

D.C. Saini **Medicinal Plants of  
BSIP Garden**



**Diamond Jubilee Special Publication**



**Birbal Sahni Institute of Palaeobotany  
Lucknow  
2006**

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Cover Photo: Hanging flower of *Adansonia digitata* Liin. (Boabab) tree. This endangered tree is native to South Africa.

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## FOREWORD

It seems possible that, as soon as man had achieved the stage of reasoning, he discovered by the process of trial and error, which plants might be used as food, which of them were poisonous, and which of them had some medicinal value. Folk medicine or domestic medicine largely derived from vegetables or herbs, originated in this fashion and still persists.

Indian medicine is ancient. Its earliest concepts are set out in the several written ancient documents called the Vedas, especially in the metrical passages of the Atharvaveda, which may possibly date as far back as the second millennium B.C. The system of medicine called Ayurveda was received by Dhanvantari from Brahma, who was later defined as the god of medicine. Large number of formulations of drugs using many plants and their different parts for treatment of variety of diseases has been provided in these ancient literatures. People are taking advantage of them for amelioration of their multifarious ailments since Vedic Period.

Though the traditional system of 'green medicine', has been flourished for quite a long time yet for a short while the glare of the traditional system of herbal medicines has been blurred under the impact of rapid advancement of civilization and miraculous effects of chemically synthesized modern medicines. This has led to a serious decline in traditional herbal knowledge and human expertise capable of recognizing the various medicinal plants. The global concern for reviving interest in traditional system of medicines for immediate as well as future use has gained momentum after the WHO Assembly (1976-77), in which a formal recognition to the traditional medicines was given along with recommendation to associate the traditional healers in the national health-care programme. During last two decades, by realizing the adverse side-effects of chemically synthesized medicine, people are again diverting their inclination to the nature and its plant resources for their safe and effective curative properties against variety of diseases. However, unfortunately due to lack of sufficient knowledge about identification of medicinal plants among common people and inadequate availability of knowledgeable human resources, a great difficulty has been found to get genuine samples of medicinal plants. Thus, there is an urgent need of wide awareness campaign among scientists, teachers and common people for precise recognition, conservation and plantation of medicinal plants.

In this connection, this book is a significant contribution to the growing literature on medicinal plants, by which the author has made an effort to activate the interest among the students, teachers, scientists and common men for plantation, conservation and sustainable utilization of medicinal plants through establishment of herbal gardens in their Institutions and fallow lands around their vicinity. This volume is also unique because it does not simply present the list of plants and their uses for treatment of different diseases but provides a beautiful photograph and detailed description of each plant to facilitate the easy recognition of various medicinal plants. The symptoms, diagnosis and causes of different diseases have also been incorporated along with methodology adopted in extraction of drugs and their mode of application. In order to bring this book in the present form the author has utilized his full expertise of scientific training in taxonomy, ethnobotany and practical experience.

I am confident that this book will meet a real need and will be of considerable use to students, teachers and research workers, especially those interested in Ayurveda, Unani, Siddha, Homoeopathy, medical botany, agricultural botany and horticulture.

I am glad to recommend this contribution to medicinal plants and wish all success to the author.

October 16, 2006

Dr. N.C. Mehrotra  
Director  
Birbal Sahni Institute of Palaeobotany

## PREFACE

The Indian sub-continent, one of the 12 mega-diversity regions of the world, represents undoubtedly one of the largest treasures of medicinal plant wealth. The familiarity with medicinal plants played a significant role as curative and protective agents against various ailments, since the dawn of the human civilization. At present, there are many precious life-saving medicines obtained from plants. Though the plants have been successfully used as medicine for thousands of years by sages, vaidyas, hakims, bhagats and other medicine men, but in recent years it has been overshadowed under the influence of fast action and instant result of allopathic medicines. As the present generation takes no interest in preserving the traditional uses of these resources, it is feared that the herbal knowledge for remedies of various diseases may get lost in the near future. Thus, preservation of such traditional knowledge in the face of sweeping modern medicines and diminishing ancient system of medicine is utmost need of the day and to safeguard them for the sake of future generations.

Once having realized the harmful side-effects of modern medicines, the quest for natural drugs, especially those derived from plants has been revived mainly because of the widespread belief that 'green medicine' is healthier, safe and secured, and also has milder action in various body functions than synthetic medicines. Growing interest in the use of herbal medicines among the elite of the society is heartening but, unfortunately, owing to lack of sufficient knowledge about recognition of even common medicinal plants, they could not get the genuine herbal samples. This is because of the inadequate information of systematic identification and scientific cataloguing of the medicinal plants, given in our ancient Ayurvedic literatures, which are the only authentic and recognized source of reference, recommended for variety of herbal medicines and their diverse uses in the treatment of various diseases. For the better understanding and utilization of herbal medicines and sharing of knowledge, a mass consciousness campaign has to be created for people's motivation towards the ex-situ plantation of important and common medicinal plants through establishment of herbal gardens in public and private institutions as well as in kitchen gardens for their easy access, better recognition, conservation and sustainable utilization. The gardens provide shelter to many rare, threatened and endangered plant species, which for many reasons are facing danger of extinction in their natural habitats. Considering the above facts

Birbal Sahni Institute of Palaeobotany, Lucknow, an autonomous research organization under the Department of Science and Technology, Ministry of Science and Technology, Government of India, New Delhi, devoted to the promotion and dissemination of Palaeobotanical knowledge, has developed a small herbal garden in its campus with an objective to grow authentically identified medicinal plants in order to create awareness concerning their identity and medicinal values among the students of different schools, colleges, universities and scientists of various organizations in the country and abroad, regularly visiting the Institute in academic pursuit or study tour.

While planning to write this book it has been thought that merely enumeration of plants with their curative properties is not enough and worth useful unless they are provided with good photographs and description giving salient features of the plants for their correct identification. There are so far a few books available dealing with these aspects. This situation highlights the urgent need of an illustrated book on medicinal plants dealing with all these required information. In this context, the present book on Medicinal Plants of BSIP Garden is justified. The main objective of this publication is to familiarize the populace with important medicinal plants their recognition and uses, and to activate them for plantation of medicinal plants around their vicinity. This effort will also bring awareness among the people regarding the conservation of medicinal plants from over exploitation and subsequent extinction.

The inception of writing a book on this topic emerged with the inspiration of Dr. N.C.Mehrotra, Director, B.S.I.P., Lucknow. The accomplishment of this book could be possible by his constant encouragement, full support and keen interest in garden plants, especially the medicinal, sacred and auspicious plants. The author is highly obliged to him.

The book comprises a detailed account of about 61 commonly occurred medicinal plants, planted in Institute's garden. Each plant species is provided with correct botanical name suffixed with author (s') name in accordance to the International Code of Botanical Nomenclature and their families (in parenthesis) vernacular names in English and different Indian languages



followed by phenological description including habitat, distinct morphological feature, flowering and fruiting times, distribution, parts used, herbal actions and medicinal uses along with symptoms and cause of diseases. The names of active chemical compounds, responsible for treatment of different diseases, found in the plants are also provide along with the mode of propagation for easy plantation of medicinal plants. To avoid the repetition of the detail explanation of symptoms and diagnosis of a disease at several places, a glossary of medical terms for diseases, used in this book has also been provided.

I wish to express my profound sense of gratitude to Dr. N. Awasthi, Ex Deputy Director, Birbal Sahni Institute of Palaeobotany, Lucknow, for his valuable suggestion and going through the manuscript. I wish to express my sincere thank to Dr. M. R. Rao, Scientist 'E' [Convener - Garden Committee], Dr. M. S. Chauhan, Scientist 'D', Dr. (Mrs) Neeru Prakash, Scientist 'D' and Mrs. Asha Guleria, Technical Officer 'C', Birbal Sahni Institute of Palaeobotany, Lucknow for their suggestions and helps in various ways. Thanks are also due to Sri Ram Ujagar for typing of the manuscript. I would be failing in my duties if I do not record my special thanks to my wife, Mrs. Ruby Saini who has been a constant source of encouragement during the preparation of this book.

I hope this book may stimulate the people of all level for plantation, sustainable utilization and conservation of important medicinal plants.

D.C. Saini

## INTRODUCTION

India, a country of varied physiographical configurations and meteorological conditions, is bestowed by nature with richest and diversified flora. It has also been inhabited by millions of tribal people since the time immemorial. The diverse vegetation and multiethnic societies make India one of the prosperous countries of the world in term of culture and bioresources, having all sorts of human needs including food, fiber, fuel, gum, resin and medicine. The knowledge of medicinal plants is perhaps as old as the human race itself and this resource related to well being of human health has got accumulated through ages by incidents, trials and errors.

It is perceived that the primitive men, during the course of their quest for food and other requirements, must have come across plants having pain relieving and healing property against several illnesses. The observation of beneficial effects of these plants induced an encouragement for genesis of basic thoughts in human mind. An analysis of such observations provoked them to search and identify more plants of medicinal value for combating one or other diseases. As a consequence of this, a large number of medicinal herbs have been discovered by them. These plants got wider use and success in experiments on human and led to our recognized medicines. Many of them in regulated doses constitute potent and effective remedies for amelioration from deadly diseases. These insights of incipient civilizations, developed over centuries of their observations and experimentations, have descended down to modern civilization through the indigenous and ethnic societies. Significantly, several among these medicinal plants have found wide acceptance and application in the organized system

of medicines (Chinese, Ayurveda, Siddha and Unani-Tibb, Tibetan, etc.) as well as modern medicines.

In India relevant information on medicinal plants can be chiefly traced in Vedic literature viz., *Charaka Samhita* and *Saushruta Samhita*. In addition, such account is also mentioned in *Vasthu gunadiepica* – a local treatise of Materia Medica. The herbal medicines were very popular and widely used among the people of ancient India. There were many specialized medicine-men, 'Vaidyas', 'Hakims' and 'Bhagats' in each village and area who had good knowledge of medicinal plants and their uses in specific diseases along with their procedures of preparation. Apart from the specialized traditional healers, there were also several elder folk men and women in our rural society having ample knowledge of correct recognition of frequently available medicinal herbs and their uses in different diseases. Under the able guidance and care of these knowledgeable experts, the traditional medicine flourished in India for quite a long period, but during recent years, it has been observed that under the impact of quick action and miraculous effects of chemically synthesized modern medicines, the faith in the traditional herbal medicine has overshadowed. People are forgetting the traditional uses of their ambient biological wealth. The consequent divorcement of people from dependence upon the vegetational wealth for their primary health-care, resulting in disintegration of knowledge of the plants and their properties.

Recently, the great threat of synthetic medicines on human health by producing variety of harmful side effects has developed a sense of fear in the mind of people towards the use of modern medicines. This

has compelled them for looking back again to nature and conventional green medicines. Nevertheless, unfortunately, owing to the non-availability of adequate number of competent human resource with good knowledge of bioresources, a great difficulty has been observed in recognition of appropriate medicinal herbs. The dearth of enough information of systematic identification and scientific cataloguing of phyto-medicinal species, described in the literature of ancient system of medicine is another factor, liable for posing great hindrance in proper recognition of appropriate medicinal samples of plants. Though our ancient literatures provide a good account on description of plants along with different formulations of drugs, symptoms and diagnosis of diseases, methodology followed in preparation of medicines and mode of application, however, the system of classification, adopted in these literatures creates some confusion in nomenclature of medicinal plants. Sometimes, the description of a plant, given in these ancient medical literatures shows affinity with altogether unrelated two or three plant species belonging to different families. For example, the description of plant cited for the Vedic drink, 'Soma' in *Rig Veda* has been subject of controversy for more than two thousand years and shows similarity with more than hundred plants species [*Sarcostemma*, *Periploca* and *Ephedra*, and *Amanita muscaria* (mushroom)]. Similarly, the description of 'Brahmi' also shows affinity with *Centella asiatica* (Linn.) Urban, and *Bacopa monnieri* (Linn.) Penn. This has led a great difficulty in identification of appropriate samples of medicinal plants, prescribed for treatment of specific disease. To overcome this problem, the modern system of classification should be followed in order to bring the related plants together and to make the literature more feasible. However, the evidences of systematic herbal knowledge have been found in *Sushrut Samhita*, which is the oldest medicinal book. The influx of instant caring modern medicines has diminished the popularity of conventional medicines and consequently this has led a serious decline in human expertise, capable of recognizing the various valuable medicinal plants. Due to the scarcity of good herbalists or 'Vaidyas' or 'Hakims' or 'Bhagats' and non-

availability of quality herbal medicines, people are bound to use chemically synthesized drugs. Hence, a concerted effect has to be made by government and society to preserve these conventional expertises from getting lost forever.

In fact, what is essential for the revival of interest and faith of society in the traditional herbal medicines is to increase the number of trained persons in the society so that the number of people, capable of dealing with the plant identification be adequate in near future. This objective can be easily achieved by initiating the educational programme for awareness about medicinal plants and their conservational aspect. Establishment of herbal garden from primary school level to college, university, institution and research organization including public and private sectors will provide great help in this direction. Publications of low cost small booklets on locally available medicinal plants also play a pivotal role in dissemination of knowledge on conventional herbal medicines among people of all age groups.

Keeping in view the above idea in the mind, a small herbal garden has been developed in the campus of Birbal Sahni Institute of Palaeobotany, Lucknow with an objective to provide relevant information about authentically identified medicinal plants and to create awareness among the students of various schools, colleges, universities and scientists of the country and abroad, who regularly visit the Institute for academic purposes. In order to enlighten the people about precise identity of some important medicinal plants of Institute's premise and their uses, a book entitled **Medicinal Plants of BSIP Garden** is being published. The book comprises the comprehensive relevant information and colour photographs of about 61 common medicinal plants, planted in Institute's garden. The description of each plant species incorporates the correct botanical name, its family, vernacular name in English and different Indian languages followed by an account on, flowering and fruiting times, distribution and medicinal uses along with symptoms and cause of diseases. A glossary of technical medical terms for diseases, used in this book has also been provided to make the text easily understandable to the common people.

## ENUMERATION

### ***Abroma augusta* Linn. (STERCULIACEAE)**

#### Vernacular names

English–Cotton *Abroma*, *Perennial Indian hemp*,  
*Devil's cotton*

Hindi–*Ulatkambal*, *Kumal*, *Olak*

**Description**–A large shrub or small tree with downy branches. Leaves 8-15 cm long with 3-7 basal nerves, repand-denticulate, angled in young plants, glabrescent above, tomentose beneath. Flowers axillary, pendulous, deciduous, copper coloured. Capsule 3-5 cm in diam., with 5 prominent angles, truncate at the apex, septicidally 5-valved; valves villous at the edges. Seeds many, blackish, globose. Flowers are dark brown, pendulous.

**Flowers & Fruits**–August-November.

**Distribution**–Widely distributed throughout the hotter parts of India, often cultivated, ascending to 1500 m on the Eastern Himalaya.; also found in Java, the Philippines and China.

**Parts used**–Leaves, stem, barks, seeds, roots.

**Herbal action**–Rheumatism, gonorrhoea, uterine tonic, menorrhagea, diabetes, sinusitis, emmenagogue, dysmenorrhoea,

**Uses**–Poultice of boiled leaves is used to treat rheumatic swelling and pain. The extract of leaves is used to cure diabetes and inflammation of sinus, especially a paranasal sinus (Sinusitis). Various agents,



including viruses, bacteria or allergy, may cause it. An infusion of fresh tender branches in cold water is used to treat a contagious, catarrhal inflammation of the genital mucous membrane of male and female, caused by the gonococcus, *Neisseria gonorrhoeae* (Gonorrhoea). The extract of fresh leaves, root and bark of stem is used as uterine tonic and as an agent to hastening uterine evacuation by causing contraction of the uterine muscles (Emmenagogue).

The fresh extract of root bark is used to get relief from pain of a severe shooting or stabbing character along nerve and in treatment of unusually painful and difficult and irregular menstruation. The pain usually begins just before or at menarche, which is spasmodic and located in the lower abdomen, but it may be also radiate to the back and thighs (Dysmenorrhoea). Paste of root is applied on wounds for early cure and to kill maggots.

Aqueous extract of seeds is taken to cure swelling of ovary. The fatty oil extracted from the seeds is rich in *Linoleic acid* that lowers the cholesterol level in blood.

*Chemical compounds*—Linolic acid.

*Mode of propagation*—Easily grown by seeds in moist places during rainy season. Seeds germinate in 21 to 30 days at 24°C.

### ***Acorus calamus* Linn. (ARACEAE)**

Vernacular names

English—*Sweet flag*

Sanskrit—*Vacha*

Hindi—*Bach, Safed Bach, Ghorabach, Shadgranth*



Marathi—*Vekhand*

Gujarati—*Vekhand*

Telugu—*Vasa*

Tamil—*Vasambu*

Kannada—*Baje, Gida*

Malayalam—*Vasambu*

*Description*—A marshy, perennial herb, with aromatic, creeping hizomes. Leaves distichous, 1–2m long, enciform, linear with strong midrib and parallel nerves. Spathe 5–10cm long. Flowers small, yellow–green, hermaphrodite, densely arranged in cylindric, sessile, slightly curved spadix. Berries green, angular, 1–3 seeded. Seeds oblong.

*Flowers & Fruits*—April–August.

*Distribution*—Native to eastern North America and temperate Asia. Commonly found throughout temperate and warm regions in India, Pakistan and Sri Lanka ascending to 2,200 m in Sikkim Himalaya.

*Parts used*—Rhizomes, roots.

*Herbal action*—Spermatorrhoea, blood pressure, stimulant, stomach disorder, cold, cough, asthma, hysteria, typhoid, insecticide, sore throat, epilepsy, tumor, dysmenorrhoea, lithontriptic, analgesic, sedative, antidote, antispasmodic, emetic, diuretic, stomachic, nervine tonic, antibacterial property, appetizer, anthelmintic, abortifacient, ecboic.

*Uses*—The rhizomes are used as an analgesic for the relief of headache or toothache, for oral hygiene, to cleanse and disinfect the teeth. It fights against the effect of exhaustion or fatigue and used to treat involuntary muscular contraction that may be part of a disorder such as spastic paralysis, convulsions or they may be specific such as cramp, colic, etc.; it also helps to cure hangover. The rhizome is the source of an essential oil known as Calamus oil, containing *asarone* and its isomers. The essential oil free alcoholic extract of rhizome possesses sedative, tranquillizing and analgesic properties and has antibiotic activity but is also potentially toxic and carcinogenic. The pills prepared from the paste of rhizome and root of 'pan' (*Piper betel* Linn.) and 'kamal' (*Nelumbo nucifera* Gaertn.) in the ratio of 2:1.5:1 is taken orally ones a day for ten days starting from first day of



menses to get relief from painful and difficult menstruation. Fresh and dried rhizome is taken orally with milk and sugar to treat spermatorrhoea and blood pressure. The aromatic rhizomes are wonderful tonic having of stimulating power and used to normalize the appetite and to get relief from flatulence, indigestion, chronic dysentery, diarrhoea, stomachache. The small doses of it used to reduce acidity whilst larger doses increase stomach secretions and it is therefore, recommended in the treatment of anorexia nervosa and also used as stimulant to central nervous system; it is very useful remedy for cold, cough, asthma, bronchial catarrh, hysteria, typhoid, intermittent fever, malarial fever and haemorrhage following abortion. It is also used to remove the stone present in the urinary bladder (Lithontriptic). Small pieces of rhizome are sucked as lozenges to treat the sore throat and to get melodious voice. A pessary prepared by mixture of rhizome, saffron and milk is worn in the vagina to prevent uterine displacement and to induce abortion or for quick delivery. A decoction of rhizome is used to treat epilepsy, glandular and abdominal tumors and also used as hip bath for hastening delivery and used as hair wash to kill the lice. The pulverized rhizome is dusted over foul and indolent ulcers for relief. The powdered rhizome is taken with water to expel intestinal worm. The poultice of the rhizome or a liniment made by rubbing the rhizome with milk is also used as an antidote in case of croton poisoning and snake bite. The rhizome boiled in the seed-oil of 'malkangani' (*Celastrus paniculatus* Willd.) is used as liniment to cure rheumatism. The extract of roots is given orally to infants and children for proper development of brain and to improve mental faculty.

*Chemical compounds*–Flavone, Asarone, Calamione, Acorin, Beta-asarone.

*Mode of propagation*–The plant grows very well in sandy, clay loam and highly alluvial soil. The water requirement of the plant is very high. The new rhizomes arising from old plant are planted at 30–40 cm spacing in marshy and waterlogged areas, and along the river-banks during month of February to March.

### ***Adansonia digitata* Linn. (BOMBACACEAE)**

*Venacular names*

English–Baobab, Monkey bread tree, African calabas,

*Cream-of-tartar tree*

Hindi–Gorakh-imli, Lichora

Marathi–Gorakh chinch

Gujarati–Gorakh cinch

Tamil–Anaipuli

Kannada–Magmavu

*Description*–A soft wooded tree with thick trunk and very widely spreading branches and sparse foliage. Leaves digitately compound with 3–7 glossy leaflets each about 12 cm long. Flowers 12–18 cm in diam., white or cream coloured, attractive sweet scented on long stalk, large and pendulous. The flowers open only at night and are pollinated by bats feeding on the nectar. Petals curl backward. Numerous staminal tubes ending in a purplish spherical mass. Fruits velvety, 15–20 x 8–10 cm, elliptic, narrowed towards the ends. Seeds about 30 in number, 10–12 mm long, small, laterally flattened, reniform or kidney shape, dark brown or black, embedded in a mucilaginous pulp with pleasant, mildly acid flavor.



*Flowers*–March–June; *Fruits*–September–February.

*Distribution*–Native to hot dry savannas of Africa extends from Angola, through southern Africa to East Africa, as far north as southern Sudan (up to 1250 m) and Ethiopia, Malawi, Zimbabwe, Sahel, Madagascar and northern Australia. It has been introduced by humans throughout the tropics probably brought to India by Arab traders, and is scattered all over the country, particularly common along the West coast of India. In India it is not truly wild. Occasionally cultivated in gardens.

*Parts used*–Leaves, barks, fruits, seeds.

*Herbal action*–Fever, bronchitis, digestive, eye diseases, inflammation, rheumatism, refrigerant, appetizer, asthma, diarrhoea, dysentery, gum, allergy, dermatitis, diaphoretic, rancidity.

