. 1840.

Distrib.: Frequent in open places, Nawegaon.

Leucas mollissima Wall., Pl. As. Rar. 1: 62. 1831; Hook.f., Fl. Brit. India 4: 682. 1885; Cooke, Fl. Pres. Bombay 2: 552. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 127. 1981; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 734. 2001.

Herbs, annual or perennial, 70–120 cm tall, branches diffuse, internodes fairly long. Leaves 1.5–5.5 × 1–3.5 cm, ovate-lanceolate, at apex acute, base subacute to truncate, hairy above, tomentose below. Flowers white, subsessile, 6–10 in a whorls; bracts filiform. Nutlets ovoid, smooth.

Fl. & Fr.: September–February.

Distrib.: Frequent along slopes and plains, Nawegaon.

Leucas zeylanica (L.) R.Br., Prodr. 504. 1810; Hook.f., Fl. Brit. India 4: 689. 1885; Cooke, Fl. Pres. Bombay 2: 549. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 738. 2001. *Phlomis zeylanica* L., Sp. Pl. 586. 1753.

Herbs, annuals, 10–30 cm high; branches quadrangular, hispidulous, diffuse. Leaves 2.5–5 × 0.3–1 cm, linear-lanceolate, scabrid above, densely hispidulous and glandular punctate beneath, at apex acute, with tapering base. Flowers white sessile or subsessile, in terminal whorls, some time axillary, with linear bracts. Nutlets obovoid, black.

Fl. & Fr.: October–January.

Illus.: B.G. Kulkarni & S. Das Das, *op. cit.* 727.

Distrib.: Occasional in open places, Nawegaon.

Ocimum L.

Key to the species

- 1a. Leaves subacuminate or acuminate at apex; median lobe of lower lip of fruiting calyx shorter than upper lip **O. gratissimum**
- 1b. Leaves acute or rounded at apex; median lobe of lower lip of fruiting calyx as long as or longer than upper lip **O. americanum**

Ocimum americanum L., Cent. Pl. 1: 15. 1755; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 741. 2001. *Ocimum canum* Sims in Bot. Mag. 51: t. 2452. 1823; Hook.f., Fl. Brit. India 4: 607. 1885; Cooke, Fl. Pres. Bombay 2: 521. 1958 (Repr.). ‘*Ran-Tulas*’.

Herbs, 20–40 cm tall, annuals; stems and branches pubescent, subquadrangular. Leaves 1.5–2.5 × 0.7–1.2 cm, ovate or ovate-oblong, sparsely pilose along nerves, gland-dotted beneath. Flowers white, in whorl, spiciform racemes. Nutlets ovoid, subtrigonus, smooth.

Fl. & Fr.: September–February.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 494. 1988.

Distrib.: Frequent among grasses in open places, Nawegaon, Nagzira.

Ocimum gratissimum L., Sp. Pl. 1197. 1753; Hook.f., Fl. Brit. India 4: 608. 1885; Cooke, Fl. Pres. Bombay 2: 522. 1958 (Repr.); B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 743. 2001. ‘*Mali Tulsi*’, ‘*Ram-tulas*’.

Herbs or undershrubs, 0.5–1.5 m tall. Leaves 3–8 × 2–4 cm, ovate-elliptic, margins crenate-serrate, pubescent and gland dotted on both surfaces. Flowers yellowish-green, in hairy whorls on simple or branched racemes; bracts decussate. Nutlets subglobose.

Fl. & Fr.: September–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 520. 1982.

Distrib.: Frequent in plains and hilly forests, Nagzira.

Notes: The plant is useful for rheumatic pains and weakness.

Plectranthus L’ Herit

Plectranthus mollis (Ait.) Spreng., Syst. Veg. 2: 690. 1825; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 748. 2001. *Ocimum molle* Ait., Hort. Kew. 2: 322. 1789. *Plectranthus incanus* Link, Enum. Hort. Berol. 2: 120. 1822; Hook.f., Fl. Brit. India 4: 621. 1885; Cooke, Fl. Pres. Bombay 2: 529. 1958 (Repr.). ‘*Lalaghada*’.

Herbs, 40–70 cm tall, annuals; stems succulent at base, finely pubescent above. Leaves 3–8 × 2–6 cm, ovate, membranous, acute or acuminate at apex, cordate at base, margins crenate, pubescent on both surfaces. Flowers pale lilac to light blue. Nutlets subglobose, with purplish-brown spots.

Fl. & Fr.: October–November.

Illus.: Matthew, Fur. *Illus. Fl. Tamilnadu Carnatic* 4: t. 498. 1988.

Distrib.: Frequent in open places, Nagzira.

Notes: Whole plant useful as an insecticide.

Pogostemon Desf.

Key to the species

- | | |
|--|---------------------------|
| 1a. Leaves verticillate | P. stellatus |
| 1b. Leaves in opposite pairs | 2 |
| 2a. Inflorescence an unbranched verticillaster | 3 |
| 2b. Inflorescence branched, with two or more lateral verticillasters | 4 |
| 3a. Leaves linear to linear-lanceolate; calyx campanulate | P. salicifolius |
| 3b. Leaves ovate; calyx not campanulate | P. purpurascens |
| 4a. Inflorescence lax, at least below; calyx tubular-inflated | P. benghalensis |
| 4b. Inflorescence dense; calyx shallow | P. plectranthoides |

Pogostemon benghalensis (Burm.f.) O. Ktze. *Rev. Gen. Pl.* 2: 529. 1891; B.G. Kulkarni & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 752. 2001. *Origanum benghalense* Burm.f., *Fl. Ind.* 128. t. 38, f. 3. 1768. *Pogostemon parviflorus* Benth. in Wall., *Pl. Asiat. Rar.* 1: 31. 1831; Hook.f., *Fl. Brit. India* 4: 632. 1885; Cooke, *Fl. Pres. Bombay* 2: 536. 1958 (Repr.). ‘*Mahador*’.

Herbs or undershrubs 1–1.5 m high; stems rounded or subquadrangular, slightly pubescent, purple. Leaves 4.5–10.5 × 2.5–5.5 cm, ovate or ovate-lanceolate, slightly pubescent, at apex acute, base cuneate, margins serrate-dentate, glabrescent. Flowers white, with purple tinge, in terminal and axillary, paniculate spikes. Nutlets obovoid, brownish, shining.

Fl. & Fr.: November–February.

Illus.: Bhatti & Ingrouille in *Bull. nat. Hist. Mus. Lond. (Bot.)* 27: 89. figs. 49, 149. 1977.

Distrib.: Common throughout in forests, Nawegaon, Nagzira.

Notes: Leaf-paste used for healing wounds and juice for killing intestinal worms by local people.

Pogostemon plectranthoides Desf. in *Mem. Mus. Hist. nat. Paris* 2: 155, t. 6. 1815; Hook.f., *Fl. Brit. India* 4: 632. 1885; Cooke, *Fl. Pres. Bombay* 2: 536. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78(3): 483. 1981; B.G. Kulkarni & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 756. 2001. ‘*Pangali*’.

Undershrubs, 1–1.5 m tall, aromatic. Stems subquadrangular or rounded, dark purple, hairy. Leaves 4–8 × 2–4 cm, ovate or ovate-lanceolate, at apex acute, base truncate, margins dentate, glabrous above, white tomentose beneath. Flowers purple, in paniculate spikes and with foliar bracts. Nutlets obovoid smooth.

Fl. & Fr.: March–May.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 574. 1982.

Distrib.: Frequent in dense forest, Nagzira.

Notes: The plant is used as an insecticide.

Pogostemon purpurascens Dalz. in Hook., *J. Bot. Misc.* 2: 337. 1850; Hook.f. & Thoms. in Hook.f., *Fl. Brit. India* 1: 190. 1872; Cooke, *Fl. Pres. Bombay* 2: 537. 1958 (Repr.); B.G. Kulkarni & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 757. 2001. '*Pangali*'.

Herbs, 15–45 cm tall, villous with spreading hairs; stems and branches quadrangular. Leaves in unequal pairs, 3–7 × 2–5 cm, ovate-elliptic, hairy on both surfaces. Flowers white, whorled, in terminal, dense villous spikes. Nutlets ovoid, compressed, smooth.

Fl. & Fr.: October–March.

Illus.: Bhatti & Ingrouille, in *Bull. nat. Hist. Mus. Lond. (Bot.)* 27: 92. Figs. 5a, 16b. 1997.

Distrib.: Frequent in dense forests, Nagzira.

Pogostemon salicifolius (Dalz. ex Hook.f.) El.-Gazzar & Watson in *Taxon* 16: 187. 1967; B.G. Kulkarni & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 759. 2001. *Dysophylla salicifolia* Dalz. ex Hook.f., *Fl. Brit. India* 4: 638. 1885; Hook.f., *Fl. Brit. India* 4: 638. 1885; Cooke, *Fl. Pres. Bombay* 2: 539. 1958 (Repr.).

Herbs, 10–25 cm tall, erect; stems reddish, terete or subquadrangular. Leaves 2–6 × 1–3 cm, linear-lanceolate, opposite, subsessile, gland dotted, at apex acute, base acute-narrowed, margins serrate. Flowers purplish, in dense, villous spikes. Nutlets ellipsoid, shining.

Fl. & Fr.: March–April.

Distrib.: Frequent in moist, marshy places, Nagzira.

Pogostemon stellatus (Lour.) O. Ktze., *Rev. Gen. Pl.* 2: 429. 1891; B.G. Kulkarni & S. Das Das in N.P. Singh & al., *Fl. Maharashtra State* 2: 759. 2001. *Mentha stellata* Lour., *Fl. Cochinch.* 2: 361. 1790. *Dysophylla stellata* (Lour.) Benth. in Wall., *Pl. As. Rar.* 1: 30. 1831 non *Mentha stellata* Roxb. 1814; Hook.f., *Fl. Brit. India* 4: 640. 1885; Cooke, *Fl. Pres. Bombay* 2: 540. 1958 (Repr.).

Herbs, terete; stems solid, with short internodes, puberulent. Leaves in whorls of up to 10, 8 × 2 mm, linear, at apex acuminate, base truncate, margins entire, revolute, hairy. Flowers white, in a single terminal spike. Nutlets oblong, tan, smooth.

Fl. & Fr.: February–March.

Illus.: Bhatti & Ingrouille in *Bull. nat. Hist. Mus. Lond. (Bot.)* 27: 117, figs. 13h, 39b. 1997.

Distrib.: Common near lakes, Nawegaon, Nagzira.

Salvia L.

Salvia plebeia R.Br., Prodr. 501. 1810; Hook.f., Fl. Brit. India 4: 655. 1885; Cooke, Fl. Pres. Bombay 2: 557. 1958 (Repr.); B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 762. 2001.

Herbs, 20–40 cm tall, erect, subquadrangular, pubescent. Leaves $3-7 \times 1.8-2.5$ cm, oblong-lanceolate, acuminate at apex, truncate at base, margins entire, revolute, hairy. Flowers white or pale blue, in spicate racemes, Nutlets ovoid, brown.

Fl. & Fr.: October–March.

Distrib.: Frequent in moist places, Nagzira.

Cultivated species:

Ocimum basilicum L., Sp. Pl. 597. 1753; Hook.f., Fl. Brit. India 4: 608. 1885; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 128. 1981; B.G. Kulkarni & S. Das Das in N.P. Singh & al., Fl. Maharashtra State 2: 766. 2001.

Erect, aromatic herbs; stems slightly pubescent, dense hairy on nodes. Leaves ovate-lanceolate, sparsely pubescent on both surfaces. Flowers white, whorled in thyrsoid racemes. Nutlets ellipsoid, faintly rugose or pitted, black.

Fl. & Fr.: August–November.

Distrib.: Commonly cultivated in houses, occasionally found as an escape, Nagzira.

NYCTAGINACEAE**Boerhavia L.****Key to the species**

1a. Shrubs, erect

B. erecta

1b. Herbs, diffuse or subscandent

B. repens

Boerhavia erecta L., Sp. Pl. 3. 1753; Hook.f., Fl. Brit. India 4: 672. 1885; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 772. 2001. *Boerhavia punarnava* Saha & Murthy in J.Sci. Ind. Res. 21C: 249. 1962. ‘*Pandhari-Punarnawa*’.

Shrubs; stems purplish. Leaves $0.8-4 \times 0.4-3$ cm, simple, opposite, pairs unequal, linear-lanceolate to ovate. Flowers white, purplish, in umbelliform clusters.

Fl. & Fr.: October–January.

Illus.: Ramarathinum in J. Bombay Nat. Hist. Soc. 61: 217, f. 1-4. 1964.

Distrib.: Frequent in open situations, Nawegaon.

Boerhavia repens L., Sp. Pl. 3. 1753; Hook.f., Fl. Brit. India 4: 709. 1885; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 773. 2001. *Boerhavia diffusa* L., Sp. Pl. 3: 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; Cooke, Fl. Pres. Bombay 2: 563 1958 (Repr.). ‘*Ghetali*’, ‘*Punarnava*’, ‘*Vasu*’.

Herbs, diffuse; roots fusiform; stems prostrate, often purplish. Leaves $1.5-2.5 \times 3.5-2$ cm, sub-orbicular. Flowers pink, in corymbose, axillary and terminal panicles. Fruits clavate, bluntly 5-ribbed, glandular, ribbed.

Fl. & Fr.: November–March.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 2 : t. 578, ff. 1-10. 1988.

Distrib.: Frequent in open places, Nawegaon, Nagzira.

Notes: Roots are very useful medicinally for anaemia, asthma, blood purification, jaundice, rheumatic pains etc.

Cultivated Species:

Mirabilis jalapa L., Sp. Pl. 177. 1753; Cooke, Fl. Pres. Bombay 2: 567. 1358 (Repr.); S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 776. 2001. '*Gulbas*'.

Herbs, 0.5–1 m tall; roots moniliform; stems thickened at nodes. Leaves 2–10 × 1–4 cm, ovate-triangular. Flowers variously coloured, red, pink, white, yellow or variegated, in corymbs. Fruits globose, rugose black.

Fl. & Fr.: More or less throughout the year, Nawegaon.

Notes: A native of Mexico, introduced as an ornamental. Medicinally, leaves useful for boils and roots as purgative.

AMARANTHACEAE

Key to the genera

1a. Leaves alternate	2
1b. Leaves opposite	5
2a. Fertile flowers subtended by sterile modified flowers	Digera
2b. Fertile flowers not as above	3
3a. Ovary with 4–20 ovules	Celosia
3b. Ovary uniovulate	4
4a. Pseudostaminodes present	Aerva
4b. Pseudostaminodes absent	Amaranthus
5a. Fertile flowers subtended by modified sterile flowers	Pupalia
5b. Fertile flowers not subtended as above	6
6a. Filaments fused at top	Gomphrena
6b. Filaments fused at base or free	7
7a. Flowers in dense, sessile, axillary heads	Alternanthera
7b. Flowers in elongate, pedunculate spikes	Achyranthes

Achyranthes L.

Achyranthes aspera L., Sp. Pl. 204. 1753; Hook.f., Fl. Brit. India 4: 730. 1885; Cooke, Fl. Pres. Bombay 2: 580. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 778. 2001. '*Aghada*'.

Herbs, 35–70 cm tall, erect, pubescent. Leaves 3–5.5. × 2–3.5 cm, elliptic or obovate or suborbicular, at apex acuminate, velvety tomentose beneath. Flowers

greenish-white, numerous in terminal spikes. Utricles cylindric-oblong, enclosed in hardened perianth. Seeds subcylindric.

Fl. & Fr.: September–November.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 581. 1982; Karthik. & al., *Fl. Pl. India* 1 : xxix. T. 9A & B. 2009.

Distrib.: Frequent in scrub forests and wastelands, Nawegaon, Nagzira.

Notes: The plant ash is used externally for ulcers.

Aerva Forssk.

Key to the species

- | | |
|----------------------------------|-------------------------|
| 1a. Spikes axillary and terminal | A. sanguinolenta |
| 1b. Spikes all axillary | A. lanata |

Aerva lanata (L.) Juss. ex Schult., *Syst. Veg.* ed. 15. 5: 564. 1819; Hook.f., *Fl. Brit. India* 4: 728. 1885; Cooke, *Fl. Pres. Bombay* 2: 578. 1958 (Repr.); P. Lakshmi. & A. Godbole in N.P. Singh & al., *Fl. Maharashtra State* 2: 780. 2001. *Achyranthes lanata* L., *Sp. Pl.* 204. 1753. '*Kapuri-Madhuri*'.

Herbs to 1m tall; stems erect or prostrate. Leaves 1–1.5 × 0.5–1 cm, pubescent above, white cottony beneath. Flowers greenish-white, sessile, in axillary heads or spikes. Utricles broadly ovoid, black. Seeds minute.

Fl. & Fr.: September–February.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 176. 1966.

Distrib.: Occasional in open places and under shade of trees, Nagzira.

Notes: Leaves used as vegetable and whole plant in Cholera.

Aerva sanguinolenta (L.) Bl., *Bijdr.* 547. 1825; S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 9. 1980; P. Lakshmi. & A. Godbole in N.P. Singh & al., *Fl. Maharashtra State* 2: 780. 2001. *Achyranthes sanguinolenta* L., *Sp. Pl.* ed. 2: 294. 1762. *Aerva scandens* Wall. ex Moq. in *DC., Prodr.* 13. 302. 1849; Hook.f., *Fl. Brit. India* 4: 727. 1885; Cooke, *Fl. Pres. Bombay* 2: 577. 1958 (Repr.).

Herbs 1–1.5 m tall, suffruticose. Leaves 1.3–4.5 × 0.5–1.2 cm, elliptic-lanceolate, hairy. Flowers white. Seeds black.

Fl. & Fr.: October–May.

Illus.: Wight, *Ic. t.* 724-1848 (*Aerva scandens*).

Distrib.: Frequent in open places, Nawegaon.

Alternanthera Forssk.

Key to the species

- | | |
|--|------------------------|
| 1a. Bracts and bracteoles glabrous | A. sessilis |
| 1b. Bracts and bracteoles barbellately hairy | A. bettzickiana |

Alternanthera bettzickiana (Regel) Nichols. III. Dict. Gard. 1: 59. 1884; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 782. 2001. *Telanthera bettzickiana* Regel, Ind. Sem. Hort. Petrop. 1862: 28. 1862 & Gartenflora 11: 178. 1862.

Herbs, up to 40 cm tall; stems diffuse or suberect, spreading. Leaves $2-7 \times 0.6-3.5$ cm, elliptic, oblanceolate, rhomboid-ovate, acute-acuminate at apex, attenuate at base. Flowers white or slightly pink, sessile, in axillary and terminal, capitate spikes.

Fl. & Fr.: Almost throughout the year.

Illus.: Chaudhari & Bhattacharyya in Bull. Bot. Surv. India 36: 274. t. 3. figs. 1-7. (1994) 1997.

Distrib.: Around the lake, Nawegaon.

Alternanthera sessilis (L.) R.Br. ex DC., Cat. Hort. Monsp. 77. 1813; Hook.f., Fl. Brit. India 4: 731. 1885; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 783. 2001. *Gomphrena sessilis* L., Sp. Pl. 225. 1753. *Alternanthera triandra* Lam., Encycl. 1: 95. 1783; Cooke, Fl. Pres. Bombay 2: 584. 1958 (Repr.).

Herbs; stems much branched, prostrate or ascending, rooting at lower nodes. Leaves $0.6-4 \times 0.3-0.5$ cm, linear-oblong, lanceolate to elliptic, subsessile. Flowers white, shining, in axillary, sessile heads; bracts ovate, scarious. Utricles minute, flattened, obcordate. Seeds suborbicular.

Fl. & Fr.: Throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 584. 1982.

Distrib.: Abundant in moist clayey soil near lakes, Nawegaon, Nagzira.

Notes: Plant is used in rheumatism. Leaves used as vegetable by local people.

Amaranthus L.

Key to the species

1a. Stamens 5; tepals 5

A. spinosus

1b. Stamens 3; tepals 3

A. viridis

Amaranthus spinosus L., Sp. Pl. 991. 1753; Hook.f., Fl. Brit. India 4: 718. 1885; Cooke, Fl. Pres. Bombay 2: 573. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 787. 2001. '*Katemath*'.

Herbs, 30-40 cm high; stems reddish, spines sharp, axillary. Leaves $2-5 \times 0.5-2.5$ cm, ovate or lanceolate, rhomboid, spinous, apiculate. Flowers sessile, in dense spikes. Utricles conical, rugose. Seeds shining, ovoid, circumsessile.

Fl. & Fr.: July-February.

Illus.: Wight Ic. t. 513. 1841.

Distrib.: Common in open situations, Nawegaon, Nagzira.

Notes: Plant is used as vegetable and also as fodder.

Amaranthus viridis L., Sp. Pl. ed. 2. 1405. 1763; Hook.f., Fl. Brit. India 4: 720. 1885; Cooke, Fl. Pres. Bombay 2: 575. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 788. 2001. '*Math*'.

Herbs, 20–40 cm high; stems erect or diffuse. Leaves 2–6.5 × 0.5–4 cm, broadly ovate or deltoid, obtuse at apex, usually notched, base truncate. Flowers unisexual, greenish or reddish-brown, in terminal and axillary, paniced spikes. Utricles ovoid, shortly beaked. Seeds lenticular, shining, black.

Fl. & Fr.: September–December.

Illus.: Tad. & G.V. Narayana, Handb. S. Indian Weeds 362, f. 145. 1955.

Distrib.: Common in moist places, Nagzira.

Notes: Leaves and young shoots used as vegetable.

Celosia L.

Celosia argentea L., Sp. Pl. 205. 1753; Hook.f., Fl. Brit. India 4: 714. 1885; Cooke, Fl. Pres. Bombay 2: 570. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 789. 2001. '*Kurdu*', '*Kombda*'.

Herbs, erect, 25–70 cm tall. Leaves 0.5–2.5 × 0.3–1.5 cm, ovate, lanceolate, elliptic or linear. Flowers white or pink, in dense terminal spikes. Utricles densely rugose.

Fl. & Fr.: September–March.

Distrib.: Common as a weed in open places, Nawegaon, Nagzira.

Notes: Leaves edible as vegetable and seeds useful in dysentery and mouth sores.

Digera Forssk.

Digera muricata (L.) Mart., Beitr. Amaranth. 77. n. 2. 1825; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 790. 2001. *Achyranthes muricata* L., Sp Pl. ed. 2. 295. 1762. *Digera arvensis* Forssk., Fl. Aegypt. Arab. 65. 1775; Hook.f., Fl. Brit. India 4: 717. 1885; Cooke, Fl. Pres. Bombay 2: 572. 1958 (Repr.). '*Tanduljira*'.

Annual herbs, up to 50 cm tall. Leaves 2.5–4 × 0.6–3 cm, ovate or elliptic, at apex acute. Flowers greenish-pink, sessile, in threes, in lax axillary spikes; bracts obovate, leafy, bracteoles pinkish-purple, lanceolate. Fruits globose, mucronate, indehiscent, hard. Seeds yellowish-brown.

Fl. & Fr.: July–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 587. 1982.

Notes: Leaves of the species also edible as a vegetable.

Gomphrena L.
Key to the species

- | | |
|---|-------------------|
| 1a. Bracteoles crested only at apex; anthers included | G. serrata |
| 1b. Bracteoles crested throughout; anthers exerted | G. globosa |

Gomphrena globosa L., Sp. Pl. 224. 1753; Hook.f., Fl. Brit. India 4: 732. 1885; Cooke, Fl. Pres. Bombay 2: 584. 1958 (Repr.); P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 790. 2001.

Annual herbs. Leaves 2.8–4 × 0.8–1.6 cm, elliptic or ovate-oblong, hairy. Flowers yellowish-white or crimson, in terminal, globose spikes; bracts leafy; bracteoles pinkish-purple. Fruits ovoid. Seeds reniform, turgid.

Fl. & Fr.: September–March.

Distrib.: Frequent as an escape in open areas, Nawegaon.

Gomphrena serrata L., Sp. Pl. 224. 1753; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 790. 2001. *Gomphrena celosioides* auct. non Mart. 1826; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980.

Herbs, 15–30 cm high; stems ascending or erect, with spreading branches. Leaves 1–5 × 0.4–1.5 cm, lanceolate, elliptic, oblong, apiculate at apex, glabrous above, densely pilose beneath. Flowers white, in terminal or axillary spikes. Utricles indehiscent, ovoid. Seeds faintly reticulate, notched on one side.

Fl. & Fr.: Mostly throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 588. 1982 (*Gomphrena celosioides*).

Distrib.: Frequent in open places of forests, Nawegaon, Nagzira.

Notes: Native of tropical America, naturalized.

Pupalia A.L. Juss.

Pupalia lappacea (L.) A.L. Juss. in Ann. Mus. Hist. Nat. Paris 2: 132. 1803; Hook.f., Fl. Brit. India 4: 728. 1885; Cooke, Fl. Pres. Bombay 2: 583. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 128. 1981; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 791. 2001. *Achyranthes lappacea* L., Sp. Pl. 204. 1753.

Shrubs, 1–2 m tall. Leaves 2.5–8.5 × 1.5–5.5 cm, ovate-oblong, at apex obtuse. Flowers green, in distant, spinous clusters. Utricles oblong, with a constriction near the at apex.

Fl. & Fr.: September–February.

Illus.: Mahesh., Illus Fl. Delhi f. 184. 1966; Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 591. 1982.

Distrib.: Frequent among grasses in open places, Nagzira.

CHENOPODIACEAE

Chenopodium L.

***Chenopodium album* L.**, Sp. Pl. 219. 1753; Hook.f., Fl. Brit. India 5: 3. 1886; Cooke, Fl. Pres. Bombay 2: 586. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. & A. Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 795. 2001. '*Chakwat*'.

Herbs, 25–50 cm tall, erect or ascending; stems striped. Leaves variable in size, oblong, deltoid or lanceolate, margins entire or toothed. Flowers in paniculate-spikes. Fruits covered by tepals, depressed-globose. Seeds orbicular, compressed, smooth.

Fl. & Fr.: October–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 594. 1982.

Distrib.: Frequent around the fields, Nawegaon.

Notes: Leaves and tender shoots used as vegetable. Leaves also used medicinally for urinary disorder.

BASELLACEAE

Basella L.

***Basella alba* L.**, Sp. Pl. 272. 1753; S. Moorthy in N.P. Singh & al., Fl. Maharashtra State 2: 799. 2001. *Basella rubra* L. Sp. Pl. 272. 1753; Hook.f., Fl. Brit. India 5: 21. 1886; Cooke, Fl. Pres. Bombay 2: 594. 1958 (Repr.); Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 596. 1982. '*Mayal ki baji*'.

Herbs, perennial, rhizomatous; stems slender, succulent. Leaves $4.9\text{--}14.5 \times 1.2\text{--}7.2$ cm, broadly ovate, at apex acute, base cordate, narrowed into petiole. Flowers white in pedunculate spikes. Pseudoberries red, glabrous.

Fl. & Fr.: October–December.

Illus.: Matthew op. cit. (*B. rubra*).

Distrib.: Frequent as an escape in scrubs forests, Nawegaon.

Notes: Leaves used as vegetable by local people.

POLYGONACEAE

Key to the genera

- | | |
|---|-------------------|
| 1a. Flowers axillary, solitary or in clusters; ocreae hyaline | Polygonum |
| 1b. Flowers terminal, in simple or spiciform racemes or heads; ocreae membranous or chartaceous | Persicaria |

Persicaria (L.) Mill. (*nom. cons.*)

Key to the species

- | | |
|---|-------------------|
| 1a. Ocreae and bracts glabrous, eciliate at mouth | P. glabra |
| 1b. Ocreae and bracts variously hairy, ciliate at mouth | 2 |
| 2a. Nuts biconvex | P. pulchra |
| 2b. Nuts trigonous | P. barbata |

Persicaria barbata (L.) Hara, Fl. East. Himal. 70. 1966; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 803. 2001. *Polygonum barbatum* L., Sp. Pl. 362. 1753; Hook.f., Fl. Brit. India 5: 37. 1886; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981.

Herbs, 1 m tall, erect. Leaves 5–10 × 1–2.2 cm, lanceolate, linear, acuminate at both ends, hairy on mid-rib beneath; stipules ocreate, truncate. Flowers white, in terminal and axillary racemes. Nuts trigonous.

Fl. & Fr.: Almost throughout the year.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 4: t. 521. 1988.

Distrib.: Frequent in moist places, Nagzira.

Persicaria glabra (Willd.) Gomez in Ann. Inst. Segunda Ensef. Habana 2: 278. 1896; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 805. 2001. *Polygonum glabrum* Willd., Sp. Pl. 2: 447. 1799; Hook.f., Fl. Brit. India 5: 34. 1886; Cooke, Fl. Pres. Bombay 3: 5. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981. 'Sheral'.

Herbs up to 1.5 m tall, semiaquatic or aquatic, stoloniferous. Leaves 5–20 × 0.5–3 cm, narrowly lanceolate, acuminate at apex, tapering at base, gland-dotted; stipules ocreate, tubular, truncate. Flowers whitish-pink, in terminal or axillary racemes. Nuts compressed, ovoid, biconvex.

Fl. & Fr.: More or less throughout the year.

Illus.: Mahesh., Illus. Fl. Delhi f. 188. 1966 (*Polygonum glabrum*).

Distrib.: Common along bank of lake and marshy places, Nawegaon, Nagzira.

Notes: The infusion of leaves is used in colic pains. The leaves after warming, utilized for curing diseases like 'Naroo'.

Persicaria pulchra (Bl.) Sojak in Preslia 46(2): 154. 1974; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 807. 2001. *Polygonum pulcherum* Bl., Bijdr. 530. 1830. *Polygonum tomentosum* Willd., Sp. Pl. 2: 447. 1799 non Schrank 1789; Hook.f., Fl. Brit. India 5: 30. 1886; Cooke, Fl. Pres. Bombay 3: 6. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 129. 1981.

Herbs, silky tomentose. Leaves 7.5–18.5 × 1.5–3.5 cm, lanceolate or elliptic-lanceolate, acuminate at apex, cuneate at base, silky pubescent on both surfaces. Flowers with white perianth. Nuts orbicular, compressed.

Fl. & Fr.: November–May.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 526. 1988.

Distrib.: Frequent in moist places, Nawegaon, Nagzira.

Polygonum L.