*Uses*–Leaf paste is applied on wounds to check bleeding and used to check irritation of skin or to make soften the skin and produce soothing effects on burnt skin. A poultice of young leaves is applied as a fomentation to rheumatic affections of limbs, painful and inflammatory swellings, and ulcers. The infusion of leaves and followers is used to treat respiratory and digestive problems; it is also used as an eye lotion to treat inflammation of eyes and as preventive agent against fevers. The dried leaves are used to induce copious secretion of sweat.

The decoction of bark is used as refrigerant and appetizer; also used to treat malarial fever.

The refreshing drink made by off-white, powdery substance of fruit [apparently rich in ascorbic acid (Vitamin C), Tartaric acid and Citric acid]] is used to treat spitting of blood from the lungs (Haemoptysis). This white powdery substance, soaked in water, is given for treatment of fever and also used as cooling, refrigerant, laxative or purgative, demulcent and diaphoretic. The pulp of fruits is used to treat diarrhoea, dysentery and skin diseases (allergic dermatitis). Drink prepared from pulp of fruit, cumin and sugar is taken to cure bilious indigestion.

The decoction of seeds is taken for treatment of dysentery. The roasted powdered seeds are applied to inflamed gums for relief. The seed has high content of vitamins A, D, E and F (essential fatty acids). This golden oil expressed from seed is used in small

percentages in face cream, body lotions and other skin care formulations and said to provide impressive moisturizing benefits to the skin and hair. It absorbs quickly, improves elasticity, encourages regeneration of skin cell and does not clog the pores. The oil is excellent stable against a disagreeable smell or taste from partial decomposition, especially of a fatty substance (Rancidity). It is an excellent ingredient in formulation for eczema and psoriasis.

Decoction of root is used to treat malarial fever.

*Chemical compounds*–Calcium, Potassium, Magnesium; Amino acid–Glutamic acid; Unsaturated fatty acid–Aspartic acid, Oleic acid, Linoleic acid.

*Mode of propagation*–The plant grows by seeds as soon as they are ripe. The seed can be collected from dry fruits by cracking the fruit open and washing away the dry, powder coating. The seeds should be soaked in a container of hot water and allowed to cool. They may then be sown after soaking 24 hours. Seeds are best sown in spring and summer in well-drained sandy soil. Germination may take from two to six weeks. It also can be grown by cuttings in nurseries in the mixture of soil, sand and wormy compost manure. The well drained sandy soil seems to be preferred, although the plants are also found on lateritic soils.

### ***Adhatoda zeylanica* Medic. (ACANTHACEAE)**

Syn.–*A. vasica* Nees

Vernacular names

English–*Malabar nut*

Sanskrit–*Vasaka*

Hindi–*Basaka, Arusa, Rusa, Adulasa*

Bengali–*Bakas*

Marathi–*Adulsa*

Gujarati–*Alduso*

Telugu–*Adsaramu*

Tamil–*Adadodai*

Kannada–*Adusoge*

Malyalam–*Atalotakam*

*Description*–A dense, small, evergreen often gregarious shrub. Leaves simple, ovate or broadly lanceolate, 10–20 cm long, dark green above, pale beneath. Flowers white in short dense axillary paniced spike, arranged towards the end of branches.

## Medicinal Plants of BSIP Garden

Capsule clavate. Seeds sub orbicular, tuberculate, verrucose.

*Flowers & Fruits*–February–July.

*Distribution*–Found throughout the hotter parts of India and Sri Lanka, ascending to 1500 m on the Himalaya; it is also found in Myanmar, China and in Malay Peninsula and Archipelago.

*Parts used*–Leaves, flowers, fruits.

*Herbal action*–Cough, asthma, bronchitis, diarrhoea, dysentery, malarial fever, leprosy, rheumatism, skin disease, anthelmintic, gonorrhoea, ophthalmia, uterotonic, abortifacient, postpartum haemorrhage, antispasmodic, oxytotic, pyrrhoea.

*Uses*–Due to presence of alkaloids, all parts of plant have a bitter taste and possess pronounced medicinal properties, and this may account for the fact of its not being eaten by goats. The active principle of this plant is *Vasicine*, which has found to be a promising uterotonic and abortifacient. It may also find use in stopping haemorrhage occurring after childbirth (Postpartum). The decoction of leaves or the fresh extract of leaves or its powder, mixed with ginger and honey is used to treat the diseases of respiratory tract, particularly in tuberculosis, and all kind of cough, chronic bronchitis, asthma and other chest diseases. It softens the thick sputum and facilitates its coming out. The decoction of leaves mixed with long pepper (*Piper longum* Linn.) and honey is used to treat diarrhoea, dysentery, especially in bleeding of dysentery and used to check local bleeding due to peptic ulcer, piles and menorrhagia. Powdered leaves are also used to treat malarial fever and leprosy. Poultice of the boiled leaves or fomentation of a strong decoction is used for early healing of wound and their protection from other infection; to stop bleeding from nose and to treat tubercular swellings, rheumatic joints, inflammatory swellings and headache. The decoction of leaves is taken to stimulate contraction of the uterine muscle for facilitating or speeding up childbirth (Oxytotic). It relieves muscular spasm, cramps or convulsions (Antispasmodic) and good for the treatment of scabies and other skin diseases. The paste of leaves is applied locally to treat pyrrhoea and bleeding gums.



Infusion of flowers and fruits is used as anthelmintic. Fresh flower is used to cure asthma, fever, gonorrhoea and ophthalmia.

*Chemical compounds*–*Vasicine*, Vitamin C, carotene, Essential oil, Fatty acid, Potassium nitrate, Betain, Vasicinone, Vasicino, Adhatodic acid, Deoxyvasicine, Oxyvasicinine, Maiontone.

*Mode of propagation*–Naturally grows by seeds on dry and shady places. Cuttings also propagate it during rainy season.

### ***Adiantum capillus-veneris* Linn. (ADIANTACEAE)**

Vernacular names

English–*Maiden-hair fern*, *Avenca*, *Alambrillo*

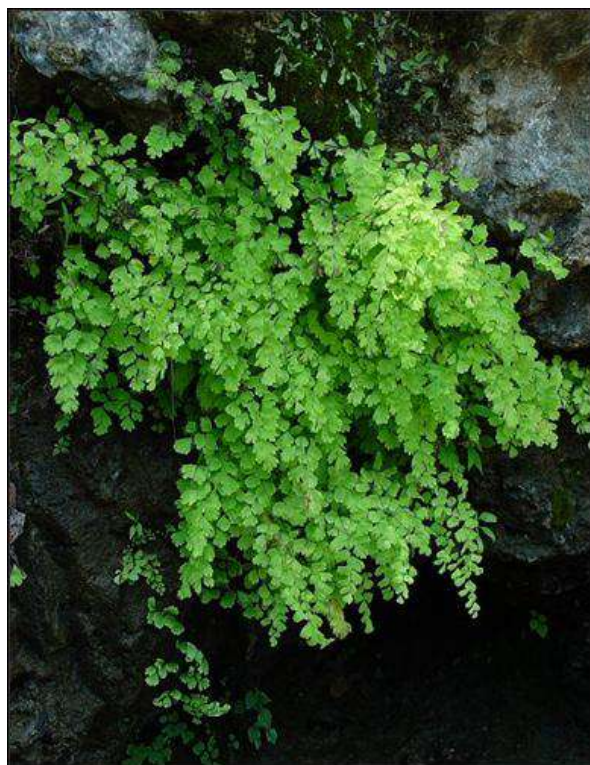
Hindi–*Hansraj*, *Pursha*, *Mubarak*

Gujarati–*Hanspadi*

Kashmiri–*Dumtuli*

Kumaon–*Mubarak*





**Description**—A small sub-erect, rather slender, 10–25 cm long beautiful slow-growing evergreen fern. Rhizome creeping. Fronds bipinnate, with short terminal pinna and numerous erect-patent lateral pinnae on each side, the lower slightly branched. Segments 1–2.5 cm broad, the base cuneate the outer edge rounded, deeply lobed from the circumference in the direction of the centre and the lobes again bluntly crenate, lower petiole 4 mm long, texture pellucid-herbaceous, thin. Sori roundish or ob-reniform, placed in roundish sinuses of the crenations.

**Distribution**—Commonly found throughout tropical, sub-tropical and warm temperate zones of India and Sri Lanka up to 1400 m on the mountains; also found distributed in Europe, Peru, Brazil, Africa, Britain and Australia.

**Parts used**—Fronds, rhizome

**Herbal action**—Demulcent, tonic, fever, bronchitis, asthma, perspiration, pulmonary diseases, diuretic, antidote, stomach disorder, phylaria, emmenagogue,

blood purifier, sore throat, acidity, rheumatism, heartburn, gallstone, alopecia, jaundice.

**Uses**—Paste of fronds is used as demulcent. Decoction or infusion or syrup made by fronds and black pepper (*Piper nigrum* Linn.) is used as expectorant to treat pulmonary affections, and to calm cough to promote perspiration and to treat fever and asthma, urinary disorders, rheumatism, heartburn, gall-stones and also used as emmenagogue. It is also used to check hair fall (Alopecia). The decoction of fern made in country liquor is given orally to get relief from hard tumor of the spleen, liver and other viscera. Extract of fronds is used to purify blood (Depurative) and reduce or remove the toxic effect of insect or scorpion-bite. Sweet drink made by frond is used orally to cure throat infection, acidity and other stomach disorders. Poultice of fronds is used to treat phylarial swelling of testicles. The leaves made in to paste with seeds of 'menthi' (*Trigonella foenum-graecum* Linn.) is used as poultice on boils for early maturation and also applied on wounds to get reduce the poisonous effect of bite of the mad dog. The decoction of rhizome is used to treat jaundice.

**Chemical compounds**—3, 4-epoxyfilicane, 21-hydroxyadiantone and Adiantone, Adiantoxide, Astragalin,

**Mode of propagation**—Naturally propagated by stolons in sandy, loamy and clay soils and requires well drained soil. The plant prefers neutral and alkaline soils. It can grow in semi-shade places under moist situation. The spores are best sown as soon as ripe on the humus-rich and sterilized soil. It is also planted in gardens for its beautiful shining green foliage.

### ***Aegle marmelos* (Linn.) Corr. (RUTACEAE)**

Vernacular names

English—Bael, Bengal quince,

Wood apple

Sanskrit—Bilva

Hindi—Bel, Bilva, Shreephala

Gujarati—Beli

Oriya—Belo

Tamil—Bilva, Vilvam

Telugu—Bilvamu

Malayalam—Koovalam, Vilvam

## Medicinal Plants of BSIP Garden

**Description**—A medium sized, deciduous, spinous tree. Leaves trifoliolate; leaflets ovate-lanceolate, lateral is sessile, terminal is stalked. Flowers greenish-white, sweet-scented. Fruits 5–20 cm in diam., globose, kernel woody. Seeds many, cream coloured, oblong, compressed, woolly, imbedded in aromatic, sweet, orange pulp

**Flowers**—March–May; **Fruits**—June–August.

**Distribution**—Indigenous to India. Found wild and cultivated throughout greater parts of India, ascending to 1400 m on outer Himalaya. It is a native of mountainous parts of Coromandel Coast.

**Parts used**—Leaves, barks, fruits.

**Herbal action**—Asthma, stomach disorder, jaundice, eye disease, bronchitis, diabetes, heart disease, sexual weakness, mental sluggishness, piles, conjunctivitis, styes, cold & cough, coccygodynia, spermatorrhoea, coryza, rhinitis—cold.

**Uses**—The fresh extract of leaves and bark mixed with honey is given orally to treat intermittent fever, cough and asthma; with the addition of black pepper (*Piper nigrum* Linn.) the extract is used to treat dropsy, constipation and jaundice. The decoction of leaves is used to treat biliousness. A lukewarm poultice of boiled leaves is used to get relief from inflammation in eyes; applied on forehead to treat delirium of fever caused by extreme mental disturbances marked by excitement, bodily restlessness, and rapid succession of confused and unconnected ideas (Delirium). The lukewarm poultice smeared with ghee and common salt is applied on chest to treat acute bronchitis. The mixture of powdered leaves made with 'neem' (*Azadirachta indica* A. Juss.) and 'Jamun' (*Syzygium cumini* Skeels) is taken orally to cure diabetes.

The extract of bark mixed with milk and a little amount of the powder of cumin is given to increase seminal fluid. A decoction of bark is used to normalize the palpitation of the heart and useful to patients, suffering from a morbid concern about his health and who constantly complains of imaginary ailments (Hypochondriasis); it is also useful in disorder of mind marked by depression of spirits, mental sluggishness and apathy to one's surroundings (Melancholia);



mixed with sugar and cooked rice it is given to treat diarrhoea and gastric irritability in infants.

The water distilled from flowers is said to be used to counteract the effect of a particular poison.

The fully develop fruits, just before ripening is well known for medicine. The powder made from sun dried unripe fruit is taken to check bleeding and secretion from minor wound of skin; used to regulate the digestive problems and to treat stomachache, chronic mucos dysentery and diarrhoea, especially in case of discomfort in the upper abdomen and lower chest with heartburn, nausea and flatulence accompanying a feeling of fullness; also taken during deficiency diseases caused by Vitamin C, marked by swollen, bleeding gums and subcutaneous bleeding into joints, ulcers and blood deficiency (Scurvy). Decoction of unripe fruit is taken with fennel (*Foeniculum vulgare* Mill.) and ginger for treatment of piles and irritation of alimentary canal. The distillt water obtained by boiling of unripe fruit is used to get relief from pain, stitching with sensation of dust particles in eye with lachrymation (Conjunctivitis),

and a bacterial infection and inflammation of gland at the base of upper eyelids (Styes). It is also used to treat inflammation of nose caused with cold and allergic reactions marked by the symptoms of an acute catarrhal inflammation of the nasal mucous membrane accompanied by profuse discharge (Coryza), sneezing, reddening of eye and blockage of nose (Rhinitis–cold).

The uncooked ripe fruit or a sweet drink made of the pulp of roasted ripe fruit is taken to treat intestinal disorder and used as cooling agent and mild laxative in habitual and chronic constipation, and during composite deficiency disease such as diarrhoea, inflamed tongue, anaemia and weight loss caused due to a metabolic disorder in which fat can not be absorbed. A sweet drink made from fresh pulp of ripe fruit is taken to treat haemorrhoids. The ripe fruits are used to reduce pain in coccyx especially on getting up and during walking (Coccygodynia). Coccyx is a small bone at the base of the spinal column in human formed by four fused rudimentary vertebrae. It is usually ankylosed and articulated with the sacrum above, which is part of pelvis. Powdered dried pulp mixed with honey is taken for treatment of dysentery with griping pain in the lions and nocturnal seminal emission with amorous dreams (Spermatorrhoea). The fine ground roots are given with 'ghee' as an antidote. The decoction of root is used as antidepressant to patient who wrongly believed that he or she is suffering from number of illness and is extremely anxious and depressed.

*Chemical compounds*–Aegeline, Aegelenine, Skimmianine, Marmesin, Marmin.

*Mode of propagation*–Propagated by seeds, root cuttings, layering, gootee or inarching from desirable tree. The sowing time of seeds is June to July. The sapling is planted in pits, filled with mixture of soil, sand and organic manure at the distance of 6–10 m. The tree is hardy and drought resistant and is ordinarily found in dry localities. It can withstand a low temperature as–7°C.

***Alstonia scholaris* (Linn.) R. Br.**  
**(APOCYNACEAE)**

Vernacular names

English–*Devil's tree, Dita bark tree*

Sanskrit–*Saptaparna*

Hindi–*Chitwan, Chatium, Satwin*

Bengali–*Chittin*

Marathi–*Satvin*

Telugu–*Aedakularites–chettu, Palgaruda*

Tamil–*Pala*

Malayalum–*Pala*

Kannada–*Maddale*

*Description*–A large evergreen tree with milky juice. Stem buttressed at the base; branches whorled. Leaves in verticels of 4–7, bright green and shining above, pale or glaucous beneath, oblong lanceolate, obtuse or shortly acuminate, tapering at the base into a short petiole. Flowers greenish–white, fragrant, arranged in compact, umbellately branched pubescent cymes. Follicles teret 30–60 cm long, pendulous in clusters. Seeds 5–8 mm long, slender, flattened with tuft of tawny hairs at both ends.

*Flowers*–December–March; *Fruits*–May–June.

*Distribution*–Found throughout the drier parts of India; in the tropical region of the Himalaya from the Jumna eastward to Assam and southward to Sri





## Medicinal Plants of BSIP Garden

Lanka, Singapore and Panang; also distributed in Myanmar, Malay Peninsula and Archipelago, tropical Australia and Africa.

*Parts used*–Leaves, bark, latex, flowers.

*Herbal action*–Fever, stomach, skin, diarrhoea, dysentery, leprosy, dyspepsia, malaria, anthelmintic, menstrual disorder, rheumatism, asthma, cardiac troubles, beri-beri, galactagogue, haemostasis, liver complaints.

*Uses*–The poultice of powdered, roasted tender leaves is applied to cure unhealthy ulcers with foul discharges. The extract of leaves is used to treat inflammation of the nerves and disease caused due to a dietary lack of vitamin B1 (Thiamine) which results in fever, paralysis, palpitation and occasionally precipitate heart failure (Beri-Beri) and to treat a disease marked by an excessive accumulation of a watery fluid in tissue or cavity of the body and congested liver (Dropsy); it is also given with fresh ginger to women after confinement.

The infusion of bark is very useful in treatment of intermittent and remittent fever, skin diseases, liver complaints, chronic diarrhoea and advanced stage of dysentery; it is effective in debility after fever and other exhausting disease. The pulverized bark is given in night to treat catarrhal dyspepsia. The extract or tincture of the fresh bark is used to treat ulcers, rheumatic joints, asthma and cardiac disease; given with milk to treat leprosy and used as appetizer, tonic, anthelmintic and emmenagogue; taken to restore the tone of the stomach and normal function of digestive system; it strengthens the mammary gland and gives strength to women to nurse better by promoting the secretion and flow of milk (Galactagogue). The powder of bark is highly effective for old wounds which fail to heal, promotes natural process of contraction of the tissue or to arrest secretion or bleeding involving blood coagulation of a ruptured blood vessel (Haemostasis or Styptic). The poultice of powdered bark is applied to painful joints, wrists, ankles and under-pits for relief. The pounded bark is useful for women in the post-natal phase. It is reported to cause paralyzing effect on motor nerves and consequently fall in high blood pressure.

The latex is applied to treat sores, ulcers, tumor and rheumatic swellings.

The ash of the wood employed as caustic to open abscesses.

*Chemical compounds*–Echitamine, Picinine.

*Mode of propagation*–Seeds grow naturally in rainy season on waste land; also propagated by root cuttings, layering and gootees, and planted on drier areas in the pits filled with mixture of sandy loam soil and organic manure.

### ***Aloe barbadensis* Mill. (LILIACEAE)**

*Syn.*–*A. vera* (Linn.) Tourn. ex Linn.

Vernacular names

English–*Barbados aloe*, *Curacao aloe*, *Indian aloe*, *Jafrabad aloe*

Sanskrit–*Ghrita-kumari Kanya*

Bengali–*Ghrita-kumari Kanya*

Hindi–*Ghee-kanwar*, *Ghirkuar*, *Guar-patta*, *Ghe-kuvar*

Marathi–*Korphad*

Gujarati–*Kumarpathu*, *Kunwar*

Oriya–*Kumari*



Tamil–*Chirukattalai*  
Telugu–*Kalabanda*  
Kannada–*Maulisara, Komarika*  
Malayalam–*Kattvazha*

*Description*—A stoloniferous, salt resistant, succulent perennial shrub with short stem. Leaves 30–60 cm long, erect, and crowded in a basal rosette, thick, glaucous–green, narrow lanceolate, long acuminate smooth, margin with spiny teeth. Flowers dull–red or yellow, arranged in simple or few branched racemes on long scape.

*Flowers & Fruits*—February–May.

*Distribution*—Native to West Indies and is now naturalized throughout drier parts of India.

*Part used*—Leaves

*Herbal action*—Purgative, anthelmintic, liver, spleen, insecticide, tonic, piles, fissures, sexual diseases, emmenagogue, blood pressure, dermatitis, rheumatism, gonorrhoea, fever, jaundice, ulcer.

*Uses*—The fresh mucilage of leaves is massaged over loose breast to make it stretched and shining; mixed with turmeric powder it is used on wound to prevent from any septic and other infection. It is also found useful in gonorrhoea, dermatitis, cutaneous leishmaniasis, and other skin diseases. A sweet drink is given orally to children for expulsion of intestinal worm (Anthelmintic) and also used to cure diseases of liver and spleen. The peeled off leaves are taken orally to treat fever, high blood pressure, constipation (Purgative), jaundice and chronic stomach ulcer. The mucilage of leave is used on burnt part to produce cooling effect, early cure and to get relief from pain, burning sensation and glandular enlargement. It is also applied in hairs to kill lice. Spherical sweetmeat made from mixture of mucilage, gum of ‘babul’ (*Acacia nilotica* subsp. *indica* Brenan), coarse ground flour and sugar is given to women after delivery to cure backache and other internal pain. It also helps to regain the physical strength, promotes sexual vigor (Aphrodisiac) and treats rheumatic pain, piles and rectal fissures. Pulp is taken as emmenagogue. The preparation made by boiling of mucilage with sesame or coconut oil is used to promote hair growth.

Investigations indicate that the extract of leaves act on dead epithelial cells of skin, aiding their removal from the surface and stimulating the growth of new cells. It shows remarkable healing effects on sun–damaged and fire burnt skin. Thus, mixture of mucilage and turmeric powder is used as massage over face to remove black spots.

*Chemical compounds*—Barbaloin, Aloesin, Aloinoside A&B, Aloin, Aloe–emodin, Aloesone, Pectic acid.

*Mode of propagation*—Propagated generally by stolons in well–drained sandy soil. The plant is very sensitive to frost and low temperature.

***Andrographis paniculata* (Burm.f.) Wall. ex Nees (ACANTHACEAE)**

Vernacular names

English–*King of Bitters*

Sanskrit–*Krate*

Hindi–*Kalmegh, Kalpnath, Kirayat, Kulufnath*

Bengali–*Kalmegh*

Marathi–*Olikirayat*

Gujarati–*Kariyat*

Telugu–*Nalavemu*

Tamil–*Nilavembu*

Kannada–*Nelaberu*

Malayalam–*Nelavepu*

*Description*—An erect, 30–90 cm high, branched, sharply 4–angled annual hrb. Leaves 5–8 cm long, lanceolate, narrowed at ends, dark green above, paler beneath. Flowers pinkish white, small, solitary, arranged in lax spreading axillary and terminal racemes or panicles, the whole forming a large paniculate inflorescence. Capsule 1–8 cm long, oblong–linear or elliptic, tapering at each end. Seeds 6–12, sub quadrate, rugose, glabrous, yellow pr deep brown.