Polygonum plebeium R.Br., Prodr. 420. 1810 (*Plebeium*); Hook.f., Fl. Brit. India 5: 27. 1886; Cooke, Fl. Pres. Bombay 3: 4. 1958 (repr.); S.K. Malhotra & K.M. Rao

in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; C.R. Jadhav in N.P. Singh & al., Fl. Maharashtra State 2: 808. 2001. (PLATE: E-4)

Herbs, 25–40 cm long, prostrate. Leaves $0.5\text{--}2.4 \times 0.12\text{--}0.3$ cm, oblong, sessile or subsessile, acute or acuminate at apex. Flowers rosy, sessile, in axillary clusters. Nuts 3-gonous, apiculate by style base.

Fl. & Fr.: Mostly throughout the year.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 527. 1988.

Distrib.: Common in wasteland and marshy places, Nawegaon, Nagzira.

Notes: Whole plant edible as vegetable. (PLATE:A-1)

ARISTOLOCHACEAE

Aristolochia L.

Aristolochia indica L., Sp. Pl. 960. 1753; Hook.f., Fl. Brit. India 5: 75. 1886; Cooke, Fl. Pres. Bombay 3: 16. 1958 (Repr.); P. Lakshmi. & Godbole in N.P. Singh & al., Fl. Maharashtra State 2: 815. 2001. '*Sampsum*', '*Sapsan*', '*Sapsund*'.

Twining shrubs with slender woody, grooved stems. Leaves linear-oblong to obovate-oblong, at apex acuminate, base rounded, margins entire. Flowers yellow with reddish-purple tinge, in axillary racemes. Capsules 6-valved, black on drying. Seeds deltoid-ovoid, flat, winged.

Fl. & Fr.: November–March.

Distrib.: Frequent, along slope on hill top in deciduous forests, Nagzira.

Illus.: Karthik. & al. Fl. Pl. India 1: xiv. T. 24B. 2009.

Notes: Roots are said to be an antidote to snake-bite and used in leucoderma and as tonic.

LAURACEAE

Key to the genera

1a. Leafless parasitic plants

Cassytha

1b. Plants with leaves, not parasitic

Litsea

Cassytha L.

Cassytha filiformis L., Sp. Pl. 35. 1753; Hook.f., Fl. Brit. India 5: 188. 1886; Cooke, Fl. Pres. Bombay 3: 35. 1958 (Repr.); A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 825. 2001. '*Amarvel*'.

Climbers, parasitic, leafless, herbaceous; stems hairy, slender, green, branched, attached to host by suckers, glabrous or hairy. Flowers small, yellowish-white, in lax spikes. Drupes globose, greenish-white, enclosed in enlarged persistent perianth-tube.

Fl. & Fr.: June–September.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 607. 1982

Distrib.: Frequent in deciduous forests on hosts like *Ipomoea* spp., *Vitex* spp. etc, Nawegaon.

Litsea Lam. (*nom. cons.*)

Litsea josephii S.M. Almeida, Fl. Savantwadi 1: 364. 1990; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 831. 2001. *Litsea stocksii* (Meissn.) Hook.f., Fl. Brit. India 5: 176. 1886; Cooke, Fl. Pres. Bombay 2: 33. 1958 (Repr.). 'Bobirsa'.

Trees, 4–7 m high. Leaves 9.5–18.5 × 4.5–8 cm, elliptic-oblong, at apex-obtuse or subacute, base acute, margins revolute. Flowers greenish, in heads or racemes, axillary and from old scars. Berries ellipsoid, green, speckled white, dark purple.

Fl. & Fr.: October–April.

Distrib.: Occasional in moist deciduous forests, Nagzira.

LORANTHACEAE

Key to the genera

- 1a. Flowers unisexual
- 1b. Flowers hermaphrodite

Viscum
Dendrophthoe

Dendrophthoe Mart.

Dendrophthoe falcata (L.f.) Etting. in Denkschr. Akad. Wiss. Math. Naturw. Cl. 32: 52, 53, 58, t. 13. f. 14. 1972; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 8. 1980; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 838. 2001. *Loranthus falcatus* L.f., Suppl. 211. 1781. *Loranthus longiflorus* var. *falcatus* (L.f.) Kurz, For. Fl. 2: 321. 1877; Hook.f., Fl. Brit. India 5: 215. 1886. *Loranthus longiflorus* Desr. in Lam., Encycl. 3: 498. 1789; Cooke, Fl. Pres. Bombay 3: 42. 1958 (Repr.). 'Bandgul', 'Kawarak'. (PLATE: E-1)

Bushy, stem parasites; stems brittle. Leaves 4–12 × 1.5–4 cm, elliptic-oblong or elliptic-ovate, amplexicaul. Flowers yellowish or pinkish-red in unilateral, axillary racemes or on old wood. Berries ovoid, reddish, encircled by cupular calyx.

Fl. & Fr.: December–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 616. 1982.

Distrib.: Frequent, stem parasitic in dense forest (mostly on 'Moha'), Nawegaon, Nagzira.

Notes: A symbolic plant.

Viscum L.

Viscum articulatum Burm.f., Fl. Ind. 311. 1768; Hook.f., Fl. Brit. India 5: 226. 1886; Cooke, Fl. Pres. Bombay 3: 47. 1958 (Repr.); A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 847. 2001.

Shrubs, pendulous; branches articulated, yellowish-green, furrowed, leafless, narrowed at both ends. Flowers minute, in axillary clusters. Berries globose, smooth, greenish yellow.

Fl. & Fr.: August–November.

Illus.: Talb. For. Fl. Bombay Pres. & Sind. 2: 423. f. 482. 1911.

Notes: Stem useful medicinally for headache.

EUPHORBIACEAE

Key to the genera

1a. Plants growing in marshy places, with milky latex	Excoecaria
1b. Plants not growing in marshy places, with or without milky latex	2
2a. Erect or prostrate herbs, rarely shrubs or small trees	3
2b. Shrubs or trees	6
3a. Inflorescence a cyathium; stamen 1	Euphorbia
3b. Inflorescence other than cyathium	4
4a. Stamens many, united	Chrozophora
4b. Stamens many, free	5
5a. Stamens 8–10, anthers twisted	Acalypha
5b. Stamens 2–5, anthers not twisted	Sebastiania
6a. Small trees, scandent or climbing shrubs	7
6b. Erect herb, shrubs, small trees or tree	8
7a. Corolla present at least in one of sex	Bridelia
7b. Corolla absent in both sexes	Phyllanthus
8a. Flowers of both sexes in axillary fascicles or clustered	9
8b. Flowers in spikes or racemes, sometimes subumbellate	11
9a. Flowers dioecious	Securinega
9b. Flowers monoecious	10
10a. Petals present	Cleistanthus
10b. Petals absent	Emblica
11a. Disc present	12
11b. Disc absent	14
12a. Petals absent	Antidesma
12b. Petals present	13
13a. Stamens 10 or more	Croton
13b. Stamens 8 or less	Jatropha
14a. Stamens 2–3	Macaranga
14b. Stamens numerous	15
15a. Leaves ovate; fruits not covered with red powder of stellate hairs	Trewia
15b. Leaves ovate-lanceolate; fruits with red powder of stellate hairs	Mallotus

Acalypha L.

Acalypha ciliata Forssk., Fl. Aegypt.-Arab. 162. 1775; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; Hook.f., Fl. Brit. India 5: 417. 1887; Cooke, Fl. Pres. Bombay 3: 109. 1958 (Repr.); A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 855. 2001.

Annual herbs, 30–50 cm high; stems, erect, stout, strigose. Leaves $2.3\text{--}5.5 \times 1.3\text{--}3$ cm, ovate, rhomboid, caudate-acuminate at apex, rounded at base, margins serrate.

Flowers green, unisexual, in axillary spikes; male flowers minute, few, at top; females large, at base of spikes. Capsules subglobose, trigonous, covered by bracts. Seeds reddish-brown, ovoid-globose.

Fl. & Fr.: August–November.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 4: t. 537. 1988.

Distrib.: Frequent in wasteland and on hill slopes, Nawegaon.

Antidesma L.

Antidesma acidum Retz., Obs. Bot. 5: 30. 1788; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 859. 2001. *Antidesma diandrum* (Roxb.) Roth, Nov. Pl. Sp. 369. 1821; Hook.f., Fl. Brit. India 5: 361. 1887 p.p.; Cooke, Fl. Pres. Bombay 3: 90. 1958 (Repr.). ‘*Ghondurili*’.

Shrubs or small trees *c.* 5 m high, deciduous. Leaves 2–8 × 1.5–4 cm, ovate or elliptic-lanceolate or obovate, base and at apex acute. Flowers androgynous, greenish-yellow, unisexual, in terminal, pubescent racemes. Drupes oblong or globose, purplish-red.

Fl. & Fr.: July–September.

Illus.: T. Chakrab. & Gang. in J. Econ. Tax. Bot. 24: 8, f. 1. 2000.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Fruits and leaves are said to be edible.

Bridelia Willd.

Bridelia retusa (L.) Spr. Syst. Veg. 3: 48. 1826; Hook.f., Fl. Brit. India 5: 266. 1887; Cooke, Fl. Pres. Bombay 3: 68. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 483. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 865. 2001. *Clutia retusa* L., Sp. Pl. 1042. 1753. ‘*Asana*’, ‘*Kassie*’.

Small trees, 5–8 m high, deciduous, dioecious. Leaves 5–12 × 2.5–6 cm, elliptic-oblong, obtuse-subacute at apex, rounded at base, glabrous above, finely tomentose beneath. Flowers unisexual, greenish-yellow, in axillary or subterminal spikes. Drupes subglobose, fleshy, with enlarged, persistent perianth, purple-black.

Fl. & Fr.: June–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 629. 1982.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: The ripe drupes are eaten by tribal people. The bark powdered, mixed with water and given to cattle after over exhaustion. Leaves are also used as fodder.

Chrozophora A.L. Juss.

Chrozophora rottleri (Gies.) Juss. ex Spreng., Syst. Veg. 3: 850. 1826; Euphorb. Gen. Tent. 28. 1824; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3):

484. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 868. 2001. *Croton rottleri* Gies., Croton Monogr. 54. 1807. *Chrozophora plicata* Voigt, Hort. Sub. Calc. 156. 1846 non A. Juss. 1824; Hook.f., Fl. Brit. India 5: 408. 1887; Cooke, Fl. Pres. Bombay 3: 104. 1958 (Repr.).

Suffrutescent, hoary-tomentose herbs, 30–60 cm high. Leaves $2.2\text{--}5.1 \times 1.4\text{--}3.3$ cm, variable, cauline, broadly ovate-orbicular to oblong, at apex acute, base truncate or cuneate, stellately hairy on both surfaces. Flowers yellow, in axillary and terminal spikes. Capsules ovoid or spherical, greenish-red, densely hairy.

Fl. & Fr.: February–May.

Illus.: Tad. & Venkat. Handb. S. Indian Weeds 400, f. 161. 1955 (Rev. ed.); Matthew, *Illus.*: Fl. Tamilnadu Carnatic 2: t. 630. 1982.

Distrib.: Common along banks of lake and moist places, Nawegaon, Nagzira.

Notes: Root ash used in cough and seeds as purgative. It also yields a dye.

Cleistanthus Hook.f. ex Planch.

Cleistanthus collinus (Roxb.) Benth. ex Hook.f., Fl. Brit. India 5: 274. 1887; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 869. 2001. *Clutia collina* Roxb., Pl. Cor. t. 169. 1802. ‘*Garari*’. (PLATE: B-1).

Small trees, 2–5 m high, deciduous. Leaves $3\text{--}10 \times 1.8\text{--}5.5$ cm, broadly ovate or elliptic, at apex rounded, base oblique or rounded. Flowers monoecious, in axillary, spicate clusters. Capsules woody, subglobose, dark brown, shining.

Fl. & Fr.: December–April.

Illus.: Matthew, *Illus.* Fl. Tamilnadu Carnatic 2: t. 632. 1982.

Distrib.: Common throughout the dense forests, Nawegaon, Nagzira.

Notes: Bark, leaves and fruits are used for tanning.

Croton L.

Croton bonplandianus Baill. in Adansonia 4: 339. 1864; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; T. Chakrab. & Balakr. In Bull. Bot. Surv. India 34: 31. (1992) 1997; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 870. 2001. *Croton sparsiflorus* Morong in Ann. New York Acad. Sci. 7: 221. 1893.

Herbs, erect, highly branched, 30–50 cm high. Leaves $2.5\text{--}3.5 \times 0.5\text{--}1.5$ cm, lanceolate, at apex acuminate, margins crenate-serrate. Flowers greenish-white, monoecious, in spikes. Capsules oblong, with warty outgrowths. Seeds carunculate.

Fl. & Fr.: More or less throughout the year.

Illus.: Matthew, Fur. *Illus.* Fl. Tamilnadu Carnatic 4: t. 545. 1988.

Distrib.: Frequent in open situations, Nawegaon.

Emblica Gaertn.

Emblica officinalis Gaertn., Fruct. 2: 122. t. 108. 1790; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 873. 2001. *Phyllanthus emblica* L., Sp. Pl. 982. 1753; Hook.f., Fl. Brit. India 5: 289. 1887; Cooke, Fl. Pres. Bombay 3: 81. 1958 (Repr.). ‘Avala’, ‘Awalkante’. (PLATE: D-4)

Trees, 8–10 m tall, deciduous. Leaves appearing, pinnate; subsessile, c. 1×0.2 cm, linear-oblong, truncate or sub-cordate at base. Flowers unisexual, greenish-yellow, minute, in axillary fascicles; flowers of both the sexes mixed or upper male and lower female. Drupes globose, yellow, fleshy. Seeds trigonous,

Fl. & Fr.: February–April.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 648. 1982.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: Fruits are rich in Vitamin C, eaten by wild animals, humans and pickled, candied etc. Also used for preparation of writing ink and hair dyes. Seeds are used in treatment of asthma, bronchitis etc.

Euphorbia L.

Key to the species

- | | |
|---|----------------------|
| 1a. Shrubs or small trees | 2 |
| 1b. Herbs | 3 |
| 2a. Branches distinctly angular | E. ligularia |
| 2b. Branches not as above | E. nivulia |
| 3a. Stems weak, filiform, prostrate or decumbent | 4 |
| 3b. Stems erect | 6 |
| 4a. Stems glabrous or scarcely hairy | 5 |
| 4b. Stems hispidly pubescent or villous | E. thymifolia |
| 5a. Limb of involucre gland conspicuous | E. rosea |
| 5b. Limb of involucre gland inconspicuous or 0 | E. prostrata |
| 6a. Leaves alternate, exstipulate | E. geniculata |
| 6b. Leaves all opposite, stipulate | 7 |
| 7a. Glands of involucre with a conspicuous petaloid limb | E. parviflora |
| 7b. Glands of involucre without a petaloid limb or limb inconspicuous | E. hirta |

Euphorbia geniculata Ortega, Nov. Rar. Pl. Matr. Decad. 18. 1797; Hook.f., Fl. Brit. India 5: 239. 1887; Cooke, Fl. Pres. Bombay 3: 66. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 880. 2001.

Herbs, annual, 20–40 cm high; stems geniculate when fresh. Leaves $2.5\text{--}3.5 \times 1\text{--}1.2$ cm, obovate, rhomboid or oblanceolate, hairy on lower surface. Flowers unisexual, in terminal clusters of cythia. Capsules 3-lobed. Seeds obovoid, grey, truncate at one end.

Fl. & Fr.: August–November.

Distrib.: Frequent in open places, Nawegaon.

Notes: Native of N. America, occurs as an escape.

Euphorbia hirta L., Sp. Pl. 454. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 880. 2001. *Euphorbia pilulifera* auct. Pl. non L. 1753; Hook.f., Fl. Brit. India 5: 250. 1887; Cooke, Fl. Pres. Bombay 3: 64. 1958 (Repr.). ‘Dudhi’.

Herbs, up to 30 cm high; branches ascending, hispid. Leaves $0.8\text{--}1.5 \times 0.4\text{--}0.7$ cm, elliptic or ovate-oblong, acute at apex, obliquely truncate at base. Cyathia c. 20, aggregated in axillary clusters; Flowers unisexual, greenish-yellow. Capsules hairy, 3-lobed. Seeds 4-angled, finely furrowed, reddish-brown, rugose.

Fl. & Fr.: More or less throughout the year.

Illus.: Tad. & Venkat. Handb. S. Indian Weeds, 390, f. 156. 1955 (Rev. ed.).

Distrib.: Common in open places, Nawegaon, Nagzira.

Notes: Leaves are edible and used as vegetable. Its latex used to cure warts.

Euphorbia ligularia Roxb., Fl. Ind. 3: 465. 1832; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 882. 2001. *Euphorbia neriifolia* L., Sp. Pl. 451. 1753. Hook.f., Fl. Brit. India 5: 255. 1887; Cooke, Fl. Pres. Bombay 3: 59. 1958 (Repr.). ‘Nivdung’, ‘Sabar’, ‘Sabarkandi’.

Shrubs, succulent, 1.5–3.5 m tall; stem angular, angles spirally twisted. Leaves $8\text{--}15 \times 2\text{--}4$ cm, alternate, clustered towards the end of the branches, obovate-oblong. Involucres hemispheric, red or pale yellow, trinate, forming solitary or twin pedunculate cyathia; limbs of glands large, fimbriate. Flowers unisexual. Capsules 3-lobed. Seeds 4-angled, smooth.

Fl. & Fr.: November–April.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 433. f. 485. 1911.

Notes: The juice of the plant is used for ear-ache. Juice mixed with neem oil cures rheumatic pains.

Euphorbia nivulia Buch.-Ham. in Trans. Linn. Soc. London 14: 286. 1825; Hook.f., Fl. Brit. India 5: 255. 1887; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 882. 2001. ‘Katethuwa’.

Shrubs or small trees 5–8 m high; spines short, paired. Leaves $12\text{--}15 \times 4.5\text{--}6.5$ cm, subsucculent, obovate. Cyathia usually paired in subterminal lax cymes. Seeds 4-angular, smooth.

Fl. & Fr.: December–April.

Illus.: Wight, Ic. t. 1862. 1852.

Distrib.: Frequent along hill slopes, Nagzira.

Euphorbia parviflora L. Syst. ed. 10. 2: 1047. 1759; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 883. 2001. *Euphorbia hypericifolia* L. Sp. Pl. 454. 1753 p.p. tantum; Hook.f., Fl. Brit. India 5: 249. 1887 p.p. *Euphorbia hypericifolia* var. *parviflora* Prain, Beng. Pl. 2: 924. 1903; Cooke, Fl. Pres. Bombay 3: 63. 1958 (Repr.).

Herbs, 19–25 cm high; stems erect or spreading. Leaves elliptic-oblong, obtuse at apex, obliquely rounded at base. Cyathia axillary or terminal, pedunculate. Involucres turbinate, with 4-white or pinkish-red petaloid limbs. Flowers unisexual. Capsules subglobose, hairy. Seeds reddish-brown.

Fl. & Fr.: July–February.

Distrib.: Frequent in waste places, Nagzira.

Euphorbia prostrata Ait., Hort. Kew ed. 1, 2: 139. 1789; Hook.f., Fl. Brit. India 5: 266. 1887; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 884. 2001. '*Gondan*'.

Herbs, prostrate, some time erect, hirsute, perennial. Leaves minute, oblique, Cyathia axillary. Involucres with rosy limb. Capsules with spreading hairs on keel. Seeds rugulose, 3–5 furrowed, brown.

Fl. & Fr.: Almost throughout the year.

Illus.: Mahesh., Illus. Fl. Delhi f. 184. 1966.

Distrib.: Frequent in waste places, Nawegaon, Nagzira.

Euphorbia rosea Retz., Obs. Bot. 4: 26. 1786; Hook.f., Fl. Brit. India 5: 251. 1887; Cooke, Fl. Pres. Bombay 3: 62. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 129. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 885. 2001.

Herbs, woody; roots longer. Leaves 0.8–1.4 cm long, obliquely obovate or linear-spathulate. Involucres subcampanulate, two upper limbs of involucre glands much larger than two lower ones. Capsules 0.2 cm long.

Fl. & Fr.: December–April.

Distrib.: Rare in scrub forests, Nagzira.

Euphorbia thymifolia L., Sp. Pl. 454. 1753; Hook.f., Fl. Brit. India 5: 252. 1887; Cooke, Fl. Pres. Bombay 3: 64. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 129. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 885. 2001. '*Dhakli-dudhi*'.

Prostrate herbs, annual. Leaves obliquely oblong or ovate, at apex obtuse, margins serrulate, glabrous above, hairy beneath. Involucres axillary, hairy. Capsules ovoid, cocci hairy.

Fl. & Fr.: June–September.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 562. 1988.

Distrib.: Frequent in scrub forests, Nawegaon.

Notes: Plant sap used medicinally for ring worm.

Excoecaria L.

Excoecaria agallocha L., Syst. Nat. (ed. 10), 2: 1288; Hook.f., Fl. Brit. India 5: 472. 1888; Cooke, Fl. Pres. Bombay 3: 122. 1958 (Repr.); A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 886. 2001. 'Geva', 'Phungali', 'Surund'.

Trees or shrubs, 2–6 m high, evergreen, with milky latex. Leaves 4–7 × 2–3 cm, ovate, elliptic or oblong-elliptic, at apex acuminate. Flowers unisexual; male flowers bracteate, sessile, numerous in axillary spikes. female flowers in racemes. Capsules depressed-globose, deeply lobed. Seeds subglobose, grey-brown, smooth.

Fl. & Fr.: February–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 638. 1982.

Distrib.: Nagzira Wildlife Sanctuary.

Jatropha L.

Key to the species

1a. Leaves with glandular hairs on margins

J. gossypifolia

1b. Leaves not as above

J. curcas

Jatropha curcas L., Sp. Pl. 1006. 1753; Hook.f., Fl. Brit. India 5: 383. 1887; Cooke, Fl. Pres. Bombay 3: 95. 1958 (Repr.); A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 891. 2001.

Shrubs, 1–2 m tall, soft wooded, deciduous. Leaves 4.6–8 × 4–9.5 cm, broadly ovate-sub-orbicular, entire or 3–5 lobed. Flowers greenish-yellow, in terminal or extra-axillary cymes. Capsules yellow, ovoid-globular.

Fl. & Fr.: April–July.

Illus.: Talb., For. Fl. Bombay Pres. & Sind. 2: 467, f. 502. 1911.

Distrib.: Frequent in open, scrub forests, Nagzira.

Notes: Seeds used as a purgative by natives and yield an oil for illumination.

Jatropha gossypifolia L., Sp. Pl. 1006. 1753; Hook.f., Fl. Brit. India 5: 383. 1887; Cooke, Fl. Pres. Bombay 3: 95. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 892. 2001. 'Bherenda'.

Shrubs, 2–4 m tall. Leaves palmately 3–5 lobed, 2–6 cm, lobes obovate, brownish green. Flowers green, in terminal, trichotomous cymes. Capsules greenish-yellow, subglobose, 3-lobed.

Fl. & Fr.: Almost throughout the year.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 468, f. 503. 1911.

Distrib.: Frequent in open scrub forests, Nawegaon, Nagzira.

Notes: Stem useful medicinally for toothache.

Macaranga Thou.

Macaranga peltata (Roxb.) Muell.-Arg. in DC., Prodr. 15(2): 1010. 1866; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 892. 2001. *Osyris peltata* Roxb., Fl. Ind. ed. 2, 3: 755. 1832. *Macaranga roxburghii* Wight, Ic. 5: 23. 1852 & 6: t.4. 1853; Hook.f., Fl. Brit. India 5: 448. 1887; *Macaranga tomentosa* Wight, Ic. 5: 23. 1852 & 6: t. 1949. f. 1. 1853; Cooke, Fl. Pres. Bombay 3: 117. 1958 (Repr.). 'Chandoda'.

Trees, 5–12 m high. Leaves 5–15 × 2–8 cm, orbicular or deltoid-ovate, acuminate at apex, rounded at base, margins entire. Flowers yellowish, unisexual, sessile in rusty-tomentose heads, bracteate and bracteolate. Capsules globose, hairy, glandular. Seeds globose.

Fl. & Fr.: January–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 644. 1982; A.N. Londhe, *op. cit.* 893.

Notes: Leaves useful medicinally for healing wounds.

Mallotus Lour.

Mallotus philippensis (Lam.) Muell.-Arg. in Linnaea 34: 196. 1865; Hook.f., Fl. Brit. India 5: 442. 1887; Cooke, Fl. Pres. Bombay 3: 113. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 894. 2001. *Croton philippense* Lam., Encycl. 2: 206. 1876. 'Kamela', 'Kumkum', 'Raini'. (PLATE: C-3)

Trees, 8–12 m tall. Leaves 4–12 × 1.5–7 cm, ovate-lanceolate. Flowers unisexual greenish-yellow, in rusty pubescent terminal spikes. Capsules globose, 3-lobed, covered with red powder of stellate hairs. Seeds subglobose, black.

Fl. & Fr.: July–March.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 483, f. 509. 1911.

Distrib.: Frequent in dense forests, Nagzira.

Notes: The powdered fruit is used as a purgative.

Phyllanthus L.

Key to the species

- | | |
|---------------------------------------|---------------------------|
| 1a. Stipules peltate | 2 |
| 1b. Stipules not peltate | P. amarus |
| 2a. Leaves scattered, cuneate-obovate | P. maderaspatensis |
| 2b. Leaves not as above | 3 |

3a. Capsules echinate; seeds transversely furrowed

P. urinaria

3b. Capsules and seeds not as above

P. virgatus

Phyllanthus amarus Schum., Besler. Guin. Pl. 421. 1827; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra 2: 897. 2001. *Phyllanthus niruri* auct. non L. 1753 *p.p.*; Hook.f., Fl. Brit. India 5: 298. 1887; Cooke, Fl. Pres. Bombay 3: 84. 1958 (Repr.). 'Bhuiavali'.

Herbs, 10–30 cm high, erect. Leaves $0.5-1 \times 0.2-0.5$ cm, subsessile, distichous, oblong, slightly oblique, rounded at base. Flowers numerous, greenish white, unisexual; male flowers 1–3; female flowers solitary. Capsules depressed-globose, dehiscent. Seeds trigonous.

Fl. & Fr.: July–August.

Illus.: Wight, Ic. t. 1894. 1852 (*Phyllanthus niruri*).

Distrib.: Frequent in open areas, Nagzira.

Phyllanthus maderaspatensis L., Sp. Pl. 982. 1753; Hook.f., Fl. Brit. India 5: 292. 1887; Cooke, Fl. Pres. Bombay 3: 82. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra 2: 900. 2001.

Herbs, 25–30 cm tall. Leaves $0.5-1.5 \times 0.2-0.5$ cm, obovate-cuneate. Flowers greenish-white, axillary, solitary or in few flowered clusters. Capsules depressed-globose. Seeds trigonous, brown.

Fl. & Fr.: July–October.

Illus.: Tad. & Venkat. Handb. S. Indian Weeds, 394, f. 158. 1955 (Rev. ed.); A.N. Londhe, *op. cit.* 899.

Distrib.: Frequent among grasses, Nagzira.

Phyllanthus reticulatus Poir. in Lam., Encycl. 5: 298. 1804; Hook.f., Fl. Brit. India 5: 288. 1887; Cooke, Fl. Pres. Bombay 3: 81. 1958 (Repr.); A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 900. 2001. *Kirganelia reticulata* (Poir.) Baill. Etud. Gen. Euph. 614. 1874; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981. 'Pitouri'.

Shrubs, 2–4 m tall, scandent; branchlets drooping, pubescent. Leaves $1.5-3 \times 0.6-2.2$ cm, elliptic-oblong, reddish when young. Flowers unisexual, greenish-yellow; male flowers 3–6; female flowers solitary. Berries globose, purple-black when matured. Seeds trigonous, superposed.

Fl. & Fr.: January–June.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 643. 1982.

Distrib.: Frequent in scrub forests, Nawegaon, Nagzira.

Notes: Roots are used for making red dye.

Phyllanthus urinaria L., Sp. Pl. 982. 1853; Hook.f., Fl. Brit. India 5: 293. 1887; Cooke, Fl. Pres. Bombay 3: 83. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 901. 2001.

Herbs, 15–40 cm high, stem erect. Leaves $0.4\text{--}1.5 \times 0.2\text{--}0.3$ cm, oblong, rounded at base. Flowers yellow, in axillary, solitary cymes. Capsules 3-valved, globose, yellowish-brown; seeds blackish, trigonous.

Fl. & Fr.: August–October.

Distrib.: Frequent along the edges of forests, Nagzira.

Phyllanthus virgatus Forst.f. Inst. Austr. Prodr. 65. 1786; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 902. 2001. *Phyllanthus simplex* Retz. Obs. Bot. 5: 29. 1788; Hook.f., Fl. Brit. India 5: 295. 1887; Cooke, Fl. Pres. Bombay 3: 83. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980.

Erect herbs, 40–50 cm tall, perennials with tap roots. Leaves $1\text{--}1.5 \times 0.4\text{--}0.6$ cm, linear-oblong, obtuse at apex; subsessile. Flowers greenish-white, usually solitary, axillary, unisexual. Capsules 3-lobed, globose. Seeds trigonous, minutely tuberculated.

Fl. & Fr.: August–December.

Illus.: Mahesh. Illus. Fl. Delhi f. 199. 1966 (*Phyllanthus simplex*).

Distrib.: Frequent in open areas, Nawegaon.

Sebastiania Spr.

Sebastiania chamaelea (L.) Muell.-Arg. in DC., Prodr. 15 (pt.2): 1175. 1866; Hook.f., Fl. Brit. India 5: 275. 1888; Cooke, Fl. Pres. Bombay 3: 124. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1981; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 903. 2001. *Tragia chamaelea* L., Sp. Pl. 981. 1753. ‘*Bhui-erandi*’.

Herbs, 25–30 cm tall, erect; branches slender, grooved. Leaves $1.4\text{--}4.5 \times 0.5\text{--}1$ cm, elliptic-oblong or linear-oblong, at apex subacute or obtuse, margins serrulate. Flowers yellowish green, monoecious, in short spikes; female flowers solitary at base. Capsules crustaceous; cocci 3 with 2 rows of spines.

Fl. & Fr.: November–April.

Distrib.: Frequent in scrub forests, Nawegaon, Nagzira.

Securinega Comm. ex A. Juss. (*nom. cons.*)

Key to the species

- | | |
|-----------------------------------|----------------------|
| 1a. Branches ending in spines | S. leucopyrus |
| 1b. Branches not ending in spines | S. virosa |

Securinega leucopyrus (Willd.) Muell.-Arg. in DC., Prodr. 15(2): 451. 1866; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 903. 2001. *Flueggea*

leucopyrus Willd. Sp. Pl. 4: 757. 1805; Hook.f., Fl. Brit. India 5: 328. 1887; Cooke, Fl. Pres. Bombay 3: 77. 1958 (Repr.). 'Pandhar phalli', 'Petuni', 'Khar-temburni'.

Shrubs, 1.5–2 m tall, branchlets thorn liked decussate, stiff. Leaves 1.5–2 cm broad, elliptic-obovate or obovate-oblong. Flowers greenish-yellow, unisexual, in axillary fascicles. Capsules spherical, white. Seeds trigonous.

Fl. & Fr.: March–October.

Illus.: Mahesh. Illus. Fl. Delhi f. 198. 1966.

Distrib.: Frequent on hill slopes in dense forest, Nagzira.

Securinea virosa (Roxb. ex Willd.) Baill. in Adansonia 6: 334. 1866; Airy shaw in Kew Bull. 26 (2): 340. 1972; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1980; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 903. 2001. *Phyllanthus virosus* Roxb. ex Willd.. Sp. Pl. 4: 578. 1805. *Flueggea microcarpa* Bl. Bijdr. 580. 1825; Hook.f., Fl. Brit. India 5: 328. 1887; Cooke, Fl. Pres. Bombay 3: 77. 1958 (Repr.). *Flueggea virosa* (Roxb. Ex Willd.) Weigt, Hort. Suburb. Calcutta 152. 1845. 'Dait', 'Karmate', 'Pacharna', 'Pandhar-phalli'.

Shrubs, 1.5–4 m tall; stem sulcate. Leaves 2–4 × 1.5–2 cm, ovate-elliptic, at apex rounded or obtuse. Flowers greenish-yellow. Capsules globose, ripens white. Seeds rounded on back, minutely punctate.

Fl. & Fr.: April–October.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 455, f. 497. 1911; Matthew, Illus. Fl. Tamilnadu Carnatic t. 655. 1982.

Distrib.: In moist places, infrequent, Nawegaon.

Trewia L.

Trewia polycarpa Benth. & Hook.f., Gen. Pl. 3: 318. 1880; Hook.f., Fl. Brit. India 5: 424. 1887; Cooke, Fl. Pres. Bombay 3: 112. 1958 (Repr.); A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2: 906. 2001. *Trewia nudiflora* L. var. *polycarpa* (Benth.) Susila & N.P. Balakr. In J. Econ. Tax. Bot. 22: 35. 1998. 'Petari'.

Trees, 7–10 m tall, deciduous. Leaves 8–18 × 6–15 cm, broadly ovate, acuminate at apex, cordate at base. Flowers unisexual, in racemes. Drupes globose-ovoid. Seeds rounded on back, with flat faces.

Fl. & Fr.: January–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 660. 1982.

Notes: Listed by Anjankar & Bardekar (2000) from Nagzira.

Cultivated Species:

Ricinus communis L., Sp. Pl. 1007. 1753; Hook.f., Fl. Brit. India 5: 457. 1887; Cooke, Fl. Pres. Bombay 3: 125. 1958 (Repr.). S.K. Malhotra & K.M. Rao in Bull.

Bot. Surv. India 22: 9. 1980; A.N. Londhe in N.P. Singh & al., Fl. Maharashtra State 2:1001.2001. '*Erand*'.

Shrubs, 2–4 m tall, monoecious. Leaves palmatifid, 6–10 lobed, lanceolate, acuminate at apex. Flowers unisexual, in terminal paniculate racemes; male flowers below female flowers. Capsules 3 lobed, prickly. Seeds oblong, smooth, marbled.

Fl. & Fr.: Throughout the year.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 652. 1982.

Distrib.: Near village, in forest, Nawegaon.

Notes: The seed cake is used as fertilizer.

ULMACEAE

Key to the genera

- 1a. Leaves palmately veined
- 1b. Leaves pinnately veined

Trema
Holoptelea

Holoptelea Planch.

Holoptelea integrifolia (Roxb.) Planch. in Ann. Sci. Nat. 3, 10: 269. 1849; Hook.f., Fl. Brit. India 5: 481.1888; Cooke, Fl. Pres. Bombay 3: 128. 1958 (Repr.); P. Venkanna & P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 911. 2001. *Ulmus integrifolia* Roxb., Pl. Cor. 1: 56, t. 78. 1795. '*Papada*', '*Wavali*'.

Deciduous trees. 12–18m tall; young parts pubescent. Leaves 5–10 × 3–6 cm, elliptic, at apex acuminate, base rounded or cordate. Flowers brownish, polygamous, in axillary, short racemes or panicles on old shoots. Fruits winged, samaroid, orbicular, wing of fruit emarginate at tip and crowned by persistent style. Seeds flat.

Fl. & Fr.: January–June.

Notes: Listed by Anjankar & Bardekar (2000) from Nagzira.

Trema Lour.

Trema orientalis (L.) Bl., Mus. Bot. 2: 61. 1856; Hook.f., Fl. Brit. India 5: 484. 1888; Cooke, Fl. Pres. Bombay 3: 129. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1981; P. Venkanna & P.V. Prasanna in N.P. Singh & al., Fl. Maharashtra State 2: 911. 2001. *Celtis orientalis* L., Sp. Pl. 1044. 1753. '*Ghol*', '*Ran-Ambada*'.

Trees, 5–12m tall; bark ash coloured; young branchlets white pubescent. Leaves 6–12 × 1–2 cm, obliquely ovate-lanceolate, at apex acuminate, base subcordate, scabrid above, canescent beneath. Flowers greenish yellow, unisexual, subsessile, in axillary cymes. Drupes ovoid or subglobose, tipped by style base. Seeds ovoid, ripen black.

Fl. & Fr.: January–October.

Illus.: Matthew, *Illus. Fl. Tamilnadu carnatic* 2:t.673.1982; P. Venkanna & P.V. Prasanna *op. cit.* 912.

Distrib.: Frequent in scrub forests, Nawegaon.

Notes: Leaves eaten by wild animals.

URTICACEAE

Neodistemon Babu & Henry

Neodistemon indicum (Wedd.) Babu & Henry in Taxon 19: 651. 1970; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1981; Verma & al., Fl. Raipur, Durg & Rajnandgaon 351. 1985. *Distemon indicum* Wedd. in Arch. Mus. Hist. Nat. Paris 9: 551. t. 20A. 1857.

Hairy herbs. Leaves 4–8 cm long, broadly ovate, acuminate, cuneate at the base. Flowers in interrupted spikes. Male flowers minute, tipped with hooked hairs; females strigose. Fruits ovoid or rhomboid, beaked.

Fl. & Fr.: November–December.

Distrib.: Frequent among herbaceous vegetation, Nawegaon.

MORACEAE

Key to the genera

- | | |
|---|-------------------|
| 1a. Flowers in syconia | Ficus |
| 1b. Flowers exposed | 2 |
| 2a. Leaves with many transverse inter costal veins | Artocarpus |
| 2b. Leaves with few or less transverse inter costal veins | Sterblus |

Artocarpus J.R. & J.G.A. Forst. (*nom. cons.*)

Artocarpus heterophyllus Lam., Encycl. 3: 210. 1789 (*heterophylla*); P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 930. 2001. *Artocarpus integrifolia* sensu Gamble, Fl. Madras Pres. 1369. 1928 non L.f. 1781]; Hook.f., Fl. Brit. India 5: 541. 1888; Cooke, Fl. Pres. Bombay 3: 158. 1958 (Repr.). ‘*Phanas*’.

Evergreen trees; cauliflorous with massive syncarps. Leaves elliptic or obovate, dark green, 5–25 × 3.5–10 cm, at apex obtuse, base cuneate. Inflorescence solitary, axillary; male heads narrowly clavate; syncarp green, round with conical acute processes; fruiting perianth yellow to light orange.

Fl. & Fr.: March–April.

Illus.: Sant. in J. Bombay Nat. Hist. Soc. 57: f. A & B opp. page 448. 1960.

Distrib.: Usually cultivated also naturalised, Nagzira.

Notes: Fruits are edible and also used as pickle.

Ficus L.

Key to the species

- | | |
|---|---|
| 1a. Monoecious; figs often with inter floral bracts | 2 |
| 1b. Dioecious; figs without inter floral bracts | 9 |

- | | | |
|------|--|------------------------|
| 2a. | Leaves with a gland at back of the petiole; stamen-1 | 3 |
| 2b. | Leaves with a gland in the axils of ten main basal nerves; stamens 2(-3) , often with a pistillode | F. racemosa |
| 3a. | Ovary wholly red-brown or in the upper half | 4 |
| 3b. | Ovary white or with a red mark at base | 5 |
| 4a. | Lateral nerves 8–14 pairs; figs in clusters | F. tsjahela |
| 4b. | Lateral nerves 4–9 pairs; figs in pairs | F. religiosa |
| 5a. | Ovary white | F. amplissima |
| 5b. | Ovary with red mark at base | 6 |
| 6a. | Figs pedunculate, sessile or pedicilate | 7 |
| 6b. | Figs mostly sessile | F. microcarpa |
| 7a. | Figs ripening brown or brownish-orange with green spot | F. arnottiana |
| 7b. | Figs ripening yellow to red | 8 |
| 8a. | Figs oblong or pyriform, basal bracts often small | F. drupacea |
| 8b. | Figs subglobose to ellipsoid; basal bracts well developed | F. benghalensis |
| 9a. | Lamina with a basal gland; perianth separate | 10 |
| 9b. | Lamina without basal glands; perianth gamophyllous | F. hispida |
| 10a. | Leaves distichous; male flowers with gall ovary | F. tinctoria |
| 10b. | Leaves variously arranged; male flowers without gall ovary | 11 |
| 11a. | Tepals and ovary red or white; receptacles globose | F. exasperata |
| 11b. | Tepals and ovary white; receptacles spherical to elongate pyriform | F. heterophylla |

Ficus amplissima J.E. Sm. in Rees, Cyclop. 14. n. 68. 1810; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 933. 2001. *Ficus tsiela* Roxb. ex Buch-Ham. in Trans. Linn. Soc. 15:149. 1826; Hook.f., Fl. Brit. India 5: 515.1888; Cooke, Fl. Pres. Bombay 3:150.1958 (Repr.). ‘Payer’, ‘Pimpri’.

Trees, 12–15 m tall. Leaves 6–12 × 4–7 cm, alternate, bright green, ovate-oblong, at apex acute or cuspidate, base rounded, coriaceous. Flowers unisexual. receptacles axillary, sessile, globose, in pairs; basal bracts 3, ovate. Achenes smooth.

Fl. & Fr.: April–November.

Illus.: Talb. For. Flora Bombay Pres. & Sind 2: 518, f. 526. 1911 (*Ficus tsiela*).

Distrib.: Frequent in dense forests, Nawegaon.

Notes: Fruits are edible.

Ficus arnottiana (Miq.) Miq. in Ann. Mus. Bot. Lugd. Bat. 3: 287. 1867; Hook.f., Fl. Brit. India 5: 513.1888; Cooke, Fl. Pres. Bombay 3: 149. 1958 (Repr.); P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 933. 2001. *Urostigma arnottianum* Miq. in Hook., J. Bot. 6: 564. 1847. ‘Kadak payer’, ‘Pair’.

Trees, 8–12 m tall. Leaves spirally arranged; 7–14 × 4–9 cm; ovate-cordate or elliptical, acuminate at apex, rounded or cordate at base, margins entire, coriaceous. Flowers unisexual, in axillary, paired or apically crowded, sessile. Receptacles smooth with greyish dots.

Receptacles: August–February.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 518, f. 526. 1911.

Distrib.: Frequent in dense forests, Nagzira.

Notes: Leaves used as fodder and latex for wound healing.

Ficus benghalensis L., Sp. Pl. 1059. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; Hook.f., Fl. Brit. India 5: 499.1888; Cooke, Fl. Pres. Bombay 3:145. 1958 (Repr.); P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra 2: 934. 2001. ‘*Wad*’.

Tall trees, with aerial roots from radially spreading branches. Leaves 9–20 × 6–15, elliptic-ovate, rounded or cordate at base, glabrous above, puberulous beneath. Flowers unisexual, monoecious in axillary, paired, ripening orange to red, depressed-globose, sessile receptacles. Achenes globose-ellipsoid.

Receptacles: April–June.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Ficus drupacea Thunb. var. **pubescens** (Roth) Corner in Gard. Bull. Singapore 17: 1381. 1960; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 935. 2001. *Ficus mysorensis* Heyne ex Roth var. *pubescens* Roth in Roem. & Schult., Syst. Veg. 1: 508. 1817; Hook.f., Fl. Brit. India 5: 500.1888; Cooke, Fl. Pres. Bombay 3: 145. 1958 (Repr.). ‘*Burali-wad*’.

Trees, 20–25 m tall with aerial roots around the trunk; branchlets tomentose. Leaves 10–20 × 4–8 cm, broadly elliptic-ovate, abruptly acuminate at apex, rounded or subcordate at base. Flowers unisexual in ellipsoid-globose, sessile, solitary or paired, axillary, monoecious receptacles. Achenes smooth.

Receptacles: March–May.

Distrib.: Frequent in deciduous forests, Nawegaon.

Ficus exasperata Vahl, Enum. Pl. 2: 197, 402. 1806; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 936. 2001. *Ficus asperrima* Roxb., Fl. Ind. 3: 554. 1832; Hook.f., Fl. Brit. India 5: 522. 1888; Cooke, Fl. Pres. Bombay 3: 158. 1958 (Repr.). ‘*Buiumber*’, ‘*Karyat*’, ‘*Kharmate*’, ‘*Kharvati*’.

Shrubs or small trees up to 10 m tall. Leaves 8–18 × 4–9 cm, broadly oblong-elliptic, acute to acuminate at apex, rounded to acute at base, alternate, upper ones opposite. Flowers unisexual, in solitary, globose or ellipsoid, receptacles pubescent. Achenes oblong, reticulate.

Receptacles: February–April.

Illus.: Wight, Ic. t. 633. 1840 (*Ficus asperrima*).

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: Fruits are edible.

Ficus heterophylla L.f. Suppl. 432. 1781; Hook.f., Fl. Brit. India 5: 518. 1888; Cooke, Fl. Pres. Bombay 3: 152. 1958 (Repr.); P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 937. 2001. '*Datir*'.

Creeping or prostrate shrubs; twigs reddish-brown, thinly pubescent. Leaves 4–10 × 1.5–4.5 cm, polymorphous i.e. ovate, ovate-lanceolate, orbicular, irregularly lobed, scabrous. Receptacles spherical, pyriform, scabrid.

Receptacles: May–June.

Distrib.: Frequent in deciduous forests, Nawegaon.

Ficus hispida L.f., Suppl. 442. 1781; Hook.f., Fl. Brit. India 5: 522. 1888; Cooke, Fl. Pres. Bombay 3: 154. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 937. 2001. '*Gandy-umbar*', '*Kala-umbar*'.

Small trees 5–9 m tall; branchlets hispid, latex white, bark grey. Leaves 8–18 × 6–10 cm, ovate-oblong to elliptic-lanceolate, at apex acuminate, cordate to truncate at base, hispid beneath. Flowers unisexual in depressed-globose dioecious, hispid receptacles. Achenes lenticular, keeled, with hilum.

Receptacles: February–July.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 523. f. 530. 1911.

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Ficus microcarpa L.f. Suppl. 442. 1781; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 938. 2001. *Ficus retusa* sensu King in Ann. Bot. Gard. Calcutta 1: 50, tt. 61, 62. 1887 non. L. 1767; Hook.f., Fl. Brit. India 5: 511. 1888; Cooke, Fl. Pres. Bombay 3: 146. 1958 (Repr.). '*Nandruk*'.

Trees, up to 10 m tall, with aerial roots. Leaves 6.5–8.6 × 3.2–4.8 cm, elliptic-ovate, acuminate. Receptacles paired, axillary, sessile, depressed-globose, yellowish, smooth, purple and black when ripe.

Receptacles: February–May.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 676. 1982.

Distrib.: Frequent in plains and hilly forests, Nawegaon.

Ficus racemosa L., Sp. Pl. 1060. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 939. 2001. *Ficus glomerata* Roxb., Pl. Corom. 2: 13. t. 1. 23. 1798; Hook.f., Fl. Brit. India 5: 535. 1888; Cooke, Fl. Pres. Bombay 3: 154. 1958 (Repr.). '*Umbar*'.

Trees, 5–12 m tall. Leaves 6–10 × 3–4 cm, alternate, oblanceolate, ovate-oblong or elliptic-lanceolate, acute at apex, rounded to acute at base, entire, subcoriaceous. Flowers unisexual in globose, reddish, pilose, monocious receptacles. Achenes lenticular, smooth.

Receptacles: February–June.

Illus.: Wight, Ic. t. 1967. 1853 (*F. glomerata*).

Distrib.: Frequent along streams and hill slopes, Nawegaon, Nagzira.

Notes: A religious plant. Fruit are edible. Leaves, bark and fruit useful for skin disease, diabetes and urinary disorders.

Ficus religiosa L., Sp. Pl. 1059. 1753; Hook.f., Fl. Brit. India 5: 513. 1888; Cooke, Fl. Pres. Bombay 3: 149. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 940. 2001. '*Pimpal*'.

Trees, 10–20 m tall. Leaves 6–15 × 5–11 cm, broadly ovate, caudate-acuminate at apex, truncate at base, coriaceous; petiole up to 4 cm long. Flowers unisexual, ovoid or globose, sessile, monoecious, axillary, in paired receptacles. Achenes smooth.

Receptacles: December–July.

Illus.: Wight, Ic. t. 1967. 1853 (*Urostigma religiosum* (L.) Gasp.].

Distrib.: Frequent in dense forests, Nawegaon, Nagzira.

Notes: A symbolic religious plant with magical belief to purify environment and also to cure Asthma etc. Fruits are edible.

Ficus tinctoria Forst. f. ssp. **parasitica** (Willd.) Corner in Gard. Bull. Singapore 17: 1476. 1960; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 942. 2001. *Ficus parasitica* Koen ex Willd., in Mem. Acad. Roy. Soc. Hist. (Berlin) 2: 102, t. 3. 1798; Hook.f., Fl. Brit. India 5: 497. 1888; Cooke, Fl. Pres. Bombay 3: 144. 1958 (Repr.). *Ficus gibbosa* Bl. var. *parasitica* King in Ann. Roy. Bot. Gard. Calcutta 1: 6, t. 2. 1887; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1981; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, *op. cit.*

An epiphytic straggler or shrub with copious aerial roots; often covering the host tree with a net work of branches. Leaves 8.5–18.5 × 2.5–8.5 cm, oblong, ovate-lanceolate, at apex obtuse, base unequal sided, hispid above. Receptacles axillary in pairs, globose, scabrid. Achenes obliquely ovoid, papillose.

Receptacles: April–May.

Illus.: Talb., For. Fl. Bombay Pres. & Sind 2: 506. f. 517. 1911.

Distrib.: Frequent as parasite in dense forests, Nagzira.

Ficus tsjahela Burm.f., Fl. Ind. 227. 1768; Hook.f., Fl. Brit. India 5: 514. 1888; Cooke, Fl. Pres. Bombay 3: 150. 1958 (Repr.); P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 942. 2001. '*Kel*', '*Tjakela*'.

Trees, 12–15 m tall, deciduous. Leaves 8–18 × 2.5–8 cm, elliptic-oblong, ovate-oblong, abruptly acuminate at apex, rounded to subcordate at base. Receptacles sessile, unisexual, in cluster of 2–6, basal bract 3, broad, bifid. Male flowers sessile, scanty near orifice, stamen 1. Gall and females with 3–4 tepals. Achenes obovate.

Receptacles: March–May.

Distrib.: Frequent in the forests, Nawegaon.

Streblus Lour.

Streblus asper Lour., Fl. Cochinch. 2: 615. 1790; Hook.f., Fl. Brit. India 5: 489. 1888; Cooke, Fl. Pres. Bombay 3: 141. 1958 (Repr.); P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 944. 2001. '*Parayu*', '*Poi*', '*Kharota*'.

Evergreen trees, 8–10 m tall; much branched, bushy. Leaves 2–8 × 1–3 cm; elliptic-rhomboid or elliptic obovate, acute at apex, cuneate at base, scabrid. Flowers dioecious; males in stalked globose heads; females axillary, solitary or in fascicles, stalks elongated in fruits. Drupes enclosed by elongated perianth, orange-yellow when ripe, edible.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 679. 1982.

Notes: Listed by Anjankar & Bardekar (2000) from Nagzira.

Cultivated Species:

Ficus elastica Roxb. ex Horn. Hort. Bot. Hatn. Suppl. 7. 1819; King in Hook.f., Fl. Brit. India 5: 508.1888; P. Lakshmi. & P. Venkanna in N.P. Singh & al., Fl. Maharashtra State 2: 947. 2001.

Small, evergreen trees. Leaves 12–18 × 6–8 cm, elliptic, subacute at apex, rounded or acute at base, coriaceous, deep glossy green. Receptacles axillary and on twigs below leaves, ripening yellow-ochre. Seeds subrugose.

CASUARINACEAE

Casuarina L. ex Adans.

Casuarina equisetifolia L. Amoen. Acad. 4: 143. 1759; Hook.f., Fl. Brit. India 5: 598.1888; Cooke, Fl. Pres. Bombay 3: 161. 1958 (Repr.). P. Venkanna & Kothari in N.P. Singh & al., Fl. Maharashtra State 2: 949. 2001. '*Suru*'.

Tall trees, 10–15 m; branches modified in to cladodes. Leaves reduced to scales, arranged in whorls of 6–7. Flowers small, unisexual, monoecious; males in spikes 1–3 cm long and branches in heads; perianth 1–2, scarious in male and absent in female flowers. Carpophores pubescent, cone like.

Fl. & Fr.: February–March.

Illus.: Rodgers in J. Arnold Arbor. 63: 356, f. 1a-n. 1982.

Distrib.: Frequent in forests, Nawegaon, Nagzira.

SALICACEAE

Salix L.

Salix tetrasperma Roxb., Pl. Cor. T. 97. 1798; Hook.f., Fl. Brit. India 5: 626.1888; Cooke, Fl. Pres. Bombay 3: 162. 1958 (Repr.); P. Venkanna & Kothari in N.P. Singh & al., fl. Maharashtra State 2: 950. 2001. '*Walunj*'.

Evergreen shrubs 1–1.5 m tall; branches drooping. Leaves 7–15 × 2.4–5 cm, elliptic-lanceolate, acute to acuminate at apex, narrowed to rounded at abse. Flowers unisexual, in catkins; males pendulous; females straight. Fruits with white silky hairs. Seeds 4, ellipsoid, grayish-black, with lighter rhaphe.

Fl. & Fr.: September–December.

Illus.: Wight, Ic. t. 1954. 1853.

Notes: Listed by Rajkondawar (1996) from Nawegaon.

MONOCOTYLEDONS HYDROCHARITACEAE

Key to the genera

- | | |
|---|---------------------|
| 1a. Stems branched, leafy throughout | 2 |
| 1b. Stemless or stoloniferous; leaves radical | 3 |
| 2a. Leaves in whorls; perianth double; stamens 3; style undivided | Hydrilla |
| 2b. Leaves alternate; perianth single; stamens 2; stylenotched | Lagarosiphon |
| 3a. Petioles distinct; spathes winged | Ottelia |
| 3b. Petioles indistinct; spathes not winged | 4 |
| 4a. Perianth single, peduncle of female spathes spirally coiled | Vallisneria |
| 4b. Perianth double; peduncle not as above | Blyxa |

Blyxa Noron. ex Petit-Thou.

Blyxa octandra (Roxb.) Planch. ex Thw., Enum. Pl. Zeyl. 332. 1864; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1981; P. Lakshmi. in Sharma & al., Fl. Maharashtra State, Monocot. 2. 1996. *Vallisneria octandra* Roxb., Pl. Cor. 2: 34, t. 165. 1802. *Blyxa roxburghii* Rich. in Mem. Inst. Paris 12, 2: 77, t. 5. 1812; Hook.f., Fl. Brit. India 5: 660. 1888; Cooke, Fl. Pres. Bombay 3: 172. 1958 (Repr.).

Herbs gregarious. Leaves 18–35 cm long, linear, sheathing, narrowed at base. Flowers white; male spathes enclosing 5–10 flowers; female spathes 1-flowered. Capsules linear, finely ribbed. Seeds oblong-ellipsoid, white.

Fl. & Fr.: June–February.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 684 & 977a. 1982.

Distrib.: Submerged in stagnant water of lakes, Nawegaon, Nagzira.

Hydrilla L.C. Rich.

Hydrilla verticillata (L.f.) Royle, Illus. Bot. Himal. t. 376. 1839; Hook.f., Fl. Brit. India 5: 659. 1888; Cooke, Fl. Pres. Bombay 3: 170. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al, Fl. Maharashtra State., Monocot. 3: 1996. *Serpicula verticillata* L.f., Suppl. 416. 1781. ‘*Sheval*’.

Herbs, slender, submerged, free floating or rooting, c. 45 cm long; roots fibrous. Leaves 3–8, 0.5–0.6cm long, linear or linear-oblong, at apex apiculate, margins entire or serrulate. Flowers unisexual, white; male flowers minute, shortly pedicelled,

solitary, in subsessile, subglobose, muricate spathes; female flowers sessile, solitary in cylindrical, membranous spathes. Fruits smooth, muricate. Seeds oblong.

Fl. & Fr.: August–February.

Distrib.: Common in lakes, Nawegaon.

Lagarosiphon W.H. Harvey

Lagarosiphon alternifolia (Roxb.) Druce in Rep. Bot. Exch. Cl. Brit. Is. 1916: 630. 1917; P. Lakshmi. in B.D. Sharma & al., Fl. of Maharashtra State, Monocot. 4, 1996. *Vallisneria alternifolia* Roxb., Pl. Cor. 2: t. 165. 1802. *Lagarosiphon roxburghii* (Planch.) Benth. in Benth. & Hook.f., Gen. PL. 3: 451. 1883; Hook.f., Fl. Brit. India 5: 659. 1888; Cooke, Fl. Pres. Bombay 3: 170. 1958 (Repr.).

Herbs, c. 15 cm tall, perennial, submerged, lower portion floating. Leaves linear-lanceolate, acute, often twisted. Male spathes ovate, axillary, sessile, paired, 2-valved; female flowers solitary, axillary, sessile. Fruits ovoid, oblong or linear. Seeds numerous.

Fl. & Fr.: August–February.

Distrib.: Common in lake, Nawegaon.

Ottelia Pers.

Ottelia alismoides (L.) Pers., Syn. Pl. 1: 400. 1805; Hook.f., Fl. Brit. India 5: 662. 1888; Cooke, Fl. Pres. Bombay 3: 173. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmin. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 4, 1996. *Stratiotes alismoides* L., Sp. Pl. 535. 1753. (PLATE: E-5).

Herbs, annual, submerged, flaccid. Leaves of two kinds; submerged leaves shortly petioled, narrow or oblong, tapering to base; floating ones oblong or orbicular, cordate or rounded at base, then narrowed in to angled petiole, margins undulate. Flowers white with yellow blotched base. Fruits ellipsoid. Seeds oblong-fusiform.

Fl. & Fr.: September–April.

Distrib.: Frequent in lakes, Nawegaon, Nagzira.

Vallisneria L.

Vallisneria spiralis L., Sp. Pl. 1015. 1753; Hook.f., Fl. Brit. India 5: 660. 1888; Cooke, Fl. Pres. Bombay 3: 176. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1981; P. Lakshmi., in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 5, 1996.

Herbs, submerged. Leaves linear, ribbon-shaped, at apex obtuse, sheathing at base. Flowers dioecious; male spathes shortly peduncled, ovate; female spathes connate, tubular. Fruits linear, included in spathes. Seeds numerous, oblong to fusiform, embedded in a gelatinous mass.

Fl. & Fr.: October–April.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 689. 1982.

Distrib.: Common in lakes, Nawegaon.

ORCHIDACEAE

Key to the genera

- | | |
|--------------------------|------------------|
| 1a. Plants epiphytic | Vanda |
| 1b. Plants terrestrial | 2 |
| 2a. Plants pseudobulbous | Eulophia |
| 2b. Plants with tubers | Habenaria |

Eulophia R.Br. ex Lindl. (*nom. cons.*)

Eulophia ochreatea Lindl. in J. Linn. Soc. 3: 24. 1858; Hook.f., *Fl. Brit. India* 6: 2. 1890; Cooke, *Fl. Pres. Bombay* 3: 196. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State Monocot.* 29: 1996.

Pseudobulbs *c.* 4 × 2.5 cm, ovoid-conical, markings irregular, transverse and longitudinal. Leaves 2–5, 13–28 × 4–10 cm, sheathing at base, oblong-lanceolate, lanceolate to ovate or ovate-elliptic, acute, entire. Flowers in dense racemes, clustered at top of scape. Capsules broadly ovoid, deflexed, strongly ridged, green.

Fl. & Fr.: June–October.

Illus.: Sant. & Kap. *Orch. Bombay* 111. 1966.

Distrib.: Frequent in moist places, Nagzira.

Habenaria Willd.

Key to the species

- | | |
|-------------------------------------|--------------------------|
| 1a. Sidelobes of petals broad | H. plantaginea |
| 1b. Sidelobes of petals very narrow | 2 |
| 2a. Tubes of anther cells long | H. commelinifolia |
| 2b. Tubes of anther cells short | 3 |
| 3a. Leaves flat on ground | H. diphylla |
| 3b. Leaves not as above | H. marginata |

Habenaria commelinifolia (Roxb.) Wall. Ex Lindl., *Gen. Sp. Orchid.* 325. 1835; Hook.f., *Fl. Brit. India* 6: 143. 1890; Cooke, *Fl. Pres. Bombay* 3: 224. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 9. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 34. 1996. *Orchis commelinifolia* Roxb., *Fl. Ind.* 3: 415. 1832.