*Flowers & Fruits*—October–December.

*Distribution*—Found growing throughout India and Sri Lanka on moist, shady places and sometimes in dry forests; also found cultivated in E. and W. Indies.

*Parts used*—Whole plant.

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**Herbal action**—Fever, malaria, stomach disorder, dysentery, liver disease, cholera, diabetes, influenza, bronchitis, typhoid, itching, swelling, vitiligo, dyspepsia, anthelmintic, astringent, febrifuge, cholagogue, alexipharmic, anodyne, tonic, alterative, blood purifier, aperient.

**Uses**—The decoction of leaves is used for treatment of sluggishness of liver. Traditionally it is used to cure children suffering from liver complaints. The alkaloid 'Andrographolid' is a hepatoprotector responsible for the protection and enhancement of liver function. It is also used as antidote or alexipharmic. The extract of fresh leaves mixed with common salt is taken to treat flatulence, loss of appetite, slight feverishness, bowel complaint of children, irregular stool, diarrhoea, advanced stage of dysentery, cholera, bronchitis, piles; it promotes flow of bile (Cholagogue) and get relief from pain (Anodyne). The macerated leaves together with cardamom, clove and cinnamon, are made into pills and prescribed for relief from grip and other stomach ailments in infants. The decoction or infusion of leaves is taken to cure general debility and dyspepsia in which patient feels discomfort in the upper abdomen and lower chest with heartburn, nausea and flatulence accompanying a feeling of fullness after taking food.

The decoction or strong infusion of whole plant is bitter tonic useful for treatment of fever, and stomachache and other pains; it is specially prescribed in convalescence after fever, intermittent and malarial fever, advanced stage of dysentery, disorders of liver and certain forms of indigestion. It exhibits anti-typhoid activity against *Salmonella typhi* (Shroter) which is an acute infectious disease, marked by ulceration of the intestine, eruption of rose coloured spots, and a characteristic course of temperature. Decoction of plant is used as blood purifier and also to treat an acquired dermatological disorder characterized by white patches, surrounded by areas of normal pigmentation (Vitiligo). It exhibits antifungal activity against *Helminthosporium sativum*. The extract of plant is used to check bleeding from minor wound of skin and is also used as anthelmintic, mouth wash and eye drop; used to treat Influenza which is highly infectious disease caused by virus that affects the respiratory tract. Symptoms include headache, weakness and fever, appetite loss and general aches and pains. Sometimes there is



complication of a lung infection. A mixture made with well pounded plant, barks of 'neem' (*Azadirachta indica* A. Juss.) and 'kutaz' (*Holarrhena antidysenterica* Wall.) in equal amount is given with water to treat jaundice. The whole plant is used to correct disordered processes of nutrition, and to restore the normal function of an organ or of the system (Alterative). The extract of plant is applied to get relief from itching and swellings. It is used to treat an infectious bacterial venereal disease (Gonorrhoea) causing an inflammation of the mucous membrane of the vagina or in the male, the urethra and other symptoms like pain on urinating with a discharge of pus. Inflammation of nearby organs may occur (testicle, prostate in men; uterus, fallopian tubes and ovaries in women). The plant is employed for treatment of cancerous symptoms.

The paste of root mixed with black salt is given to treat stomachache. The mixture of paste made with root and 'haldi' (*Curcuma domestica* Valetton) is applied to get relief from itching and to remove skin rashes. The tincture of roots is used as tonic and stimulant, and to evacuate the bowel or to soften stool



(Aperient). The paste of root mixed with rhizome of *Zingiber zerumbet* Rosc. ex Sm. in equal amount is given thrice a day for fifteen days to treat whooping cough.

Recent experiments have shown that the plant has antityphoid, immuno-stimulant and antibiotic activity that is highly significant.

**Chemical compounds**—Andrographolide, Neoandrographolide, Deoxyandrographolide, Andrographidide, Homoandrographolide, Andrographosterol, Andrographane, Andrographone,  $\alpha$  &  $\beta$ —unsaturated lactone.

**Mode of propagation**—It grows by seeds in moderately fertile and well-drained loamy or sandy soil. The plant grows in wide range of temperature in dry to moist places.

### ***Annona squamosa* Linn. ( ANNONACEAE)**

Vernacular names

English—*Custard apple, Sugar apple.*

Sanskrit—*Sitaphal*

Hindi—*Sharifa*

Bengali—*Ata*

Telugu—*Gadagatramu*

Marathi—*Sitphal*

Malyalam—*Antacheecha, Atta*

Tamil—*Atta, Sitapalm*

Oriya—*Ata, Sitapholo*

**Description**—A shrub or small tree, nearly evergreen. Leaves 5–8 cm long, stalked, oblong or oblong-lanceolate, obtuse or acuminate at apex, acute at base, green above, paler beneath. Flower is cream coloured, solitary or fascicled, terminal or leaf-opposed. Fruits are 5–15 cm in diam., yellowish-green at maturity, confluent into a many seeded. Seeds oblong, brownish-black, with a pale swelling at the hilum.

**Flowers**—March–June; **Fruits**—July–October.

**Distribution**—Plant is native of Tropical America and West Indies. Extensively cultivated in the hotter part of India. Now naturalized in many part of India.

**Parts used**—Leaves, bark, roots, fruits.

**Herbal action**—Hysteria, diabetes, dysentery, diarrhoea, fever, constipation, skin diseases, dyspepsia, spinal diseases, melancholia, vertigo, insecticide, abortifacient, astringent.

**Uses**—Leaves are chewed or its infusion is given to treat diabetes and dysentery. Bruised leaves are kept or the extract of leaves is poured into nostrils of a patient suffering from hysterical or fainting fits to get relief. In prolapsed ani of children the infusion of the leaves proves serviceable. The paste of the leaves is applied on sores to kill maggots and to expel guinea-worm from the wounds; the same is also applied in hair to kill lice; mixed with salt it is applied to boils, ulcers and malignant tumors to hasten suppuration. Extract or decoction of bark is used as mouth wash and eye drop; to treat fever, diarrhoea and applied on minor wound to check bleeding.

The unripe fruit is used to treat indigestion, diarrhoea and dysentery. The paste of unripe fruit made with ginger is given to treat the patient who has a false sensation of imbalance and of the surroundings moving. It is commonly a sensation of spinning but may be as if the ground is tilting (Vertigo). This is due to some problem with the mechanism in semicircular canal of the ear. The powder of dried



and unripe fruit mixed with gram flour is used to remove or kill maggots or vermin from ulcers in cattles.

The seeds contain a highly acrid principle said to be fatal to insect, thus the powdered seeds are sprinkled on the wound of the cattle to kill maggots and for extracting guinea-worm; the powder mixed with gram flour is used as hair wash to kill lice. It is a powerful irritant to the mucous membrane that lines the eyelid and is reflected onto the eyeball (Conjunctiva); used to induce abortion by applying them to the mouth of the uterus.

Roots are regarded as a drastic purgative, therefore, the extract of root is used to treat constipation and also taken to cure dysentery and spinal diseases. It is also useful in melancholia.

*Chemical compounds*—Anonaine.

*Mode of propagation*—Generally grows by seeds but it can also be propagated by goottees and layering in well drained loamy soil.



### ***Asparagus racemosus* Willd. (LILLIACEAE)**

Vernacular names

English—*Asparagus*

Sanskrit—*Satmulī*

Hindi—*Satawar, Satmulī, Phusar, Chatwal*

Bengali—*Satmulī*

Marathi—*Satwarmulī, Asvel*

Gujarati—*Satwari, Ekalkanto*

Telugu—*Chattagadda, Pilli-tegalu, Pilli-gaddalu, Taola-gaddalu*

Tamil—*Simai shsdavari*

Kannada—*Majjige-gadde*

Malyalam—*Shatawali*

*Description*—A tall, much branched, scandent, spinous undershrub, with tuberous, creeping rootstock. Stem teret, trigonous, grooved, straggling or climbing, arm with sub erect or sub curved spines. Cladodes 1–2.5 cm long in tuft of 2–6 spreading needle like, falcate, channeled beneath. Flowers small, white, fragrant, solitary or in fascicles of simple or branched racemes. Fruits berry, trilobed, globose, red at maturity, pulpy, 4–6 mm in diam. Seeds few, black,

*Flowers & Fruits*—October–March.

*Distribution*—Found throughout tropical and subtropical regions of India and Sri Lanka, and up to 1400 m on Himalaya from Kashmir eastward. It also occurs in tropical Africa, Java and Australia.

*Part used*—Plant, root, seeds.

*Herbal action*—Dysentery, fever, diarrhoea, dyspepsia, rheumatism, sexual disease, serosis, skin, Tonic, diuretic, aphrodisiac.

*Uses*—The extract of tuberous roots is used orally to get relief from excess menstrual flow; the fresh extract mixed with honey is used to treat dysentery, diarrhoea and indigestion and also used to promote sexual desire and for the treatment of sexual impotency and general debility. The mustard oil boiled with roots is used to treat nervous and rheumatic complaints. The paste of tubers is applied on skin for soothing effect. The decoction of roots is given orally to increase the amount of urine (Diuretic), to treat fever and epilepsy. The fresh or dried root powder is used with milk and sugar to check the frequent nocturnal emission (Spermatorrhoea) and to check quick discharge of sperm during intercourse. The pounded root is very



nutritive health tonic and taken with milk to promote secretion or increase the flow of breast milk. (Lactagogue). The oil expressed from seed is used to treat joint pain, serosis, and other skin diseases. The alcoholic extract of tubers was found pharmacologically active, showing uterine blocking activity both spontaneous and induced by *Acteycholine* and *Oxytocine*.

*Chemical compounds*—Asperagine, Asperagosine, Asperagamine A, Diosgenin, Shatawararin I to IV, Sitosterol, *Acteycholine*, *Oxytocine*.

*Mode of propagation*—The plants are raised by seeds and adventitious roots. The roots are dipped in liquid cow dung for 24 hours before planting and the sprouted seedlings are transplanted in sandy loam soil with adequate drainage.

**Azadirachta indica A. Juss. (MELIACEAE)**

*Syn.*—*Melia azadirachta* Linn.

Vernacular names

English—*Margosa tree*, *Neem tree*, *Indian lilac*

Sanskrit—*Arishta*, *Nimba*

Hindi—*Neem*, *Nimb*

Gujarati—*Limbado*

Marathi—*Limba*

Oriya—*Nimba*

Telugu—*Veepachettu*, *Yapachettu*

Tamil—*Vembu*, *Veppam*

Kannada—*Bevinamara*

*Description*—A medium-sized tree. Leaves 20–30 cm long, aggregated at end of branches, imparipinnate; leaflets 5–15, lanceolate, opposite or sub-opposite, falcate, oblique at the base, acuminate at the apex, crenate to serrate or dentate. Flowers numerous, white, fragrant arranged in branched panicles. Fruits drupe, 1–1.2 cm long, oblong, yellow when ripe. Seeds one, ellipsoid or sub ovoid.

*Flowers*—March–May; *Fruits*—June–October.

*Distribution*—Native of India, Sri Lanka and Myanmar. Commonly found the tropical and subtropical parts of India ascending to 2100 m.

*Parts used*—All parts.

*Herbal action*—Jaundice, malaria, liver, calculus, eczema and other skin diseases, bone fracture, lumbago, rheumatism, leucorrhoea, tetanus, scrofula, urticaria, leprosy, syphilis, spasm, cholera, elephantiasis, shin disorder, fever, vaginal discharge, alterative, emmenagogue, diuretic, antiseptic, refrigerant, antiperiodic, blood purifier, vermicide, vermifuge, leucoderma.

*Uses*—Under the name of 'Nimba' it is mentioned in the Ayurveda (System Medicinae) of Susruta, one of the most ancient of the Hindu medical writings. Every part of this plant is reputed to possess medicinal properties. The powder made with leaves, bark, flowers, roots, seeds and a little amount of common salt is taken orally 1–2 teaspoonfuls twice a day for 7–15 days to treat malaria and used to prevent from measles and chicken pox. The powdered mixture of turmeric rhizome, leaves of 'tejpat' (*Cinnamomum tamala* Nees & Eberm.) and seeds of 'jamun' (*Syzygium cumini* Skeels) mixed with above powder is used in doses of 5–10 gm after taking meal to control the blood sugar. Neem oil is anti-bacterial, and the leaves have been used for centuries to make anti-bacterial washes and poultice. The tender leaves are claimed to reduce obesity if taken early in the morning with milk. The extract of leaves mixed with salt is taken as anthelmintic; mixed with honey it is used as emmenagogue, and diuretic. Extract of leaves mixed with leaf extract of emblic myrobalan (*Embolia officinalis* Gaertn.) in equal amount is useful antiseptic and applied on boils, wounds chronic ulcers, sores, pustular eruptions especially eruptions of smallpox, syphilitic sores, indolent glandular swelling, wounds, bruises, etc. The leaf extract is used to treat bleeding and swelling gum and pyorrhoea by rubbing on teeth as toothpaste; it is very effective in an allergy disease of systemic origin, marked by painful and itching elevation of the skin (Urticaria) and also useful remedy of chronic skin diseases marked by a persistent eruption of reddish pimples which itch intensely (Prurigo). The extract of leaves mixed with honey is given orally to purify blood, to cure diabetes, boils, and pimples, and to inhibit sleep and thus slowing the effect of snake venom on the nervous system. The mustard oil boiled with leaf extract of this plant and 'tulsi' (*Ocimum tenuiflorum* Linn.) and bulb of onion (*Allium cepa* Linn.) is applied to treat leucoderma. Infusion of fresh leaf is very useful as

## Medicinal Plants of BSIP Garden

bitter tonic and used as alterative; this infusion of the leaves is also used to treat diabetes and chronic malarial fever. A piece of cloth soaked with decoction of leaves made with Camphor and spirit is applied with great benefit in case of compound fractures. The dried leaves are burnt to ash and taken orally to dissolve stone in the kidney. A strong warm decoction of fresh leaves is very effective as a vaginal douche after childbirth, in which this medicated decoction is applied internally in vagina with slow flow but little pressure for cleaning. The decoction of leaves is taken to treat cholera. The powdered dry leaves are applied locally to the anus of children suffering from pinworms (Vermicide). A cold poultice of leaf paste is used for treatment of weeping eczema while in treatment of muscular contraction or cramp (spasm), swelled feet, ulcers, rheumatic joints and leprosy the warm poultice is used. The leaves have been prescribed to aid the digestive system and to stimulate the function of liver. The one group of chemical compound called *Limonoids* also known as *Nimbin* has antimicrobial activity and reduces fevers.



Bark is used for the same purposes as the leaves. The bark is bitter, astringent and a most valuable tonic, used as febrifuge and antiperiodic. The fresh paste of bark is applied on feet to treat elephantiasis and to treat itching without or with dry reddish eruptions on thighs, arms and other parts of the body and also itching followed by burning (Shin disorder). Decoction of bark made with bark of 'babul' (*Acacia nilotica* subsp. *indica* Brenan.) is considered effective in leucorrhoea. Decoction of bark mixed with long pepper (*Piper longum* Linn.) is used to treat pain in the lower back, this pain can be muscular, skeletal or neurological in origin (Lumbago) and rheumatism. A strong and concentrated decoction of bark is given orally as vermifuge. The aqueous extract of bark is used orally to treat fever, worse in the afternoon with restlessness and bitter taste of mouth with white coated tongue followed by burning in palm and sole during heat. The bark soaked in water overnight, if used regularly would reduce blood sugar significantly and also purify blood. The paste of bark made with turmeric and sandal wood powder mixed with coconut oil is applied to treat boils.

The toddy or the fermented saccharine sap that exudes from the trunk in certain year and certain

season is drunk to improve the disordered processes of nutrition, and restore the normal function of digestive system; this sap is refrigerant and nutrient, used for treatment of stomachache, chronic leprosy and various other skin diseases.

The oil extracted from seed is used to treat chronic malaria, syphilis, leprosy and other skin diseases. Externally the oil is used as stimulant and antiseptic dressing in leprosy, tetanus, suppurating scrophulous glands, urticaria, chronic from of skin diseases like eczema, ringworm, scabies, and sloughing ulcers, maggot infested sores, bad ulcer and wounds. It is also externally applied in the form of liniment for headache. The margosa seed oil has been found to possess anti-fertility activity. Thus it is used as barrier contraceptive. It is also used to treat cervicitis and vaginitis caused by various genital pathogens. The paste of seeds is used with milk to treat piles.

The unripe fruits and seeds are used as anthelmintic. The ripe fruits are used to purify blood and to treat cough. It is claimed to retard cataract formation in eyes. Paste of seeds is rubbed in hair to kill lice. It is considered poisonous in large doses.

During smallpox outbreak garlands made of seeds and leafy twigs are hung on doors and leaves are spread on the bed of patients in the belief that such a practice keeps away infection.

*Chemical compounds*—Azadirone, Azadiradione, Azadirinin, Azadirol, Azadirachtol, Azadirachtin, Nimbidin, Nimbiol, Polysaccharides (CSP I to III), Limonoid.

*Mode of propagation*—The plant is propagated by seeds but sometimes roots and shoot cuttings are also used for this purpose. It grows on any type of soil in any part of India except in cold areas. The black cotton soil is very suitable for its cultivation.

***Bacopa monnieri* (Linn.) Pennell.  
(SCROPHULARIACEAE)**

*Syn.*—*Herpesrtis monnieri* (Linn.) H.B. & K.

Vernacular names

English—*Thyme leaved gratiola*

Sanskrit—*Nira-brahmi*

Hindi—*Brahmi*

Bengali—*Brihmi-sak*

Marathi—*Nirabrahmi*

Telugu—*Nirabrahmi*

Tamil—*Nirabrahmi*

Kannada—*Nirubrahmi*

*Description*—A creeping somewhat succulent perennial marshy herb. Stem rooting at the nodes. Leaves sessile, deccusate, 5–25 mm long, obovate–oblong or spatulate, lower surface dotted. Flowers axillary and solitary, blue or white with purple veins. Fruit a capsules, 5 mm long, ovoid, glabrous. Seeds numerous, minute, dark–brown.

*Flowers & Fruits*—July–November.

*Distribution*—Commonly found in marshy places and river banks throughout the plains of India and Pakistan, ascending to 1400m on the Himalaya and in all warm countries.

*Parts used*—Whole plant.



*Herbal action*—Epilepsy, bronchitis, cough, rheumatism, hoarseness of voice, debility, diarrhoea, nervous breakdown, eczema, ringworm, diabetes, senility, cardio and nerve tonic, tranquilizer, diuretic, antidote, antioxidant, mental retardness, depression, memory restoration.

*Uses*—The herb is act as anti-anxiety agent, astringent, bitter, cooling and improves the intellect. It also calms restlessness in children and is used to treat mental retardness. The plant is used to control depression and it also enhances the ability of brain, process of learning; it restores memory, and enhances power of speech and imagination; used as anti stress and for nervous and mental strain. Fried leaves are eaten to get relief from hoarseness of voice. Powdered dry leaves are very effective in debility and nervous breakdown. The extract of leaves is taken orally to treat diabetes and to regulate urination, especially in case of stoppage of urine accompanied by obstinate costiveness; the extract is used to reduce swelling and mixed with oil is good liniment for rheumatism. The infusion made in oil with powders of this plant, ‘ashwagandha’ (*Withania somnifera* Dunal), ‘tulsi’



(*Ocimum tenuifolius* Linn.) and fruits of 'amla' (*Emblia officinalis* Gaertn.) is used to massage the scalp to strengthen the hair roots, relieve itchy scalp problems and remove dandruff. The leaves are used to promote longevity and to improve mental or physical weakness that may be associated with old age (Senility). The extract of leaves is given to children for treatment of diarrhea; the extract mixed with honey is taken to treat epilepsy and bilious disorder. The herb is used to treat severe mental disorder such as psychosis. This state of mental condition is characterized by the inability to distinguish between rights and wrong (Insanity). The powder of dried leaves is taken to treat weakness of mind (Debility) and nervous breakdown.

The herb is used to treat epilepsy; it is also a potent cardio-tonic and nerve-tonic. It is also used as tranquilizer. The extract or decoction of plant is given to children for relief from severe bronchitis, cough and chest complaints. The paste of plant is applied externally for the treatment of hair loss and several skin diseases such as eczema, psoriasis and ringworm. The herb can assist in feeling a greater sense of well being during period of restlessness, fatigue, cloudiness of thoughts and overactive mind. It is also used as a blood cleanser and is considered helpful for any inflammation, chronic skin diseases, high fever, and control of blood pressure. The concentrated extract of plant containing the active molecules *Bacoside A* & *B* assists in the release of Nitric oxide, that causes the relaxation of the aorta and veins and allows blood to flow more smoothly in the body. *Bacoside-B* is a protein that nourishes the brain cells. The fresh extract of whole plant is also taken for slowing the effect of snake venom on nervous system, in the case of snake-bite (Antidote). The extract of whole plant mixed with petroleum is used externally to treat rheumatism; the extract of plant mixed with black pepper (*Piper nigrum* Linn.) is taken to treat malarial fever. A number of compounds have been identified in this plant including antioxidant, terpenoids and bacosides. Recently, an alcoholic extract of plant was shown to neutralize free radicals in brain tissue. Compound of this plant bind to brain cell receptors to provide antioxidant protection. The alcohol fraction worked in a manner similar to that of vitamin E, while a hexane extract appeared devoid of the antioxidant activity.

**Chemical compounds**–Terpenoids, Bacosides A & B, Bacpasaponins, Bramhime, Herpestine.

**Mode of propagation**–The plant is very easily propagated by stem cuttings in low-lying and water logged areas during summer. It may also be propagated by seeds.

***Boerhavia diffusa* Linn. (NYCTAGINACEAE)**

Syn.–*B. repens* Linn.

Vernacular names

English–*Hog weed, Pig weed, Spreading hog weed*

Sanskrit–*Punarnava, Rakta-Punarnava, Shotagni*

Hindi–*Punarnava, Gajpurna, Gadaphurna*

Bengali–*Punarnava, Gandhappurna*

Marathi–*Tambadi vasu*

Gujarati–*Vakha-khaparo*

Oriya–*Ghdapuruni*

Telugu–*Atikamamidi, Giligeru*

Tamil–*Mukku-rattai, Keerai*

Kannada–*Balavadikae, Gajjeru*



**Description**—A diffuse branched perennial herb. Root stout fusiform, rootstock woody. Stem, slender, prostrate, or ascending often tinged with pink or purple. Leaves thick, arranged in unequal pairs at each node, 2–4 cm long, ovate oblong or sub orbicular, green above, whitish beneath, base rounded or sub cordate, margin sub undulate, often pink. Flowers pink or white, minute, sub capitate, 4–10 together in small bracteolate umbels forming slender, long stalk, axillary and terminal panicles. Perianth tube glandular hairy. Fruits 3 mm long, clavate, rounded, viscidly glandular, 5 ribbed.

**Flowers & Fruits**—June–November.

**Distribution**—Abundant on dry places, throughout India, ascending to 2400 m in the warm valley of Himalaya; also found distributed in Sri Lanka and the Malay Peninsula, extending to China, Africa, America and the Pacific Islands.

**Part used**—Leaves, plant, roots.

**Herbal action**—Low blood pressure, dyspepsia, piles, fever, gonorrhoea, emmenagogue, dropsy, liver & spleen disease, peritoneal, kidney disease, inflammation in eye, conjunctivitis, antidote, heart, anaemia, intestinal colic, cough, pleurisy, jaundice, urticaria, spermatorrhoea, cataract, hypertension, bright disease, laxative, diuretic.

**Uses**—Leaves and tender shoots are cooked and taken as vegetable to treat low blood pressure, diabetes and to get relief from hypertension and indigestion (Dyspepsia). Leaves are used with black pepper (*Piper nigrum* Linn.) to treat piles.

An infusion of the plant is used as mild laxative and to treat fever in children; it is used to treat gonorrhoea and preliminary stage of disease marked by an excessive accumulation of a fluid in tissue or cavities of the body (Dropsy), and to regulate menstrual flow. Aqueous extract of dry or fresh plant protects liver and helps the kidney function and promotes urination. The extract of fresh plant is dropped in eye to treat chronic inflammation and conjunctivitis; it is used orally to reduce the effect of scorpion-sting, snake and rat-bites. The extract is fairly good diuretic in dropsy associated with acute or chronic disease of the kidney (Bright's disease). It exerts more powerful

action as compared to other diuretics on certain type of ascites, such as those of liver, kidney and chronic inflammation of peritoneum (Peritonitis), which may be caused by infection of bacteria that gain access by way of rupture or perforation of viscera or associated structures, via the female genital tract, by piercing of abdominal wall, via blood stream or lymphatic vessels (e.g. tuberculous peritonitis) resulting in abdominal pain and swelling, persistent vomiting, fever, rapid pulse rate and weight loss.

The powder or infusion of root is useful in cardiac disease and kidneys specially painful and drop by drop discharge of urine and gonorrhoea. The extract of root is also used to treat a disease of blood deficiency (Anaemia) in which the ability of blood to carry oxygen is decreased due to reduction in the number of red blood cells or the amount of haemoglobin pigment, which is responsible for binding of oxygen. It is also used to treat the chronic disease of kidney with dropsical swellings, intestinal colic and cough. The root is very useful in treatment of inflammation of the membrane enclosing the lungs resulting in pain from deep breathing, and resulting shortness of breath (Pleurisy). This is often due to pneumonia in the adjacent lung and is always associated with disease in the lung, diaphragm, chest wall or abdomen. Powder is used as laxative. Root powder mixed with 'sonth' (dry ginger), 'kutki' (*Picrorhiza kurrao* Royle. ex Benth.) and 'Chirayta' (*Swertia chirayita* Karst.) is used to treat enlargement of liver and spleen, internal inflammations, jaundice, and to increase the amount of urine; it is also useful in allergic disease of systemic origin, marked by painful and itching elevation of the skin and nettle-rash. The extract of root is taken with black pepper (*Piper nigrum* Linn.) for treatment of Spermatorrhoea. The extract of root is used as eye drop for treatment of cataract.

**Chemical compounds** – Punarnavoside, Punarnavosine-1 & 2, Hypoxanthine-9-L-arabinofuranoside, Boeravinones, Reperone, Boeravine, Punernavine.

**Mode of propagation**—The plant is propagated by seeds but it can also be grown by cuttings and layering in rocky and graveled soil during raining season.

***Calotropis gigantea* Ait (ASCLEPIADACEAE)**

Vernacular names

English–*Madar*

Sanskrit–*Arka, Mandara*

Hindi–*Arka, Mandara*

Bengali–*Akanda*

Marathi–*Rui*

Gujarati–*Akado*

Telugu–*Jilledu*

Tamil–*Arakkam*

Kannada–*Arkagida*

Malayalam–*Erikku*

*Description*—A large shrub, 2–4 m high. Leaves sessile, simple, waxy, thick, glaucous–green, 10–20 cm long, elliptic or ovate–oblong, acute or shortly acuminate with narrow cordate or often amplexicaul base; undersurface of young leaves covered with appressed white floccose tomentum. Flowers 3–5 cm in diam., purplish or white, arranged in umbellate cymes. Fruit a follicle, 7–10 cm long, curved, turgid, smooth. Seeds broadly ovate, flat, minutely tomentose with silky white comma.

*Flowers & Fruits*—March–September.

*Distribution*—Commonly found throughout the hotter parts of India, Sri Lanka, Malay Peninsula, Pakistan, Afghanistan, ascending to 1200 m, extending to Persia, Palestine, Arabia, Egypt, Nubia, and Abyssinia, Malay Peninsula and Islands, Myanmar, Siam to south China.

*Parts used*—Stem, bark, leaves, flower, roots.

*Herbal action*—Intermittent fever, cold, cough, asthma, abdominal dropsy, paralysis, inflammation, tympanitis, skin disease, tonic, cholera, leprosy, gonorrhoea, cholagogue, diuretic, diaphoretic, secondary syphilis, leucoderma, rheumatism, toothache, elephantiasis, herpes, emetic, stomachic, digestive, appetizer,

*Uses*—The ash of burnt leaves mixed with rock salt is given with buttermilk, for treatment of a disease in which the abdominal viscera is enlarged due to accumulation of watery fluid in abdominal cavity (Abdominal dropsy). A small dose of leaf extract is



used to treat intermittent fever and asthma. Powdered dried leaves are dusted over wounds, ulcers and old sores for early healing. Paste of fresh leaves mixed with mustard oil is used as dressing for paralyzed part. Poultice made of the leaves is tied around affected part of the body to get relief from pain, redness, heat and swelling. It is particularly useful in backache and in joint pains. Warm leaves also provide relief from stomachache if tied around the stomach. Inhalation of burnt leaves cures headache. A warm bath (fomentation) of the decoction of leaves is used to get relief from pain in the chest and cure chronic inflammation of the middle ear (Tympanitis). Slightly roasted and pounded fresh leaves are bandaged to painful rheumatic swellings for relief. Lotion prepared from mixture of fresh latex, boiled leaves and fruits is used for extracting guinea worm. The extract of warm leaves is dropped in the nostrils for relief from headache; it is also used to cure aphthous sores in the mouth of children.

The decoction of flowers is used as tonic, stomachic, digestive and to treat cold, cough, asthma, loss of appetite and cholera. The dried flowers mixed with sugar are used for treatment of leprosy, secondary syphilis and gonorrhoea.

The powdered root bark is used to promote flow of bile for restoration of the normal function of the digestive system, large dose of it causes vomiting (Emetic); it induces the secretion of sweat and increases the amount of urine, and used to treat secondary syphilis and chronic rheumatism; also used



to treat white spots on skin (Leucoderma) caused by loss of pigment (Melanin) formation.

The paste of root bark mixed with rice vinegar or sour gruel is used as dressing for treatment of elephantiasis of legs and scrotum and for leprosy. Extract or decoction of root bark is used to treat dysentery and skin diseases. It is used to dissolve stone in the kidney, and act as diaphoretic, expectorant and emetic. The active principle of root is *Mudarine* which causes vomiting. The paste of root is used to treat toothache. The powder of charcoal prepared from root mixed with some blend oil, is used externally for skin eruption, syphilis, foul ulcers, leprosy, etc. An ointment prepared from powdered root is applied for healing old ulcers.

The latex of the plant is used for treatment of leprosy, ringworm, herpes, dropsy and rheumatism and to reduce poisonous effect of insect-sting; it stops bleeding immediately from fresh cuts. It is also used as an infanticide and abortifacient, when used internally or applied locally to the mouth of the uterus. The dried latex is used as nervine tonic. The latex mixed with honey is used for mouth-wash in aphthous condition. The cotton wool soaked in the latex relieves pain, if plugged in a decayed (Caries) tooth. The latex mixed with salt is applied to treat injuries of the subcutaneous tissues, but without an open wound, in which minute vessels ruptured and blood occupies the skin in the immediate area and produce blue and black coloured symptom (Bruises). It is also used to treat pain and swelling due to an injury of ligament (or muscles, or tendons) around joint, caused by a sudden overstretching (sprain).

The paste made with mixture of bruised leaves, bark, roots, sesame oil and cow urine is used as Antidote. The extract of plant is used on painful joints and swelling for relief. Recent investigations have found that the alkaloids—*Calotropin*, *Calotoxin* and *Uskerin* are stimulant to heart.

*Chemical compounds*—*Mudarine*, *Typsin*, *Calotropin*, *Uskerin*, *Calotoxin*, *Emirin*, *Zygotontial*, *Calotriol*.

*Mode of propagation*—Plant is easily propagated by seeds

### ***Cannabis sativa* Linn. (CANNABACEAE)**

Vernacular names

English—*Indian Hemp*, *Canvas*

Sanskrit—*Bhanga*, *Vijaya*

Hindi—*Bhang*, *Charas*, *Ganja*, *Hashish*, *Sidee*, *Vijaya*

Bengali—*Bhanga*, *Ganja*, *Charas*

Gujarati—*Sidhi*, *Jia*, *Ganja*

Marathi—*Ganja*

Telugu—*Ganjai*

*Description*—Erect, tall, branched, aromatic, annual–perennial herb. Stems angular, appressed–pubescent. Leaves 3–7 foliolate or partite, higher one simple; leaflets lanceolate–oblong to elliptic, narrow at both ends, long acuminate at apex, coarsely serrate, thinly gland–hairy above. Male and female flowers occur on separate plants, greenish yellow arranged in short cymes combined into terminal panicles. Fruits grayish brown or yellowish, smooth. Seeds grayish brown, 4–5 mm.

*Flowers & fruits*—April–August.

*Distribution*—Found throughout tropical parts of India.



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*Parts Used*—Leaves, flowers, resinous exudates.

*Herbal action*—Sedative, anodyne, narcotic, analgesic, antispasmodic, diuretic, digestive, astringent, orchitis, piles, dyspepsia, gonorrhoea.

*Uses*—Leaves are used as sedative and to relieve pain (Anodyne). Powdered leaves mixed with sugar are used to treat dysentery, diarrhoea, stomachache and flatulence. It is also used to get relief from unusual pain during menstruation (Dysmenorrhoea). Such type of pain usually begins just before or at menarche. The pain is spasmodic and located in the lower abdomen, but it may also radiate to the back and thighs. Some individuals also experience nausea, vomiting, diarrhea, low back pain, headache, dizziness. The poultice or cataplasm is applied to tumors for readily resolving them. The extract of fresh leaves is used to treat the inflamed condition of the scalp, characterized by the presence of white scales in the hair due to exfoliation of the horny cell of the scalp (Dandruff) and to remove lice from the head. The extract is also used as ear drop to alleviate the pain in ear. The powder of leaves is used for dressing fresh wound and sores for early healing. Poultice of fresh leaves is used in eye disease (Photophobia) marked by unusual intolerance of light during measles, rubella, meningitis, and inflammation of eye; it is also used to treat inflammation of testicles (Orchitis) and inflamed condition of the veins in the rectal region (Piles).

The infusion of flowering young shoots in milk is used as nervine stimulant and as appetizer; it is used to treat imperfect or painful digestion, marked by vague abdominal discomfort, a sense of fullness after eating, eructation, heartburn, nausea and vomiting, loss of appetite and other intestinal disorders. This infusion is also used to treat a contagious, catarrhal inflammation of the genital mucous membrane of either sex (Gonorrhoea), caused by infection of the gonococcus, (*Neissera gonorrhoeae*).

The smoke of dried pistillate flowering top of the plant coated with resinous exudation, (contain oily principle—*Cannabinol*) is inhaled to counteract the effect of a particular poison. This smoke is passed through the rectum to treat the griping pain of

dysentery and strangulated hernia in which air or blood supply is cut off due to constriction or closure of passage or vessel. This smoke is especially administered to induce sleep in those suffering from structural disease of sensory organs (Hallucination), in which there is false perception of something that is not there and which may involve any of the senses of sight, hearing, smell, taste and touch, which is caused by a psychological illness (Schizophrenia). They can also be a symptom of fever and deprivation, such as lack of sleep. The seeds are not narcotic and are used to treat gonorrhoea.

*Chemical compounds*—Cannabinol, Trigonilline.

*Mode of propagation*—Easily propagated by seeds in all kinds of soils.

### ***Cassia angustifolia* Vahl (CAESALPINIACEAE)**

Vernacular names

*English*—Indian Senna, Tinnevely Senna  
*Sanskrit*—Abhumari, Bhupadama, Hemaori  
*Hindi*—Sena, Sanay, Bhikakhosa, Hindisana  
*Bengali*—Sanna-makki, Son-pat  
*Gujarati*—Nat-ki-sana, Meddiawal  
*Telugu*—Nela-tangedu, Nelaponna  
*Tamil*—Nila virai, Kattuni, Cimaivilavirai  
*Kannada*—Nelavarike, Nelavare  
*Malyalam*—Nilavaka, Katakonna

*Description*—A much branched shrub. Leaves paripinnate, without glands on rachis; leaflets 4–8 pairs, elliptic-lanceolate, acute at both ends, entire, dark green. Flowers yellow in axillary and terminal racemes. Pods 4–8 cm long, yellowish-brown at maturity, apiculate at apex and tapering towards base, cylindrical, slightly compressed on thin sutures, nearly straight or slightly curved with reticulate veined valves; valves papery, smooth, glabrous, Seeds many, 5–8 mm, yellowish-brown, ovate compressed, quadrangular to trigonous, smooth, shining.

*Flowers & Fruits*—Almost throughout the year.

*Distribution*—Native to Sudan and Arabia. Found throughout tropical and subtropical parts of India,





especially in Punjab, Sindh and Western Peninsula; distributed in Arabia, Egypt and Abyssinia.

*Parts used*—Leaves, fruits, seeds.

*Herbal action*—Constipation, gout, rheumatism, skin, piles, anthelmintic, purgative, laxative, stimulant, cathartic, vermifuge.

*Uses*—Infusion of leaves and ginger is used with sugar and milk in the morning on an empty stomach as purgative and laxative. The presence of glycoside—*Sennoside A&B* found in the plant have a strong laxative action and increase the peristaltic movement of the intestine. It is very effective in habitual constipation and digestive disturbance due to improper functioning of the liver. Leaves are used to treat gout and rheumatism and used as vermifuge and a mild stimulant. As the leaves cause nausea and sharp colicky pain in the bowel (Griping) they must be given with aromatics, they should not be given in inflammatory condition of the alimentary canal, fever, piles, prolepses of the uterus or rectum, and during abnormally excessive menstruation and

pregnancy. The powdered leaves mixed with vinegar are applied externally for treatment of skin diseases and used to remove pimples from the skin.

The infusion of fruits made in cold water is taken to treat piles, to induce active movement of bowels, and to promote natural evacuation in constipation.

A paste made by mixture of powdered seeds of this plant and of 'amaltas' (*Cassia fistula* Linn.) and curd is applied for treatment of ringworm.

*Chemical compounds*—Sennoside A & B, Salicylic acid, Mannitol, Flavones, Anthraquinone.

*Mode of propagation*—It grows only by seeds on sandy loam soil under moist situation.

### ***Cassia fistula* Linn. (CAESALPINIACEAE)**

Vernacular names

English—*Indian Laburnum, Purging Cassia, Golden-shower*

Sanskrit—*Suvamaka, Rajataru*

Hindi—*Amaltas*

Bengali—*Sundhli, Amultas, Sondhla*

Marathi—*Bahava*

Gujarati—*Gramala*

Telugu—*Rela*

Tamil—*Konnel*

Kannada—*Kakke*

*Description*—A medium sized tree. Leaves 20–40 cm long, acuminate, cuneate towards the base. Flowers bright-yellow in 30–70 cm long, axillary, pendulous, lax racemes. Pods 30–70 x 2.5–4 cm, cylindrical, pendulous, indehiscent, smooth, hard, dark-brown or black. Seeds many, flat, yellowish-brown embedded in soft black sweetish pulp, albuminous.

*Flowers*—April–July; *Fruits*—November–March.

*Distribution*—Commonly found throughout the tropical and subtropical parts of India on outer Himalaya up to 1400 m high hilly tract; distributed in Sri Lanka, Malay Island, China, and Cambodia. Commonly cultivated in gardens for its beautiful yellow fragrant flowers.

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*Parts used*—Leaves, bark, wood, flowers, fruits, roots.

*Herbal action*—Dropsy, rheumatism, paralysis, gout, black–water–fever, eczema, paralysis, dyspepsia, chilblain, ringworm, amenorrhoea, toothache, purgative, laxative, tonic, antipyretic, antiperiodic, febrifuge, vermicide.

*Uses*—The poultice made of leaves is said to relieve from itchy inflammation of the skin which usually occurs on the toes or fingers during cold weather (Chilblain) caused by a localized deficiency in the circulation, it may sometimes be an indication of poor health or inadequate nutrition. The decoction of leaves is used as purgative and laxative for habitual constipation. It is also used to treat eczema. Internally, the paste of leaves is given as derivative in paralysis and brain affections. The paste of young leaves is kept inside the genital of women ones in a day till two hours for seven days to start the menstruation after the puberty (Amenorrhoea), this may be due to failure or imbalance in the secretion of hormones. In secondary amenorrhoea, the menstrual period stops when they would normally be expected to be present. There are various causes including hormone deficiency, disorders of the hypothalamus, psychological and environmental stresses and depression. The fresh extract of young leaves or their paste is used to treat ringworm, for relieving irritation caused by marking nut (*Semecarpus anacardium* Linn. f. ) juice, and to get relief from swelling caused by dropsy. Poultice of leaves is used to treat rheumatic swelling and facial paralysis, when rubbed on the affected parts.

The decoction of bark and wood is used to treat stomachache, dysentery, malaria and blood poisoning.

The decoction of flowers is used in certain stomach diseases and to expel intestinal worms.

The pulp of fruit containing sugar, gum, extractive jelly, gluten and water has a peculiar nauseous property. The mixture of fruit pulp, sugar and pulp of tamarind fruits (*Tamarindus indica* Linn.) is used as mild and safe purgative, but the large dose may cause colic, nausea and flatulence; this preparation of pulp is also used for treatment of dyspepsia and diabetes.



The mixture of pulp and “Gulkhand” is used as cooling laxative and given orally to children and weak women during advanced pregnancy to evacuate the bowel or to soften stool because it provides gentle effect. The pulp is used for dressing gout or rheumatic joints to get relief. The decoction of young fruits is used as gargle to get relief from toothache.

The extract of root bark is used to treat black–water–fever. The decoction of root is considered as tonic and used to get relief from fever (Antipyretic or Febrifuge). Due to strong purgative property, this decoction is very effectively used to treat constipation. It produces strong action by increasing the muscular contraction of the intestine or by increasing the fluid in the intestine to evacuate the bowels (Purgative). It is also used to control periodic attack of disease such as malaria (Antiperiodic). A gargle of decoction of roots, black pepper (*Piper nigrum* Linn.) and leaves of ‘Katahal’ (*Atrtocarpus heterophyllus* Linn.) is useful in reducing the swelling in the throat.

*Chemical compounds*—Sennoside A & B, Leucanthocyanidin, Fistucacidin, Barbaloin, Rhein, Fistulin, Emodin, Fistulic acid.



*Mode of propagation*—Seeds easily propagate the plants during the month of March to June. The seedlings are transplanted in pits, filled with mixture of sand, soil and organic manure during rainy season.

***Catharanthus roseus* (Linn) G. Don**  
**(APOCYNACEAE)**

*Syn.*—*Vinca rosea* Linn.

Vernacular names

English—*Madagascar-periwinkle, Red periwinkle, Old maid*

Sanskrit—*Nityakalyani*

Hindi—*Sada-bahar*

Bengali—*Nayantara*

Marathi—*Sada-phul*

Telugu—*Billaganneru*

Tamil—*Sudakada mallikai*

Malayalam—*Ushmalai*

Oriya—*Ainskali*

Kannada—*Kempukasi kanegale*

*Description*—An erect, widely branched, glabrous, perennial herb. Leaves 2.5-10 cm long, oblong or oblong-obovate with obtuse or rounded, apiculate

apex and acute base. Flowers red or white, axillary. Follicles 2–3 cm long, patent hairy. Seeds 1–2 mm long, black.

*Flowers & Fruits*—Almost throughout the year.

*Distribution*—Native to West Indies and Madagascar. Commonly grown in gardens throughout India, occasionally found as an escape.

*Parts used*—Leaves, flowers, plant, roots.

*Herbal action*—Diabetes, menorrhagia, leukaemia, stomachache, dyspepsi, sedative, tranquilizer, hypotensive, vermifuge, antidote, hodgkin's disease.

*Uses*—The fresh young leaves and floral buds are chewed and swallowed daily in the morning to cure diabetes, the white flowered plants are more effective. The leaves are used to treat solid tumor of the lymphoreticular system that may originate in any lymphoid tissue (Hodgkin's disease). This disease is characterized by painless enlargement of the lymph node beginning in the cervical region, then the axillary, inguinal, mediastinal, and mesenteric regions. There are signs of swelling due to pressure from lymphoid infiltration of blood vessels and organs such as the liver, heart, and spleen. Other symptoms include fever, night sweats, loss of appetite, and weight loss. Infusion of leaves is used to check the excessive bleeding from womb and diarrhoea. Extract of leaves is applied to get relief from pain due to wasp stings.