Herb, 42–78 cm tall. Tubers 1–2, 4–7 × 1–2 cm, ellipsoid. Leaves 6–20 × 1.5–3.5 cm, oblong or oblong-lanceolate, acute, rarely subspinescent, entire, minutely papillate. Spikes somewhat dense. Flowers greenish-white, sessile, bracteates. Capsules fusiform.

Fl. & Fr.: August–November.

Illus.: Sant. & Kap. *Orch. Bombay* 25, t. 4, f. 11–12, 1966.

Distrib.: Common near lakes. Nawegaon, Nagzira.

Habenaria diphylla Dalz. In Hook., Kew J. Bot. 2: 262. 1850; Hook.f., Fl. Brit. India 6: 151. 1890; Cooke, Fl. Pres. Bombay 3: 227. 1958 (Repr.); Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 36. 1996.

Herbs, 10–20 cm high. Tuber usually one, ellipsoid. Leaves $1.5-4 \times 0.5-4$ cm, ovate-oblong to suborbicular, acute or obtuse, margins yellowish or pale coloured. Racemes 2 to many flowered, lax up to 10 cm long. Flowers shortly stalked, bracteate, greenish-white. Capsules fusiform, shortly pedicellate, beaked.

Fl. & Fr.: July–October.

Distrib.: Frequent on lake margin, Nagzira.

Habenaria marginata Coleb. In Hook., Exot. Fl. 2, 17: t. 136. 1824; Hook.f., Fl. Brit. India 6: 150. 1890; Cooke, Fl. Pres. Bombay 3: 226. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 130. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 39. 1996.

Herbs 5–35 cm tall; tubers 1–2, ovoid or ellipsoid. Leaves $1.5-4.5 \times 1.2-3$ cm, oblong, oblong-elliptic, acute, obtuse or mucronate. Flowers greenish-yellow, sessile, in lax or dense spikes. Capsules fusiform, turgid, curved.

Fl. & Fr.: July–November.

Illus.: Ugemuge, Fl. Nagpur Dt. T. 156. 1986.

Distrib.: Frequent on lake margins, Nagzira.

Habenaria plantaginea Lindl. Gen. Sp. Orchid. 323. 1835; Hook.f., Fl. Brit. India 6: 141. 1890; Cooke, Fl. Pres. Bombay 3: 224. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 684. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 42. 1996.

Herbs, 10–40 cm tall; tubers 2, unequal, suborbicular to ellipsoid. Leaves 3–5, uppermost usually small and bract-like, $2-13 \times 0.5-3.5$ cm, oblong-lanceolate, acute, entire, minutely papillate. Inflorescence 8–30 cm long, lax, few-many flowered bracteate or subsecond racemes, terminating long peduncle. Flowers white, shortly pedicellate, bracteate. Capsules turgid, fusiform, curved, beak slender.

Fl. & Fr.: September–November.

Illus.: Sant. & Kap., Orch. Bombay 28, t. 6, f. 25. 1966.

Distrib.: Frequent terrestrial orchid, Nawegaon, Nagzira.

Vanda W. Jones ex R.Br.

Key to the species

1a. Flowers 1.2–3.7 cm in diam.

V. testacea

1b. Flowers 5 cm in diam.

V. tessellata

Vanda tessellata (Roxb.) Hook. ex G. Don in Loud. Hort. Brit. 372. 1838; P. Lakshmi. in Sharama & al., Fl. Maharashtra State, Monocot. 62. 1996. *Vanda roxburghii* R.Br. in Edw., Bot. Reg. 6: t, 506. 1820; Hook.f., Fl. Brit. India 6: 52. 1890; Cooke, Fl. Pres. Bombay 3: 208. 1958 (Repr.). (PLATE: E-2)

Stems 0.5–2 cm thick, sheathed. Leaves spreading, recurved, coriaceous, 5–25 × 0.4–2 cm, linear-oblong, strap-shaped, entire, at apex praemorse, with usually 2 unequal rounded lobes and an acute one in between. Racemes usually longer than leaves, 2–10-flowered. Flowers bracteate, pedicellate. Capsules oblong, sharply winged, pedicelled.

Fl. & Fr.: March–October.

Illus.: Joseph in Rec. Bot. Surv. India 22: 130, f. 110 a & b. 1982.

Distrib.: Common, on *Mangifera indica* and *Tectona grandis* species, Nawegaon, Nagzira.

Notes: Medicinally, roots used for sores and rheumatic pains.

Vanda testacea (Lindl.) Reichb.f. in Gard. Chron. 2: 166. 1877; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 131. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 63. 1996. *Vanda parviflora* Lindl. in Edw., Bot. Reg. Misc. 30: 45. 1844; Hook.f., Fl. Brit. India 6: 50. 1890; Cooke, Fl. Pres. Bombay 2: 207. 1958 (Repr.). '*Hadaicha-lasun*'.

Epiphytes; stems non-pseudobulbous, 8–15 cm long, lower portion covered with brown leaf scars; roots large thick, vermiform. Leaves 5.5–14.5 × 0.9–1.5 cm, linear-lorate, unequally lobed or toothed at apex, coriaceous and keeled. Flowers cream-yellow, with white, purple or reddish-pink lip, many in racemes. Capsules fusiform or oblong-ellipsoid, sharply angled.

Fl. & Fr.: May–July.

Illus.: Wight, Ic. t. 1669. 1851 (*Vanda parviflora*),

Distrib.: Frequent on *Mangifera indica* and *Terminalia* species, Nawegaon.

ZINGIBERACEAE

Key to the genera

- | | |
|---|-----------------|
| 1a. Ovary 1-celled; placenta parietal | Globba |
| 1b. Ovary 3-celled; placenta axile | 2 |
| 2a. Lateral staminodes broad | Curcuma |
| 2b. Lateral staminodes small or absent, rarely narrow and adnate to lip | 3 |
| 3a. Leaves spiral; stigma with a semi-lunar pit, ciliate along the margin | Costus |
| 3b. Leaves distichous; stigma subglobose | Zingiber |

Costus L.

Costus speciosus (Koen.) J.E. Sm. in Trans. Linn. Soc. Jan: 249. 1800; Baker in Hook.f., Fl. Brit. India 6: 249. 1892; Cooke, Fl. Pres. Bombay 3: 243. 1958 (Repr.);

S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 70. 1996. *Banksia speciosa* Koen. apud Retz., Obs. Bot. 3: 75. 1783. 'Kosht', 'Piway'. (PLATE-B-4)

Herbs, 2–3 m tall; rootstock tuberous; stems more or less woody at base. Leaves 15–30 × 3–7.5 cm, subsessile, oblong or oblanceolate-oblong, acute or acuminate, often cuspidate, glabrous above, silky-pubescent beneath, base rounded. Flowers white, in terminal, dense spikes. Capsules globosely 3-gonous, red. Seeds black, aril white.

Fl. & Fr.: August–February.

Illus.: Matthew, Fl. Tamilnadu Carnatic 2: t. 726. 1982.

Distrib.: Common in dense forests. Nawegaon, Nagzira.

Notes: Roots useful in Asthma, cholera, cough, fever and snake bite.

Curcuma L.

Key to the species

- 1a. Flowering spike autumnal, rising from the centre of a previously formed tuft of leaves **C. pseudomontana**
- 1b. Flowering spike vernal or aestival, lateral, apart from and usually appearing before the leaves 2
- 2a. Lip obovate **C. inodora**
- 2b. Lip orbicular **C. aromatica**

Curcuma aromatica Salisb. Parad. 20. t. 96. 1807; Baker in Hook.f., Fl. Brit. India 6: 210. 1890; Cooke, Fl. Pres. Bombay 3: 236. 1958 (Repr.). P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 75. 1996. 'Amba-halad', 'Ran-haldi'.

Rhizomes yellow within, aromatic; tubers globose, yellow. Leaves 37.5–60 × 10–20 cm, oblong-elliptic or oblong-lanceolate, caudate-acuminate, base deltoid; petioles as long as or longer than blade. Flowers pinkish-white, in lateral spikes. Capsules globose, 3-valved.

Fl. & Fr.: May–July.

Illus.: Wight, Ic. t. 2005. 1853, P. Lakshmi. *op. cit.* 73.

Notes: Medicinally important plant.

Curcuma inodora Blatt. in J. Proc. Asiat. Soc. Beng. (N.S.) 26: 357. 1930; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 75. 1996.

Rhizomes with many tuberiferous fibrous roots; tubers white inside. Leaves radical, 16–31 × 7–14 cm, acuminate at tip, plicate; petiole deeply concave, winged. Flowers purplish with a yellow strip on the lip. Capsules 3-valved. Seeds arillate.

Fl. & Fr.: June–November.

Distrib.: Frequent in dense forests, Nagzira.

Curcuma pseudomontana Grah., Cat. Bombay Pl. 210. 1839; Cooke, Fl. Pres. Bombay 3: 236. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 76. 1996. *Curcuma Montana* Baker in Hook.f., Fl. Brit. India 6: 214. 1890 p.p. non Rosc. 'Ran Haldi', 'Shailandh', 'Shindalvan', 'Sindarbar'.

Herb, scapigerous *c.* 45 cm high; rhizomes small, 3–6 × 2.5 cm; roots fibrous. Leaves 6–30 × 4–12 cm. oblanceolate or oblong-lanceolate, at apex acuminate or acute, petiolate. Flowers with bright yellow staminodes, on lateral and central spikes. Capsules subglobose, 3-valved. Seeds many, arillate.

Fl. & Fr.: May–September.

Distrib.: Frequent in moist areas, Nawegaon, Nagzira.

Notes: Rhizome used as a vegetable and tonic.

Globba L.

Globba canarensis Baker in Hook.f., Fl. Brit. India 6: 206. 1890; Cooke, Fl. Pres. Bombay 3: 230. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Monocot. Fl. Maharashtra State, 78. 1996.

Herbs, up to 85 cm high, roots fascicled, tuberous. Leaves up to 12 × 3.7 cm, caudate; sheaths glabrous except the ciliate margins. Flowers in lax, 6.5–27 cm long panicles, ovary 1-celled with linear. Bulbils acuminate.

Fl. & Fr.: August–November.

Distrib.: Rare in dense forests, Nawegaon, Nagzira.

Zingiber Boehm. (*nom. cons.*)

Zingiber neesanium (Grah.) Ramam. in Sald. & Nicols. Fl. Hassan Dt. 769. 1976; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 85. 1996. *Alpinia neesana* Grah., Cat. Pl. Bombay 207. 1839. *Zingiber macrostachyum* Dalz. in Hook., Kew J. Bot. 4: 342. 1852; Baker in Hook.f., Fl. Brit. India 6: 247. 1892; Cooke, Fl. Pres. Bombay 3: 242. 1958; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981. 'Nisam'. (PLATE: Q-4)

Leafy stem reaching *c.* 50 cm tall, red, pubescent. Leaves sessile, 12.5–30 × 2.5–5 cm, lanceolate, acuminate. Flowers white or greenish-white, in long cylindric spikes. Capsules pubescent, red. Seeds dark purple; aril white, large.

Fl. & Fr.: July–September.

Illus.: P. Lakshmi. *op. cit.* 84.

Distrib.: Fairly common in moist habitats, Nawegaon, Nagzira.

MUSACEAE

Ensete Horan.

Ensete superbum (Roxb.) Cheesm. in Kew Bull. 1947: 100. 1948; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 88. 1996. *Musa superba* Roxb.,

Pl. Cor. t. 223. 1811; Baker in Hook.f., Fl. Brit. India 6: 261. 1892; Cooke, Fl. Pres. Bombay 3: 247. 1958 (Repr.). '*Chowani*', '*Kawder*', '*Rankel*'.

Tree like herbs, 3–3.6 m tall; trunk narrow below leaves. Leaves 1.5–3 × 0.5–1 m, oblong, tapering towards base. Flowers pale, in subterminal, stout, drooping spikes. Fruits oblong, subcoriaceous, ripens dry. Seeds numerous, subglobose, smooth, brown or black.

Fl. & Fr.: July–January.

Notes: Inflorescence, flower buds and fruits used as vegetable.

Cultivated Species:

Musa paradisiaca L., Sp. Pl. 1043. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 1980; P. Lakshmi. in B.D. Sharma & al. Fl. Maharashtra State, Monocot. 89. 1996. *Musa sapientum* L. var. *paradisiaca* Baker in Ann. Bot. 7: 213. 1893 & in Hook.f., Fl. Brit. India 6: 262. 1892. '*Kela*'.

Herbs, to 2 m tall. Leaves 1–2 × 0.6 m, oblong, green. Flowers unisexual, in terminal, pendulous spikes, 60–120 cm long. Fruits oblong, trigonous, ripens yellow; pulp sweet, edible. seeds irregularly globose, black.

Fl. & Fr.: Throughout the year.

Distrib.: Cultivated in gardens.

CANNACEAE

Canna L.

Canna indica L., Sp. Pl. 1: 1753; Cooke, Fl. Pres. Bombay 3: 251. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. in B.D. Sharma & al. Fl. Maharashtra State, Monocot. 91. 1996. *Canna indica* var. *orientalis* (Rose.) Baker in Hook.f., Fl. Brit. India 6: 260. 1892. '*Kardli*'.

Rootstock tuberous; stems erect. Leaves 12–40 × 09–18 cm, oblong or elliptic-lanceolate, caudate-acuminate. Flowers scarlet or yellow. Fruits erect, subspherical, obscurely 3-lobed; black, shining. Seeds black, globose.

Fl. & Fr.: Throughout the year.

Distrib.: Usually cultivated, found as an escape in Nawegaon National Park (S.K. Malhotra & K.M. Rao, *op. cit.*).

AMARYLLIDACEAE

Crinum L.

Crinum viviparum (Lam.) R. Ansari & V.J. Nair in J. Econ. Tax. Bot. 11: 205. (1987) 1988; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 96. 1996. *Amaryllis vivipara* Lam., Encycl. 1: 123. 1783. *Crinum defixum* Ker-Gawl. in J. Sci. Arts. London 3: 105. 1817; Baker in Hook.f., Fl. Brit. India 6: 281. 1892; Cooke, Fl. Pres. Bombay 3: 257. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 131. 1981. '*Kumbaya*', '*Plykand*'.

Bulbs 4.5–6.5 cm in diam., ovoid, cylindric. Leaves 50–70 × 2–2.5 cm, linear, coriaceous. Scapes 40–70 cm long, cylindric. Flowers white, in 5–12 flowered umbels; perianth tube green; filaments purple. Capsules subglobose, beaked by perianth tube. Seeds rugose.

Fl. & Fr.: June–October.

Illus.: P. Lakshmi. & B.D. Sharma, Fl. Nasik Dt. 561. Photo & f. 32. 1991 (*Crinum defixum*).

Distrib.: Frequent near pond, moist places, Nawegaon Nagzira.

Notes: Bulbs used for burns and swellings.

HYPOXIDACEAE

Curculigo Gaertn.

Curculigo orchioides Gaertn., Fruct. 1: 63, t. 13. 1788; Baker in Hook.f., Fl. Brit. India 6: 279. 1892; Cooke, Fl. Pres. Bombay 3: 255. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 102. 1996. '*Kajuri*', '*Kalimusli*'.

Herbs, 19–35 cm high, erect, perennial; rootstock stout, short or elongate, root fibres copious, fleshy. Leaves sessile or petiolate, 12–40 × 2.5 cm, linear or linear-lanceolate, membranous, plicate, base sheathing. Inflorescence of small racemes, upper staminate, lower hermaphrodite. Flowers bright-yellow. Capsules hypogaeous, 1–4 seeded, with a slender beak; septa spongy. Seeds oblong; testa deeply grooved in wavy lines, black.

Fl. & Fr.: June–October.

Distrib.: Common in dense forests, Nawegaon, Nagzira.

Notes: Rhizomes eaten by wild animals. Also used medicinally for Asthma, bronchitis, diarrhoea, jaundice, piles, skin diseases etc.

AGAVACEAE

Agave americana L., Sp. Pl. 323. 1753. var. ***variegata*** Hook. in Curtis, Bot. Mag. t.3654. 1899; Cooke, Fl. Pres. Bombay 3: 261. 1958 (Repr.). S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 131. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State Monocot. 104. 1996. '*Latia-Guial*'.

Undershrubs. Leaves dark green and yellow, twisted, oblong-lanceolae, grey, prickly on the edges. Flowers yellowish-green, on a bracteate scape or stalk. Fruits oblong-clavate.

Fl. & Fr.: October–December.

Distrib.: Naturalized in the area, Nawegaon.

DIOSCOREACEAE

Dioscorea L.

Key to the species

- | | |
|----------------------|-----------------------|
| 1a. Leaves simple | 2 |
| 1b. Leaves compound | D. pentaphylla |
| 2a. Stems winged | D. alata |
| 2b. Stems not winged | D. bulbifera |

Dioscorea alata L., Sp. Pl. 1033. 1753; Hook.f., Fl. Brit. India 6: 296. 1892; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 131. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 109. 1996. *Dioscorea alata* var. *globosa* (Roxb.) Prain, Bengal Pl. 2: 1067. 1903. 'Goradu', 'Karukavinda'.

Extensive twiners, tubers large, solitary; stems winged, 15–16 cm long. Leaves 6.5–17 × 5.4–12 cm, simple, subsagittate or subhastate-ovate, acuminate, mucronulate, 5-nerved. Male flowers in fascicled spikes on leafless branches; female flowers in spikes longer than leaves. Capsules in two semicircular lobes, drying reddish-brown. Seeds winged.

Fl. & Fr.: August.

Illus.: Wight, Ic. t. 810 & 812. 1844.

Distrib.: Frequent, sometimes cultivated or escape, Nawegaon.

Dioscorea bulbifera L., Sp. Pl. 1033. 1753; Hook.f., Fl. Brit. India 6: 296. 1892; Cooke, Fl. Pres. Bombay 3: 265. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 111. 1996. 'Godri', 'Gorkan', 'Kadu-kand', 'Karanda'. (PLATE:C-1)

Herbaceous twiners; bulbil warted, large globose or oblong. Stems terete bulbiliferous. Leaves 7.5–14.5 × 5.5–9.5 cm, broadly ovate-orbicular, acuminate or caudate at apex, cordate at base. Male flowers greenish-white sessile, axillary, solitary or fascicled in pendulous spikes; female spikes longer than males. Capsule oblong, broader upwards. Seeds winged.

Fl. & Fr.: July–October.

Illus.: Prain & Burkill in Ann. Roy. Bot. Gard. Calcutta 14: 111. t. 51–59. 1936.

Distrib.: Frequent in scrub forests. Nawegaon, Nagzira.

Notes: Tubers are used as vegetable.

Dioscorea pentaphylla L., Sp. Pl. 1032. 1753; Hook.f., Fl. Brit. India 6: 261. 1892; Cooke, Fl. Pres. Bombay 3: 264. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 113. 1996. 'Shend-vel'.

Herbaceous twiners. Root tubers oblong; stems prickly at base, bulbiliferous in the leaf-axils. Leaves alternate 5–7 foliolate; leaflets 3–12 × 1–5 cm, elliptic-ovate,

acuminate. Flowers white, unisexual; male flowers axillary, solitary or clustered in racemes; female flowers in solitary or paired in pendulous spikes. Capsules angled, winged. Seeds 6 subquadrate, winged towards base.

Fl. & Fr.: July–November.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 4: t. 613. 1988.

Distrib.: Common on trees and bushes, Nawegaon, Nagzira.

Notes: Flowers, fruits, buds and young shoots are edible. Fruits eaten by wild animals also. Tubers useful for Asthma, cough and rheumatic pains.

LILIACEAE

Key to the genera

- | | |
|--|---------------------|
| 1a. Leaves replaced by cladodes; fruit a berry | Asparagus |
| 1b. Leaves not as above; fruit a loculicidal or septicidal capsule | 2 |
| 2a. Underground perennial stems small | Chlorophytum |
| 2b. Underground perennial stems large in proportion to roots | 3 |
| 3a. Aerial annual stems climbing; leaves broad with tendril-like tips; rootstock tuber, irregular, naked | Gloriosa |
| 3b. Aerial annual stems or scapes erect; leaves narrow; rootstock a globose, coated corm or bulb | 4 |
| 4a. Perennial stem a solid corm covered with brown sheaths | Iphigenia |
| 4b. Perennial stem a tunicated bulb | Dipcadi |

Asparagus L.

Asparagus racemosus Willd. var. **javanica** (Kunth) Baker in J. Linn. Soc. Bot. 14: 317. 1892; Hook.f., *Fl. Brit. India* 6: 261. 1892; Cooke, *Fl. Pres. Bombay* 3: 270. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 9. 1980; P.Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 119. 1996. *Asparagus javanica* Kunth, *Enum. Pl.* 5: 100. 1850. '*Ashwal*', '*Satavari*'. (PLATE:D-3)

Undershrubs, scandent, spinous, much-branched; rootstock tuberous; cladodes spinous-pointed. Leaves 0.42–0.63 cm long, linear-subulate, with a stout conical spinous spur. Flowers white, in simple racemes; bracts triangular. Berries globose, ripen red.

Fl. & Fr.: June–December.

Illus.: P. Lakshmi. *op. cit.* 120.

Distrib.: Frequent in dense deciduous forests, Nawegaon, Nagzira.

Notes: Roots used in preparation of medicated oils and tonic.

Chlorophytum Ker-Gawl.

Chlorophytum glaucum Dalz. in Hook., *Kew J. Bot.* 2: 142. 1850; Hook.f., *Fl. Brit. India* 6: 234. 1892; Cooke, *Fl. Pres. Bombay* 3: 280. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 127. 1996.

Herbs, annual; root-fibres cylindric. Leaves 6–8, 25–40 × 2–5 cm, acute, glaucous. Scapes erect, simple. Flowers white, in racemes. Capsules globose, emarginated, acutely 3-winged. Seeds 2–4, orbicular, compressed, dull black.

Fl. & Fr.: September–October.

Illus.: P. Lakshmi. *op. cit.* 128.

Distrib.: Frequent in dense deciduous forest, under shade, Nawegaon.

Dipcadi Medik.

Dipcadi ursulae Blatt., in J. Bombay Nat. Hist. Soc. 32: 735. 1928; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monooct. 133. 1996.

Herbs, scapigerous, 15–25 cm long; bulbs globose or ovoid, tunicated. Leaves 1–6, 12–25 × 0.5–0.6 cm, linear, plicate. Flowers white, cream or orange, greenish outside. Capsules obovoid-oblong, straw coloured. Seeds orbicular.

Fl. & Fr.: March–August.

Illus.: Deb & Dasgupta in J. Bombay Nat. Hist. Soc. 75: 63. f. 7. 1978; Lakshmi *op. cit.* 132.

Distrib.: Frequent among grasses in moist places, Nagzira.

Notes: Endemic to Peninsular India.

Gloriosa L.

Gloriosa superba L., Sp. Pl. 305. 1753; Hook.f., Fl. Brit. India 6: 358. 1892; Cooke, Fl. Pres. Bombay 3: 274. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 137. 1996. ‘*Bachnag*’, ‘*Kadya-nag*’, ‘*Kal-lavi*’.

Herbaceous climbers, perennial; stems leafy. Leaves 5–11 × 1.2–5 cm, sessile, ovate-lanceolate, apex acuminate, cordate at base, tendrillate. Flowers yellow, orange, showy, axillary, solitary or subcorymbose towards the end of branches. Capsules ellipsoid-oblong, torulose. Seeds many, dorsally compressed, warty.

Fl. & Fr.: July–October.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 743. 1982.

Distrib.: Frequent on bushes, Nawegaon.

Notes: Roots are very useful in Asthma, itches, leprosy, skin diseases, tumours etc. The plant is threatened due to over exploitation for commercial purposes.

Iphigenia Kunth

Key to the species

- 1a. Stems branched; filaments glabrous
- 1b. Stems not branched; filaments hairy

I. magnifica
I. indica

Iphigenia indica (L.) A. Gray apud kunth, Enum. Pl. 4: 213. 1843; Hook.f., Fl. Brit. India 6: 357. 1892; Cooke, Fl. Pres. Bombay 3: 275. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 139. 1996. '*Markalani*'.

Herbs, 10–25 cm high; corms subglobose, tunicated. Leaves 5–13 × 0.5–2 cm, linear or linear-lanceolate, sessile, base sheathing. Flowers purple, few or many, star-like, in terminal racemes. Capsules oblong, 3-grooved, obtuse. Seeds ellipsoid or subglobose, brown.

Fl. & Fr.: June–September.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 744. 1982.

Distrib.: Frequent in dense forests, Nagzira.

Iphigenia magnifica Ansari & Rolla K.M. Rao in Bull. Bot. Surv. India 20: 162. t. 1. (1978) 1979; Ansari in Red data Book Ind. Pl. 1: 183. 1987; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 139. 1996.

Herbs, 25–30 cm tall, erect. Leaves 14–17 × 0.2–0.3 cm, linear-lanceolate. Flowers deep violet or brownish purple, in racemes. Capsules subglobose or ellipsoid-oblong, trilocular, 3-valved. Seeds many subglobose, brown.

Fl. & Fr.: September–December.

Illus.: Ansari & Rolla K.M. Rao, *op. cit.*; Kothari & S. Moorthy, Fl. Raigad Dist. 406. 1993.

Distrib.: On exposed grassy slopes of the hills on gravelly soil, Nagzira.

Notes: Endemic to Maharashtra. The seeds contain c. 0.7 % colchicine. The plant at present is vulnerable and may lead to be endangered if it is exploited more for commercial purposes (Ansari, *op. cit.* ; Kothari & S. Moorthy, 1993).

SMILACACEAE

Smilax L.

Key to the species

- 1a. Leaf blades of flowering branches orbicular-ovate, 5–7-costate **S. ovalifolia**
- 1b. Leaf blades of flowering branches broadly ovate or broadly elliptic, 3–5-costate **S. zeylanica**

Smilax ovalifolia Roxb., Fl. Ind. 3: 794. 1832; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 143. 1996. *Smilax macrophylla* Roxb. *op. cit.* 793 non Willd. 1805; Hook.f., Fl. Brit. India 6: 310. 1892; Cooke, Fl. Pres. Bombay 3: 271. 1958 (Repr.). '*Chotvel*'. (PLATE: L-1)

Scandent shrubs; stems, terete, striate, armed with distant prickles or unarmed. Leaves thick, coriaceous, 6–16 × 5.5–12 cm, broadly ovate or suborbicular, petiolate, acuminate at apex, rounded at base, tendrils near the base of petioles. Flowers unisexual, greenish-yellow, in many-flowered, pedunculate umbels. Berries globose, 1–2 seeded.

Fl. & Fr.: August–November.

Illus.: T. Koyama in Adv. Front. Pl. Sci. 4: 48. t. 1. 1963.

Distrib.: Frequent in scrub forests, Nawegaon.

Smilax zeylanica L., Sp. Pl. 1429. 1753; Hook.f., Fl. Brit. India 6: 309. 1892; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 144. 1996. '*Jangli Ael*'.

Scandent shrubs; stems straggling, sparsely prickly. Leaves 5–15 × 2–8 cm, elliptic-oblong or ovate-oblong, shortly cuspidate at apex, rounded or cordate at base, coriaceous. Flowers greenish, caducous, numerous, in axillary, pedunculate umbels. Berries globose, 3-seeded.

Fl. & Fr.: June–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 746. 1982.

Distrib.: Frequent in mixed deciduous forests, Nagzira.

Notes: Twigs used for cleaning teeth. Young branches and leaves are used as vegetable. Leaves used in dysentery and rheumatic pains.

PONTEDERIACEAE

Monochoria K.B. Presl

Monochoria vaginalis (Burm.f.) K.B. Presl, Rel. Haenk. 1: 128. 1827; Hook.f., Fl. Brit. India 6: 363. 1892; Cooke, Fl. Pres. Bombay 3: 286. 1958; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 131. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 2: 146. 1996. *Pontederia vaginalis* Burm.f., Fl. Ind. 80. 1768.

Herbs, 4–40 cm tall; stems erect or obliquely erect. Leaves 3.5–6.8 × 2.9–3.2 cm, ovate, ovate-oblong, at apex acute to acuminate. Flowers dark blue, in axillary, 3–25 flowered subspicate racemes. Capsules ellipsoid. Seeds brown, oblong, elongate, ribbed longitudinally, glandular hairy.

Fl. & Fr.: May–September.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 748. 1982.

Distrib.: Frequent on margins of ponds and lakes, Nagzira.

COMMELINACEAE

Key to the genera

- | | |
|--|------------------|
| 1a. Fertile stamens 2–3, staminodes 1–4 | 2 |
| 1b. Fertile stamens 6 (rarely 5), staminodes absent | 3 |
| 2a. Cymes solitary, included in a spathe | Commelina |
| 2b. Cymes paniced, naked, rarely in a spathe | Murdannia |
| 3a. Cymes enclosed in biseriate, falcate, imbricating bracteoles | Cyanotis |
| 3b. Bracteoles not as above | Tonningia |

Commelina L.
Key to the species

- | | |
|---|------------------------|
| 1a. All the cells of the ovary 1-ovuled | 2 |
| 1b. Two anticus cells of the ovary 2-ovuled, posticus cell 1 ovuled or obsolete | 3 |
| 2a. Capsules subequally 3-valved; seeds free in the cell | C. maculata |
| 2b. Capsules 2 valved; seeds adnate to the cell | C. erecta |
| 3a. Capsules 2-celled | 4 |
| 3b. Capsules 3-celled | 5 |
| 4a. Capsules constricted in the middle, bicuspidate; seeds not appendaged | C. clavata |
| 4b. Capsules neither constricted in the middle, nor cuspidate; seeds appendaged at each end | C. attenuata |
| 5a. Posticus cell not keeled, indehiscent | C. forsskalaei |
| 5b. Posticus cell keeled, dehiscent at length | 6 |
| 6a. Spathe funnel-shaped or hooded | C. benghalensis |
| 6b. Spathe complicate, margins free or connate at base only | C. hasskarlii |

Commelina attenuata Koen. ex Vahl, Enum. Pl. 2: 168. 1806; Hook.f., Fl. Brit. India 6: 372. 1892; Cooke, Fl. Pres. Bombay 3: 293. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 149. 1996.