Due to presence of an alkaloid, *Vinblastine* in roots and, *Vincristine* in thick basal stem and leaves, the plant is very effectively used in treatment of blood cancer (Leukaemia) in children. This disease is characterized by an uncontrolled proliferation of leucocytes in the bone marrow. The cells fail to mature to adult cells and thus cannot function as part of the defense mechanism against infection. This leads to anaemia, bleeding, and easy bruising with enlargement of spleen, liver and lymph nodes. The extract of plant has shown growth inhibitory effect in certain human tumors.

The roots has hypotensive alkaloids, thus, this drug is not safe remedy for diabetes. The root containing an alkaloid *Ajmalicine* is responsible for treatment of



high blood pressure for which the paste of roots is used. It has sedative, tranquilizing and soothing property, thus used to relieve stress and anxiety. The paste of root is used as antidote to scorpion sting and used to treat boils and blisters. The paste of root and ginger is taken orally to get relief from stomachache and indigestion. The decoction of root is used as vermifuge.

**Chemical compounds**–Vinblastin, Vincristine, Ajmalicine, Serpentine, Reserpine, Vincamicine, Vindoline, Pleurosine, Catharanthine, Lochneridine.

**Mode of propagation**–It can easily grow on all types of soils through seeds during month of April to July.

***Centella asiatica* Urban. (APIACEAE–Umbelliferae nom. alt.)**

**Syn.**–*Hydrocotyle asiatica* Linn.

**Vernacular names**

English–Asiatic pennywort, Water Navel, Vallari,

Thick-leaves pennywort, Karinga, Khulakhudi

Sanskrit–Madukaparni

Hindi–Brahma, Brhma-manduki, Khulakhudi

Bengali–Thol-kuri

Gujarati–Moti Brahma

Marathi–Karinga, Karivana

Telugu–Brahmi, Saraswataku

Kannada–Brahmisoppu

Malayala–Kodangal, Muyalchevi

Oriya–Thalkudi

**Description**–A slender, prostrate, creeping, perennial herb with long stoloniferous stem, rooting at the nodes. Leaves 1–6 cm in diam., long petioled, reniform or orbicular, crenate dentate, shining green above. Flowers small, sessile, red, pink or white, 3–6 in fascicled umbel. Fruits 3–4 mm in diam, sub-cylindric, thinly pilose, oblong, curved, dull brown, laterally compressed. Seeds thickened, hard, white.

**Flowers & Fruits**–April–July.

**Distribution**–Commonly found throughout India in moist and marshy places up to 200 m on the Himalaya.



**Parts used**–Plants, leaves.

**Herbal action**–Inflammation, abscesses, scrophula, leprosy, rheumatism, nervous diseases, piles, elephantiasis, dysentery, dyspepsia, syphilis, fish-skin-disease, gonorrhoea, jaundice, fever, malaria, blood pressure, depression, cough. Tonic, alterative, diuretic, sedative, cardio-depressant, hypotensive, antiphlogistic, laxative.

**Uses**–The extract or paste of whole plant is used as tonic to improve intestinal disorder and to restore the normal function of the digestive system and used to reduce or check the inflammation. It is very effectively used to treat chronic rheumatism, nervous diseases, piles and very effective against many skin diseases, such as chronic abscesses, obstinate eczema. The extract of whole plant is used to treat enlargement of gland and used to cure tuberculosis of the lymph nodes in the neck, which form sores and scars after healing (Scrofula). It is also used to provide gentle effect for emptying the bowel or to soften stool. It is used as diuretic and blood purifier. The presence of a glycoside, known as Asiaticoside play an active role in treatment of leprosy, which is a serious disease caused by the bacterium (*Mycobacterium leprae*) that attacks the skin, nerves and mucous membranes and has an incubation period of several years. It has the power to regenerate skin in leprotic patients. It can

induce fast growth of skin, hairs and nails and the factor is 'Asiaticoside'. The paste of fresh or dried plant is used to treat elephantiasis of the scrotum and legs in which there is a dramatic and debilitating enlargement of skin and underlying connective tissues due to inflammation of the skin, subcutaneous tissues and the blocking of lymph vessels, preventing drainage. Inflammation and blocking of vessels is occurred due to parasitic worms-filariae, which is carried to man by mosquitoes. The decoction of plant is used to treat unnatural suppression of menses.

The leaf extract is used to treat rheumatic swellings and fever. The extract of leaves is given orally to children for treatment of dysentery. An infusion of leaves with seeds of 'menthi' (*Trigonella foenum-graecum* Linn.) is given to children to treat bowel complaints and fever. The leaves are effectively used as remedy for syphilis, skin diseases, leprosy, rheumatism, indigestion, nervousness, and skin disease in which the skin becomes dry and scaly (Fish-skin-disease). The pulverized leaves are taken orally in small doses with milk for improvement of memory. The fresh extract of leaves and root of liquorices (*Glycyrrhiza glabra* Linn.) is used with milk to treat gonorrhoea, jaundice and fever; this mixture is also given orally to children for treatment of diseases of the skin, blood and nervous system. A paste, made with equal part of leaves of 'brahmi', 'tulsi' (*Ocimum tenuiflorum* Linn.) and fruits of black pepper (*Piper nigrum* Linn.) is used for treatment of high blood pressure, depression and several kinds of fever such as remittent, intermittent and malarial. The decoction of leaves, ginger and black pepper is used for treatment of cough. Recent pharmacological studies have shown that it has tranquilizing, sedative, spasmolytic and anti-amoebic properties. It is anabolic and improves the general ability and behavioral pattern of retarded children.

**Chemical compounds**—Asiatic acid, Asiaticoside, Vellarine, Madecassic acid, Thankuniside, Brahmic acid, Centellose, Hydrocotyline

**Mode of propagation**—The plant is easily propagated by seeds and stem cuttings during February to March in wet places.

### ***Chlorophytum tuberosum* Baker (LILIACEAE)**

**Vernacular names**

Sanskrit—*Musali*

Hindi—*Sufaid musli, Kulai*

Gujarati—*Janjaria, Safed musli*

Marathi—*Kuli*

Telugu—*Kuselli*

**Description**—An annual herb with a short, hard root stock having fascicled roots. Leaves sessile, membranous falcate, acuminate, margin crisped or undulate. Flowers white in simple or shortly branched racemes. Fruit a capsule, obovoid, emarginated, shining, transversely veined. Seeds flat, black.

**Flowers and Fruits**—July–November.

**Distribution**—Commonly found in Central, Northern and Peninsular India.

**Parts used**—Tuberous roots.

**Herbal action**—Leucorrhoea, arthritis, apthae, impotency, stomach disorders, tonic, aphrodisiac, spermatogenic, aphrodisiac.

**Uses**—The paste of tuberous root is used for the preparation of health tonic for general body immunity; it is also used to cure leucorrhoea. It has spermatogenic properties, thus, the use of decoction of the tubers is found very effective in increasing male potency curing impotency as they are rich in glycosides and is considered as alternative to Viagra.





It is curative of many physical illness and weakness. Decoction of herb is used to cure diabetes and arthritis. The mixture of dried powder of tubers and seeds of 'saunf' (*Foeniculum vulgare* Mill.) is taken orally to get relief from stomach ailments. The powder of tuber is fried in 'ghee' and taken orally to cure minute white ulcers on the mucous membrane of the mouth and throat (Apthae).

*Chemical compounds*–Galactoglucan.

*Mode of propagation*–The disk tubers are used for propagation in loam soil mixed with farm yard manure, bone meal and vermin-compost with good drainage during rainy season.

***Cissampelos pareira* Linn.  
(MENISPERMACEAE)**

Vernacular names

English–*False Pareira Brava, Ice Vine, Pareira Brava*  
Sanskrit–*Ambashtha*

Hindi–*Acanadi, Ambastha, Dakhnirbisi, Harjori, Nirbisi, Pahadel, Pari*

Bengali–*Aknadi*

Gujarati–*Venivel*

Marathi–*Paharvel*

Tamil–*Appatta*

Telugu–*Adivi banka tige*

*Description*–A slender, hairy, more or less twining perennial herb. Leaves 3–8 cm in diam, heart shaped or kidney shaped, obtuse or retuse, mucronate, margin entire glabrate or hairy above, glaucous and appressed-hairy beneath. Flowers small, greenish yellow, arranged in axillary fascicled, pilose cymes or panicles. Drupe globose or ovoid-subglobose, red, pilose .

*Flowers and Fruits*–June–November.

*Distribution*–Commonly found throughout tropical and subtropical regions of India and Pakistan.

*Parts used*–Leaves, stem, roots.

*Herbal action*–Pimples, ulcer, sinus, syphilis, abscess, itch, emmenagogue, skin, dyspepsia, dropsy, cough,

urinary diseases, diarrhoea, dysentery, menorrhagia, cystitis, antidote, blood purifier, tonic, stomachic, anticalculous, diuretic, alterative, purgative, muscular relaxant.

*Uses*–The pounded root and leave are used as antidote. The decoction of root and leaves is used as wash to treat ulcers, sinuses, abscesses, syphilitic and unhealthy sores, and itch. A decoction is taken as blood purifier. The extract of roots is used to check secretion or bleeding in wounds. It is also used to treat prolepses of uterus, emmenagogue and menorrhagia. The paste of roots mixed with honey and mashed rice is given to treat internal or deep-seated inflammations. The roots are used as mild tonic and stomachic. The decoction of root is taken to stop the concretion or development of inorganic matter such as stone in urinary bladder, kidney and ureters. It is used as diuretic and alterative. It is given with aromatics in later stage of bowel complaints and also used to get relief from stomachache, due to indigestion and diarrhoea, especially infantile diarrhoea. The decoction of whole plant with root is used orally to treat acute and chronic inflammation, secretion of mucous and catarrhal disorder of the urinary bladder caused by bacterial infection, marked by frequent urination and burning sensation. There may be cramp like pain in the lower abdomen with dark strong urine, which contains blood. The condition is common in female and is usually not



serious, but there is a danger that the infection may spread to the kidneys. The extract of root is useful in treatment of dropsy, cough, urinary diseases, dysentery and diarrhoea and internal inflammation. Due to presence of *Hayatine* alkaloid the root is used as muscular relaxant (Curariform).

*Chemical compounds*—Bebeerine, Pelocine, Hayatine.

*Mode of propagation*—The plant can be easily propagated by seeds in any type of soil during the month of July to August.

***Clitoria ternatea* Linn. (FABACEAE–  
Papilionaceae nom. alt.)**

Vernacular names

English—*Butterfly-pea, Nazerion*

Hindi—*Aparajita, Gokarri, Kajalai, Kajina, Nnili–Koyala, Vishnukanti*

Bengali—*Aparajit*

Gujarati—*Garani, Koyala*

Kannada—*Gokarna*

Malayalam—*Aral, Sankhankuppi*

Marathi—*Gokurna*

Tamil—*Kakkanam, Kakkattan*

Telugu—*Dintana, Nella-ghentana*

Oriya—*Onasi, Oporato*

*Description*—A slender twining herb. Leaves 6–13 cm long, pinnate; leaflets 5–7, ovate or oblong, retuse at apex, obtuse or acute at the base. Flowers bright blue

or white solitary axillary. Pods 5–10 x 0.8–1 cm, linear, slightly curved, thin, flattened or turgid beaked, and sparsely pubescent. Seeds 7–11, globose or compressed, yellowish brown.

*Flowers & Fruits*—November–March.

*Distribution*—Common throughout the tropical and subtropical parts of India from Himalaya to Sri Lanka, Myanmar and Malacca.

*Parts used*—Leaf, flowers roots, seeds.

*Herbal action*—Earache, ulcer, migraine, ascites, gonorrhoea, abdominal dropsy, eye diseases, vermifuge, diuretic, antidote, laxative, demulcent, cathartic, aperient, purgative.

*Uses*—The lukewarm extract of leaves, mixed with a little amount of common salt is used as eardrop to get relief from earache. A lotion made from leaves is used to treat ulcers. Leaf extract mixed with fresh ginger is given to check excessive perspiration in fever. The infusion of leaves is used to be best against eruptive conditions.

A powder made by roasted seed mixed with 'gheee' is taken orally with milk to stimulate the bowel movements (Cathartic). It is also used in abdominal dropsy, sore throat, mucous disorder and skin diseases. The roasted seeds are used to increase the eye-sight.

The root extract of white flowered-plant is taken to get relief from migraine. An alcoholic extract of roots is given to treat ascites, and enlargement of the abdominal cavity. The extract of roots mixed with milk is used in chronic bronchitis. Paste of roots produces soothing effect on skin and mucous membrane; it is also taken to expel or kill the intestinal worms. It is used as emetic. The infusion of powdered root bark is used as diuretic. This infusion is also used to treat a contagious venereal disease (Gonorrhoea) which is spread primarily by sexual contact but may be produced through contact with infected discharge on clothing, towels, etc. The causative agent is the bacterium (*Neisseria gonorrhoeae*) and it affects the mucous membrane of the vagina or in the male, the urethra with symptoms of pain on urinating with a



discharge of pus, inflammation of nearby organs such as testicles, prostate in men; uterus, fallopian tubes and ovaries in women, and irritation of the bladder and urethra. The paste made from root of this plant and root-bark of 'nirgundi' (*Vitex negundo* Linn.) is given as antidote against snake-bite. The alcoholic extract of the root act as brisk purgative if taken in doses of 5–10 drops, but griping and tenesmus are often produced and the patient feels feverish and uneasiness. The powder of root has purgative and aperient properties.

*Mode of Propagation*—Easily propagated by seeds in sandy loam soil.

***Commiphora wightii* (Arnott.) Bhandari (BURSERACEAE)**

*Syn.*—*C. mukul* Engl., *C. roxburghii* (Stocks) Engl.

Vernacular names

English—*Indian bdellium tree*

Sanskrit—*Guggulu*, *Koushikaha*, *Devadhupa*

Hindi—*Guggul*

Bengali—*Guggul*

Gujarati—*Guggul*

Marathi—*Guggule*

Kannada—*Guggule*

Telugu—*Guggul*

Tamil—*Malshkshi*, *Gukkal*

*Description*—A much branched, large, deciduous shrub or small thorny tree with paper like bark peeling; the branches knotty and crooked, usually ending in sharp spines. Leaves 1–3 foliolate; leaflets rhomboid-ovate, serrate near the apex, Flowers sessile, small, pinkish or brownish-red, solitary or in fascicles of 2–3. Fruit a drupe, 6–8 mm in diam., ovoid, acute, readily splitting into two, red at maturity.

*Flowers & Fruits*—March–April.

*Distribution*—Found in drier parts of India, distributed in Arabia, Baluchistan, Pakistan,

*Part used*—Gum resin.

*Herbal action*—Emmenagogue, endometritis, amenorrhoea, menorrhagia, leprosy, gout,

rheumatism, leucorrhoea, bronchitis, whooping cough, pneumonia, tuberculosis, pharyngitis, tonsillitis, caries of teeth, pyorrhoea alveolaris, carminative, demulcent, astringent, antiseptic, diaphoretic, diuretic, appetizer, digestive, aphrodisiac.

*Uses*—The gum is used as carminative, uterine stimulant and emmenagogue. It is also used to treat inflammation of mucous membrane lining the uterus (Endometritis) caused commonly by bacteria but can also be due to a virus. It is associated with fever and abdominal pain and occurs mostly after abortion or childbirth or women with an intrauterine contraceptive device. If there is an absence of menstruation in girls after attaining sexual maturity (Puberty), due to imbalance in the secretion of hormones, this gum resin is taken to stimulate the secretion of hormones to start the menstruation, it also controls the abnormally excessive menstruation (Menorrhagea). It is very effective in the treatment of leprosy, gout and rheumatic swellings. The gum resin is useful in treatment of leucorrhoea, if taken in large doses. It may be normal condition, before and after the menstruation but a large discharge probably indicates an infection somewhere in the genital tract.





It is also used to treat bronchitis and whooping cough—an infectious disease in which the mucous membranes lining the air passage are affected and after a one to two week of incubation period, fever, catarrh and a cough develop. The cough then becomes paroxysmal with a number of short coughs punctuated with the ‘whooping’ drawing in of breath. Nosebleeds and vomiting may follow a paroxysm. Whooping cough is not usually serious and however, children may be susceptible to pneumonia and tuberculosis. The gum resin is used to treat Pneumonia—a disease in which there is a bacterial infection of lung resulting in inflammation and filling of the alveoli with pus and fluid. As a result the lung becomes solid and air can not enter. The symptoms vary depending upon how much of the lung is unavailable for respiration, but commonly there will be chest pain, coughing, breathlessness, fever and possibly cyanosis. Pneumonia may be caused by several bacteria, virus or fungi, but bacterial infection is commonest. The powdered gum resin is used to as demulcent, astringent, antiseptic, diaphoretic and diuretic. It is a very effective medicine for rheumatism. It is also taken to increase appetite and improve digestion. It is prescribed for diseases like tubercular ulceration of the bowels, and pulmonary tuberculosis. The mouth-wash or gargle is very useful for treatment of inflammation of the pharynx and throat due to viral infection, resulting sore throat (Pharyngitis). The gum resin is used to treat Tonsillitis—an inflammation of tonsil caused by bacterial or viral infection. The symptoms include a severe sore throat causing painful swallowing, accompanied by fever and earache, especially in children. The tonsils are swollen and white in appearance due to infected material exuded from them and glands in the neck are enlarged. It is used to treat caries of teeth and a suppurative disease of the tooth sockets, causing shrinkage of the gum and loosening of teeth (Pyorrhoea alveolaris). The powdered gum resin is taken with milk to promote sexual desire. The recent pharmacological and clinical studies of the drug, proved that some of the fractions and chemical constituents (Oleo-resin) present in the gum have shown that serum cholesterol level and phospholipids level are significantly reduced. *Gugglusterone* is the major pregnane-type compound and exhibits high degree of anti-cholesterolemic activity.

**Chemical compounds**—Diterpenes,  $\alpha$ -comphorene, Myricyl alcohol,  $\beta$ -sitosterol, Gugglusterols I, II & III, Z-gugglusterone,

**Mode of propagation**—It can be propagated through cuttings and seeds in sandy to silt loam soil, poor in organic matter but rich in several other minerals in dry tracts. The air layering is the fastest method of propagation.

***Convolvulus microphyllus* Sieb. ex Spreng. (CONVOLVULACEAE)**

Syn.—*C. pluricaulis* Choisy

Vernacular names

Hindi—*Shankh-puspi*

**Description**—A procumbent, prostrate or suberect perennial herb. Stem suffrutescent at the base 15–50 cm long, softly hairy or ferruginously pilose. Leaves 1.5–7 cm long, linear-oblong or oblong-lanceolate, narrowed to a sessile base. Obtuse mucronate at the apex, whitish-green hairy on both surfaces; radical leaves usually longer, spatulate. Flowers 1–



## Medicinal Plants of BSIP Garden

3 together, nearly sessile, white, funnel shaped. Fruit a capsule, globose, 3 mm long, smooth. Seeds 4, small, black.

*Flowers & Fruits*–April–July.

*Distribution*–Commonly found throughout tropical and sub-tropical areas in India, distributed in Western Tropical Africa.

*Parts used*–Whole plant, leaves, roots.

*Herbal action*–Constipation, fever, asthma, urinary diseases, mental disorder, stomach disorder, high blood pressure, hysteria, bed wetting, depression, emmenagogue, rickets, heat stroke, brain tonic, laxative.

*Uses*–The extract or paste of plant is used with water for the treatment of constipation. Infusion of plant is given orally with milk for treatment of fever. Smoking of leaves is useful in asthma. Decoction of plant is taken with sugar to treat burning sensation during urination. Paste of plant mixed with sugar and ‘pudina’ (*Mentha arvensis* Linn.) is taken to cure stomach disorder caused by heat strokes. The plant is reported to contain a potent memory improving drug and has been used as a psycho stimulant. The extract of plant is used to induce, an increase in brain protein content, thus increases acquisition efficiency. It increases the memory when taken with honey, and reduces mental tension. The decoction of plant is taken twice a day for treatment of high blood pressure. The powder of plant mixed with powder of ‘brahmi’ (*Bacopa monnieri* Penn.) and rhizome of ‘bach’ (*Acorus calamus* Linn.) in 2:1:1: ratio is taken with honey, twice a day for treatment of hysteria. The powdered plant is taken with honey, twice a day to stop bed wetting in children.

Powdered root is taken with milk to treat depression. A sweet drink made from root is given to treat hectic fever and to regulate menstrual periods. Infusion of root mixed with fresh cow milk is taken to promote pregnancy. Oil extract of plant is massaged to children suffering from rickets.

*Chemical compounds*–Sankhpuspine, n-triacontane, Aliphatic alcohols, B & E Sitosterol

*Mode of propagation*–The plant is easily propagated by seeds in sandy and graveled soil.

### ***Costus speciosus* (Koenig ex Retz.) Smith (ZINGIBERACEAE)**

Vernacular names

Sanskrit–*Kemuka*

Hindi–*Keu–Kand*

Bengali–*Keu*

Marathi–*Penva, Pushkarmula*

Tamil–*Kuiravam*

Telugu–*Chengalvakoshtu*

Kannada–*Chengalvakoshtu*

*Description*–A rhizomatous herb. Stem clothed with sheath in the lower part, leafy upward. Leaves subsessile, obovate–oblanceolate to oblong, acuminate–caudate, glabrous and dark green above, appressed–pubescent on the lower surface. Flowers white, fragrant, arranged in terminal spike. Capsules 3–gonous, bright red. Seeds black with white aril

*Flowers & Fruits*–July–November.

*Distribution*–Found throughout India ascending to 1320 m in Himalaya; distributed in Malaya and other tropical countries.

*Parts used*–Leaves, stem, rhizomes.

*Herbal action*–Heartburn, rheumatism, piles, malarial fever, skin diseases, cough, earache, purgative, tonic, anthelmintic, contraceptive, refrigerant, vulnerary.

*Use*–Leaves are used to treat stomach disorders. Stem is chewed or extract of it is taken to treat stomachache and heartburn marked by feeling of burning sensation or discomfort in the region of heart and often rising upward from stomach to throat, caused by rising of acid contents of the stomach into the lower esophagus, generally due to indigestion.

Paste of rhizome made with leaves of ‘hathil’ (*Murraya paniculata* Jack.) and sugar candy is taken orally to treat rheumatic pain and swelling, and used to cure piles. The extract of rhizome is applied on forehead to produce a feeling of coolness and taken





***Crataeva nurvala* Buch.-Ham.  
(CAPPARIDACEAE)**

Syn.—*C. religiosa* auct. (non Forst.)