Herbs 40–80 cm. Leaves 2.5–5.6 × 0.3–1.0 cm, narrowly ovate-lanceolate, at apex acute to caudate-linear, or linear-lanceolate, base subobtuse; sheaths ciliate. Flowers blue. Capsules subquadrate.

Fl. & Fr.: August–November.

Illus.: Lakshmi. *op. cit.* 150.

Distrib.: Frequent along lakes, Nagzira.

Commelina benghalensis L., Sp. Pl. 41. 1753; Hook.f., Fl. Brit. India 6: 370. 1892; Cooke, Fl. Pres. Bombay 3: 291. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 484. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 149. 1996.

Herbs; stems 50–80 cm long, slender, dichotomously branched, creeping. Leaves 2.5–8 × 1–4 cm, ovate or ovate-oblong, base inequilateral, cuneate or cordate, margins ciliate or rufous-hairy. Flowers blue, 2–3 in spathaceous cymes. Capsules membranous, pyriform. Seeds 5, oblong, pitted.

Fl. & Fr.: July–December.

Illus.: Matthew, Fur. Illus. Fl. Tamilnadu Carnatic 2: t. 751. 1982.

Distrib.: Frequent among bushes, Nagzira.

Notes: Leaves used as vegetable by local people.

Commelina clavata C.B. Clarke Commel. & Cyrt. Beng. 15, t. 5. 1874; Hook.f., Fl. Brit. India 6: 371. 1892; Cooke, Fl. Pres. Bombay 3: 292. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 151. 1996.

Stems 25–75 cm long; branches diffuse, rooting at nodes. Leaves $3.5\text{--}7.2 \times 0.5\text{--}1\text{--}9$ cm, ovate, elliptic-lanceolate or linear-lanceolate, acuminate, narrowed at base. Spathes ovate-lanceolate, at apex acuminate, base cordate. Capsules quadrate-oblong, truncately rounded at the ends. Seeds 4, cylindric, truncate at one end, rounded at the other, pitted.

Fl. & Fr.: September–October.

Illus.: P. Lakshmi. *op. cit.* 152.

Distrib.: Rare in moist places, Nawegaon.

Commelina erecta L., Sp. Pl. 41. 1753; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 151. 1996. *Commelina kurzii* C.B. Clarke in J. Linn. Soc. Bot. 11: 444. 1871; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 132. 1981. *Commelina undulata* R.Br., Prodr. 270. 1810; Hook.f., Fl. Brit. India 6: 373. 1892.

Herbs, 40–50 cm tall. Leaves $4.5\text{--}14.5 \times 1.2\text{--}3.5$ cm, lanceolate or ovate-lanceolate, pubescent beneath; sheaths ciliate. Spathes cucullate, broadly cordate, recurved. Flowers blue. Capsules 2-valved, ellipsoid, apiculate. Seeds oblong, blackish-brown.

Fl. & Fr.: August–October.

Illus.: Mahesh., Illus. Fl. Delhi f. 202. 1966 (*Commelina kurzii*).

Distrib.: Common in moist places, Nawegaon.

Commelina forsskalaei Vahl, Enum. Pl. 2: 172. 1806; Hook.f., Fl. Brit. India 6: 371. 1892; Cooke, Fl. Pres. Bombay 3: 292. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 132. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 153. 1996. '*Canpet*'.

Herbs, rooting at lower nodes. Leaves $1.2\text{--}4.4 \times 0.4\text{--}0.9$ cm, linear-oblong or slightly elliptic, sparsely hairy; sheaths pubescent. Spathes hooded, ovate. Flowers blue. Capsules oblong, laterally compressed. Seeds orange-brown.

Fl. & Fr.: July–December.

Illus.: Mahesh., Illus. Fl. Delhi f. 204. 1966.

Distrib.: Frequent in moist places, Nawegaon.

Commelina hasskarlii C.B. Clarke, Commel. & Cyrt., Beng. 13, t. 3. 1874; Hook.f., Fl. Brit. India 6: 370. 1892; Cooke, Fl. Pres. Bombay 3: 291. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 153. 1996.

Herbs; stems branched, creeping or ascending, often rooting at nodes. Leaves $2\text{--}7 \times 1\text{--}2$ cm, lanceolate or ovate-lanceolate. Flowers blue, in spathaceous cymes. Capsules subtruncate, apiculate. Seeds terete, truncate at one end, rounded at other end.

Fl. & Fr.: August–January.

Illus.: Mahesh. *Illus. Fl. Delhi* f. 204. 1966; P. Lakshmi. *op. cit.* 154.

Distrib.: Frequent in moist places, Nawegaon.

Commelina maculata Edgew. in *Trans. Linn. Soc.* 20: 89. 1846; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 159. 1996. *Commelina obliqua* Buch.-Ham. ex D. Don, *Prodr. Fl. Nepal.* 45. 1825 non Vahl, 1806; Hook.f., *Fl. Brit. India* 6: 70. 1892; Cooke, *Fl. Pres. Bombay* 3: 293. 1958 (Repr.).

Herbs, 60–90 cm long; stems fleshy, branched, suberect or procumbent. Leaves 7.5–14.5 × 2.5–5 cm, variable, ovate-lanceolate or elliptic-lanceolate, acute or caudate-acuminate at apex, margins of leaf sheath rusty hairy. Flowers blue, in simple racemes. Capsules subglobose, 3-valved. Seeds 3, oblong or ellipsoid, smooth, blackish.

Fl. & Fr.: August–November.

Illus.: Rolla K.M. Rao & Kammathy in *J. Bombay Nat. Hist. Soc.* 59: 60, t. 1(B). 1962.

Distrib.: Frequent near moist places, Nawegaon.

***Cyanotis* D. Don (*nom. cons.*)**

Cyanotis cristata (L.) D. Don, *Prodr. Fl. Nepal.* 46. 1825; Hook.f., *Fl. Brit. India* 6: 385. 1892; Cooke, *Fl. Pres. Bombay* 3: 304. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78(3): 484. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 163. 1996. *Tradescantia cristata* L., *Sp. Pl.* 42. 1753.

Herbs; stems 15–40 cm long, much branched, slender, rooting at nodes creeping and ascending. Leaves 2.5–6.5 × 0.6–1.0 cm, ovate or oblong-lanceolate, obtuse at apex, cordate at base, margins ciliate. Flowers rose to purple, in scorpioid cymes. Capsules oblong, trigonous, truncate, membranous. Seeds trigonous.

Fl. & Fr.: July–November.

Illus.: Wight, *Ic. t.* 2082. 1853.

Distrib.: Common in marshy places, Nagzira,.

***Murdannia* Royle (*nom. cons.*)**

Key to the species

- | | |
|---|----------------------------|
| 1a. Cells of ovary 1-ovuled | <i>M. vaginata</i> |
| 1b. Cells of ovary 2-many-ovuled | 2 |
| 2a. Cells of ovary 2 ovuled; capsules 2-seeded | <i>M. nudiflora</i> |
| 2b. Cells of ovary 3-many ovuled; capsules 1,3 or more seeded | <i>M. spirata</i> |

Murdannia nudiflora (L.) Brenan in *Kew Bull.* 1952: 189. 1952; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 175. 1996. *Commelina nudiflora* L., *Mant.* 177. 1767 (non *Sp. Pl.* 41. 1753). *Aneilema nudiflorum* (L.) R.Br., *Prodr.* 271. 1810; Hook.f., *Fl. Brit. India* 6: 378. 1892; Cooke, *Fl. Pres. Bombay* 3: 298. 1958 (Repr.).

Annual herbs; stems 15–35 cm tall, branched, procumbent. Leaves $2.5\text{--}9.5 \times 0.2\text{--}0.4$ cm, linear or linear-lanceolate, acute to acuminate at apex, cordate at base. Flowers bluish purple, pink or blue, in corymbose-paniculate cymes. Capsules trigonously subglobose, mucronate. Seeds cuboid, dark brown, deeply pitted.

Fl. & Fr.: July–November.

Illus.: P. Lakshmi. & B.D. Sharma, Fl. Nasik Dt. 485, f. 39. 1991.

Distrib.: Common in moist and mashy places, Nawegaon, Nagzira.

Murdannia spirata (L.) Brueck. in Engl & Prantl, Pflanzenfam. (ed. 2), 15a: 173. 1930; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 177. 1996. *Commelina spirata* L., Mant. 176. 1767. *Aneilema spiratum* (L.) R.Br., Prodr. 271. 1810; Hook.f., Fl. Brit. India 6: 377. 1892; Cooke, Fl. Pres. Bombay 3: 296. 1958 (Repr.).

Herbs, 15–18 cm high, decumbent, rooting at lower nodes. Leaves sessile, $1.5\text{--}3.5 \times 0.5\text{--}0.8$ cm, lower broadly linear-lanceolate, upper oblong, cordate. Flowers bluish-purple, few in dichotomously branched panicles. Capsules oblong, trigonous, mucronate. Seeds 1-seriate, cuboid, white or straw coloured.

Fl. & Fr.: July–November.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 752. 1982.

Distrib.: Frequent in moist places, Nawegaon.

Murdannia vaginata (L.) Brueck. in Engl. & Prantl, Pflanzenfam. ed. 2, 15a: 173. 1930; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 177. 1996. *Commelina vaginata* L., Mant. 177. 1767. *Aneilema vaginatum* (L.) R.Br., Prodr. 271. 1810; Hook.f., Fl. Brit. India 6: 381. 1892; Cooke, Fl. Pres. Bombay 3: 300. 1958 (Repr.).

Herbs, 15–35 cm high; stems slender, rooting at lower nodes. Leaves $5.5\text{--}10.5 \times 0.6\text{--}0.9$ cm, linear-lanceolate, at apex acuminate. Flowers blue, with jointed pedicels, solitary or 2–6-fascicled in axils of persistent bracts. Capsules subglobose, cuspidate. Seeds hemispheric, rugose, black.

Fl. & Fr.: August–October.

Illus.: Wight, Ic. t. 1853.

Distrib.: Frequent in moist places, Nawegaon.

Tonningia Neck. ex A.H.L. Juss.

Key to the species

1a. Filaments bearded; capsules beaked

T. axillaris

1b. Filaments glabrous; capsules 3-horned at apex

T. cucullata

Tonningia axillaris (L.) O. Ktze., Rev. Gen. Pl. 2: 721. 1891; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 182. 1996. *Commelina axillaris* L., Sp. Pl. 42. 1753. *Cyanotis axillaris* (L.) D. Don, Prodr. Fl. Nepal. 46. 1825;

Hook.f., Fl. Brit. India 6: 388. 1892; Cooke, Fl. Pres. Bombay 3: 305. 1958 (Repr.). *Amischophacelus axillaris* (L.) Rolla K.M. Rao & Kammathy in J. Linn. Soc. Bot. 59: 306. 1966; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(30): 484. 1981.

Annuals herbs, 15–40 cm long; stems diffusely branched, spreading with ascending branches. Leaves sessile, $4.5\text{--}14.5 \times 0.5\text{--}1.2$ cm, linear to linear-lanceolate, acute to acuminate; sheaths inflated, ciliate. Flowers bluish-violet, fascicled, axillary. Capsules oblong-ellipsoid, beaked. Seeds oblong, flat, truncate at base, rounded at apex, shining, mottled.

Fl. & Fr.: Mahesh., Illus. Fl. Delhi f. 205. 1966 (*Cyanotis axillaris*).

Distrib.: Common in moist, marshy places, Nagzira.

Tonningia cucullata (Roth) O. Ktze., Rev. Gen. Pl. 722. 1891; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 182. 1996. *Tradescantia cucullata* Roth, Nov. Pl. Sp. 189. 1821. *Cyanotis cucullata* (Roth) Kunth, Enum. Pl. 4: 107. 1843; Hook.f., Fl. Brit. India 6: 389. 1892; *Amischophacelus cucullata* (Roth) Rolla K.M. Rao & Kammathy in J. Linn. Soc. Bot. 59: 306. 1966; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 9. 1980.

Herbs, glabrous or sparsely hairy, prostrate or suberect, rooting at nodes. Leaves $1.2\text{--}6.5 \times 0.3\text{--}0.7$ cm, linear-lanceolate. Flowers pinkish-purple. Capsules ellipsoid-oblong, depressed in the centre. Seeds brown.

Fl. & Fr.: July–December.

Illus.: Tad. & Venkatanarayana, Handb. S. Indian Weeds 412. f. 162. 1955 [Rev. ed. (*Cyanotis cucullata*)].

Distrib.: Common in moist places, Nawegaon.

ARECACEAE (PALMAE)

Phoenix L.

Key to the species

1a. Stems 7.5–37.5 m tall

P. sylvestris

1b. Stems 0.15–7.5 m high often stem less

P. acaulis

Phoenix acaulis Roxb. ex Buch-Ham. in Trans. Linn. Soc. London 15: 87. 1826; Becc. & Hook.f. in Hook.f., Fl. Brit. India 6: 426. 1892; Cooke, Fl. Pres. Bombay 3: 312. 1958 (Repr.). P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 193. 1996. '*Shevara*'.

Palms, Dwarf often stemless; stems bulbiferous. Leaves 0.5–1.5 m long; leaflets $25\text{--}45 \times 0.75\text{--}1.75$ cm, stiff, base thickened and decurrent; petiole with spines. Flowers in spadix. Spathes c. 15cm long, oblong-elliptic, ribbed. Seeds deeply grooved.

Fl. & Fr.: November–May.

Illus.: Laxmi. Op. cit. 192. fig1-2.

Distrib: Common, in scrub forest, Nagzira.

Phoenix sylvestris (L.) Roxb., Fl. Ind. 3: 787. 1832; Becc. & Hook.f. in Hook.f., Fl. Brit. India 6: 425. 1892; Cooke, Fl. Pres. Bombay 3: 311. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 195. 1996. *Elate sylvestris* L., Sp. Pl. 1189. 1753. '*Shindi*'.

Trunks 9–15 m tall, rough from persistent bases of leaf-sheaths. Leaves 3–4.5 m long, grayish-green; pinnules numerous, densely fascicled, 15–45 × 2–2.5 cm, ensiform. Male flowers white; spadix 60–90 cm long, erect; spathes woody; spikes numerous towards at apex of peduncle in fascicles, simple. Females with spadix and spathe same as in male, spikes arranged in distinct groups. Fruits oblong-ellipsoid, orange-yellow. Seeds rounded at the ends.

Fl. & Fr: January–October.

Illus: Blatt. Palms Brit. Ind. Ceyl. 3, t. 2. 1978 (Repr.).

Distrib: Near guest house, Nagzira.

Notes: Fruits are edible. Plant sap useful for cooling. Leaves used for thatching and hut construction by local people.

Cultivated Species:

Cocos nucifera L., Sp. Pl. 1188. 1753; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 200. 1996. '*Narel*'.

Trunk 12–24 m high, annulate, thickened at base. Leaves 1.8–4.5 m long; leaflets equidistant, 60–90 cm long, linear-lanceolate, coriaceous; spadix 1.2–1.8 m long, stout, androgynous, simply paniced; branches bearing scattered female flowers towards their bases and numerous males above. Fruits 3-gonous, obovoid or subglobose green or yellowish.

Fl. & Fr: Throughout the year.

Notes: Planted in Nawegaon and Nagzira. Fruits are edible and source of coconut oil.

TYPHACEAE

Typha L.

Typha angustifolia L., Sp. Pl. 971. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 207. 1996. *Typha angustata* Bory & Chaub. Expend. Sci. Moree Bot. 2, 1: 338. 1832; Hook.f. & Thoms. in Hook.f., Fl. Brit. India 1: 190. 1872; Cooke, Fl. Pres. Bombay 3: 326. 1958 (Repr.). '*Pan-Kanis*'.

Herbs, 1–2 m tall, robust, tufted, perennial. Leaves 1.5–2 × 0.5–2.5 cm, linear, thick, subcylindrical above the sheath. Male and female spikes separated by a considerable interval, up to 30 × 0.6–2.3 cm, brown. Male flowers slender and paler than the female ones and mixed with clavate sterile pistillodes. Nutlets small, ellipsoid, membranous, indehiscent, brown.

Fl. & Fr.: March–October.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 206. 1966.

Distrib.: In marshes, common in canal, Nawegaon.

Notes: Young shoots are edible. Inflorescence is antiseptic and used for healing wounds.

ARACEAE

Key to the genera

- | | |
|--|-----------------------|
| 1a. Water or marshy plants | Pistia |
| 1b. Terrestrial plants | 2 |
| 2a. Flowers appear before the leaves; ovules anatropous | Amorphophallus |
| 2b. Flowers and leaves present together; ovules orthothopous | Typhonium |

Amorphophallus Bl. ex Decne. (*nom. cons.*)

Amorphophallus paeoniifolius (Dennst.) Nicols. var. **campanulatus** (Decne.) Sivadasan in *Taxon* 32: 130. 1983; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 210. 1996. *Amorphophallus campanulatus* Decne. in *Nouv. Ann. Mus. Hist. Paris* 3: 366. 1834; Hook.f., *Fl. Brit. India* 6: 513. 1893; Cooke, *Fl. Pres. Bombay* 3: 336. 1958 (Repr.). *Arum campanulatum* Wight, *Icon. T.* 782. 1844. 'Suran'.

Bulbiferous herbs with depressed-globose, corms. Leaves 30–90 cm broad, simple or forked; leaflets oblong acute. Male Inflorescence sub-turbinate. Berries obovoid, red. 2–3-seeded.

Fl. & Fr.: June–September.

Illus.: Wight, *Icon. T.* 782. 1844 (*Arum campanulatum*).

Distrib.: Frequent in dense forests, Nagzira.

Notes: Leaves and tuber used as vegetable. Tubers useful in constipation, throat and earache, pimples, rheumatic pains etc.

Pistia L.

Pistia stratiotes L., *Sp. Pl.* 963. 1753; Hook.f., *Fl. Brit. India* 6: 497. 1893; Cooke, *Fl. Pres. Bombay* 3: 328. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 219: 1996. 'Havavel', 'Brandal'.

Herbs, stemless, stoloniferous. Leaves obovate-cuneate, rounded, densely pubescent on both surfaces. Spathes white, obliquely campanulate. Fruits membranous, ovoid. Seeds many, oblong or obovoid.

Fl. & Fr.: November–January.

Illus.: Matthew, *Illus. Fl. Tamilandu Carnatic* 2: t. 768. 1982.

Distrib.: Common in ponds and lakes.

Typhonium Schott

Typhonium bulbiferum Dalz. in Hook., Kew J. Bot. 4: 113. 1852; Hook.f., Fl. Brit. India 6: 511. 1893; Cooke, Fl. Pres. Bombay 3: 333. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 223. 1996. '*Rantiri*'.

Herbs 15–20 cm tall; tubers 0.5–1.5 cm in diam. Leaves triangular, sagittate or cordate, 6–12 cm long. Spathe slender, rose-coloured. Spadix yellow. Neuters above the female inflorescence, yellow.

Fl. & Fr.: July–August.

Illus.: Lakshmi. *Op. cit.* 224.

Distrib.: Rare, among grasses in moist places, Nagzira.

Notes: The species is endemic to Western Ghats, Karnataka, Kerala and Meghalaya (Kothari & S. Moorthy, p. xxvii 1993; N.P. Singh & S. Karthik. 2000).

APONOGETONACEAE

Aponogeton L.f. (*nom. cons.*)

Aponogeton natans (L.) Engl. & Krause in Engl., Pflanzenr. 24: 11. 1906; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 238. 1996. *Aponogeton monostachyon* L.f., Suppl. 214. 1781; Hook.f., Fl. Brit. India 6: 564. 1893; Cooke, Fl. Pres. Bombay 3: 348. 1958 (Repr.).

Aquatic herbs, submerged. Submerged leaves lanceolate or oblong, 3–5 × 0.3–1.5 cm; floating leaves linear-oblong. Flowers blue, bluish-violet, lilac or rosy pink, in spikes. Follicles 3, subglobose. Seeds oblong, ribbed.

Fl. & Fr.: July–October.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 620. 1988.

Distrib.: Common in lakes, shallow waters, Nawegaon, Nagzira.

BUTOMACEAE

Butomopsis Kunth

Butomopsis latifolia (D. Don) Kunth, Enum. Pl. 3: 165. 1841; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 237. 1996. *Butomus latifolius* D. Don, Prodr. Fl. Nepal. 22: 1825. *Butomopsis lanceolata* (Roxb.) Kunth, *op. cit.*; Hook.f., Fl. Brit. India 6: 562. 1893; Cooke, Fl. Pres. Bombay 3: 347. 1958 (Repr.). *Tenagocharis latifolia* (D. Don) Buchen. in Abh. Naturw. var. Bremen 2: 6. 1868; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980.

Herbs, annual, juice milky. Leaves 4.5–14 × 1.4–5.5 cm, elliptic-lanceolate, at apex acute, base attenuated. Flowers white or light blue. Follicles 6–7, reticulately veined, tapering into short beak. Seeds numerous, oblong, with rounded ends, dark brown, shining.

Fl. & Fr.: September–February.

Illus.: Subra. Aquat. Ang. 88, t. 4. 1962.

Distrib.: Submerged in lakes, Nawegaon.

POTAMOGETONACEAE

Potamogeton L.

Potamogeton nodosus Poir. in Lam., Encycl. Suppl. 4: 535. 1816; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 240. 1996. *Potamogeton indicus sensu* Hook.f., Fl. Brit. India 6: 565. 1893 non Roxb. 1832; Cooke, Fl. Pres. Bombay 3: 349. 1958 (Repr.).

Aquatic herbs; stems terete, branched, smooth. Leaves 5.5–10.5 × 2.4–3.5 cm, petiolate, alternate or uppermost opposite, oblong or elliptic-lanceolate, acute or obtuse, thinly coriaceous, base acute or rounded; the lower submerged. Peduncles axillary or leaf-opposed, stout or slender. Spikes green, dense-flowered. Drupelets obliquely obovoid, spongy, shortly beaked, 1-seeded.

Fl. & Fr.: October–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 775. 1982; Kothari, in Bull. Bot. Surv. India 43: f. 15 (1–8). 2001.

Distrib.: In lakes, Nawegaon, Nagzira.

NAJADACEAE

Najas L.

Najas indica (Willd.) Cham. in Linnaea 4: 501. 1829; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 243. 1996. *Caulina indica* Willd. in Mem. AC. R. Sc. Berl. 89, f. 3. 1801. *Najas minor sensu* Hook.f., Fl. Brit. India 6: 569. 1893 *pro majore parte* non All 1785; Cooke, Fl. Pres. Bombay 3: 352. 1958 (Repr.).

Herbs, submerged, 5–25 cm long. Leaves 1.2–2.2 × 0.14 cm, narrowly linear, the upper recurved. Flowers fascicled, monoecious. Achenes ellipsoid. Seeds narrowly ellipsoid, pitted.

Fl. & Fr.: August–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 776. 1982.

Distrib.: Frequent in stagnant water, Nawegaon.

ERIOCAULACEAE

Eriocaulon L.

Key to the species

- | | |
|--|--------------------------|
| 1a. Whole plant hairy; heads subglobose | E. lanceolatum |
| 1b. Plants glabrous or nearly so; heads globose or ovoid | 2 |
| 2a. One female sepal flat or linear | E. diana |
| 2b. All the female sepals boat-shaped or flat | E. quinquangulare |

Eriocaulon diana Fyson in J. Indian Bot. 2: 259, t. 11. 1921; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 251. 1996.

Herbs, annual, erect, tufted. Leaves 2.5–6.5 × 0.3–0.5 cm, lanceolate. Scapes many. Heads flat, hemispherical, globose or ovoid; involucre bracts longer than the head. Male flowers few; female flowers numerous. Seeds minute, oblong-ellipsoid.

Fl. & Fr.: August–February.

Illus.: Fyson, *op. cit.*

Distrib.: Frequent in moist, marshy places, Nagzira.

Eriocaulon lanceolatum Miq. ex Steud., Syn. Pl. Glum. 2: 271. 1855; Hook.f., Fl. Brit. India 6: 577. 1893; Cooke, Fl. Pres. Bombay 3: 357. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 257. 1996.

Herbs, 7–15 cm high. Scapes slender, 11.5–14.5 cm long. Leaves 5.5 × 0.5 cm wide, linear-lanceolate, acute. Heads subglobose, white; floral bracts short, darkish but overtopped by the female sepals. Seeds oval, dark brown.

Fl. & Fr.: August–November.

Illus.: Fyson in J. Ind. Bot. 266, t. 23. 1921.

Distrib.: Frequent in moist places, Nagzira.

Eriocaulon quinqueangulare L., Sp. Pl. 87. 1753; Hook.f., Fl. Brit. India 6: 582. 1893; Cooke, Fl. Pres. Bombay 3: 361. 1958 (Repr.); P. Lakshmi. in Sjarma & al., Fl. Maharashtra State, Monocot. 262. 1996.

Herbs; stems short or absent. Leaves 2.3–5.2 cm long, flat. Heads globular or often conical, black, grey or white. Seeds ellipsoid, pale brown.

Fl. & Fr.: September–June.

Illus.: Ugemuge, Fl. Nagpur Dt. t. 164. 1986.

Distrib.: Frequent along lake sides, Nagzira.

CYPERACEAE

Key to the genera

- | | |
|--|-----------------------|
| 1a. Flowering glumes 1 or 2 | Rhynchospora |
| 1b. Flowering glumes many | 2 |
| 2a. Flowering glumes spirally arranged | 3 |
| 2b. Flowering glumes distichously arranged | 6 |
| 3a. Style-base constricted or articulate | Fimbristylis |
| 3b. Style base passing gradually in to the nut | 4 |
| 4a. Leaves reduced to sheaths | Schoenoplectus |
| 4b. Leaves well developed | 5 |
| 5a. Hypogynal structures scaly, membranous | Lipocarpus |
| 5b. Hypogynal structures setaceous | Scirpus |

6a. Styles 2-fid	7
6b. Styles 3-fid	8
7a. Rhachilla of spikelet deciduous	Kyllinga
7b. Rhachilla of spikelet persistent	Pycneus
8a. Rhachilla of spikelets persistent	Cyperus
8b. Rhachilla of spikelets deciduous	Mariscus

Cyperus L.

Key to the species

1a. Spikelets digitate or clustered, not spicate	2
1b. Spikelets spicate	3
2a. Nuts white when ripe	C. tenuispica
2b. Nuts brown when ripe	C. difformis
3a. Rhachilla of spikelets not winged	4
3b. Rhachilla of spikelets winged	6
4a. Annuals with tufted stems	5
4b. Perennials with woody rhizome and often long stolons	C. procerus
5a. Spikelets in short spikes; nuts <i>c.</i> $\frac{1}{2}$ as long as glume	C. compressus
5b. Spikelets in much elongated spikes; nuts nearly as long as glume	C. iria
6a. Stolons absent	C. pangorei
6b. Stolons present	C. rotundus

Cyperus compressus L., Sp. Pl. 46. 1753; Dandy in Exell, Cat. S. Tome 357. 1944; C.B. Clarke in Hook.f., Fl. Brit. India 6: 505. 1893; Cooke, Fl. Pres. Bombay 3: 379. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State Monocot. 280. 1996.

Herbs, annual, 10–30 cm high, erect, triquetrous. Leaves 12–24 × 2.5 cm, linear, glabrous. Inflorescence compound umbel, with involucre bracts. Spikelets oblong, flat, greenish-yellow. Nuts trigonous, obovoid-ellipsoid, obtuse, apiculate.

Fl. & Fr.: July–October.

Illus.: Mahesh., Illus. Fl. Delhi f. 217. 1966.

Distrib.: Common along streams and lakes, Nawegaon.

Notes: Tubers useful for removing lice.

Cyperus difformis L., Sp. Pl. 67. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 6: 599. 1893; Cooke, Fl. Pres. Bombay 3: 376. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 132. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 281. 1996. '*Lavala*'.

Tufted annuals 10–60 cm high, with reddish roots. Leaves 5–30 cm long, linear. Inflorescence simple or compound umbel with sessile capitate head at the base of each umbel. Spikelets greenish-brown. Nuts pale-yellow, ovate-oblong, minutely punctate.

Fl. & Fr.: August–January.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 781. 1982.

Distrib.: Common in open moist places, Nawegaon, Nagzira.

Cyperus iria L., *Sp. Pl.* 45. 1753; S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78(3): 485. 1981; C.B. Clarke in *Hook.f., Fl. Brit. India* 6: 606. 1893; Cooke, *Fl. Pres. Bombay* 3: 380. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 287. 1996.

Herbs; stems 12–45 cm high, sparsely tufted, slender or rigid. Leaves basal, 9–18 × 0.1–0.5 cm, linear, flat, multistriate. Inflorescence compound, with 3–5, involucre bracts. Spikelets 15–18 flowered, greenish-yellow, linear oblong. Nuts obovoid, triquetrous, dark brown, greenish yellow or black, stipitate.

Fl. & Fr.: July–February.

Illus.: Ugemuge, *Fl. Nagpur Dist.* t. 167. 1986.

Distrib.: Common near wet and moist places, Nawegaon, Nagzira.

Cyperus pangorei Rottb., *Descr. Ic. Rar. Nov. Pl.* 31, t. 7. f. 3. 1773; S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 291. 1996. *Cyperus tegetum* Roxb., *Fl. Ind.* 1: 208. 1832; C.B. Clarke in *Hook.f., Fl. Brit. India* 6: 613. 1893; Cooke, *Fl. Pres. Bombay* 3: 384. 1958 (Repr.). ‘*Lahul*’.

Herbs, perennial, 70–80 cm tall. Leaves *c.* 20 × 0.3 cm, linear, glabrous. Inflorescence a terminal, compound umbel. Spikelets reddish-brown, linear-lanceolate. Nuts subglobose or obovoid, apiculate, blackish-brown, punctate.

Fl. & Fr.: July–February.

Illus.: Matthew, *Further Illus. Fl. Tamilnadu Carnatic* 4: tt. 642 & 643. 1988.

Distrib.: Frequent on stream beds, Nawegaon.

Cyperus procerus Rottb., *Descr. & Ic. Rar. Nov. Pl.* 29, t. 5, f. 3. 1775; C.B. Clarke in *Hook.f., Fl. Brit. India* 6: 610. 1893; Cooke, *Fl. Pres. Bombay* 3: 381. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 132. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 293. 1996.

Herbs 1–1.5 m high; stolons woody, covered with scales. Leaves 0.5–1.5 cm wide, linear. Inflorescence simple to subcompound; bracts 2–5, foliaceous. Spikelets lax, 8–10 flowered; glumes straw coloured. Nuts dark brown.

Fl. & Fr.: September–November.

Illus.: Matthew, *Further Illus. Fl. Tamilnadu Carnatic* 645. 1988.

Distrib.: Frequent in grasslands, Nawegaon, Nagzira.

Cyperus rotundus L., *Sp. Pl.* 45. 1753; C.B. Clarke in *Hook.f., Fl. Brit. India* 6: 614. 1893; Cooke, *Fl. Pres. Bombay* 3: 385. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl.*

Maharashtra State, Monocot. 293. 1996. ssp. *rotundus*. 'Belgondhara', 'Moth', 'Motha', 'Nagar-Motha'.

Herbs, perennial, stout; tubers fragrant. Leaves $5-20 \times 0.1-0.2$ cm long, narrowly linear. Inflorescence compound umbel. Spikelets linear, brown. Nuts broadly obovoid, greenish-black.

Fl. & Fr.: June–October.

Illus.: Hooper in Sald. & Nicols. Fl. Hassan Dt. 656, f. 110D. 1976.

Distrib.: Common near wet and moist places, Nawegaon.

Notes: Tubers useful for stomach disorder and lice.

Cyperus tenuispica Steud., Syn. Cyp. 11. 1855; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78: 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 296. 1996. *Cyperus flavidus sensu* C.B. Clarke In Hook.f., Fl. Brit. India 6: 600. 1893 non Retz. 1789; Cooke, Fl. Pres. Bombay 3: 375. 1958 (Repr.).

Herbs, annual, 10–15 cm tall. Leaves 3.5–8 cm long, linear. Inflorescence a terminal, umbellate spike. Spikelets linear, greenish-brown. Nuts broadly obovoid, stipitate, tubercled.

Fl. & Fr.: September–February.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 651. 1988.

Distrib.: Frequent among grasses in moist habitats, Nagzira.

Fimbristylis Vahl (*nom. cons.*)

Key to the species

- | | |
|--|------------------------|
| 1a. Lower glumes of spikelets distichous; upper fertile glumes spirally placed | F. ovata |
| 1b. Lowest fertile glumes of the spikelets spiral | 2 |
| 2a. Stems with one spikelet (rarely 2 or 3) | F. tetragona |
| 2b. Stems with many spikelets | 3 |
| 3a. Style 3-fid | 4 |
| 3b. Style 2-fid | 5 |
| 4a. Style hairy; rhachilla winged | F. miliacea |
| 4b. Style glabrous; rhachilla wingless | F. littoralis |
| 5a. Spikelets few (often 3–1) | F. schoenoides |
| 5b. Spikelets many | 6 |
| 6a. Glumes mucronate, usually with 2 to 4 lateral nerves | F. dichotoma |
| 6b. Glumes obtuse, usually without distinct lateral nerves | F. bisumbellata |

Fimbristylis bisumbellata (Forssk.) Bub. Dodec. 30. 1850; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 306. 1996. *Scirpus bis-umbellatus* Forssk., Fl. Aegypt-Arab. 15. 1755. *Fimbristylis dichotoma sensu* C.B. Clarke in Hook.f., Fl. Brit. India 6: 635. 1893 non (L.) Vahl, 1806.

Herbs, annual, 5–25 cm high, tufted, slender, trigonous. Leaves 4–14 × 0.7–0.1 cm, linear, flat, acuminate, pubescent. Inflorescence compound umbels; involucre bracts 3–5. Spikelets many flowered; rhachilla winged. Nuts obovoid, biconvex, trabeculate with vertical ridges, shortly stipitate.

Fl. & Fr.: July–December.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: 659. 1988.

Distrib.: Common in moist places, Nagzira.

Fimbristylis dichotoma (L.) Vahl, Enum. Pl. 2: 287. 1806; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 307. 1996. *Scirpus dichotomus* L., Sp. Pl. 50. 1753. *Fimbristylis diphylla* Vahl, *op. cit.* 289; C.B. Clarke in Hook.f., Fl. Brit. India 6: 636. 1893 *excl. var. pluristriata*; Cooke, Fl. Pres. Bombay 3: 396. 1958 (Repr.).

Herbs, 5–15 cm tall, perennial, tufted. Leaves as long as or usually shorter than the stem, linear, 3–8 cm long, acute, sparsely hairy. Inflorescence compound umbel. Spikelets greenish-brown, solitary, ovoid-oblong. Nuts obovoid, biconvex, shining, vertically ribbed.

Fl. & Fr.: July–March.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 662. 1988.

Distrib.: Frequent in moist habitats, Nagzira.

Fimbristylis littoralis Gaud. in Freyc. Voy. Bot. 413. 1826; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 313. 1996. *Fimbristylis miliacea sensu* Benth., Fl. Austral. 316. 1878; C.B. Clarke in Hook.f., Fl. Brit. India 6: 644. 1893 *p.p. omne non* Vahl, 1806 *non Scirpus miliaceus* L. Cooke, Fl. Pres. Bombay 3: 397. 1958 (Repr.).

Glabrous annual sedges, 20–60 cm tall. Leaves 1–3 mm broad, equitant, shorter than the stem, linear. Spikelets subglobose, glumes ovate-oblong shorter than umbel, rachilla not winged. Nuts obovoid, white, becoming brown.

Fl. & Fr.: September–April.

Distrib.: Common along ponds and streams, Nawegaon.

Fimbristylis miliacea (L.) Vahl, Enum. Pl. 2: 287. 1806; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 315. 1996. *Scirpus miliaceus* L., Syst. Veg. ed. 10, 2: 868. 1759. *Fimbristylis quinquangularis* Kunth, Enum. Pl. 2: 229. 1807; C.B. Clarke in Hook.f., Fl. Brit. India 6: 644. 1893; Cooke, Fl. Pres. Bombay 3: 397. 1958 (Repr.).

Herbs, annuals or perennials, 20–80 cm tall, tufted. Leaves 10–25 cm long, linear, acuminate, scabrid on margins. Inflorescence compound or decompound, involucre bracts 3–5, not overlapping. Spikelets ellipsoid, ovoid; rhachilla winged. Nuts obovoid, trigonous, shining.

Fl. & Fr.: August–December.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: 669. 1988.

Distrib.: Common in moist places, Nagzira.

Fimbristylis ovata (Burm.f.) Kern in Blumea 15: 126. 1967; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 133. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 316. 1996. *Carex ovata* Burm.f., Fl. Ind. 194. 1768. *Fimbristylis monostachyos* (L.) Hassk., Pl. Jav. Rar. 61. 1848 (*'monostachya'*); C.B. Clarke in Hook.f., Fl. Brit. India 6: 649. 1893 Cooke, Fl. Pres. Bombay 3: 399. 1958 (Repr.).

Herbs, densely tufted; rhizomes short. Leaves filiform, shorter than stems. Spikelets yellow or straw coloured, terminal, ovoid. Nuts pyriform, sessile, umbonate, tubercled.

Fl. & Fr.: August–November.

Illus.: Mahesh., Illus. Fl. Delhi f. 221. 1966 (*Fimbristylis monostachyos*).

Distrib.: Frequent in grasslands, Nagzira.

Fimbristylis schoenoides (Retz.) Vahl, Enum. Pl. 2: 286. 1806; C.B. Clarke in Hook.f., Fl. Brit. India 6: 634. 1893; Cooke, Fl. Pres. Bombay 3: 394. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 317. 1996. *Scirpus schoenoides* Retz., Obs. Bot. 5: 14. 1789.

Herbs, perennials, 10–50 cm tall; stems densely tufted. Leaves 0.1–0.2 cm wide, shorter than stems, glaucous, narrow, linear, scabrid on margins. Inflorescence of terminal, simple or subcompound umbels. Spikelets ovoid-oblong or lanceolate. Nuts biconvex, distinctly stipitate, umbonate.

Fl. & Fr.: August–November.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 673. 1988.

Distrib.: Common along roadsides, Nawegaon, Nagzira.

Fimbristylis tetragona R.Br., Prodr. 226. 1810; C.B. Clarke in Hook.f., Fl. Brit. India 6: 631. 1893; Cooke, Fl. Pres. Bombay 3: 393. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 133. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 319. 1996.

Herbs, glaucous, densely tufted, 25–35 cm tall, rhizomes short. Leaves absent; sheaths brown. Spikelets brown or yellow, terminal, solitary, ovoid. Nuts stipitate, with longitudinal trabeculae.

Fl. & Fr.: August–February.

Illus.: P. Lakshmi. & B.D. Sharma, Fl. Nasik Dt. 512, f. 45. 1991.

Distrib.: Frequent in grasslands, Nagzira.

Kyllinga Rottb. (*nom. cons.*)

Kyllinga tenuifolia Steud., Syn. Pl. Glum. 2: 69. 1855; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 330. 1996. *Kyllinga triceps* Rottb., Descr. & Ic. 14, t. 4, f. 6 (excl. cit. Rheede) 1773, *nom. superfl.*; C.B. Clarke in Hook.f., Fl. Brit. India 6: 587. 1893; Cooke, Fl. Pres. Bombay 3: 391. 1958 (Repr.). ‘Lavali’.

Herbs, 5–25 cm tall; stems erect, tufted, triquetrous. Leaves 10–15 cm long, linear, flaccid, scabrid. Inflorescence capitates, often 3-lobed spikes, sometimes 1–5 lobed; central subglobose, lateral ones globose. Spikelets white, oblong, 1-flowered. Nuts oblong, laterally compressed, biconvex, apiculate, stipitate.

Fl. & Fr.: August–January.

Illus.: Mahesh., Illus. Fl. Delhi f. 213. 1966.

Distrib.: Common in plains in moist places, Nawegaon, Nagzira.

Lipocarpa R.Br. (*nom. cons.*)

Lipocarpa chinensis (Osb.) Kern in Blumea (Suppl.) 4: 167. 1958; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 332. 1996. *Scirpus chinensis* Osb. Dagb. Ostind. Resa 220. 1757. *Lipocarpa argentea* (Vahl) R.Br. Ex Nees in Linnaea 9: 287. 1835; C.B. Clarke in Hook.f., Fl. Brit. India 6: 667. 1893.

Herbs, annual or perennial; stems 30–45 cm high, stiff with short rhizomes. Leaves stiff, spreading, short or half as long as stem. Inflorescence terminal, capitate. Spikelets grayish-white, ovoid. Nuts narrowly ovoid-oblong, apiculate.

Fl. & Fr.: September.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 685. 1988.

Distrib.: Frequent in moist places, Nawegaon.

Mariscus Vahl (*nom. cons.*)

Mariscus sumatrensis (Retz.) J. Raynal in Adansonia 15: 110. 1975; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 343. 1996.

Kyllinga sumatrensis Retz., Obs. Bot. 4: 13. 1786. *Cyperus cyperoides* (L.) O. Ktze., Rev. Gen. Pl. 3: 333. 1898; S.K. Malhotra & K.M. Rao, J. Econ. Tax. Bot. 2: 132. 1981. ‘Dokri’.

Perennial, rhizomatous, herbaceous sedges, 30–45 cm high, erect. Leaves linear, flat, equal to the stem or half as long, flaccid. Spikes in terminal, compound umbels; spikelets narrowly linear, 2-flowered. Nuts trigonous oblong-ellipsoid.

Fl. & Fr.: July–October.

Illus.: K.M. Rao, A.S. & Verma, D.M. Cyper. N.E. India 24. Figs. 7-7b. 1982 (*Cyperus cyperoides*).

Distrib.: Frequent in open grass lands, Nawegaon, Nagzira.

Pycreus P. Beauv.**Key to the species**

- 1a. Stems decumbent at base; glumes with arcuate keel, with depression on either side **P. sanguinolentus**
 1b. Stems erect; glumes with straight keel, without depressions **P. flavidus**

Pycreus flavidus (Retz.) T. Koyama in J. Jap Bot. 51: 316. 1976; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 347. 1996. *Cyperus flavidus* Retz., Obs. Bot. 5: 13. 1789; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981. *Cyperus globosus* All., Fl. Pedem. 49. 1789, non Forssk. 1775; Cooke, Fl. Pres. Bombay 3: 370. 1958 (Repr.).

Annual herbs, 10–25 cm high. Stems slender, erect, trigonous. Leaves up to 14 cm long, canaliculated, shorter than heads, often setaceous. Inflorescence compound, involucre bracts 3, overtopping; Spikelets red or brown, oblong, 25–28 flowered; rhachilla wingless. Nuts ellipsoid, obovoid, biconvex, apiculate, minutely tubercled.

Fl. & Fr.: July–March.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 693. 1988.

Distrib.: Common in open, moist areas, Nagzira.

Pycreus sanguinolentus (Vahl) Nees ex C.B. Clarke in Hook.f., Fl. Brit. India 6: 590. 1893; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 352. 1996; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 132. 1981.

Cyperus sanguinolentus Vahl, Enum. Pl. 2: 351. 1806; Cooke, Fl. Pres. Bombay 3: 369. 1958 (Repr.).

Perennial herbs, tufted. Leaves 10–18 cm long, linear, shorter than or equalling the stem. Spikelets greenish-purple, oblong. Nuts broadly obovoid to suborbicular, apiculate, biconvex.

Fl. & Fr.: September–February.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 784. 1982 (*Cyperus sanguinolentus*).

Distrib.: Frequent in open grasslands, Nawegaon.

Rhynchospora Vahl (*nom. cons.*)

Rhynchospora corymbosa (L.) Brit. in Trans. New York Acad. Sci. 11: 84. 1892; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 354. 1996. *Scirpus corymbosus* L. in Torner, Cent. Pl. 2: 7. 1756; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980. *Rhynchospora aurea* Vahl, Enum. Pl. 2: 229. 1806; C.B. Clarke in Hook.f., Fl. Brit. India 6: 671. 1893; Cooke, Fl. Pres. Bombay 3: 416. 1958 (Repr.).

Rhizomatous perennial, herbs, 60–150 cm tall. Leaves flat, 80–90 cm long with prominent midrib. Inflorescence paniculate, with 2–5 corymbiform anthers. Spikelets

lanceolate, brown. Nuts sessile, obovate-oblong, brown, beaked; beak conical, grooved on both surfaces.

Fl. & Fr.: November–December.

Illus.: Matthew, *Illus. Fl. Tamilandu Carnatic* 2: t. 794. 1982.

Distrib.: Occasional in moist habitats, Nawegaon.

Schoenoplectus (H.G.L. Reichb.) Palla (*nom. cons.*)

Key to the species

- | | |
|---------------------------------|-----------------------|
| 1a. Hypogynous bristles present | S. mucronatus |
| 1b. Hypogynous bristles absent | 2 |
| 2a. Some spikelets pedicellate | S. corymbosus |
| 2b. All spikelets sessile | 3 |
| 3a. Stems septate | S. articulatus |
| 3b. Stems not septate | S. supinus |

Schoenoplectus articulatus (L.) Palla in *Engl. Bot. Jahrb. Syst.* 10: 299. 1888; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 357. 1996. *Scirpus articulatus* L., *Sp. Pl.* 47. 1753; C.B. Clarke in *Hook.f., Fl. Brit. India* 6: 656. 1893; Cooke, *Fl. Pres. Bombay* 3: 406. 1958 (Repr.). ‘*Nwala*’.

Herbs, 60–80 cm tall, erect, tufted; stems spongy. Leaves reduced to sheaths. Inflorescence capitate; Spikelets ovoid-oblong, rusty-brown, sessile, in laterally, stellately, spreading clusters of 50–60. Nuts obovoid, triquetrous, apiculate, plano-convex, with transverse wavy lines.

Fl. & Fr.: June–March.

Illus.: T. Koyama in Dassan. & Fosb., *Rev. Handb. Fl. Ceylon* 5: 163. f. 7. 1985.

Distrib.: Frequent in open grass lands, Nagzira.

Schoenoplectus corymbosus (Roth ex Roem. & Schult.) J. Raynal in J.B. Lebrun & al., *Cat. Niger Pl.* 343. 1976; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 359. 1996. *Isolepis corymbosus* Roth ex Roem. & Schult., *Syst. Veg.* 2: 110. 1817. *Scirpus corymbosus* auct. non L. 1753, *nec* Forssk. 1775; C.B. Clarke in *Hook.f., Fl. Brit. India* 6: 657. 1893; Cooke, *Fl. Pres. Bombay* 3: 407. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980.

Herbs, 1–1.5 m tall; stems approximate, finely striate. Inflorescence lateral from near the top of the stem. Spikelets in pedunculate clusters, ellipsoid, reddish-brown. Nuts trigonous, yellow.

Fl. & Fr.: September–January.

Illus.: Laxmi. *Op. cit.* 358. ff. 1–4.

Distrib.: Frequent in open grasslands, Nawegaon.

Schoenoplectus mucronatus (L.) Palla in *Verh. K.K. Zool.-Bot. Ges. Wien.* 38, *Sitzb.* 49. 1888; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.*

365. 1996. *Scirpus maritimus* L., Sp. Pl. 73. 1753; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980. *Scirpus mucronatus* L. Sp. Pl. 73. 1753; C.B. Clarke in Hook.f., Fl. Brit. India 6: 657. 1893;

Herbs, perennial, rhizomatous; stems spongy. Heads lateral near at apex of stem. Spikelets sessile, ovate; glumes ovate, acute, nerved. Bristles 6, scabrid. Nuts obovoid, trigonous, transversely wrinkled, black.

Fl. & Fr.: October–May.

Illus.: Matthew, Further Illus. Fl. Tamilandu Carnatic 4: t. 704. 1988.

Distrib.: Infrequent in moist places, Nawegaon.

Schoenoplectus supinus (L.) Palla in Engl., Bot. Jahrb. 10: 299. 1889; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 366. 1996. *Scirpus supinus* L., Sp. Pl. 49. 1753. C.B. Clarke in Hook.f., Fl. Brit. India 6: 655. 1893; Cooke, Fl. Pres. Bombay 3: 406. 1958 (Repr.).

Herbs, 10–30 cm tall. Spikelets 3–8, ellipsoid-oblong, glumes imbricate, ovate, acute. Nuts obovoid, rugose, umbonate, black.

Fl. & Fr.: July–February.

Illus.: C.B. Clarke. Illust. Cyper. T. 48 (13-14). 1909 (*Scirpus supinus*).

Distrib.: Frequent in open moist places, Nawegaon.

POACEAE (GRAMINEAE)

Key to the genera

- | | | |
|---|----|----------------------|
| 1a. Large shrubs or trees, woody with large culm-sheaths; leaves with transverse veins, articulate with sheaths | 2 | |
| 1b. Herbs or shrubs, not woody, without culm-sheaths; leaves with parallel veins, not articulate with sheaths | 3 | |
| 2a. Spikelets in globose heads; pericarp fleshy or crustaceous | | Dendrocalamus |
| 2b. Spikelets in panicles; pericarp thin, adnate to seed | | Bambusa |
| 3a. Spikelets 1-many-flowered, breaking up at maturity above the more or less persistent glumes or if falling entire then not 2-flowered, usually more or less laterally compressed or terete | 4 | |
| 3b. Spikelets 2-flowered, falling entire at maturity, usually with the upper floret hermaphrodite, frequently dorsally compressed | 15 | |
| 4a. Grasses unawned | 5 | |
| 4b. Grasses awned | 8 | |
| 5a. Inflorescence a panicle | | Sporobolus |
| 5b. Inflorescence spike or spiciform racemes | 6 | |
| 6a. Spikes 2–8, digitate | | Cynodon |
| 6b. Racemes or spikes solitary, panicle in some species | 7 | |
| 7a. Florets 2 | | Isachne |
| 7b. Florets 3-many | | Eragrostis |

8a. Spikelets 1-flowered	Aristida
8b. Spikelets 2-many-flowered	10
9a. Lemmas muticous; glumes aristate	Dinebra
9b. Lemmas awned; glumes awned or muticous	11
10a. Inflorescence of plumose panicles	Arundo
10b. Inflorescence never plumose	12
11a. Spikelets 2-flowered	Arundinella
11b. Spikelets few-many flowered	13
12a. Glumes muticous	Chloris
12b. Glumes aristate	14
13a. Spikelets secund in the inflorescence	Melanocenchris
13b. Spikelets not secund	15
14a. Inflorescence of densely crowded, globose clusters of spikelets	Elytrophorus
14b. Inflorescence of umbellate spikes	Dactyloctenium
15a. Male and female spikelets in separate inflorescences or in different parts of the same inflorescence	Coix
15b. Spikelets all hermaphrodite, or with male or barren and hermaphrodite spikelets mixed in the same inflorescence	17
16a. Spikelets solitary or paired, more or less similar; glumes usually membranous, the lower usually smaller or sometimes suppressed; upper lemma papery to tough and rigid, usually awnless	18
16b. Spikelets often paired, with one sessile and the other pedicelled, those of each pair similar or more often dissimilar; glumes as long as the spikelet and enclosing the florets, upper lemma usually awned	28
17a. Grasses awned	19
17b. Grasses unawned	21
18a. Upper lemma shortly aristate	Alloteropsis
18b. Upper lemma muticous	20
19a. Lower glume awned	Oplismenus
19b. Lower glume muticous	Echinochloa
20a. Inflorescence of panicles	2
20b. Inflorescence of spiciform racemes arranged on a common axis	25
21a. Spikelets usually subtended by an involucre of bristles	23
21b. Spikelets not subtended by bristles	24
22a. Bristles rigid; upper lemma often rugose or transversely striate	Setaria
22b. Bristles rather soft; upper lemma more or less smooth	Pennisetum
23a. Spikelets not gibbous	Panicum
23b. Spikelets gibbous	Sacciolepis
24a. Lower glume usually absent, if present minute, scale-like	26
24b. Lower glume well-developed	27
25a. Spikelets elliptic or elliptic-oblong or lanceolate	Digitaria
25b. Spikelets orbicular, oblong or ovate, secund, 2-seriate	Paspalum
26a. Lower glume turned away from axis	Paspalidium
26b. Lower glume turned towards axis	Brachiaria
27a. Spikelets each pair similar	29

- 27b. Spikelets each pair dissimilar 30
- 28a. Spikelets awned **Spodiopogon**
- 28b. Spikelets unawned **Saccharum**
- 29a. Joints of the rachis and pedicel of the pedicelled spikelet swollen, 3-angled, rounded, flattened 31
- 29b. Joints of rachis and pedicel narrow, seldom thickened upwards 35
- 30a. Sessile spikelet with a male and a hermaphrodite floret; upper lemma awned 32
- 30b. Sessile spikelet with a hermaphrodite floret only or occasionally with a male floret below; upper lemma unawned 34
- 31a. Racemes 1-nodded, enclosed in a boat-shaped spathe **Apluda**
- 31b. Racemes many-nodded, not contained in a spathe like sheath 33
- 32a. Pedicelled spikelets developed **Ischaemum**
- 32b. Pedicelled spikelets reduced to a linear, curved pedicel **Thelepogon**
- 33a. Sessile spikelets in pairs at each node of axis **Mnesithea**
- 33b. Sessile spikelets solitary at each node of axis **Ophiuros**
- 34a. Spikelets in racemes which are not interrupted by spathes; joints and pedicels not furrowed 36
- 34b. Panicles of racemes which are interrupted by spathes, joints and pedicels with a translucent median furrow 37
- 35a. Spikelets in groups; lower glume smooth, not tuberculate **Chrysopogon**
- 35b. Racemes with many pairs of spikelets arranged in whorls; lower glumes tuberculate **Vetiveria**
- 36a. Margins of lower glumes inturned and rounded at sides; awns usually hairy 38
- 36b. Margin of lower glume of sessile spikelets sharply infolded, 2-keeled; awns glabrous 40
- 37a. Racemes surrounded at base by an involucre 39
- 37b. Racemes without an involucre **Heteropogon**
- 38a. Involucral spikelets pedicellate, deciduous **Iseilema**
- 38b. Involucral spikelets sessile, not deciduous **Themeda**
- 39a. Inflorescence not spathaceous **Dichanthium**
- 39b. Inflorescence spathaceous 41
- 40a. Inflorescence of subumbellate fascicles of racemes, 2-jointed, the basal with one sessile and one pedicelled spikelet **Pseudanthistiria**
- 40b. Inflorescence of paired racemes, usually one sessile, the other peduncled **Cymbopogon**

Alloteropsis C.B. Presl

Alloteropsis cimicina (L.) Stapf in Prain., Fl. Trop. Afr. 9: 487. 1919; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monooct. 389. 1996. *Milium cimicinum* L., Mant. Alt. 184. 1771. *Axonopus cimicinus* (L.) P. Beauv., Agrost. 12. 1812; Hook.f., Fl. Brit. India 7: 334. 1896; Cooke, Fl. Pres. Bombay 3: 441. 1958 (Repr.).

Tufted, hairy herbs, 30–120 cm tall. Leaves 3.15×0.5 –2.0 cm, ovate-lanceolate, flat, acute at apex, cordate at base, hairy, ciliate at margins. Spikelets subsecund, solitary or 2-nate; lower glume ovoid-lanceolate, aristate; upper glume coriaceous. Caryopsis ellipsoid-oblong, dorsally compressed.

Fl. & Fr.: July–November.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 801. 1982.

Distrib.: Common in plains and a hill slopes, Nawegaon, Nagzira.

Apluda L.

Apluda mutica L., *Sp. Pl.* 82. 1753; Hook.f., *Fl. Brit. India* 7: 150. 1896; Cooke, *Fl. Pres. Bombay* 3: 474. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 390. 1996. '*Ghagara*', '*Holera*', '*Kharwel*', '*Phulia*', '*Tambat*'.

Annuals or perennials. Culms 1.5–2 m tall, tufted. Leaves 5–25 × 0.5–1.5 cm, linear-lanceolate, setaceous at apex, pilose. Each raceme enclosed within spatheole and many such racemes together forming interrupted pseudo-panicle; raceme comprising of one sessile and two pedicelled Spikelets, greenish-red or greenish-orange. Caryopsis elliptic-oblong, reddish-brown.

Fl. & Fr.: October–May.

Illus.: Patunkar, *Grass. Marathw.* 31, f. 7. 1980; Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: tt. 804 & 805. 1982.

Distrib.: Common along moist places, lakes and streams bank, Nawegaon.

Aristida L.

Key to the species

- 1a. Lemma and the awns articulated whether it be at the tip or centre of the lemma or at top of column **A. funiculata**
- 1b. Lemma and the awns not articulated **2**
- 2a. Glumes long-awned, awns 0.3–0.5 cm long **A. setacea**
- 2b. Glumes not long-awned, awns 0.2 cm long **A. adscensionis**

Aristida adscensionis L., *Sp. Pl.* 82. 1753; Hook.f., *Fl. Brit. India* 7: 224. 1896; Cooke, *Fl. Pres. Bombay* 3:529. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78 (3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 392. 1996. '*Longi-kusal*'.

Tufted annuals or perennials with a short root stock, 10–50 cm tall. Leaves 5–25 × 0.1–0.2 cm, usually folded. Infloescence of linear panicles or fascicled spikes. Spikelets green or purplish, ovoid-oblong or oblong-lanceolate, erect.

Fl. & Fr.: February–April.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 271. 1966.

Distrib.: Common in open grasslands, Nagzira.

Aristida funiculata Trin. & Rupr., *Sp. Gram. Stip.* 159. 1842; Hook.f., *Fl. Brit. India* 7: 226. 1896; Cooke, *Fl. Pres. Bombay* 3: 531. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 133. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 392. 1996. '*Kantabawri*', '*Pandharikusal*'.

Annuals; culms 20–60 cm tall, erect or geniculate, tufted. Leaves 2.5–12.5 × 0.1–0.2 cm, flat, linear, finely acuminate to setaceous at apex. Spikelets in terminal panicles. Caryopsis cylindric, black.

Fl. & Fr.: September–December.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 713. 1988.

Distrib.: Common along grasses, Nawegaon.

Aristida setacea Retz., Obs. Bot. 4: 22. 1786; Hook.f., Fl. Brit. India 7: 225. 1896; Cooke, Fl. Pres. Bombay 3: 529. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 397. 1996. '*Mothi-kusal*'.

Herbs, perennial, 50–90 cm tall, erect or geniculately ascending. Leaves rolled, 8–18 × 0.2–0.3 cm; sheaths polished, yellow, open at the ramifications. Panicles contracted. Spikelets erect; lemma rigid at the base of the trifold awn.

Fl. & Fr.: September–January.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 714. 1996.

Distrib.: Common along forest margins, Nawegaon.

Notes: The plant is used for making brooms and screens.

Arundinella Raddi

Arundinella pumila (Hochst. ex A. Rich) Steud., Syn. Pl. Glum. 1: 114. 1854; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 407. 1996. *Acratherum pumilum* Hochst. ex A. Rich, Tent. Fl. Abyss. 2: 414, t. 100. 1851. *Arundinella tenella* Nees ex Steud., Syn. Pl. Glum. 1: 115. 1854; Hook.f., Fl. Brit. India 7: 71. 1896; Cooke, Fl. Pres. Bombay 3: 522. 1958 (Repr.).

Herbs, annual; culms erect, 10–25 cm tall, terete, smooth. Leaves 2.5–12.5 × 0.4–1.2 cm, ovate to linear-lanceolate, at apex acuminate, base narrowed. Spikelets delicately awned. Caryopsis small, subellipsoid.

Fl. & Fr.: September–November.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 718. 1988.

Distrib.: Common in deciduous forests, Nawegaon.

Arundo L.

Arundo donax L., Sp. Pl. 81. 1753; Hook.f., Fl. Brit. India 7: 302. 1896; Cooke, Fl. Pres. Bombay 2: 574. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 411. 1996. '*Baramal*', '*Dev-kanda*'.

Herbs, perennial, 1.5–3 m tall. Leaves 25–45 × 2–4.5 cm, lanceolate, base amplexicaul, at apex acuminate. Panicles large, decompound. Spikelets laterally compressed, lanceolate. Caryopsis oblong.

Fl. & Fr.: September–June.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 4: tt. 812 & 813. 1988.

Distrib.: Frequent in dense, deciduous forests, Nawegaon.

Notes: The plant is used for making baskets by local people.