Vernacular names

English—Garlic pear

Sanskrit—Varuna

Hindi—Varum, Barna, Barua, Karwan, Kumla,  
Varunna

Bengali—Barun

Marathi—Vayanarna, Haravarna

Tamil—Maralingam

**Description**—A small tree. Petiole vigorous, with a distinct knob consisting of gland to about 1 mm in diam. Leaves trifoliate; leaflets chartaceous to thinly coriaceous, 8–15x2–6 cm, stalked rarely sessile, acute at the apex, margin entire, base unequal. Flowers whitish and pale-yellow in lax terminal corymbs, arising after leaf fall. Fruits on gynophore, 4–6 in diam, ovoid or globose, red at maturity. Seeds 6–15 in each fruit, 6–11x2–3 mm, dull dark brown, dorsally with a crest of sharp irregular protrusions.

**Flowers & Fruits**—March–April.

orally to kill worm in intestine (Anthelmintic). This extract is also used as ear drop to get relief from earache and applied on blisters and wounds to promote healing. Decoction of rhizome with leaves of 'hathil' and black pepper (*Piper nigrum* Linn.) is taken to treat malarial fever. Paste of rhizome is used to treat skin diseases. The extract of rhizome mixed with ginger is taken to cure cough. Women to reduce birth rate or to stop temporary pregnancy eat the fresh rhizome once in a day for one month. It is considered as raw material for commercial production of *Diosgenin*. It is a precursor of steroids including sex hormones and oral contraceptives. The rhizome is taken orally as purgative.

**Chemical compounds**—Tigogenin, Diosgenin, tocopherol quinine, Dihydrophytylplastoquinone.

**Mode of propagation**—The plant is propagated by rhizomes during rainy season on variety of soils with adequate water supply. Seeds are also sown for propagation but it is not very common.



## Medicinal Plants of BSIP Garden

**Distribution**–Native to Argentina. Commonly cultivated in garden. Frequently planted near Muslim tombs.

**Parts used**–Leaves, flowers, bark, seeds, roots.

**Herbal action**–Gout, igniprdites, rheumatism, caries, neuralgia, paralysis, calculus, scrofula, diabetes, fever, gastric irritation, vomiting, intermittent and typhus fever, stomachic, alterative, demulcent, rubefacient, vesicant, laxative, astringent, cholagogue.

**Uses**–The poultice of leaves is used to treat gouty swellings of joints caused by an imbalance of uric acid in the body. Uric acid is normally excreted by the kidneys but sufferers of gout have an excess in their blood stream which is deposited in joints as salt (urates) of the acid which causes inflammation of the affected joints and painful gouty arthritis with destruction of the joints. The kidney may also be damaged, with formation of stones. Deposits of salt (called *tophi*) may reach the stage where they prohibit further use of joints, causing stiffness in hand and feet. The poultice of leaves is used to treat inflammation of the nerves of sole of the feet causing swelling of feet and acute burning sensation and pain in soles (Ignipedites). A hot poultice of the leaves is used or the extract of leaves is given or warm bath of decoction of bark is taken or lotion prepared from bark is applied to treat pain in the muscles and joints. The leaves are smoked in case of decay of the nasal bones, the smoke being exhaled through the nose. The cooked leaves are used as vegetable for the cure of pain of a severe shooting or stabbing character along nerves and for the treatment of paralysis. The paste of leaves is used as demulcent.

The infusion of flowers is used as astringent.

The mustard oil boiled with bark and root is massaged to treat rheumatism. The decoction of bark is given for the treatment of hard and stony masses of various sizes formed with in the gall, kidney and ureters (Calculus affection or Concretions). It is also given in disease of scrofulous enlargement of gland below the lower jaw of the young's, in which patient has lost their resistance power and become susceptible to tuberculosis, especially of the glands, bones and joints. The decoction is used to treat eczematous

eruptions, ulcerations, glandular swellings. The extract of bark is given orally to treat diabetes, vomiting and gastric irritation; it is also used to stimulate liver and increase secretion of bile to promote digestion and appetite. The extract of bark is used to treat the fever that is marked by intervals of normal temperature between periods of rise of temperature. It is also given to treat an acute contagious and infectious disease, characterized by high temperature, acute depression, and eruptions. The extract of bark is given as laxative.

The powdered seeds are taken to treat prostrate cancer.

The decoction of root bark is used as rubefacient, and vesicant.

**Mode of propagation**–Propagated by seeds and root suckers in all kinds of soils.

### ***Crinum asiaticum* Linn. (AMARYLLIDACEAE)**

Vernacular names

English–*Poison bulb*

Sanskrit–*Nagadamani, Nagapatra,*

Hindi–*Sudarsan, Sukh darshan, Pindar, Barkanavara, Kanwal, Chindar Kanmu, Nagdone, Nagin-kapatta*

Bengali–*Nagdaun*

Telugu–*Kesarchettu*

Tamil–*Vishmungil*

Kannada–*Vishamungali*

**Description**–A scapigerous herb with large bulbous. Leaves fleshy, large, 1.4x0.15 m, linear or linear-lanceolate, shortly acuminate at apex, sheathing at the base. Flowers 20–40, white, fragrant, arranged in umbel on 30–40 cm long compressed scape. Fruits up to 2.5 cm in diam, subglobose or ellipsoid, beaked. Seed 1 or 2.

**Flowers & Fruits**–July–November.

**Distribution**–commonly found throughout India to Malaya and Western Polynesia on marshy places, also cultivated in gardens for its fragrant flowers.

**Parts used**–Leaves, tubers.





*Chemical compounds*–Narcissne.

*Mode of propagation*–The plant is easily propagated by small bulbs on marshy or moist places

***Curculigo orchioides* Gaertn.  
(HYPOXIDACEAE)**

*Vernacular names*

English–*Black musle*

Sanskrit–*Mushali*

Hindi–*Kali-musle, Musali-kand, Tallura*

Bengali–*Tala muli*

Telugu–*Nelatatygadda*

Kannada–*Nelatati-gadde*

*Description*–A perennial, stemless herb with stout, thick, tuberous root-stock. Leaves 10–50x2–6 cm, sessile or narrowed into a short petiole, lanceolate, oblong to elliptic, plicate, acute or acuminate at apex, glabrous or thinly hairy. Flowers small, shortly pnduncled, yellow, arising at the base. Capsule hypogynous, 10–13 mm long with minute beak. Seeds 1–4, oblong, shining with deep wavy grooves.

*Herbal action*–Earache, whitlow, sprain, biliousness, stranguary, insect repellent.

*Uses*–The warm extract of leaves mixed with a little salt is used as ear drop to get relief from earache and other ear diseases. Crushed leaves are spread in cattle sheds to repel noxious insects. The extract of leaves is use to cause vomiting. The paste of leaf is applied to treat septic inflammation of the tissues surrounding the nail or of the bones of the distal joint of finger or toe (Whitlow); it is also used to treat inflamed joints and sprains.

The extract of bulb is given orally at short interval to the patient for treatment of indigestion due to improper functioning of liver (Biliousness). It is also used to treat painful and drop by drop discharge of urine (Stranguary) and other urinary diseaes. The powdered bulb is used as antidote. The decoction of bulb, turmeric and stem of 'giloe' (*Tinospora cordifolia* Miers ex Hook.f. & Thoms.) is taken orally thrice a day to treat dengue and chikungunya. It increases the number of blood platelets very rapidly.



*Flowers & Fruits*–August–November.

## Medicinal Plants of BSIP Garden

**Distribution**–Found throughout the tropical and subtropical parts of India to Southeast Asia and Australia in shady areas.

**Parts Used**–Tuberous root.

**Herbal action**–Toothache, jaundice, asthma, piles, syphilis, burning sensation in urine, diarrhoea, styptic, emmenagogue, demulcent, tonic, diuretic.

**Uses**–Tuberous root is chewed for treatment of toothache, the gargle with decoction of this tuber is also useful. Paste made from tuber is used to stop bleeding from wounds by astringent action (Styptic). The decoction of the tuber and leaves of ‘bhumi-anwala’ (*Phyllanthus fraternus* Webster) is used to treat jaundice and asthma. The paste of tubers made with roots of ‘ban-gobhi’ (*Launaea asplenifolia* Hook. f.) is very effective in treatment of piles, if used regularly twice in a day for about one month. Paste of tubers mixed with sugar and milk is given orally twice or thrice a day for treatment of syphilis and burning sensation during urination. The plant is emmenagogue, demulcent and diuretic. The warm poultice of paste of the tubers is wrapped with leaves of ‘kaua’ (*Martynia annua* Linn.) on affected part of the body to treat bone fracture and other strokes. Powdered tuber is taken with milk and candy to check early discharge of semen during intercourse and for the treatment of sexual impotency. The tuberous roots are taken orally as general health tonic and to treat diarrhoea.

**Chemical compounds**–Lycorine, Curculigoside,  $\beta$ -Sitosterol.

**Mode of propagation**–Propagated by root tubers.

### ***Curcuma caesia* Roxb. ( ZINGIBERACEAE)**

Vernacular names

Hindi–*Nar kachur, Kali haldi*

Bengali–*Kala haldi*

Marathi–*Kala haldi*

Telugu–*Manupasupu*

**Description**–A rhizomatous herbaceous plant, up to 1.2 M high. Leaves 30–60x12.5–15 cm, broadly

lanceolate or oblong, glabrous with a deep ferruginous purple cloud down the middle which penetrates to the lower surface. Petiole and sheath about as long as blade. Spike appearing before the leaves, about 15 cm long or altogether about 30 cm high with the peduncle. Flowering bract green with a ferruginous tinge. Corolla deep bright red, tending to crimson. Flowers pale yellow, reddish at outer border, and rather shorter than their bracts.

**Flowers & Fruits**–August–December.

**Distribution**–Found throughout tropical and subtropical parts of India.

**Parts used**–Rhizome, roots.

**Herbal action**–Appetizer, vulnerary, anthelmintic, antifebrile, alexiteric or alexipharmic, leucoderma, piles, bronchitis, asthma, tumors, scrofula, splenomegaly, epileptic seizure, laxative, tonic, aphrodisiac, emetic, emmenagogue, expectorant, carminative, griping, inflammation, toothache, diarrhoea, dysentery, rubefacient.

**Uses**–Extract of fresh rhizome is appetizer, anthelmintic, vulnerary and emetic when taken in large doses. The fresh extract of rhizome mixed with honey is taken orally to treat fever. This extract is also used to counteract the effect of particular poison (Antidote or Alexiteric). The paste of rhizome is applied on affected parts to treat leucoderma. Decoction of rhizome is taken to treat piles (Haemorrhoid). The rhizome is chewed to treat bronchitis and asthma. They are also used to cure the abnormal swelling in any part of body consisting of an unusual growth of tissue (Tumor). Decoction of rhizomes is taken regularly for three to six months to treat scrofula. The fresh extract of rhizome is taken to treat toothache and abnormal enlargement of spleen which occurs commonly with blood disorders and parasitic infections (Splenomegaly); it is also given orally to the patients, suffering from chronic neurological disorder involving repeated convulsions, seizures and loss of consciousness (Epilepsy). There are many possible causes or associations of epilepsy, including cerebral trauma, brain tumor, cerebral haemorrhage and metabolic imbalances as in hypoglycaemia. Usually an epileptic attack occurs without warning, with complete unconsciousness and





***Cymbopogon citratus* Stapf. (POACEAE–  
Germinae nom. alt.)**

Syn.–*Andropogon citratus* DC.

Vernacula names

English–*Lemon grass*

Sanskrit–*Bhustina*

Hindi–*Nibu-ghas, Aginghas, Bhustrina, Ghandh-trina, Lli-cha.*

Bengali–*Gandhbena*

Marathi–*Hirua cha, Olech*

Gujarati–*Lil-ch*

Telugu–*Nimmagaddi*

Tamil–*Vasanpillu*

Kannada–*Majjigehulu*

Malayalam–*Vasanapullu*

*Description*–A perennial, densely tufted, aromatic, tall grass. Leaves in dense clusters, arising from underground stem. Flowers arranged in branched panicles.

*Flowers & Fruits*–September–November.

some muscle contraction and spasm. The decoction of rhizome is used as tonic, laxative, aphrodisiac, emmenagogue, expectorant and carminative, and also used to treat acute intermittent cramp like pain, especially in the abdomen (Griping). The injury of any part of the body marked by redness, heat and swelling is cured by roots extract. The fresh extract of rhizome is used to treat food poisoning (Diarrhoea) characterized by frequent loose motions. A sever cases will result in the loss of water and salt (Dehydration); it is also used to treat (Dysentery) caused by amoebic and bacterial infection and ulceration of the lower part of the bowels that cause cramp, nausea, fever, anaemia, weight loss and sever diarrhoea with the passage of mucous and blood. The root is mild counterirritant causing tingling and reddening of the skin.

*Mode of propagation*–Propagated by rhizome cuttings.



**Distribution**—The plant is native of Sri Lanka and India now grows only under cultivation in India, Africa, the Philippines, Madagascar, Central and South America, the West Indies and southeast Asia..

**Part used**—Leaves.

**Herbal action**—Stomachache, dysmenorrhoea, sprain, rheumatism, lumbago, fever, bodyache, ringworm, flatulence, colic, convulsion, cholera.

**Uses**—The infusion of leaves is used with lukewarm water to treat stomachache in children. The extract of leaves and black pepper (*Piper nigrum* Linn.) is given orally to treat dysmenorrhoea and dropsical condition caused by malaria. The decoction of leaves made with ginger (*Zingiber officinale* Rosc.), turmeric (*Curcuma domestica* Valetton) and leaves of 'tulsi' (*Ocimum teniflorum* Linn.) is taken alone or with milk, twice or thrice a day for treatment of fever and bodyache caused by cold. The past of leaves mixed with 'ghee' is used to treat ringworm. The small quantity of leaf oil, is taken orally with sugar to treat flatulence, colic, convulsion, gastric irritability and cholera. This oil mixed with that of coconut in the ratio of 1:2 is rubbed on affected parts of the body for treatment of chronic rheumatism, lumbago, sprains, neuralgia, and other painful affection. It is also used to treat ringworm.

**Chemical Constituents**—Citral, Geraniol mycrene, pinen ethyl laurate, 1,8-Cinole, Limonene, Phellandrene methylheptenone, Citronellal, Linalool, Caryophyllene menthol, Terpeneol, Citronllol.

**Mode of propagation**—Propagated by root suckers.

**Flacourtia jangomas Reusch.**  
(FLACOURTIACEAE)

Syn.—*F. cataphracta* Roxb.

**Vernacular Names**

English—*Indian plum*, *Many-spined flacourtia*,  
*Puneala plum*

Sanskrit—*Talisha*

Hindi—*Paniala*, *Paniamlak*, *Paniaonvala*, *Jaggam*

Bengali—*Paniala*

Gujarati—*Talispara*

Marathi—*Tambet*



Telugu—*Kuragayi*, *Talispatramu*, Tamil—*Saralu*,  
*Vayangara*

Kannada—*Chankali*

Malayalam—*Kanji*, *Talisam*, *Vayancatha*

Oriya—*Bainch*

**Description**—A small, spreading tree or shrub, armed with about 10 cm long, stout, sharp, branched and unbranched spines. Leaves alternate, 5–10 cm long, shining green above, dull beneath, narrow-ovate, ovate-oblong, oblong or ovate, lanceolate, apex long, pointed, broadly cuneate to rounded at the base, margins toothed or subserrate-crenate, membranous to thinly chartaceous. Flowers fragrant, axillary, minute, greenish yellow in small irregular subcorymbose racemes.; male and female flowers born on separate plants. Fruits dull brownish red or purple, subglobose or globose, smooth. Seeds brown, hairy, flat

**Flowers**—March–June; **Fruits**—August–November.

**Distribution**—Possibly indigenous in the area of Assam and Myanmar. Not known in wild state, but possibly originated in India. Found in lower Bengal, Assam,



Chittagong, Maharashtra, Orissa and south Konkan. In the salt range along the lower hills, sometimes up to 1200m, and skirt of the Suliman range; distributed in Malacca, Singapore, Malay Island extending to China.

*Part Used*—Leaves, bark, fruit.

*Herbal action*—Astringent, stomachic, diaphoretic, carminative, expectorant, asthma, bronchitis, phthisis, antiperiodic, tuberculosis, fever, chest diseases, dysentery, diarrhoea, tonic, sore throat.

*Uses*—The powdered leaves mixed with the leaf extract of ‘vasaka’ (*Adhatoda zeylanica* Medic.) and honey is given orally thrice a day in dose of one or two teaspoons to treat catarrh of the urinary bladder and tuberculosis of lungs. This mixture is also used to treat asthma and inflammation of the mucous membrane of bronchial tubes. The extract of fresh leaves in doses of 5–10 drops, mixed with water or mother’s milk is given to children for treatment of fever. The extract is also given in dose of one teaspoon thrice a day for treatment of chest diseases, phthisical cough, dysentery and diarrhoea, and infantile indigestion during dentition. It is also used as tonic during pregnancy.

The decoction of bark is used as gargle for cure of sore throat.

The fruits are used to cure bilious condition. It also controls purging and relieves nausea

*Mode of propagation*—Propagated by seeds in sandy loam soil.

### ***Gloriosa superba* Linn. (LILIACEAE)**

Vernacular names

English—*Climbing lily*, *Superb glory*, *Turk’s cap*

Sanskrit—*Langli*, *Kalikari*, *Ailni*, *Agni*, *Gorbhaghatini*, *Agnimukhi*

Hindi—*Kalihari*, *Carihari*, *Bachang*, *Khadyanag*, *Langali*, *Agnishikha*

Bengali—*Bishlanguli*, *Ulatchandal*

Marathi—*Indai*, *Kariannag*, *Nagkaria*, *Kallavi*

Gujarati—*Dudhiiovachinag*, *Varhvardi*

Telugu—*Adhvi-nabhi*, *Kalappagadda*

Tamil—*Kalaippaik*, *Kishangu*, *Akkinichilam*

Kannada—*Agnishikha*, *Akkalanganaballi*, *Karadikanninagaddi*

Malayalam—*Medoni*, *Malattamara*, *Mettoni*

Oriya—*Garbhoghhatono-panjangulio*, *Ognishikha*, *Mehria-phulo*

*Description*—A large, branching, glabrous, climbing herb, with a chain of 15–30 cm long, fleshy, cylindrical large, simple or forked, white tuberous root. Leaves sessile or nearly so, cordate, scattered or opposite or sometimes ternately whorled, 8–20 cm long, ovate lanceolate, terminating in spirally twisted tendril. Flowers 7–10 cm in diam, axillary, large, solitary or subcorymbose, towards the end of branches, bright scarlet. Capsule linear-oblong, 3–6 cm long. Seeds black, subglobose.

*Flowers & Fruits*—June–October.

*Distribution*—Commonly found throughout tropical regions of India and Sri Lanka ascending to 2000m on the Western Himalaya and extending to Malaya, Myanmar, Malacca, Cochinch–China and tropical Africa.



*Parts Used*—Leaves, tuber.

*Herbal action*—Insecticide, promoting labour pain, skin disease, anthelmintic, stomachic, malaria, alterative, gonorrhoea, leprosy, piles, neuralgic pain, antidote, abortifacient.

*Uses*—The extract of leaves is applied for about half an hour to kill lice.

The paste of tuber is applied over supra pubic region for promoting labour pain; a paste made with the small piece of tuber and black pepper is give orally to woman for abortion and also used to treat skin diseases. The white starchy powder obtained by repeated washing and grinding of the tuber is bitter and used as anthelmintic, and alterative, and also used to treat stomachache and malarial fever. Powdered tuber (10gms) mixed with one teaspoonful honey is give orally twice a day to treat gonorrhoea, piles and leprosy. The warm poultice is used to get relief from neuralgic pain. The tuber is crushed in water or milk, and a few drops of this extract are poured into nostril, as an antidote to patient, especially when stupor or coma has set in.

*Chemical compounds*—Colchicine, Lueolin, Thiocolchicine.

*Mode of propagation*—The plant is propagated through seed and root cuttings of underground tubers in deep moist loamy soil during March and April.

### ***Jatropha curcas* Linn. (EUPHORBIACEAE)**

Vernacur names

English—*Physic nut, Diesel tree, Purging nut*

Sanskrit—*Kananaeranda, Pavataranda*

Hindi—*Jamalgota, Jungali-arendi, Bagh bherenda, Safed arend*

Bengali—*Bagbherenda, Erandagachha*

Marathi—*Mogalierenda, Ranayerendi*

Gujarati—*Jamalg*

Telugu—*Nepalamu ota, Peddanepalam, Adaviramidomu*

Tamil—*Kadalamankku, Kaattamanakku*

Kannada—*Adaluhharalu, Bettadahharalu*

Malayalam—*Kattvenakka, Kadalavanakka*

Oriya—*Jahazigada*



*Description*—A soft wooded shrub. Branches glabrous with watery juice. Leaves long petioled, palmately angled or 3–5 lobed less than halfway down. Flowers greenish yellow arranged in cymes. Capsules 2.5–3 cm long, ellipsoid, faintly trilobed, indehiscent, yellow at first, black at maturity. Seeds up to 2 cm long, dull black, ellipsoid-oblong.

*Flowers & Fruits*—April–September.

*Distribution*—Native of tropical America. Found throughout warmer parts of India

*Parts Used*—Leaf, twigs, seeds, root, bark.

*Herbal action*—Febrifuge, gum, caries of teeth, vulnerary, galactagogue, purgative, paralysis, eczema, herpes, pruritus, sciatica, dropsy, skin diseases, abortifacient, scabies, rubefacient.

*Uses*—The decoction of leaves is used to treat fever and used as mouth wash to strengthen the gums. The leaf extract is applied on cuts to stop bleeding



and quick healing and also used to treat caries of teeth. The pounded leaves are used to treat tumors and reddening of skin. The paste of leaves is applied to promote suppuration of sluggish ulcers, boils and abscesses. Washing of breasts of nursing mother by decoction of leaves and poultice of warm leaves are used to promote secretion and flow of milk. The ash from the burnt leaves and a lotion prepared by leaves in hot water is used to expel guinea-worm from wounds. Twigs are used as tooth brush to treat bleeding gum.