Bambusa Schreb (*nom. cons.*)

Bambusa arundinacea (Retz.) Willd., *Sp. Pl.* 2: 245. 1799; Hook.f., *Fl. Brit. India* 7: 395. 1896; Cooke, *Fl. Pres. Bombay* 3: 569. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 412. 1996. *Bambos arundinacea* Retz., *Obs. Bot.* 5: 24. 1789. ‘*Kalak*’, ‘*Kaset*’, ‘*Kashti*’.

Culms 20–25 m tall, branching from all nodes from base upwards. Leaves 15.5–20.5 × 2–2.5 cm, linear or linear-lanceolate, at apex stiff, base rounded, ciliate. Spikelets lanceolate in enormous, leafless, compound panicles. Caryopsis oblong, beaked by style base, grooved on one side.

Fl. & Fr.: September–May, once in life time (100 years).

Illus.: Matthew, Further *Illus. Fl. Tamilnadu Carnatic* 4: tt. 721 & 722. 1988.

Distrib.: Frequent in dense deciduous forests, Nawegaon.

Notes: Commercially useful for making baskets.

Brachiaria Griseb.

Brachiaria ramosa (L.) Stapf in Prain, *Fl. Trop. Afr.* 9: 542. 1919; S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 133. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 417. 1996. *Panicum ramosum* L., *Mant.* 1: 29. 1767; Hook.f., *Fl. Brit. India* 7: 36. 1896; Cooke, *Fl. Pres. Bombay* 3: 449. 1958 (Repr.). ‘*Chapar*’, ‘*Chapsura*’.

Tufted annuals; culms ascending, 10–60 cm long, slender. Leaves 4–10 cm long; 10–15 mm broad. Racemes 3–8, scattered. Spikelets ovoid or elliptic, white ciliate at the base. Caryopsis ellipsoid, with pointed ends, rugose.

Fl. & Fr.: August–November.

Illus.: Matthew, Further *Illus. Fl. Tamilnadu Carnatic* 4: t. 726. 1988.

Distrib.: Frequent in damp, moist places, Nagzira.

Chloris Swartz.

Chloris dolichostachya Lagasca, *Gen. & Sp. Pl.* 5. 1816; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 426. 1996. *Chloris incompleta* Roth, *Nov. Pl. Sp.* 60. 1821; Hook.f., *Fl. Brit. India* 7: 290. 1896; Cooke, *Fl. Pres. Bombay* 3: 556. 1958 (Repr.).

Herbs, perennial; culms terete, 50–120 cm tall. Leaves 8–28 × 0.3–0.8 cm, narrowed into a fine point, flat, linear-lanceolate. Spikes 4–6. Spikelets narrowly fusiform, 2 awned. Caryopsis oblong-lanceolate, brown, dorsally compressed.

Fl. & Fr.: September–December.

Illus.: Matthew, *Illus. Fl. Tamilandu Carnatic* 4: tt. 825 & 826. 1982.

Distrib.: Frequent in deciduous forests, Nagzira.

Chrysopogon Trin. (*nom. cons.*)

Chrysopogon fulvus (Spr.) Chiov. *Fl. Somala* 1: 327. 1929; S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 430. 1996. *Pollinia fulva* Spr., *Pugill.* 2: 10. 1815. *Andropogon monticola* Roem. & Schult., *Syst. Veg.* 2. Mant. 3: 665. 1827; Hook.f., *Fl. Brit. India* 7: 192. 1896; Cooke, *Fl. Pres. Bombay* 3: 505. 1958 (Repr.). ‘*Agiva*’, ‘*Gogar*’, ‘*Kahandol*’, ‘*Vagnaki*’.

Tufted perennials, 30–90 cm tall. Leaves $2-7 \times 0.3-0.4$ cm, narrowly linear, tuberculate-pilose along margins. Spikelets paired, in 6–8 cm long panicles; sessile one lanceolate, rufous hairy, awned; pedicelled one shorter than the sessile ones. Caryopsis compressed, yellow.

Fl. & Fr.: September–January.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 273. 1966.

Distrib.: Common throughout in open grasslands, Nawegaon.

Coix L.

Key to the species

- | | |
|---|------------------------|
| 1a. Lower glume of male spikelets narrowly or hardly winged | C. lacryma-jobi |
| 1b. Lower glume of male spikelets broadly winged | C. gigantea |

Coix gigantea Koen. ex Roxb., *Fl. Ind.* 3: 570. 1832; S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 437. 1996. *Coix lacryma-jobi* var. *gigantea* (Roxb.) Stapf ex Hook.f., *Fl. Brit. India* 7: 100. 1896; ‘*Kachor*’.

Annual robust herbs up to 3 m tall. Leaves $35-50 \times 3.2$ cm, acuminate, subcordate at base, margins scabrid; sheaths terete. Racemes 1-many, peduncles flat. Female spikelets solitary; males many, lanceolate. Caryopsis flat, broadly ovoid.

Fl. & Fr.: September–November.

Illus.: P. Lakshmi. & B.D. Sharma, *Fl. Nasik Dt.* 541, f. 49. 1991; P. Lakshmi., *op. cit.* 436. ff. 1–4.

Distrib.: Frequent in dense forest along hills, Nawegaon, Nagzira.

Coix lacryma-jobi L., *Sp. Pl.* 972. 1753; Hook.f., *Fl. Brit. India* 7: 100. 1896; Cooke, *Fl. Pres. Bombay* 3: 517. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 438. 1996. ‘*Kasai*’, ‘*Ran-jondhala*’, ‘*Vagnaki*’.

Annual, robust herbs; culms 2.5 to 3 m tall, stout, tufted. Leaves $14-35 \times 0.8-1.5$ cm, linear-lanceolate, acuminate, cordate at base, margins spinulose. Inflorescence

axillary and terminal, drooping, spike like racemes; male spikelets 2–3, above; female spikelets below, solitary, ovoid or globose, enclosed in creamy, polished, hard bracts. Caryopsis flat, reddish-brown.

Fl. & Fr.: August–January.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 4: tt. 834 & 835. 1988.

Distrib.: Common in moist places along banks of lake and streams, Nawegaon, Nagzira.

Notes: Leaves and flowers eaten by wild animals.

Cymbopogon Spr.

Key to the species

1a. Leaf-blades rounded or cordate at base

C. martini

1b. Leaf-blades narrow or attenuate at base

C. flexuosus

Cymbopogon flexuosus (Nees ex Steud.) Wats. in Atkins., *Gaz. N.W. Prov. Ind.* 392. 1882; S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 134. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 438. 1996. *Andropogon flexuosus* Nees ex Steud., *Syn. Pl. Glum.* 1: 388. 1854.

Tufted; culms 2–2.5 m tall, terete, smooth, nodes shortly bearded. Leaves 90 × 1.5 cm long, linear; leaf sheath auricled. Panicles spatheate, decompound racemes, often deflexed. Sessile spikelets longer than pedicelled spikelets.

Illus.: Soenarko in Reinwardtia 9: 353. f. 39B. 1977.

Distrib.: Rare, along with other grasses in moist places, Nawegaon.

Cymbopogon martini (Roxb.) Wats. in Atkins., *Gaz. N.W. Prov. Ind.* 392. 1882; P. Lakshmi., in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 439. 1996. *Andropogon martinii* Roxb., *Fl. Ind.* 1: 280. 1820. *Andropogon schoenanthus* L. var. *martinii* Hook.f., *Fl. Brit. India* 7: 204. 1896. ‘*Rosha*’, ‘*Rusa*’.

Aromatic herbs, erect up to 1 m high. Leaves 9–14.5 × 0.5–1.0 cm, linear-lanceolate. Panicles oblong. Sessile spikelets elliptic-oblong, awned.

Fl. & Fr.: September–December.

Illus.: Patunkar, *Grass Marathw.* 50. f. 13. 1980.

Notes: The leaves are very useful for extraction of essential oils.

Cynodon L.C. Rich. (nom. cons.)

Cynodon dactylon (L.) Pers., *Syn. Pl.* 1: 85. 1805; Hook.f., *Fl. Brit. India* 7: 1288. 1896; Cooke, *Fl. Pres. Bombay* 3: 554. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 442. 1996. ‘*Darb*’, ‘*Durva*’, ‘*Hariali*’.

Perennial grasses. Culms 5–25 cm long, slender, prostrate, with ascending flowering branches. Leaves 2–8 cm long, narrowly linear to linear-lanceolate, finely

acute, distichous. Spikelets 1-flowered sessile, laterally compressed, imbricating, 2-seriate, in digitate spikes. Caryopsis obovoid, turgid.

Fl. & Fr.: Throughout the year.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: t. 838. 1982; Ugemuge, *Fl. Nagpur Dist.* t. 181. 1986.

Distrib.: Common in moist places, Nawegaon.

Notes: The plant is scared. Medicinally, whole plant used for healing cuts, wounds and for bleeding piles. A good fodder grass.

Dactyloctenium Willd.

Dactyloctenium aegyptium (L.) Willd., *Enum. Pl. Hort. Berol.* 1029. 1809; S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 445. 1996. *Cynosurus aegyptius* L., *Sp. Pl.* 1: 72. 1753. *Cynosurus aegyptius* (L.) Desf., *Fl. Atlant.* 1: 85. 1798; Hook.f., *Fl. Brit. India* 7: 295. 1896; Cooke, *Fl. Pres. Bombay* 3: 560. 1958 (Repr.).

Herbaceous grasses; culms 20–60 cm long, tufted, forming mats, geniculately ascending. Leaves 3–12 × 0.4–0.5 cm, linear, finally acuminate, flat, tubercled, hispid. Spikes 2–6, bearded at base, digitately radiating. Spikelets broadly ovate, laterally compressed. Caryopsis ovoid, rugose.

Fl. & Fr.: August–December.

Illus.: Mahesh., *Illus. Fl. Delhi* f. 263. 1966; Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: tt. 841 & 842. 1982.

Distrib.: Common in open grasslands, Nawegaon, Nagzira.

Notes: Plant is eaten by animals.

Dendrocalamus Nees

Dendrocalamus strictus (Roxb.) Nees in *Linnaea* 9: 476. 1834; Gambel in Hook.f., *Fl. Brit. India* 7: 78. 1897; Cooke, *Fl. Pres. Bombay* 3: 572. 1958 (Repr.); S.K. Malhotra & K.M. Rao in *Bull. Bot. Surv. India* 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 449. 1996. *Bambos stricta* Roxb., *Pl. Cor.* 1: 58, t. 80. 1996. ‘*Kania*’, ‘*Bans*’, ‘*Manvel*’, ‘*Velu*’. (PLATE: B-4)

Arborescent, stout grasses, 10–15 m tall; culms branched above, with a small cavity. Leaves 10–30 × 1.2–3 cm, linear-lanceolate to ovate-lanceolate, stiff, shortly petiolate. Spikelets spiny, hairy, with spiny bracts, in globose compound panicles. Caryopsis subglobose, beaked, with persistent style bases.

Fl. & Fr.: October–March.

Illus.: Matthew, *Further Illus. Fl. Tamilnadu Carnatic* 4: t. 743. 1988.

Distrib.: Common throughout in dense deciduous forests, Nawegaon, Nagzira.

Notes: Stems commercially used for making papers, baskets and construction. Tender sprouts are used as vegetable. Whole plant is an astringent and used for tonic.

Dichanthium Willd.

Key to the species

- 1a. Joints and pedicels, not grooved; racemes digitate or subdigitate, not panicle **D. annulatum**
- 1b. Joints and pedicels with a translucent groove, if not grooved then racemes in panicles 2
- 2a. Lower racemes shorter than main axis 3
- 2b. Lower racemes longer than main axis **D. pertusum**
- 3a. Perennials, robust, aromatic; joints densely hairy **D. odoratum**
- 3b. Perennial herbs, not aromatic; joints not as above **D. glabrum**

Dichanthium annulatum (Forssk.) Stapf in Prain, Fl. Trop. Afr. 9: 178. 1917; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980 et in J. Bombay Nat. Hist. Soc 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 452. 1996. *Andropogon annulatus* Forssk., Fl. Aegypt-Arab. 173. 1775; Hook.f., Fl. Brit. India 7: 196. 1897; Cooke, Fl. Pres. Bombay 3: 508. 1958 (Repr.). 'Jinjra', 'Marvel', 'Paunava'.

Herbs, perennial, c. 1 m tall. Leaves 6.5–16.5 × 0.2–0.4 cm, linear, finely acuminate. Racemes 2-many. Sessile spikelets; narrowly oblong; pedicelled ones as long as sessile.

Fl. & Fr.: October–March.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 844 & 845. 1982.

Distrib.: Common in open grasslands, Nawegaon, Nagzira.

Dichanthium glabrum (Roxb.) Jain & Deshpande in Bull. Bot. Surv. India 20: 134. (1978) 1979; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 455. 1996. *Andropogon glaber* Roxb., Fl. Ind. 1: 271. 1820. *Bothriochloa glabra* (Roxb.) A. Camus in Ann. Soc. Linn. Lyon 1930, n.s. 76: 164. 1931; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 133. 1981. *Andropogon intermedius* R.Br., Prodr. 202, 1810; Hook.f., Fl. Brit. India 7: 175. 1896; Cooke, Fl. Pres. Bombay 3: 500. 1958 (Repr.).

Perennial 1–1.5 m tall; culms terete; nodes with ring of soft, spreading, white hairs. Leaves 8.5–45 × 0.5–1 cm, linear, setose at base. Spikelets in terminal dense panicles; pedicelled spikelets linear-oblong; lower glumes pitted.

Fl. & Fr.: September–November.

Illus.: Deshpande & N.P. Singh, Grass. Maharashtra 47, t. 5. f. 3. 1986.

Distrib.: Frequent along with grasses, Nagzira.

Dichanthium odoratum (D. Lisboa) Jain & Deshpande in Bull. Bot. Surv. India 20: 134. (1978) 1979; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 458. 1996. *Andropogon odoratus* D. Lisboa in J. Bombay Nat. Hist. Soc. 4: 123. 1889 cum Ic. 6: 68, 203. 1891; Hook.f., Fl. Brit. India 7: 176. 1896; Cooke, Fl. Pres. Bombay 3: 500. 1958 (Repr.).

Perennials, robust, aromatic; culms 80–120 cm tall, erect; nodes bearded. Leaves 25–50 × 0.40–0.80 cm, linear-lanceolate, flat, acuminate, scaberulous on both surfaces and on margins. Racemes numerous. Sessile spikelets oblong-lanceolate, with silky hairs; pedicelled spikelets equal to sessile.

Fl. & Fr.: October–December.

Illus.: Blatt. & McCann Bombay Grass. 89. t. 56. 1935.

Distrib.: Frequent in deciduous forests, Nagzira.

Dichanthium pertusum (L.) W.D. Clayton in Kew Bull. 32: 4. 1977; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 459. 1996. *Holcus pertusus* L., Mant. 301. 1771. *Bothriochloa pertusa* (L.) A. camus in Ann. Soc. Linn. Lyon 1930, n.s. 76: 164. 1931; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980. *Andropogon pertusus* (L.) Willd., Sp. Pl. 4: 922. 1806; Hook.f., Fl. Brit. India 7: 173. 1896; Cooke, Fl. Pres. Bombay 3: 497. 1958 (Repr.). ‘Ghanga’, ‘Kathora’, ‘Palva’.

Herbs, perennial 25–50 cm tall, erect or geniculately ascending; nodes bearded. Leaves 25–30 cm long, linear, glabrous or pubescent. Sessile spikelets silky hairy, oblong-lanceolate; pedicelled spikelets narrower than sessile ones.

Fl. & Fr.: September–October.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: t. 816. 1982.

Distrib.: Common in open grasslands, Nawegaon.

Digitaria (Heist.) Haller (*nom. cons.* prop)

Key to the species

1a. Hairs on spikelets clavate

D. stricta

1b. Hair on spikelets, if any not clavate

D. ciliaris

Digitaria ciliaris (Retz.) Koel., Descr. Gram. 27. 1802; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 462. 1996. *Panicum ciliare* Retz., Obs. Bot. 4: 16. 1786. *Digitaria sanguinalis* Scop. var. *ciliaris* Prain, Beng. Pl. 1181. 1903 [2: 889. 1963 (Repr.); Cooke, Fl. Pres. Bombay 3: 457. 1958 (Repr.).

Herbs, annual, tufted, 80–90 cm tall; branches ascending; culms branched, rooting at base. Leaves 4.5–17.5 × 0.3–0.8 cm, linear or linear-lanceolate. Spikelets narrowly elliptic, in racemes. Grains ellipsoid.

Fl. & Fr.: August–February.

Illus.: Matthew Further. Illus. Fl. Tamilnadu Carnatic 4: tt. 748 & 749. 1988.

Distrib.: Common in bushes in the forests, Nagzira.

Digitaria stricta Roth ex Roem. & Schult., Syst. Veg. 2: 474. 1817; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 465. 1996. *Paspalum royleanum* Nees ex Hook.f., Fl. Brit. India 7: 18. 1896; *Digitaria royleana* (Nees ex Hook.f.) Prain, Beng. Pl. 1182. 1903; Cooke, Fl. Pres. Bombay 3: 459. 1958 (Repr.).

Herbs, annual, tufted, 15–20 cm tall. Leaves 4.3–12.5 × 0.1–0.3 cm, linear. Inflorescence of spike like racemes. Spikelets oblong, ellipsoid or narrowly obovoid. Grains ellipsoid, apiculate.

Fl. & Fr.: August–February.

Illus.: Patunkar, Grass. Marathw. 143. f. 42. 1980.

Distrib.: Common in moist places, Nagzira.

Dinebra Jacq.

Dinebra retroflexa (Vahl) Panz. in Denkschr. Acad. Wiss. Munchen 270. t. 12.1814; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 470. 1996. *Cynosurus retroflexus* Vahl, Symb. Bot. 2: 20. 1791. *Dinebra arabica* Jacq., Fragm. Bot. 77. t. 121, f. 1. 1809; Hook.f., Fl. Brit. India 7: 297. 1896; Cooke, Fl. Pres. Bombay 3: 562. 1958 (Repr.). '*Lonigawat*'.

Tufted herbs, c. 50 cm tall. Leaves linear, acuminate. Inflorescence pyramidal, spicate; racemes stiff, oblong. Spikelets 2-many-flowered; lemmas muticous; glumes aristate.

Fl. & Fr.: September–February.

Illus.: Matthew, Illus. Fl. Tamilandu Carnatic 2: tt. 849 & 850. 1982.

Echinochloa P. Beauv.

Echinochloa colona (L.) Link, Hort. Berol 2: 209. 1833; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 472. 1996. *Panicum colonum* L., Syst., Nat. ed. 10. 2: 870. 1759; Hook.f., Fl. Brit. India 7: 32. 1896; Cooke, Fl. Pres. Bombay 3: 447. 1958 (Repr.). '*Barad*', '*Bovur*', '*Harund*', '*Ranborat*', '*Rovar*', '*Sama*', '*Savank*'.

Annuals, Culms 30–90 cm, erect or ascending. Leaves 4.5–18 × 0.5 cm, linear-lanceolate, acute to acuminate. Spikelets ovoid-ellipsoid, hispidly pubescent, sessile, in linear, spiciform racemes. Caryopsis broadly ellipsoid, dorsally compressed.

Fl. & Fr.: July–February.

Illus.: Patunkar, Grass. Marathw. 146, f. 43. 1980.

Distrib.: Common in clayey soil near lake banks, Nawegaon, Nagzira.

Notes: Seeds are edible. The plant is also eaten by wild animals.

Elytrophorus P. Beauv.

Elytrophorus spicatus (Willd.) A. Camus in Lecomte, Fl. Gen. Indo Chine 7: 547. 1923; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 476. 1996. *Dactylis spicata* Willd. in Ges. Naturf. Fr. Berlin, Neue Schrift. 3: 416. 1801. *Elytrophorus articulatus* P. Beauv., Ess. Ayrost.

67, t. 14, f. 2. 1812; Hook.f., Fl. Brit. India 7: 306. 1896; Cooke, Fl. Pres. Bombay 3: 567. 1958 (Repr.). '*Jangli-rala*'.

Annual herbs; culms 15–45 cm high, erect. Leaves $4.5\text{--}15.5 \times 0.12\text{--}0.5$ cm, linear, acute, flat, flaccid; ligules fimbriate. Spikelets ovoid, laterally compressed, sessile, 3–6 flowered, in globose interrupted clusters. Caryopsis oblong or fusiform.

Fl. & Fr.: October–February.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 857 & 858. 1982.

Distrib.: Common in open grasslands and moist habitats, Nawegaon, Nagzira.

Eragrostis N.M. Wolf

Key to the species

- | | |
|--|-----------------------|
| 1a. Spikelets breaking up from above downwards; rachis fragile | 2 |
| 1b. Spikelets breaking up from below upwards; rachis tough | 3 |
| 2a. Keels of paleas scabrid or smooth, not ciliate | E. japonica |
| 2b. Keels of paleas more or less ciliate | E. tenella |
| 3a. Lemmas up to 0.15 cm long | 4 |
| 3b. Lemmas over 0.15 cm long | 5 |
| 4a. Plants glandular | E. minor |
| 4b. Plants eglandular | E. gangetica |
| 5a. Plants glandular; grains globose | E. cilianensis |
| 5b. Plants devoid of glands, grains obovoid | E. unioides |

Eragrostis cilianensis (All.) Vignolo-Lutati ex F.T. Hubb. in Philipp. J. Sci. Bot. 8: 159. 1913; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 481. 1996. *Poa cilianensis* All., Fl. Pedem. 2: 246. t. 91, f. 2. 1785. *Eragrostis major* Host., Gram. Austral. 4: 14, t. 24. 1809; Hook.f., Fl. Brit. India 7: 320. 1896; Cooke, Fl. Pres. Bombay 3: 548. 1958 (Repr.).

Annuals 25–80 cm tall, tufted. Leaves $5\text{--}25 \times 0.5\text{--}0.7$ cm, linear-lanceolate. Grains globose, reddish-brown.

Fl. & Fr.: August–May.

Illus.: Blatt. & McCann Bombay Grass. 237. 1935.

Distrib.: Frequent in moist places, Nagzira.

Eragrostis gangetica (Roxb.) Steud., Syn. Pl. Glum. 1: 266. 1854; Cooke, Fl. Pres. Bombay 3: 547. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 483. 1996. *Poa gangetica* Roxb., Fl. Ind. 1: 341. 1820.

Perennial herbs, tufted, 20–60 cm tall. Leaves $8\text{--}13 \times 0.3\text{--}0.5$ cm, linear, convolute, finely acuminate. Spikelets oblong, 2–10 flowered, in oblong-ovate panicles. Caryopsis oblong-ovoid, brown.

Fl. & Fr.: July–April.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 774. 1988.

Distrib.: Common in open grass lands, Nawegaon, Nagzira.

Notes: Plant is eaten by wild animals.

Eragrostis japonica (Thunb.) Trin. in Mem. Acad. Sci. Petersb. 6, 1: 405. 1831; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 134. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 484. 1996. *Poa japonica* Thunb., Fl. Jap. 51. 1784. *Eragrostis interrupta* var. *koenigii* Stapf in Hook.f., Fl. Brit. Inda 7: 316. 1896; Cooke, Fl. Pres. Bombay 3: 546. 1958 (Repr.). ‘*Chikisi*’.

Herbs, 20–150 cm tall, erect, tufted; culms stout, branched. Leaves 4.5–25.5 × 0.1–0.4 cm, linear; ligule a fimbriate membrane. Spikelets linear-oblong, ovoid or linear, red, in interrupted panicles. Fruits ellipsoid, reddish-brown. Grains ellipsoid.

Fl. & Fr.: September–March.

Illus.: Mahesh., Illus. Fl. Delhi f. 254. 1966.

Distrib.: Common in scrub forests, Nagzira.

Eragrostis minor Host., Gram. Austral. 4: 15. 1809; Hook.f., Fl. Brit. India 7: 321. 1896; Cooke, Fl. Pres. Bombay 3: 548. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 484. 1996. *Eragrostis poaeoides* P. Beauv., Ess. Agrost. 162. 1812; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78 (3): 485. 1981.

Tufted annuals, erect; culms 20–40 cm tall. Leaves 6.5–14 × 0.2–0.6 cm, linear, usually with a row of warty glands along margins. Spikelets pale green, greyish or purplish, 3–6 flowered, linear or ovoid, in terminal panicle.

Fl. & Fr.: September–December.

Illus.: Patunkar Grass. Marathw. 252. f. 77. 1980 (*Eragrostis poaeoides*).

Distrib.: Frequent in open grasslands, Nagzira.

Eragrostis tenella (L.) P. Beauv. ex Roem. & Schult., Syst. Veg. 2: 576. 1817; Stapf in Hook.f., Fl. Brit. India 7: 315. 1896; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 489. 1996. *Poa tenella* L., Sp. Pl. 69. 1753. *Eragrostis tenella* var. *plumosa* (Retz.) Stapf in Hook.f. *op. cit.* 315; Cooke, Fl. Pres. Bombay 3: 545. 1958 (Repr.). ‘*Bakralu*’, ‘*Belakuda*’, ‘*Waya*’.

Slender, erect or ascending tufted annuals; culms 5–35 cm tall. Leaves 2.6–7.5 × 0.2–0.4 cm, linear. Panicles ovoid-oblong, spreading. Spikelets oblong, red, in dense, cuspidate glumes. Caryopsis ovoid, reddish-brown.

Fl. & Fr.: September–March.

Illus.: Blatt. & McCann Bombay Grass. 232. t. 155. 1935.

Distrib.: Frequent along lake bank and open grasslands, Nawegaon, Nagzira.

Notes: Plant is eaten by wild animals.

Eragrostis unioloides (Retz.) Nees ex Steud., Syn. Pl. Glum. 1: 264. 1854; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. Nat. Hist. Soc. 78 (3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 491. 1996. *Poa unioloides* Retz., Obs. Bot. 5: 19. 1789. *Eragrostis amabilis* Stapf in Hook.f., Fl. Brit. India 7: 317. 1896 non Wight & Arn. ex Nees 1838; Cooke, Fl. Pres. Bombay 3: 546. 1958 (Repr.). 'Chidsi', 'Chimandara', 'Holpoho'.

Annual herbs, 10–50 cm tall, tufted, erect or ascending. Leaves $2.5\text{--}6.5 \times 0.2\text{--}0.3$ cm, linear, flat, acute. Panicles fairly dense and oblong. Spikelets straw coloured, tinged with purple. Caryopsis ellipsoid, reddish-brown, laterally compressed.

Fl. & Fr.: August–February.

Illus.: Blatt. & McCann Bombay Grass. 235. t. 156.

Distrib.: Common in open grasslands, Nawegaon, Nagzira.

Notes: The plant is eaten by wild animals.

Heteropogon Pers.

Heteropogon contortus (L.) P. Beauv. ex Roem. & Schult., Syst. Veg. 2: 836. 1817; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 503. 1996. *Andropogon contortus* L., Sp. Pl. 1945. 1753; Hook.f., Fl. Brit. India 7: 119. 1896; (Cooke, Fl. Pres. Bombay 3: 510. 1958 Repr.). 'Kali kusali', 'Kursali'.

Perennial herbs, densely tufted; culms 15–75 cm tall, tufted, erect or geniculate. Leaves $6\text{--}15 \times 0.2\text{--}0.3$ cm, linear, lanceolate with fimbriate ligule. Lower spikelets homogamous, awnless, male; upper ones awned, heterogamous, sessile one female and pedicelled ones male or sterile, in solitary racemes. Caryopsis enclosed by lemmas.

Fl. & Fr.: July–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 876 & 877. 1982.

Distrib.: Common in open grasslands, Nawegaon, Nagzira.

Notes: Roots are useful against snake-bite (N.P. Singh & B.D. Sharma, 1998).

Isachne R.Br.

Isachne globosa (Thunb.) O. Ktze., Rev. Gen. Pl. 2: 778. 1891; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 510. 1996. *Milium globosum* Thunb., Fl. Jap. 49. 1784. *Isachne australis* R.Br., Prodr., 196. 1810; Cooke, Fl. Pres. Bombay 3: 439. 1958 (Repr.). 'Daura'.

Herbs, slender, tufted, erect or suberect. Leaves $2.5\text{--}6.5 \times 0.3\text{--}0.6$ cm, linear-lanceolate or ovate-lanceolate. Spikelets globose, in lax panicles; lemmas unequal, lower elliptic, upper suborbicular.

Fl. & Fr.: August–February.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 787. 1988.

Distrib.: Frequent in open grassland, Nawegaon, Nagzira.

Ischaemum L.

Ischaemum kingii Hook.f., Fl. Brit. India 7: 129. 1897; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 519. 1996.

Annual, 25–30 cm tall, erect. Lower leaves narrowed at base. Spikelets sessile awned awn; geniculate just below middle, pedicelled spikelets awnless.

Fl. & Fr.: September–November.

Distrib.: Frequent, Nagzira.

Iseilema Anderss.

Key to the species

- | | |
|---|--------------------------|
| 1a. Pedicels of involucre spikelets as broad as long | I. anthephoroides |
| 1b. Pedicels of involucre spikelets longer than broad at apex | 2 |
| 2a. Tubercles not present on spatheoles or involucre spikelets | I. laxum |
| 2b. Tubercles present on spatheoles or margins of involucre spikelets | I. prostratum |

Iseilema anthephoroides Hack. in DC., Monogr. Phan. 6: 683. 1889; Hook.f., Fl. Brit. India 7: 219. 1897; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 532. 1996. ‘*Tambadgota*’.

Herbs, perennial, 25–30 cm tall, erect or prostrate. Leaves 3.5–7.5 × 0.2 cm, linear-oblong. Involucre spikelets strongly nerved; hermaphrodite spikelets awned. Caryopsis oblong-ellipsoid, brown.

Fl. & Fr.: August–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 886 & 887. 1982.

Distrib.: Common in open grasslands, Nawegaon, Nagzira.

Iseilema laxum Hack. in DC., Monogr. Phan. 6: 682. 1889; Hook.f., Fl. Brit. India 7: 218. 1897; Cooke, Fl. Pres. Bombay 3: 516. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 533. 1996. ‘*Moshi*’, ‘*Mus*’, ‘*Shadta*’, ‘*Tambit*’.

Culms 40–75 cm high, slender, erect or ascending. Leaves 3.5–22 × 0.5 cm long, linear, scaberulous at top, abruptly obtuse. male spikelets whorled, oblong-lanceolate; bisexual spikelets lanceolate, in paniculate racemes. Caryopsis ellipsoid, dorsally compressed.

Fl. & Fr.: August–December.

Illus.: Mahesh., Illus. Fl. Delhi 229. 1966.

Distrib.: Common in moist habitats, Nagzira.

Notes: Plant is used as fodder.

Iseilema prostratum (L.) Anders. in Nov. Act. Soc. Sci. Upsal. 3, 2: 251. 1856; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 134. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 533. 1996. *Andropogon prostratus* L., Mant. 304. 1771. *Iseilema wightii* Andress. *Op. cit.*; Hook.f., Fl. Brit. India 7: 218. 1897; Cooke, Fl. Pres. Bombay 3: 516. 1958 (Repr.). 'Achigrass', 'Sona'.

Perennial herbs; culms procumbent-ascending, rooting at base, 25–50 cm high, nodes bearded. Leaves 7.5–28.5 × 0.3–0.5 cm, linear. Panicles compound. Involucral spikelets oblong-lanceolate; hermaphrodite ones with lower glume acute, 4-nerved, upper glume mucronate obtusely keeled on back.

Fl. & Fr.: October–December.

Illus.: Patunkar, Grass. Marathw. 82. f. 23. 1980.

Distrib.: Common throughout forests along with grasses, Nawegaon.

Melanocenchris Nees

Melanocenchris jacquemontii Jaub. & Spach, Illustr. Pl. Orient 4: 36. t. 325. 1851; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 11. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 537. 1996. *Gracilea royleana* Hook.f., Fl. Brit. India 7: 284. 1897; Cooke, Fl. Pres. Bombay 3: 553. 1958 (Repr.).

Annual herbs, tufted, 10–15 cm tall; stem erect-diffuse. Leaves 2.5–5.5 cm long, narrowly linear, glabrous. Spikelets 1-flowered, in a single row on spikes; glumes subequal, lanceolate-oblong; lemmas acuminate. Caryopsis compressed, oblong-ellipsoid, brown.

Fl. & Fr.: August–December.

Illus.: Patunkar, Grass. Marathw. 222, f. 67. 1980.

Distrib.: Common in clayey soil in open grassland, Nawegaon.

Mnesithea Kunth

Mnesithea granularis (L.) Koning & Sosef in Blumea 31: 285. 1986; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot 539. 1996. *Cenchrus granularis* L., Mant.2, App. 575. 1771. *Manisuris granularis* L.f., Nov. Gram. Gen. 40. 1779; Hook.f., Fl. Brit. India 7: 159. 1897; Cooke, Fl. Pres. Bombay 3: 473. 1958 (Repr.). *Hackelochloa granularis* (L.) O. Ktze., Rev. Gen. Pl. 2: 776. 1891; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 10. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981. 'Dalura ghats', 'Kangri'.

Annual herbs, c. 30 cm tall; culms much branched from base; nodes hairy. Leaves 3.5–8.5 × 0.3–0.7 cm, linear-lanceolate; sheaths hispid; ligules densely ciliate. Upper glumes of sessile spikelets narrowly crested at apex; pedicelled spikelets ovate-lanceolate.

Fl. & Fr.: September–November.

Illus.: Patunkar, Grass. Marathw 63, f. 18. 1980.

Distrib.: On gravelly hill slopes and in grasslands, common, Nawegaon, Nagzira.

Ophiuros Gaertn.f.

Ophiuros exaltatus (L.) O. Ktze., Rev. Rev. Gen. Pl. 2: 780. 1891; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 134. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 541. 1996. *Aegilops exaltata* L., Mant. 575. 1771. *Ophiuros corymbosus* Gaertn.f. Fruct. 3: 4, t. 181. 1805; Hook.f., Fl. Brit. India 7: 160. 1897; Cooke, Fl. Pres. Bombay 3: 468. 1958 (Repr.). ‘*Hutia*’, ‘*Uphada*’.

Perennial herbs, erect, tufted, 1–1.5 m tall; stems cylindrical. Leaves 12–15 × 0.5–0.8 cm, linear-lanceolate; ligule short. Spikelets sunken in rachis. Caryopsis oblong.

Fl. & Fr.: August–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 899 & 900. 1982.

Distrib.: Frequent along moist places, Nawegaon.

Oplismenus P. Beauv.

Oplismenus burmannii (Retz.) P. Beauv., Ess. Agrost. 54, 168, 169. 1812; Hook.f., Fl. Brit. India 7: 68. 1897; Cooke, Fl. Pres. Bombay 3: 443. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 11. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 541. 1996. *Panicum burmannii* Retz., Obs. Bot. 3: 10. 1783. ‘*Kudak*’, ‘*Yerwa*’.

Annual herbs; culms 15–40 cm high, diffusely branched. Leaves 2.4 × 0.5–1 cm, ovate or ovate-lanceolate, acuminate, pilose. Spikelets lanceolate with scaberulous awns, solitary or binate in awns. Caryopsis ellipsoid-oblong.

Fl. & Fr.: July–February.

Illus.: Mahesh., Illus. Fl. Delhi f. 265. 1966; Patunkar, Grass. Marathw. 152. f. 45. 1980.

Distrib.: Common in open grasslands of deciduous forests, Nawegaon, Nagzira.

Panicum L.

1a. Lower glume orbicular, rounded or truncate

P. notatum

1b. Lower glume cuspidate-acuminate

P. trypheron

Panicum notatum Retz., Obs. Bot. 4: 18. 1786; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 550. 1996. *Panicum montanum* Roxb., Fl. Ind. 1: 315. 1820; Hook.f., Fl. Brit. India 7: 53. 1897. ‘*Jokarband*’.

Herbs, perennial, erect, with short, woody rootstock, 30–90 cm tall. Leaves 8–15 × 1.3–2.4 cm, linear-oblong or lanceolate, at apex acuminate, base cordate; ligule

obscure, sparsely hairy. Spikes spreading. Spikelets many ellipsoid. Caryopsis compressed, enclosed by hardened lemma and palea.

Fl. & Fr.: September–November.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 4: t. 801. 1988.

Distrib.: Frequent in grasslands of the forests, Nagzira.

Panicum trypheron Schult. *Syst. Veg.* 2, Mant. 244. 1824; Hook.f., *Fl. Brit. India* 7: 47. 1897; Cooke, *Fl. Pres. Bombay* 3: 452. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al. *Fl. Maharashtra State, Monooct.* 553. 1996. '*Bhatur*'.

Annual herbs, 40–50 cm high. Leaves 8–12 × 0.3–0.4 cm, linear, hairy on both surfaces, bulbous based hairy along margins. Spikelets ovoid; lower glume ovate, scaberulous on median nerves at tip; upper glume ovate, 7–9 nerved. Caryopsis oblong.

Fl. & Fr.: September–October.

Illus.: Matthew, *Illus. Fl. Tamilnadu Carnatic* 2: tt. 904 & 905. 1982.

Distrib.: Frequent in moist places, Nawegaon.

***Paspalidium* Stapf**

Paspalidium flavidum (Retz.) A. Camus in Lecomte, *Fl. Gen. Indo-Chine* 7: 419. 1922; S.K. Malhotra & K.M. Rao in *J. Econ. Tax. Bot.* 2: 135. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 555. 1996. *Panicum flavidum* Retz., *Obs. Bot.* 4: 15. 1786; Hook.f., *Fl. Brit. India* 7: 28. 1897; Cooke, *Fl. Pres. Bombay* 3: 445. 1958 (Repr.). '*Burad*', '*Shedya*'.

Perennial herbs; culms 14–45 cm high; tufted, erect or ascending from decumbent base. Leaves 7.5–14.5 × 0.5–1 cm, lanceolate; sheaths hairy at throat. Spikelets ovoid. Caryopsis orbicular.

Fl. & Fr.: July–October.

Illus.: Patunkar, *Grass. Marathw.* 167, f. 51. 1980; Ugemuge, *Fl. Nagpur Dt.* t. 190. 1986.

Distrib.: Common in moist places, Nagzira.

***Paspalum* L.**

Paspalum scrobiculatum L., *Mant. Pl.* 1: 29. 1767; Hook.f., *Fl. Brit. India* 7: 10. 1897; Cooke, *Fl. Pres. Bombay* 3: 460. 1958 (Repr.). S.K. Malhotra & K.M. Rao in *J. Bombay Nat. Hist. Soc.* 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., *Fl. Maharashtra State, Monocot.* 561. 1996. '*Harik*', '*Kodo*', '*Kodra*'.

Perennials, 10–80 cm tall, usually erect, sometimes with a procumbent base. Leaves 3–8 × 0.3–0.5 cm, linear, deciduous, hairy, with filiform tip. Panicles one to several, digitate or scattered along a common axis. Spikelets green, brown, ovoid, biseriate, lower glume absent. Caryopsis suborbicular.

Fl. & Fr.: August–March.

Illus.: Patunkar, Grass. Marathw. 179. f. 52. 1980.

Distrib.: Frequent in open grasslands, Nagzira.

Notes: Cultivated for its edible grains which are harmful under certain condition. because the plant is used as an insecticide (S.K. Malhotra & K.M. Rao, 1981).

Pennisetum L.C. Rich. ex Pers.

Pennisetum pedicellatum Trin. in Mem. Acad. Sci. Petersb. 6, 3: 184. 1834; Hook.f., Fl. Brit. India 7: 86. 1897; Cooke, Fl. Pres. Bombay 3: 431. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 11. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 564. 1996.

Erect annuals, 0.6–1.2 m high. Leaves 6.5–22 × 0.5–0.6 cm, flat. Spikes white or usually pale purple. Rachis of the panicles winged. Spikelets pedicellate, lanceolate, solitary; lower glume half of the lower lemma, woolly; upper glume oblong, upper lemma ovate-oblong, shining. Caryopsis oblong-lanceolate.

Fl. & Fr.: October–November.

Illus.: Blatt. & McCann Bombay Grass. t. 115. 1935.

Distrib.: Common stream-beds, Nawegaon, Nagzira.

Pseudanthistiria (Hack.) Hook.f.

Pseudanthistiria heteroclita (Roxb.) Hook.f., Fl. Brit. India 7: 219. 1897; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78(3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 573. 1996. *Anthistiria heteroclita* Roxb., Fl. Ind. 1: 253. 1820. ‘*Phulada*’.

Herbs, up to 60 cm tall; culms densely tufted, geniculate, erect. Leaves 6.5–14 × 0.3 cm, linear. Spikes spathaceous, in panicles. Sessile spikelets linear-oblong, hispidulous; pedicelled spikelets lanceolate, with a few long, tubercle-based bristles.

Fl. & Fr.: October–November.

Illus.: Blatt. & McCann Bombay Grass. 121. t. 75. 1935.

Distrib.: Common in grasslands, Nagzira.

Saccharum L.

Saccharum spontaneum L., Mant. Alt. 2: 183. 1771; Hook.f., Fl. Brit. India 7: 118. 1897; Cooke, Fl. Pres. Bombay 3: 465. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 583. 1996. ‘*Bagberi*’, ‘*Kamis*’.

Herbs, perennial, rhizomatous, 2–2.5 m tall; culms erect, tufted. Leaves 25–50 × 0.3–0.5 cm, narrowly linear; ligule ovate, membranous. panicales large, silvery silky hairy. Spikelets lanceolate.

Fl. & Fr.: September–March.

Illus.: Patunkar, Grass. Marathw. 94, f. 29. 1980.

Distrib.: Common in open grasslands and road sides, Nawegaon, Nagzira.

Sacciolepis Nash

Sacciolepis interrupta (Willd.) Stapf in Prain, Fl. Trop. Afr. 9: 757. 1920; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 11. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 586. 1996. *Panicum interruptum* Willd., Sp. Pl. 1: 341. 1798; Hook.f., Fl. Brit. India 7: 40. 1897; Cooke, Fl. Pres. Bombay 3: 450. 1958 (Repr.).

Herbs, perennials, culms spongy below, 50–80 cm tall, ascending from rootstock. Leaves 7.5–18.5 × 0.3–0.8 cm, linear. Spikes cylindric. Spikelets crowded, subsessile, ellipsoid, ultimately spreading. Caryopsis obovoid, apiculate.

Fl. & Fr.: November–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 930 & 931. 1981.

Distrib.: Common along the lakes, Nawegaon, Nagzira.

Setaria P. Beauv. (*nom. cons.*)

Key to the species

- | | |
|---|------------------------|
| 1a. Bristles retrorsely barbed | S. verticillata |
| 1b. Bristles antrorsely barbed | 2 |
| 2a. Inflorescence a cylindric false spike | S. pumila |
| 2b. Inflorescence a narrow panicle | S. intermedia |

Setaria intermedia Roem. & Schult., Syst. Veg. 2: 489. 1817; Hook.f., Fl. Brit. India 7: 79. 1897; Cooke, Fl. Pres. Bombay 3: 436. 1958 (Repr.); P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra state, Monocot. 593. 1996. '*Landgar*'.

Herbs, 50–80 cm tall, erect or ascending, tufted. Leaves 5–30 × 0.5–1.0 cm, linear-lanceolate, sparsely hairy. Panicles with ovoid spikelets. Grains plano-convex.

Fl. & Fr.: September–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 935 & 936. 1982 (*Setaria tomentosa*); Ugemuge, Fl. Nagpur Dt. t. 191. 1986.

Distrib.: Frequent in open grasslands, Nagzira.

Setaria pumila (Poir.) Roem. & Schult., Syst. Veg. 2: 891. 1817; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra state, Monocot. 595. 1996. *Panicum pumilum* Poir. in Lam., Encycl. 4: 273. 1816. *Setaria glauca* non (L.) P. Beauv. 1812; Hook.f., Fl. Brit. India 7: 78. 1897; Cooke, Fl. Pres. Bombay 3: 435. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981. *Panicum pumilum* Poir. in Lam., Encycl. 4: 273. 1816. '*Bindi*', '*Kolara*', '*Kolu*', '*Kolwa*'.

Herbs, 15–45 cm tall, tufted; culms spreading, ascending. Leaves 2.5–9.5 × 0.2–0.5 cm, linear. Spikelets ovoid or ellipsoid, subacute; upper lemma rugose. Caryopsis plano-convex.

Fl. & Fr.: July–September.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 823. 1988.

Distrib.: Common in scrub forests, Nawegaon, Nagzira.

Setaria verticillata (L.) P. Beauv., Ess. Agrost. 51, 178. 1812; Hook.f., Fl. Brit. India 7: 80. 1897; Cooke, Fl. Pres. Bombay 3: 436. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 595. 1996. *Panicum verticillatum* L., Sp. Pl. ed. 2: 82. 1762. ‘*Danyani*’.

Herbs, 1–1.5 m tall, rooting at lower nodes. Leaves 6.5–18 × 0.8–3.5 cm, linear or linear-lanceolate. Spikelets ovoid, subacute, in panicles. Caryopsis ellipsoid.

Fl. & Fr.: September–January.

Illus.: Mahesh., Illus. Fl. Delhi f. 239. 1966.

Distrib.: Common in grassland in scrub forests, Nawegaon.

Spodiopogon Trin.

Spodiopogon rhizophorus (Steud.) Pilger in Engler & prantl, pflanzenf. Aufl. 2, 14e: 119. 1940; Lakshmi., in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 608. 1996. *Andropogon rhizophorus* Steud., Syn. Pl. Glum.1: 381. 1854. *Spodiopogon albidus* Benth. in J. Linn. Soc. 19:66. 1881; Hook.f., Fl. Brit. India 7: 108. 1897; Cooke, Fl. Pres. Bombay 3: 464. 1958 (Repr.).

Herbs, annual 1–1.5m tall, erect or suberect, tufted. Leaves 5–15 × 1–3 cm, oblong-lanceolate, petiolate; ligule oblong, reddish-brown.

Fl. & Fr.: September–December.

Illus.: Patunkar., Grass Marathw, 112. f. 33. 1980.

Distrib.: Frequent, Nagzira.

Sporobolus R.Br.

Sporobolus indicus (L.) R.Br., Prodr. 170. 1810. var. **flaccidus** (Roem. & Schult.) Veldk. in Blumea 35: 433. 1991; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 613. 1996. *Agrostis elongata* (R.Br.) Roth ex Roem. & Schult. var. *flaccida* Roth ex Roem. & Schult., Syst. Veg. 2: 368. 1817. *Sporobolus diander* (Retz.) P. Beauv., Ess. Agrost. 26, 147, 178. 1812; Hook.f., Fl. Brit. India 7: 247. 1897; Cooke, Fl. Pres. Bombay 3: 539. 1958 (Repr.); S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 11. 1980.

Herbs, perennial; culms 20–60 cm high, tufted, erect. Leaves 7.5–32.5 × 0.2–0.3 cm, narrowly linear; ligule a narrow ridge of minute hairs. Spikes narrowly pyramidal. Spikelets ovoid, shortly pedicelled. Caryopsis obovoid, reddish-brown, rugulose.

Fl. & Fr.: September–December.

Illus.: Matthew, Further Illus. Fl. Tamilnadu Carnatic 4: t. 826. 1988 (*Sporobolus diander*).

Distrib.: Common in open grasslands and dense, deciduous forests, Nawegaon.

Notes: A good fodder.

Thelepogon Roth ex Roem. & Schult.

Thelepogon elegans Roth ex Roem. & Schult., Syst. Veg. 2: 788. 1817; Hook.f., Fl. Brit. India 7: 148. 1897; Cooke, Fl. Pres. Bombay 3: 490. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 618. 1996.

Annual herbs, robust; culms 15–60 cm high, erect or geniculate, tufted. Leaves $4.5\text{--}18.5 \times 0.5\text{--}1.5$ cm, linear, bulbous hairy. Spikelets ovoid, beaked, in corymbose racemes. Caryopsis oblong-ellipsoid, brown.

Fl. & Fr.: September–January.

Illus.: Patunkar, Grass. Marathw. 114. f. 34. 1980.

Distrib.: Frequent along lake margins, Nagzira.

Themeda Forssk.

Key to the species

- | | |
|---|------------------------|
| 1a. Pairs of involucrel spikelets inserted at different level | T. tremula |
| 1b. Pairs of involucrel spikelets inserted at same level | 2 |
| 2a. Involucrel spikelets over 0.6 cm long; awns up to 6 cm long | T. triandra |
| 2b. Involucrel spikelets less than 0.6 cm long; awns shorter | T. quadrivalvis |

Themeda quadrivalvis (L.) O. Ktze., Rev. Gen. Pl. 2: 794. 1891; S.K. Malhotra & K.M. Rao in J. Bombay Nat. Hist. Soc. 78 (3): 485. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 622. 1996. *Andropogon quadrivalvis* L. in Murr., Syst. Veg. ed. 13. 758. 1774. *Themeda ciliata* (L.f.) Hack. in DC., Monogr. Phan. 6: 664. 1889; Hook.f., Fl. Brit. India 7: 213. 1897; Cooke, Fl. Pres. Bombay 3: 514. 1958 (Repr.). ‘*Bhati*’, ‘*Fulora*’. ‘*Ghonad*’, ‘*Zini*’.

Stout, annual grasses; culms up to 1 m tall, suberect or geniculately ascending. Leaves $10\text{--}20 \times 0.3\text{--}0.6$ cm, linear, acute, flat, flaccid. Spikelets of two types; involucrel spikelets pedicelled, sterile or imperfectly male, linear-lanceolate; bisexual or fertile spikelets linear-lanceolate, sessile awned with two pedicellate male or sterile spikelets. Caryopsis linear-obovoid.

Fl. & Fr.: September–January.

Illus.: P. Lakshmi. & B.D. Sharma, Fl. Nasik Dist, 588, f. 52. 1991.

Distrib.: Common along lake side and moist places, Nagzira, Nawegaon.

Notes: The grass is eaten by deer.

Themeda tremula (Nees ex Steud.) Hack. in DC., Monogr. Phan. 6: 667. 1889; Cooke, Fl. Pres. Bombay 3: 515. 1958 (Repr.); S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State,

Monocot. 623. 1996. *Anthistiria tremula* Nees ex Steud., Syn. Pl. Glum. 1: 401. 1855; Hook.f., Fl. Brit. India 7: 214. 1896. 'Barki', 'Bhatandi'.

Perennial herbs; culms 25–115 cm tall, erect or ascending from creeping rootstock. Leaves linear, tip setaceous, margins scabrid. Spikelets are of two types one is involucre spikelets and other is pedicelled glabrous spikelets, in panicles.

Fl. & Fr.: October–February.

Illus.: Blatt. & McCann, Bombay Grass. 119. t. 75. 1935.

Distrib.: Frequent along grasses, Nagzira.

Themeda triandra Forssk., Fl. Aegypt-Arab. 123 & 178. 1775; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 11. 1980; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 623. 1996. *Anthistiria imberbis* Retz. Obs. Bot. 3: 11. 1783; Hook.f., Fl. Brit. India 7: 211. 1897. *Themeda imberbis* (Retz.) Cooke, Fl. Pres. Bombay 2: 993. 1908 (Repr.). 'Bathni', 'Bunden'.

Stout, perennial grasses; culms 25–80 cm tall, erect. Leaves 12–25 × 0.3–0.6 cm, linear-lanceolate, scabrid above and on margins. Racemes clustered; involucre spikelets sessile; bisexual spikelets linear-oblong. Caryopsis linear-obovoid.

Fl. & Fr.: August–February.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt 943 & 944. 1982.

Distrib.: Common in open grasslands, Nawegaon, Nagzira.

Vetiveria Bory de St. Vincent

Vetiveria zizanioides (L.) Nash in Small, Fl. S.E.U.S. 67. 1903; S.K. Malhotra & K.M. Rao in Bull. Bot. Surv. India 22: 11. 1980 et in J. Bombay Nat. Hist. Soc. 78(3): 486. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 632. 1996. *Andropogon lawsonii* Hook.f., Fl. Brit. India 7: 187. 1897. 'Khas-khas', 'Ushir', 'Vala'. (PLATE:F-2)

Perennial herbs; culms 1.3–1.5 m tall, tufted, slender. Leaves 12–18 × 0.2–0.5 cm linear, rigid, flat or folded, ciliate on margins. Spikes contracted, purplish green. Sessile spikelets linear, bisexual; pedicelled ones male and dorsally compressed; glumes spinulose.

Fl. & Fr.: September–December.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 955 & 956. 1982.

Distrib.: Frequent along lakeside, moist places, Nawegaon, Nagzira.

Notes: The plant is used for making curtains etc.

Cultivated Species:

Perotis indica (L.) O. Ktze., Rev. Gen. Pl. 2: 787. 1891; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 568. 1996. *Anthoxanthum indicum* L.,

Sp. Pl. 28. 1753. *Perotis latifolia* Ait. Hort. Kew 1: 85. 1789; Cooke, Fl. Pres. Bombay 3: 538. 1958 (Repr.). 'Kuras'.

Herbs, 20–40 cm tall. Leaves ovate-lanceolate, flat, glabrous. Spikes violet-purple, compact. Spikelets linear, scabrous. Grains cylindric.

Fl. & Fr.: September–October.

Illus.: Blatt. & McCann, Bombay Grass. 220. t. 147. 1935.

Distrib.: In open grasslands and near lakes frequent, Nawegaon.

Notes: The violet-purple spikes of the plant are attractive. Hence the plant is used for ornamental purpose.

Setaria italica (L.) P. Beauv. Ess. Agrost. 51, 178. 1812; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State, Monocot. 596. 1996. *Panicum italicum* L., Sp. Pl. 56. 1753. 'Kano', 'Rala'.

Annual herbs, erect 50–100 cm tall. Leaves 12–25 × 0.5–2.4 cm, linear-lanceolate, minutely scaberulous on both side. Spikelets ellipsoid in compact panicles.

Fl. & Fr.: September–February.

Distrib.: Frequent, cultivated, naturalised in forests, Nagzira.

Sorghum halepense (L.) Pers. Syn. Pl. 1: 101. 1895; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981; P. Lakshmi. in B.D. Sharma & al., Fl. Maharashtra State Monocot. 598. 1996. 'Barro', 'Boru'.

Herbs, perennial 2–3 m tall, erect; culms simple or branched, solid. Leaves 11–40 × 1.5 cm, linear-lanceolate; sheaths striate; ligule membranous, ciliate. Spikelets ovoid-lanceolate in decompound panicles; pedicelled spikelets sessile but narrower. Fruits terete, dark brown.

Fl. & Fr.: July–January.

Illus.: Matthew, Illus. Fl. Tamilnadu Carnatic 2: tt. 937 & 938. 1982.

Distrib.: Cultivated, naturalized in scrub forests, Nawegaon.

PTERIDOPHYTES

SELAGINELLACEAE

Selaginella delicatula (Desv. ex Poir.) Alst. in J. Bot. 70: 282. 1932; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981; Dixit, Census Ind. Pteridophytes 12. 1984; Kothari & S. Moorthy, Fl. Raigad Dt. 510. 1993. *Lycopodium delicatulum* Desv. ex Poir. in Lam., Encycl. Suppl. 3: 554. 1814.

Trailing herbs with wiry rhizophores, dimorphic leaves, micro and megasporangiate strobili.

Fertile: September–October.

Distrib.: Frequent, in marshy places, Nawegaon, Nagzira.

LYGODIACEAE

Lygodium flexuosum (L.) Sw. in Schrad. Journ. Bot. 1800 (2): 106. 1801; S.K. Malhotra & K.M. Rao in J. econ. Tax. Bot. 2: 3. 136. 1981; Dixit, Census Ind. Pteridophytes 58. 1984; Kothari & S. Moorthy, Fl. Raigad Dt. 513: 1993. *Ophioglossum flexuosum* L., Sp. Pl. 2: 1063. 1753.

Climbers; fronds with pinnules pinnate or variously lobed, serrulate; sori protruding from margins.

Fertile: October–February.

Illus.: Beddome, Handb. Ferns Brit. India 457. f. 283. 1969 (Repr.).

Distrib.: Frequent, along hilly forests, Nawegaon, Nagzira.

Notes: Rhizomes boiled with mustard oil and used in rheumatic pains.

ADIANTACEAE

Adiantum philippense L., Sp. Pl. 2: 1094. 1753; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981; Dixit, Census Ind. Pteridophytes 75. 1984; Kothari & S. Moorthy, Fl. Raigad Dt. 516. 1993.

Rhizomes tufted, creeping. Fronds oblong, pinnate; sori marginal.

Fertile: August–November.

Distrib.: Frequent along hilly forests, Nawegaon, Nagzira.

Notes: The paste of leaves is said to be used in leprosy and to overcome hair falling. Ornamental.

PARKERIACEAE

Ceratopteris thalictroides (L.) Brongn. in Bull. Sci. Philom. Paris 1821: 186. 1822; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 136. 1981; Dixit, Census Ind. Pteridophytes 84. 1984; Kothari & S. Moorthy, Fl. Raigad Dt. 516. 1993. *Acrostichum thalictroides* L., Sp. Pl. 2: 170. 1753.

Aquatic or semi-aquatic with inflated stipes. Fronds succulent, simple or bi-tripinnate, ultimate segments pod-like in fertile ones.

Fertile: October–November.

Illus.: Beddome, Ferns of Brit. India 123. t. 83. 1969 (Repr.).

Distrib.: Frequent, along moist places, Nagzira.

Notes: Fronds used as poultice in skin diseases, blood clotting and young fresh leaves as vegetable curry (Kothari, *op. cit.*).

MARSILEACEAE

Marsilea minuta L. Mant. Pl. 308. 1771; Dixit, Census Ind. Pteridophytes 85. 1984; Kothari & S. Moorthy, Fl. Raigad Dt. 517. 1993.

Semiaquatic herbs. Leaflets 4, entire, crenate-serate. Sporocarps rounded, ribbed and bordered.

Fertile: May–October.

Illus.: Gupta, Marsilea Monogr. No. 2. 23. f. 7, 7a. 1962.

Distrib.: Frequent along lakes, Nagzira.

Notes: Dried stipes used for decorative purposes. The leaves and sprouts are cooked as vegetable.

THELYPTERIDACEAE

Christella parasitica (L.) Lev., Fl. Koutesycheon 475. 1915; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 136. 1981; Dixit, Census Ind. Pteridophytes 106. 1984; Kothari & S. Moorthy, Fl. Raigad Dt. 517. 1993. *Polypodium parasiticum* L., Sp. Pl. 2: 1090. 1753.

Rhizomes creeping. Fronds bi-pinnatifid with anastomosing veins. Sori globose, indusiate.

Fertile: October–November.

Distrib.: Frequent in moist, swampy places, Nawegaon.

ATHYRIACEAE

Athyrium hohenackerianum (Kuntze) Moore, Ind. Fil. XLIX. 1857; S.K. Malhotra & K.M. Rao in J. Econ. Tax. Bot. 2: 135. 1981; Dixit, Census Ind. Pteridophytes 127. 1984; Kothari & S. Moorthy, Fl. Raigad Dt. 519. 1993. *Altantoides hoheanckeriana* Kuntze, Farrankr. 2: 63. t. 126. 1850.

Terrestrial ferns with many pairs of pinnae; sori copious with linear-oblong, curved, horse-shoe shaped involucre.

Fertile: July–October.

Distrib.: Frequent along hilly forests, Nagzira.

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ABOUT THE BOOK

The need for comprehensive flora of Nawegaon National Park and Nagzira Wildlife Sanctuary in Maharashtra state was long felt. Except a few scattered articles published by Haines(1916), Malhotra & Rao (1980, 1981a,b), Illorkar & Totey (2001), Illorkar & Khatri (2003), Patil (2008), Patil & Kothari (2009, 2013 a-b), there is no much updated information regarding correct nomenclature, description, phenological data, relative abundance, distribution and uses of plants of Nawegaon National Park and Nagzira Wildlife Sanctuary. The present work is an outcome of extensive and intensive plant explorations in the study areas from 2001 to 2008 and to fill up the existing lacunae. Since the protected areas are prime centers for in-Situ conservation, an assessment of the existing floristic wealth of these areas was essential. Considering the above facts, Nawegaon National Park and Nagzira Wildlife Sanctuary were selected for detailed study of plant diversity. A systematic enumeration on 715 species with 7 pteridophytes are supported by 3 maps, 4 tables, 2 pie charts, 10 photographic Plates A–J.

The book will help naturalists, conservationists, teachers, students, foresters and other stakeholders concerned with the Flora and Fauna of the above mentioned protected areas.

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