The cotyledons of two to three seeds are wormed and given to patient suffering from chronic constipation. The oil extracted from seeds is used to treat paralysis, eczema, herpes, itch, sores pruritus and bleeding wounds; it is also taken orally in doses of 5–10 drops to treat constipation and abdominal dropsy. The oil, diluted with some blend oil is useful in chronic rheumatism and also the massage over breasts promotes the flow of milk.

*Mode of propagation*—Easily propagated by seeds and stem cuttings.

*Flowers*—April–June; *Fruits*—July–September.

*Distribution*—Frequently cultivated in North India; distributed in Malay Peninsula.

*Parts Used*—Leaves, flowers, fruits, seeds, bark, root.

*Herbal action*—Cholagogue, digestive, appetizer, vermifuge, headache, astringent, febrifuge, increase fertility, gum diseases, pyrrhoea, dysentery, constipation, swelling, pustular eruption of skin.

*Uses*—The extract of leaves is taken to increase the flow of bile and to improve digestion and appetite. It is also used as vermifuge. The ash of burnt leaves and bark is used as tooth powder to strengthen the gum and to get relief from pyrrhoea. It is also used to reduce excessive salivation and sore mouth.

The extract of bark is applied on fresh wounds and cut to stop bleeding. The decoction of bark is used as astringent, general tonic and febrifuge. The extract of bark or its decoction is used to increase fertility in

### ***Mimusops elengi* Linn (SAPOTACEAE)**

Vernacular names

Sanskrit—*Bakula*

English—*Bullet-wood Tree, Indian Medlar*

Hindi—*Maulsri, Maulsari, Borsali, Bukul, Qwli, Vavali, elengi*

Bengali—*Bakul*

Marathi—*Ovalli*

Gujarat—*Barsoli, Balsari*

Telugu—*Pogada*

Kannada—*Bakula, Pagade*

Malayalam—*Elengi, Ilanni*

Oriya—*Bakulo, Baulo*

*Description*—A medium sized tree. Leaves alternate, shortly petioled, 6–8 x 2–3 cm, shortly acuminate, base rhomboid, glabrous, margin undulate, shining green above and pale beneath. Flowers whitish and fragrant, clustered, axillary; pedicels rusty tomentose. Fruit a berry, 0.6–2.5 cm long, ovoid, elliptic, yellow at maturity. Seeds compressed, elliptic.



## Medicinal Plants of BSIP Garden

women. The decoction of bark is used as mouthwash to treat diseases of gums and teeth.

The lotion prepared from flowers is used to wash wounds and ulcers. The powder of dried flowers is used as snuff for relief of headache, and to induce copious discharge from the nose.

The unripe fruit is used to check bleeding from wounds. This fruit is masticated for strengthening and fixing loose teeth. The pulp of ripe fruit is taken to treat chronic dysentery. The pulp is applied on forehead for treatment of headache. A lotion made by pulp of ripe fruits is used to wash wounds and sores.

The paste of seeds made with bland oil is used to treat obstinate constipation in children.

The paste of root made with vinegar is applied on face to treat swellings and pustular eruption of the skin

*Mode of propagation*—Propagated by seeds.



### **Mirabilis jalapa Linn. (NYCTAGINACEAE)**

Vernacular names

Sanskrit—Kishnakali

English—Four-o'clock Flower, Clavillia, Marvel of Peru, False Jalapa

Hindi—Gulabbas, Krishnakali, Sandhya-raga, Sanji

Bengali—Krishnakali, Sarpamani

Marathi—Gullas

Gujarati—Gubbaji

Telugu—Chandrakanta, Chandramalli

Tamil—Andhimalligai, Chandramallige

Malyalam—Antimalari, Antimantarum

*Description*—Erect branched glabrous, annual herb with tuberous tap root. Stem often tinged with purple, thickened on the nodes. Leaves in unequal pairs, ovate-lanceolate, 3–10x2–5 cm, rounded, succordate or truncate at the base, acute or acuminate at apex smooth. Flowers white, rose, lilac, yellow, crimson, striped and mottled, crowded in lax. Fruits globose, ribbed and plicate, black, 0.6–0.8 cm long.

*Flowers & Fruits*—September–January.

*Distribution*—Generally cultivated in gardens and often found as an escape. There are some disagreements about where it come from originally? Mexico, Chile or India. Today this plant is naturalized throughout the tropics of South America, Latin America, France, and India.

*Parts used*—Leaves, roots.

*Herbal action*—Buboes, vulnerary, bruises, urticaria, piles, purgative, dropsy, contusion, carbuncle.

*Uses*—A poultice made by boiling or warmed leaves is used for early maturing or resolving boils, abscesses and buboes—an inflamed, swollen, or enlarged lymph node often exhibiting suppuration, occurring commonly after infective disease due to absorption of infective materials. The most commonly effected part is those of the groin and armpit. The extract of leaves is used as vulnerary. It is also used to treat injuries and leakage of blood into the subcutaneous tissue, but without on open wound in which blue or



black colour on skin is appeared followed by brown and yellow as the blood pigment is reabsorbed (Bruises). The leaf extract is used as salve (ointment) for allaying heat and itching in allergic reaction by an individual to some substances to which they are hypersensitive, in which the allergic response is manifested on the skin. Raised red patches develop which may last for hours or days. The sensitivity may be to certain food and the effect may occur anywhere on the body, but commonly erupts on the face and trunks. The leaves are used to cure piles.

The root is taken as purgative. The pulverized root is used as tonic and to treat dropsy. The poultice of root is applied on injury of the soft parts in which the skin is unbroken (Contusion). It is also applied on wounds and acute suppurative inflammation of the skin and tissues under the skin, rapidly spreading around the original point of infection (Carbuncle).

**Chemical compounds**—Alanine, Alpha-amyrins, Arabinose, Beta-amyrins, Betalamic acid, Betanin, Beta-sitosterols, Campesterol.

**Mode of propagation**—Propagated by seeds and stem cuttings.

### ***Moringa oleifera* Lamk. (MORINGACEAE)**

Vernacular names

English—*Drum stick*

Sanskrit—*Shobhanjana*

Hindi—*Mungana, Saijana, Sahjan*

Bengali—*Sajina*

Gujarati—*Mdgosaragaro, Saragao*

Telugu—*Mulaga, Munaga, Rellamunaga, Tellamunaga*

Tamil—*Murungai*

Kannada—*Nugge*

Malayalam—*Muringa, Sigru, Moringa*

Oriya—*Sagina*

**Description**—A small or medium-sized tree, up to 8 m high, bark corky. Leaves impari-3 pinnate; rachis thickened and articulated at the base with solitary gland at each articulation; pinnae and pinnules opposite; leaflets opposite, 10–25x6–12 mm, deciduous, 6–9 pairs, the laterals elliptic, the terminal ovate to elliptic, slightly longer than the laterals.

Flowers white, fragrant with yellow in the center, arranged in large puberulous, spreading panicles. Fruits capsular, up to 15–30 cm long, pendulous, more or less trigonous, strongly 9-ribbed, many seeded. Seeds 3-angled, 2–5 cm long, the angles winged.

**Flowers & Fruits**—January–June.

**Distribution**—Common throughout India; introduced from tropical Asia or Malaya in prehistoric period, now pan tropic in cultivation; also found in Philippines.

**Parts used**—Leaves, fruits, roots, root bark.

**Herbal action**—Blood purifier, skin diseases, eye diseases, paralysis, antibiotic, scurvy, flatulence, galactagogue, dog bite, antispasmodic, hysteria, vulnerary, diuretic, rubefacient, counterirritant, neuralgia, earache, inflammation, caries, headache, palsy, rheumatism, gout, edema, dyspepsia, lumbago.

**Uses**—The flowers, leaves and pods are eaten as vegetable for calcium, iron, phosphorus and vitamins. The extract of leaves or bark is given to a patient suffering from a deficiency disease caused by lack of vitamin C (ascorbic acid) due to a dietary lack of fruit and vegetables (Scurvy). Symptoms begin with swollen, bleeding gums and then subcutaneous bleeding, bleeding into joints, ulcers, anaemia and then fainting, diarrhoea, and trouble with major organs. The extract of leaf mixed with little amount of common salt is given orally to children to check flatulence. An ointment made with extract of leaves mixed with honey is applied to eyelids for treatment of eye diseases. The leaves are used as vegetable to increase the flow of milk (Galactagogue). The distil water obtained by boiling the leaves is used as eye drop to treat fainting fits and hysteria caused by nervous weakness or lack of strength; it is used to treat the involuntary sudden pain of bowels. The paste of leaves made by mixture of black pepper (*Piper nigrum* Linn), salt, ginger (*Zingiber officinale* Rosc.) and garlic (*Allium sativum* Linn.) is given orally to counteract the harmful effect of dog-bite; this paste is also applied on the bitten part. A paste of fresh leaves is applied on wound to promote healing of wound (Vulnerary); to promote early suppuration of

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boils; to reduce the swellings and to expel guinea-worm from wounds.

It contains two alkaloids allied to *Ephedrine*, thus is used as cardiac stimulant. The decoction of bark is taken as diuretic and used to treat asthma and cough. The extract of bark is applied to produce inflammatory reaction for producing a local congestion, with dilated vessels and an increased blood supply in rheumatic swellings. The extract is also used to treat severe sharp pain occurring along the course of a nerve caused by pressure on nerve trunks, faulty nerve nutrition, toxins, or inflammation. The decoction of stem bark or root bark is taken orally to expel non-viable foetus, especially during the first three or four months of pregnancy. It is also applied to dilate the mouth of womb.

Poultice of root bark is used to treat inflammation. The fresh extract of root bark is used as eardrop to get relief from earache. The gargle with decoction of root bark is used to treat the hollow of the teeth formed by gradual decay and disintegration of soft or bony tissue of tooth (Caries). If the decay progresses, the surrounding tissue becomes inflamed and an abscess forms.

The powder of root is inhaled through the nose (snuff) or placed in the posterior part of the buccal cavity on one side to get relief from headache and earache. The paste made from fresh root of young plant or seedlings is given to treat chronic nervous disorder (Epilepsy) marked by repeated attack of unconsciousness or convulsions or both. There are many possible causes or associations of epilepsy, including cerebral trauma, brain tumour, cerebral haemorrhage and metabolic imbalances as in hypoglycaemia. The symptom may vary from the almost imperceptible alteration in consciousness as in absence seizures (Petit mal), to dramatic loss of consciousness, a cry, falling, tonic-clonic convulsions of all extremities, urinary and fecal incontinence. A massage from paste of fresh root or its extract on affected part of the body is very effective for the treatment of partial or complete paralysis of any part of the body of newborn, caused by an injury to the nerve resulting from traction during a difficult delivery. Recent findings indicate that *Maringin* obtained from root is responsible for the treatment of paralysis while *Terigospermin* obtained from root and leaves have

strong antibiotic properties which can be used as herbal antibiotic. The massage of fresh extract of roots is used to treat acute and chronic inflammation, muscle soreness and stiffness, and pain in joints of feet, ankles, and wrists. It is also used to treat arthritis produced due to rheumatic fever or trauma, degenerative joint diseases. At first there is swelling of the joint and inflammation of the membraneous sac which surrounds the joints, followed by erosion and loss of cartilage and bone. The extract of roots is taken orally or poultice of root paste is applied to treat gout which is a hereditary metabolic disease caused by hyperuricemia that is a form of acute arthritis and is marked by joint inflammation. Any joint may be affected, but gout usually begins in the knee or foot. Most of the hyperuricemic persons are asymptomatic between acute attacks. When an attack of acute gouty arthritis does develop, it usually begins at night with moderate pain that increases in intensity to the point where no body position provides relief. Hypertension, back pain, low-grade fever, and joint



inflammation may be present. Decoction of roots is used to treat an edema disease. The root is chewed or paste of it is used to get relief from imperfect or painful digestion marked by vague abdominal discomfort, a sense of fullness after eating, eructation, heartburn, nausea and vomiting, and loss of appetite. The extract of the root mixed with milk is given to treat asthma, calculus affections, enlargement of spleen and liver, internal and deep-seated inflammation. The decoction of roots mixed with asafetida (*Ferula assafoetida* Linn.) and common salt is given in pain of any sort in the lower back. It can be muscular, skeletal or neurological in origin. A severe and sudden case may be due to a strained muscle or slipped disc and the latter is unusually the cause of lumbago with sciatica. The decoction of root with addition of crushed mustard seeds is given to treat ascites in which there is accumulation of serous fluid in the peritoneal cavity, which may be caused by interference in venous return as occurs in cardiac disease; obstruction of flow in the portal vein; obstruction in lymphatic drainage; disturbance in electrolyte balance as occur in sodium retention; depletion of plasma protein or cirrhosis of liver. The decoction of root prepared by soaking in boiling water is used as stimulant, diuretic and abortifacient. A paste made from root and common salt is applied to reduce inflammatory swellings and tumors and to relieve form rheumatic pains and in paralysis.

The gum exudes from the stem is fried and taken for relief from flatulence. It is taken with milk to cure headache. The gum is used as effective dressing for buboes glandular swellings, boils, venereal pains in the limb. It is also used to treat dental caries for relief from toothache. A pessary or device prepared from gum is used to induce abortion and to dilate the os uteri.

The flowers boiled with milk are used to stimulate sexual desire. The juice of flowers is taken with milk as diuretic, antilithic, digestive, and antiasthmatic and anthelmintic. The oil extracted from flowers is used to treat arthritic pains, rheumatic and gouty joints.

The vegetable of pods is used to treat the diseases of liver, spleen, and articular pain, tetanus, paralysis. The tender pods are used as anthelmintic. The paste of fruits is applied to treat skin diseases. Fruits and

seeds are taken as vegetable to purify the blood. The seeds are used to get relief from venereal diseases and ascites resulting from enlargement of liver and spleen. The seed oil is used to treat eye diseases.

**Chemical compounds**—Maringin, Terigospermin, Palmitic acid, Stearic acid, Myristic acid, Oleic acid, Behenic acid, Phytosterol, Epinephrine.

**Mode of propagation**—Commonly propagated by stem cuttings and it can be grown by seeds.

### ***Murrya koenigii* Spreng. (RUTACEAE)**

Vernacular names

English—Curry-leaf Tree

Sanskrit—Surabhininiba

Hindi—Kari patta, Katnim, Karayapan, Kadhinim, Harri, Mitha-nim, Gandhela

Bengali—Barsanga, Kariaphuli

Marathi—Karhnimb, Poospala, Gandha, Jhirang

Gujarati—Goranimb, Kadhlimbdo

Telugu—Karepaku





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Tamil–*Karivempu, Karuveppile, Kattuveppilei*  
Kannada–*Karibevu*  
Malayalam–*Kariveppilei*  
Oriya–*Barsan, Bhursunga, Basango*

**Description**–A deciduous, small, strong smelling, downy tree. Leaves alternate, imparipinnate; leaflets 2.5–5 cm long, shortly petioled, ovate-lanceolate, base oblique, apex obtusely acuminate and notched at the tip, margin entire or obscurely crenulate. Flowers white, numerous, small arranged in terminal corymbose panicles, sweet scented. Berries avoid or sub-globose, 8 mm in diam, greenish white with minute black spots when young and rugose, purplish black when ripe.

**Flowers & Fruits**–February–May.

**Distribution**–Found throughout the tropical parts of India and along foot hill of the Himalaya, from Garhwal to Sikkim ascending to 1500 m, also distributed in Pakistan, Bngladesh, Pegu and Sri Lanka. Indigenous to India and Pakistan.

**Parts used**–Leaves, bark and roots.

**Herbal action**–Dysenrany, diarrhea, tonic, carminative, febrifuge, eruption, bruises, antidote, purgative, diabetes.

**Uses**–The fresh extract of young leaves is taken orally as tonic and used to treat diabetes, dysentery and diarrhoea. The leaves are chewed to get relief from stomachache and gas formation in the gastrointestinal tract. An infusion of roasted leaves is given to check vomiting. Decoction of leaves is given to check fever (Febrifuge). The paste of leaves or bark or roots is applied for treatment over breaking out of skin or rash (Eruption) and injury with diffuse effusion into subcutaneous tissue and in which skin is discoloured but not ruptured. The crushed leaves are used with milk as antidote.

The roots are used as purgative. The paste of bark and roots is applied on parts, bitten by venomous animals to counteract the poisonous effect (Antidote).

**Chemical compounds**–Murrayacinine, antioxidant, Vitamins alpha-tocopherol, beta-carotene, Lutein, Murrayazolinol, Muconine, Murrayanine, Koenoline, Isomahanine, Murrayanol

**Mode of propagation**–Easily grown by seeds, root cuttings and small suckers from the base of the tree.

### ***Musa paradisiaca* Linn. (MUSACEAE)**

Syn.–*M. sapientum* Linn.

Vernacular names

English–*Banana, Adam's Fig, Fig of India, Plantain*

Sanskrit–*Rambha, Kadali*

Hindi–*Kela*

Bengali–*Kaula*

Telugu–*Arali, Anati*

Tamil–*Vazhai*

Kannada–*Bale*

Malayalam–*Vazha*

**Description**–A stoloniferous tree like herb with stout cylindrical stem composed of convolute leaf-sheaths.





Leaves very large, oblong, spirally arranged. Flowers in drooping, sub terminal spike. the upper male and lower female; bract large spathaceous, ovate or orbicular, dark red. Fruits cylindric, up to 30 cm long, usually yellowish green when ripe, pulp sweet.

*Flowers & Fruits*—Throughout the year.

*Distribution*—Cultivated throughout India; found in Myanmar and the eastern Himalayas, ascending to 1300 m; distributed in Sri Lanka and Malay Island. Native of India and Malaysia.

*Parts used*—All parts.

*Herbal action*—Dysmenorrhoea, menorrhagia, diabetes, scurvy, diuretic, demulcent, laxative, dyspepsia, AIDS, syphilis, gonorrhoea, vermifuge, goiter, intoxicant, antiscorbutic.

*Uses*—The fresh, tender, leaves smeared with some bland oil are used as a cool dressing for inflamed and blistered surfaces and, wounds and ulcers.

The extract of the flowers is used with curd to cure menorrhagia and dysmenorrhoea. The cooked flowers are given orally to treat diabetes.

The unripe fruit is taken to treat scurvy and used as demulcent, aphrodisiac, diuretic and laxative. Pulp of one ripe fruit, well mixed with tamarind pulp (*Tamarindus indica* Linn.) and sugar candy or salt or the flour made from dried chips of unripe fruit is used to cure acute and chronic form of dysentery, diarrhea, dyspepsia, flatulence and acidity. The young unripe fruits are used to treat diabetes and spitting of blood. The watery fluid that exudes from the cut made in skin of unripe fruit is given with rice water for treatment of diarrhoea. The ash made from dried skin of fruits is used as a dressing on superficial incision on the skin.

The rhizome is taken to cure sexually transmitted disease such as AIDS, syphilis and gonorrhoea. It is used to treat disorders of blood and anaemia. Ash made from rhizome is taken with water to expel intestinal worms. The paste of rhizome is taken to cure diarrhea, gonorrhoea, goiter and other glandular diseases. The infusion of rhizome is considered

effective to a person, under the influence of alcoholic drink to neutralizing the intoxication. The rhizome is given orally to treat the patient suffering from diseases of anaemia, spongy and ulcerous condition of the gums, haemorrhages into the skin and from the mucous membranes, caused by deficiency of Vitamin C (Antiscorbutic).

*Mode of propagation*—Propagated through rhizomes.

### **Nyctanthes arbor-tristis Linn. (OLEACEAE)**

Vernacular names

English—Coral jasmine, Indian Mourner, Sorrowful Tree

Sanskrit—*Parijata*, *Sephalika*

Hindi—*Horsingar*, *Parijattaka*, *Parijat*, *Har*, *Sephalika*

Bengali—*Sephlika*, *Seoli*

Marathi—*Khurasli*, *Parijatak*

Gujarati—*Jayaparvati*

Telugu—*Kapilangadustu*, *Pogadamolle*, *Parijatamu*

Tamil—*Manjhapu*, *Pavazhamalligai*



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Kannada–*Harsinj, Parijata*  
Malayalam–*Pavizhamalli, Parijatakam*  
Oriya–*Godokodiko, Singarchoro*

**Description**–A large shrub or small tree with rough 4-angled branches. Leaves 10–12x5–7 cm, petioled, ovate, acuminate, base rounded or cuneate, upper surface scabrous with bulbous based hairs, pubescent beneath, margin slightly recurved, entire or with distant teeth. Flowers fragrant, white with orange tube, sessile in small peduncled and bracteate heads disposed in terminal trichotomous cymes, Capsules 1.2–2 cm in diam, orbicular, glabrous, emarginated at the apex, dorsally compressed. Seeds orbicular, flattened.

**Flowers & Fruits**–September–December.

**Distribution**–Found throughout the tropical and subtropical parts of India; distributed in Nepal, Burma and China.

**Parts used**–Leaves.

**Herbal action**–Cough, bilious fever, diaphoretic, diuretic, vermifuge, febrifuge, purgative, sciatica, antidote, purgative, laxative, anthelmintic, cough, expectorant, scaly disease of scalp, cholagogue, malaria, antibilious, rheumatism.

**Uses**–Due to presence of chemical compounds *Arbortristosides A* and *C*, this plant exhibits antileishmanial, antiviral, immunostimulant, antifungal and hepatoprotective activities. An infusion of leaves is given orally to children for treatment of cough and bilious fever. It is also used as diaphoretic, diuretic and vermifuge. The fresh extract of leaves is used with honey in doses of one to two teaspoonfuls thrice a day for treatment of chronic fever (Antipyretic). It is also used to promote flow of bile and to emptying the bowel or to soften stools (Laxative). The extract of leaf is safe purgative for children. The extract mixed with honey and common salt is given to expel roundworm and threadworm. A paste made with leaves and fresh ginger is given orally in malaria and obstinate fevers of the intermittent type. A decoction of leaves prepared over a slow fire is given to treat neuralgic pain in the leg along the course of the sciatic nerve felt at the back of the thigh and running down the inside of the leg (Sciatica).

The bark is used as purgative and antidote. It is chewed with 'pan' (*Piper betle* Linn.) to treat cough and to promote expectoration. The decoction of bark is used to treat malaria, constipation, headache and rheumatism. It also used to increase the flow of bile into intestine for the treatment of loss of appetite and vomiting of bile caused by disorder of liver.

The powdered seed mixed with coconut oil or paste of fresh seeds is used to treat the shedding of small, thin and dry exfoliation from hairy integument of the head (Scaly disease of scalp).

**Chemical compounds**–Nyctanthin, Arbortristosides A–E, Arborsides A–C, Arborside D, 6b-hydroxyloganin.

**Mode of propagation**–Propagated by seeds.

***Ocimum basilicum* Linn. (LAMIACEAE–  
Labiatae nom. alt.)**

Vernacular names

English–*Common Basil, Roman Basil, Sweet Basil*



Sanskrit–*Munjariki, Surasa, Vavara*  
Hindi–*Marua, ban tulsi, Bahari, Barbar, Sabzah*  
Marathi–*Marva, Sabza*  
Gujarati–*Damaro, Nasabo, Sabja*  
Telugu–*Bhutulasi, Rudarjada, Repudupachha*  
Tamil–*Tirnirupachai, Karpura-tulsi*  
Kannada–*Kamma-kasturi, Sajiagida*  
Oriya–*Dhada tulsi, Kapur-kanti*

**Description**–A strongly aromatic, branched herbaceous shrub. Leaves 2.5–5 cm or more long, glabrous, ovate to lanceolate, acute entire, base cuneate. Flowers pinkish white or white or purple, small, arranged in 6–10 flowered whorles. Nutlets about 2mm long, ellipsoid, black and pitted.

**Flowers & Fruits**–Throughout the year.

**Distribution**–Throughout the tropical parts of the India, Sri Lanka and Burma. Distributed in hotter parts of W. Asia, Africa, the Malay and Pacific Islands. Indigenous to Sindh and lower hills of Punjab.

**Parts used**–Leaves, Seeds.

**Herbal action**–Diaphoretic, carminative, cough, remittent & intermittent fever, vomiting, diarrhoea, anthelmintic, neuralgia, seminal weakness, croup, renal diseases, skin diseases, ear diseases, eye diseases, antidote, dysentery, piles, gonorrhoea, constipation.

**Uses**–The extract of leaves mixed with powder of dry ginger and white pepper is used as diaphoretic, anthelmintic and carminative, and used to treat cough, remittent and intermittent fever, vomiting and diarrhoea. The extract of leaves is used as nasal douche and also very effective remedy for ringworm; it is used as eardrop for the cure of earache and dullness of hearing and also used to counteract the poisonous effect of snake-bite. The decoction of leaves is used to treat fever, neuralgia, kidney trouble, seminal weakness, headache, gouty joints and gonorrhoea, and used as mouth-wash to remove foul breath and also used as nasal douche for expelling larvae infesting nose and to remove foul smell emanating from nose. The warm extract of leaves is given orally with honey for treatment of diseased condition of larynx of children, characterized by difficult and noisy breathing accompanied by hoarse

cough (Croup). The powdered dry leaves are used as snuff for expelling maggots, infesting the nose. A decoction of leaves with tender shoots is used as eye lotion for treatment of sore eye.

The paste of seeds is given orally to children for treatment of diarrhoea, especially during teething. Seeds are steeped in water for some time and the resulting mucilaginous jelly is taken orally with sugar to treat chronic dysentery, habitual constipation, gonorrhoea, internal piles, cough, and kidney disorder. Cold infusion of seeds is applied as poultice for the treatment of unhealthy sores and sinuses.

**Chemical compounds**–Estragol, Eugenol, Tannins.

**Mode of propagation**–Easily propagated by seeds.

***Ocimum tenuiflorum* Linn. (LAMIACEAE–  
Labiatae nom. alt.)**

Syn.–*O. sanctum* Linn.

Vernacular names

English–*Holy Basil, Monm's Basil, Sacred Basil*

Sanskrit–*Ajaka, Brinda, Manjari, Parnsa, Patrapushpa, Suvasa tulsi*

Hindi–*Tulsi, Krishna Tulsi, Ram Tulsi, Kala Tulsi, Krishna mul*

Bengali–*Tulsi*

Marathi–*Tlsa, Tulsi chajadha*

Gujarati–*Tulsi*



## Medicinal Plants of BSIP Garden

Telugu–*Tlasi*, *Brynda*, *Gaggera*, *Krishna tulsi*, *Nall tulasi*

Tamil–*Thulasi*

Kannada–*Vishnu tulasi*, *Kari tulasi*, *Sri tulasi*

Malayalam–*Trttavu*

**Description**–An erect much branched softly hairy herb sometimes woody at the base. Leaves 2.5–5 cm long, ovate or elliptic-oblong, obtuse or acute, entire or sub serrate, hairy. Flowers small, white or purple, arranged in 6–10 flowered close whorls of elongate racemes. Nutlets sub globose, broadly ellipsoid, oblong, smooth, slightly compressed, pal red or brown with yellow and black dots.

**Flowers & Fruits**–Throughout the year.

**Distribution**–Found throughout the India, ascending the Himalaya to 3000m; distributed in Sri Lanka, Malay Island to Australia and the Pacific W. Asia to Arabia.

**Part used**–Leaves, tender shoots, seeds.

**Herbal action**–Cough, cold, stomachache, menorrhagea, aphrodisiac, malaria, liver disorders, dysentery, dyspepsia, vomiting, anthelmintic, intermittent fever, bronchitis, skin diseases, earache, asthma, abortifacient, demulcent, antidote, stupor, coma.

**Uses**–The decoction or infusion of leaves prepared with black pepper is given in malaria, gastric disease in children and liver disorder. Leaf extract is taken orally for treatment of chronic fever, hemorrhage, dysentery, indigestion, vomiting and to remove intestinal worms. The paste of leaves mixed lime water is used for the treatment of ringworm and other skin diseases. The leaf extract mixed with ginger juice is given orally with black pepper for treatment of cold, cough, stomachache, menorrhagea and intermittent fever; it is also used as aphrodisiac. The extract of leaves mixed with honey and onion juice (*Allium cepa* Linn.) is given as expectorant for treatment of cough and bronchitis. The leaf extract is used as eardrop for relief from earache. The powdered dry leaves are used as snuff to get-rid-off the smell emanating from the nose, and for expelling maggot from the nose. The extract of leaves, ginger (*Zingiber officinale*

Rosc.), stem of 'gurch' (*Tinospora cordifolia* Linn.) and 'bhumi anwala' (*Phyllanthus fraternus* Webster) is used to treat dengue and chikungunya marked by high fever, sever muscle and joint pain, rashes on body, bleeding from mouth, nose, stool and urine.

The extract of flowers and ginger is taken orally with honey as expectorant for treatment of cough and asthma. A paste of young floral buds mixed with sesame oil is taken orally for abortion.

The seeds are made into paste and applied as demulcent. It is also used for treatment of diseases of the genito-urinary organs.

The paste of leaves, flowers and roots is applied as an antidote. The distil water obtained by boiling the root mixed with milk is applied to the eye for treatment of burning and reddening of eye. The distil water obtained by boiling the leaves and root of this plant along with leaves of 'kachur' (*Curcuma zedoria* Rose.) and seeds of 'paniha' (*Barringtonia acutangula* Gaertn.) is dropped into each nostril of patient in condition of stupor or coma.

**Chemical compounds**–Camphor, Lineol, Linalol, Estragol, Eugenol, Eugenol, Caevacrol, Methyl-chavicol, limatrol, Caryophyllin, Setosterol, Caffeic acid, Tannins, Beta cartene, Vitamin C, Xulose, polysaccharides.

**Mode of propagation**–Easily propagated by seeds in any type of soil.

***Phyllanthus fraternus* Webster (EUPHORBIACEAE)**

Syn.–*P. niruri* Linn.

Vernacular names

Sanskrit–*Bhumyamalaki*, *Bahupatri*

Hindi.–*Bhuin-awanla*, *Jaramla*, *Jangli amla*, *Bhunya amla*

Bengali–*Bhui-amla*, *Sadahazur-mani*

Marathi–*Bhui vali*

Gujarati–*Bhonya ammali*

Telugu–*Nela usirinka*

Tamil–*Keelanelli*

Kannada–*Nela nelli*, *Kira nelligida*



Malayalam–*Kzha nelli*  
Oriya–*Bhui aonla*, *Badianla*

**Description**—A glabrous annual herb. Leaves many, sub-sessile, distichous, often overlapping, 0.6–1.2 cm long, elliptic-oblong, obtuse or rarely sub-acute. Flowers yellowish, very small, unisexual, both sex on same plant, solitary axillary, numerous, very minute. Capsules depressed globose, 2–3 mm in diam, smooth, obscurely lobed. Seeds trigonous, rounded on the back with parallel regular longitudinal ribs.

**Flowers & Fruits**—June–November

**Distribution**—Found throughout the hotter parts of India, from Punjab to Assam and southward to Travancor, Malacca and Sri Lanka ascending the hills to 1000 m.

**Parts Used**—Whole plant.

**Herbal action**—Diuretic, laxative, cholagogue, astringent, stomachic, deobstruent, dropsical disorders, constipation, jaundice, stomachache, dysentery, malarial fever, diabetes, eye diseases, bruise, wound, oedema, scaly skin diseases, menorrhagia, antidote, galactagogue.

**Uses**—The extract of plant is used for cleaning offensive sores; mixed with sesame oil it is used to treat inflammation of eye and conjunctivitis. The young leaves boiled with milk are given to treat dropsical disorder, gonorrhoea and other genito-urinary diseases. The dried powdered leaves or infusion of young tender shoots mixed with 'menthi' (*Trigonella foenum-graecum* Linn.) is given to treat chronic dysentery, intermittent and malarial fevers and diabetes. The poultice of leaves made with rice water is applied to treat bruises, wounds and ulcer. The poultice is applied with small quantity of common salt for the treatment of itch and scaly skin diseases.

The decoction of plant is used to treat oedematous swelling caused by accumulation of fluid in the body tissue, possibly beneath the skin or in cavities or organs. With an injury, the swelling may be localized or more general as in cases of kidney or heart failure. Fluid is accumulated in the chest cavity, abdomen or lung (Pulmonary Oedema or Edema). The causes



are numerous e.g. cirrhosis of the liver, heart or kidney failure, starvation, acute nephritis, allergies. Sub-cutaneous edema commonly occurs in women before menstruation, as swollen legs or ankles. One or two plant macerated in a cup of milk or the decoction of plant is used for treatment of constipation, jaundice and stomachache. The extract of plant is used as antidote, astringent, diuretic, laxative, stomachic, deobstruent, cholagogue. The decoction of plant made with leaf mucilage of 'ghritkumari' (*Aloe barbadensis* Mill.) and stem of 'giloe' (*Tinospora cordifolia* Miers ex Hook. f. & Thoms.) is given orally 1–2 teaspoonfuls thrice a day to treat dengue and chikungunya transmitted by a mosquito—*Aedes aegypti*.

The fresh root is given with rice water in menorrhagia. The extract of root well mixed with milk is taken to promote secretion and flow of milk (Galactagogue). The extract of root is used as strong medicine for jaundice.

**Chemical compounds**—Hypophyllanthin, Lignanlintetralin, Methoxynorsecurine, Phyllanthusiin-D, Amariin, Amarulone, Linnanthin, Phyllanthin.

*Mode of propagation*—Easily grown by seeds in any kind of soil during rainy season.

***Piper longum* Linn. (PIPERACEAE)**

Vernacular names

English—Long pepper

Sanskrit—Pippali

Hindi—Pipal, Pipla, Pipli, Lendi pipal

Bengali—Piplamer

Marathi—Pimpli

Gujarati—Pipli

Telugu—Pippulore

Tamil—Tioppili, Pippili, Sirumulam, Kandan, Tippili

Kannada—Hippali, Tippali

Malayalam—Tippali, Pippali mgadhi

*Description*—A slender, creeping, glabrous, undershrub. Lower leaves long petioled, ovate-cordate often rounded, 5–8 cm long, acuminate; upper leaves much narrower, with often-unequal basal lobes, oblong-cordate, sessile, amplexicaul. Flowers minute, unisexual, the two sexes on separate plant; male spike 2.5–8 cm long; female spike 1.2–2 cm long. Fruits about 2 mm in diam.

*Flowers & Fruits*—October–December.

*Distribution*—Indigenous to North–Eastern and Southern India. Found in hotter parts of India, from Nepal to Assam, the Khasi Hills and Bengal. Distributed in Travancore, Sri Lanka and Malacca, Malay Island.

*Parts used*—Berries, roots.

*Herbal action*—Alterative, carminative, cough, bronchitis, asthma, cholera, hoarseness, chest affections, epilepsy, hysteria, gonorrhoea, piles, gout, rheumatism, haemorrhage, sciatica, paralysis, spleen, fever, drowsiness, coma, antidote, sedative, insomnia, cholagogue, emmenagogue, stomachic, abortifacient.

*Uses*—The powdered dried unripe fruit is used as alterative and carminative. The powdered fruit is given orally with honey for treatment of epilepsy, hysteria, cholera, chronic cough, asthma, bronchitis and chest affections, and used to improve hoarseness



of voice caused by simple inflammation of throat or by tobacco or alcohol. The decoction of fruits is used to treat a contagious, catarrhal inflammation of the genital mucous membrane of either sex (Gonorrhoea), and to treatment of cholagogue, gout, rheumatism and pain of any sort of lower back. It is also given to women after child-birth to check haemorrhage and to prevent fever. The coconut oil, boiled with the fruit and ginger is used as rubefacient to treat sciatica and paralysis of legs caused due to injury or disease of the spinal cord and often urinary bladder and rectum are also affected. The powdered fruits are used to treat enlargement of spleen. The powdered berries mixed with powdered black pepper are snuffed during drowsiness and coma. The powder of fruits is used as stomachic.

The dried root and berries ground with water are applied to eye and pored into nostrils to the patient to reduce the effect of the poison of snakebite. The root is used as counterirritant and analgesic for muscular pain and inflammations. The decoction of root is used as sedative during inability to sleep (Insomnia). The disorder may be caused by physical

illness or pain, psychological factors such as stress or anxiety, medication that interferes with sleep or a combination of these factors. The decoction of root is given as emmenagogue and abortifacient

*Chemical compounds*—Piperine, Dihydrostigmasterol, N-hexadecane, Sesamine, Piperlongumine, N-isobutyldeca-trans-2-trans-4-dienamide, Terpenoid, Piplartine.

*Mode of propagation*—Easily propagated by cuttings and layering of mature branches or by suckers during early monsoon in highly irrigated sandy loam soil.



***Plumbago zeylanica* Linn.  
(PLUMBAGINACEAE)**

Vernacular names

English—Ceylon Leadwort, White flowered Leadwort

Sanskrit—Chitrak

Hindi—Chitrak, Chitwar, Chita, Chitra

Bengali—Chitra, Chita, Chitraka

Tamil—Cithiramulam

Kannada—Chitramula, Vahni

Malayalam—Tumba koduveli, Veliakoduveli

Oriya—Chitamula, Chitapru

*Description*—A perennial, straggling, diffuse, sub scandent herb. Stem woody at the base, striate, glabrous. Leaves alternate, shortly petioled, 3–8 cm long, ovate, acute, entire, glabrous suddenly rounded at the base; lower portion of petiole dilated and often furnished with stipule like auricles. Flowers white, with narrowly tubular, 5-striated densely covered with spreading, stalked, crimson glands, arranged in terminal, long, glandular hairy and sticky spike like racemes; the rachis glandular, striate. Capsule enclosed with persistent calyx, oblong, pointed. Seeds oblong.

*Flowers & Fruits*—July–November.

*Distribution*—Found throughout the hotter part of India and in tropical regions of the World.

*Parts used*—Plant, root.

*Herbal action*—Abortifacient, rheumatism, eye diseases, leucoderma, appetizer, anasarca, piles, skin

diseases, paralysis, leprosy, syphilis, eczema, vesicant, dyspepsia, influenza, black-water-fever.

*Uses*—The extract of leaves is applied to treat the skin diseases (Leucoderma), characterized by white patches, surrounded by areas of normal pigmentation. In small doses, this extract is used as appetizer, diuretic and stimulant, and to treat indigestion.

The extract of plant is used to treat inflamed eyes, conjunctivitis and highly communicable skin disease (Scabies) caused by the itch mite. Scabies manifests as papules, vesicles, pustules and burrows, which causes intense itching resulting in eczema. The body parts most commonly affected is the hand, between the fingers, the wrists, axillae, genitalia, beneath the breasts and the inner aspect of the thighs.

The large dose of root causes blister on skin, it is narcotic, poisonous and irritant. The extract of roots is given to treat anasarca, piles, skin diseases, rheumatic and paralytic affections. The dried root is used to treat a serious and progressively destructive form of disease (Leprosy) caused by bacteria that attacks the skin, nerves and mucous membranes, creating lumps in the skin, thickening of skin and nerves, numbness and paralysis. The more serious case shows deformity and considerable disfigurement and sometimes blindness. The infusion of roots is used to treat highly infectious disease (Influenza) caused by virus that affects the respiratory tract, characterized by headache, weakness, fever, loss of appetite, general aches and pains. It is also used to treat bilious



remittent fever, a complication of malaria (Black-water-fever), marked by sudden onset, fever, dark urine, epigastric pain, vomiting, jaundice, tender and enlarged liver and spleen. The paste of roots is applied for opening blisters. The decoction of root is used to treat an infectious, sexually transmitted disease (Syphilis), caused by the bacteria. The root bark is used for abortion. The root paste made with vinegar or salt and water is a very effective medicine for treatment of eczema.

**Chemical compounds**—Quinones zeylanones, Isozeylanones, Plumbagic acid, Plumbaganin, Setosterol, Vanillic acid, Steroid glycoside, Plumbagin.

**Mode of propagation**—Propagated by root succors during rainy season.

***Rauvolfia serpentina* Benth. (APOCYNACEAE)**  
Syn.—*Ophioxylon serpentinum* Linn.

Vernacular names

English—*Serpentine, Serpent wood*



Sanskrit—*Serpgandha, Chundrica*

Hindi—*Scarpgandha, Chandra, Chandrika, Chandra bhaga, Chota-chand*

Bengali—*Chandra*

Marathi—*Harkaya, Harla*

Telugu—*Paataalangani, Paataalangauda*

Tamil—*Chiran amelpodi*

Kannada—*Sarpagandhi, Shivanabhibali, Sutranavi, Patalagandhi*

Malayalam—*Chunनाविलperi, Suapaval-poryan*

Oriya—*Patalgarur, Sanochodor*

**Description**—A small, glabrous, shrub. Leaves arranged in whorls, 7.5–10.5x2.5–6.00 cm, simple, smooth, lanceolate or obovate, oblique, acute or acuminate, lower end tapering in to short petiole, shining green above, pale beneath. Flowers white or light pink with dark red tube, many, arranged in terminal or lateral, 2–3 chotomous, corymbose cymes. Drupe 6 mm in diam, single or didymous and more or less connate, obliquely ovoid, purplish black when ripe. Seeds ovoid whitish brown.

**Flowers & Fruits**—June–October.

**Distribution**—Found throughout the tropical and sub-tropical parts of India, distributed in Burma, Sri Lanka, China and Java.

**Part used**—Leaves, root.

**Herbal action**—Emmenagogue, sedative, insomnia, hypochondriasis, high blood pressure, depression, antidote, epilepsy, cardiac diseases, dysentery, diarrhoea, deworming, schizophrenia, neurotic disorders.

**Uses**—The extract of the leaves is used as eye drop for cleaning the corneal opacity and taken orally for treatment of hypertension.

The extract of roots is used as emmenagogue. The roots are believed to stimulate uterine contraction and used in case of difficult delivery. Investigation discovered that the alkaloids especially *Reserpine* present in root is useful as sedative, and hypotensive agent and hence useful in reducing high blood pressure and treating certain neurotic disorders. It is

used to treat hypochondriasis marked by abnormal preoccupation by a patient with the state of his or her health. In its severest form the person wrongly believes that he or she is suffering from number of illness and is extremely anxious and depressed. It is very useful in irritable condition of the central nervous system. Having tranquilizing property in root it is used for treatment of sever mental disorders typified by gross distortion of reality, disturbance in language and breakdown of thought processes, perceptions and emotions (Schizophrenia) and other forms of mental disorders. The extract of roots is also given orally to treat dysentery, diarrhoea, epilepsy and cardiac diseases. The extract of root and leaves have high reputation as antidote to bites of reptile and stings of insects; the paste of the same is applied on bitten parts.

*Chemical compounds*—Reserpine, Serpentine, Ajmalicine.

*Mode of propagation*—Propagated by root succers in sandy loam soil during rainy season.



### ***Rubia cordifolia* Linn (RUBIACEAE)**

Vernacular names

English—*Indian Madder*

Sanskrit—*Manjistha, Kala-meshika*

Hindi—*Majitha, Majistha, Manjit, Pilia, Madar*

Bengali—*Manjistha*

Marathi—*Manjestha*

Telugu—*Taamenavalli, Chiranji, Manjistha teega*

Tamil—*Shevelli, Manjitti*

Kannada—*Siomalata, Siragathi*

Malayalam—*Poont, Manjetti*

Oriya—*Barheipani, Manistha*

*Description*—A prostrate or straggling herb with hooked minute hairs or prickles. Roots long, cylindrical. Leaves four in a whorl, two often longer and with longer petiole, ovate cordate, acute, scabrid or smooth, with 3–7 prominent nerves from the base. Flowers minute, yellowish arranged on trichotomous, spreading branches in axillary and terminal cymose panicles. Fruits didymous or globose, smooth, dark purple when ripe.

*Flowers & Fruits*—September–December.

*Distribution*—Found throughout the subtropical India from North–West Himalaya eastward ascending to 3500 m and southward to Srilanka and Malacca. Distributed in North East Asia from Dahuri to Japan, Java and Tropical Africa.

*Parts Used*—Whole plant, roots.

*Herbal action*—Antiphlogistic, astringent, pityriasis, vitiligo, freckles, alterative, jaundice, paralysis, dysuria, dysmenorrhoea, lochia, menorrhagia, antidote, rhinosinal infections.

*Uses*—Stem and leaves are used as antidote. The extract of plant forms a constituent of drug ‘*septilin*’, used for nasal or rhinosinal infections. It is used as febrifuge. It has cooling potency and used in treatment of blood disorders and spreading fever of kidney and intestine. The leaves and stem are used to regularize the menstruation period.

The paste of root mixed with honey is used as dressing to reduce or check inflammation and swellings (Antiphlogistic). It is also used to treat leucoderma

and other skin diseases of scaly type in which a small, thin dry exfoliation shed from the upper layer of skin and. A past made of root of this plant and of liquorice root (*Glycyrrhiza glabra* Linn.) mixed with rice vinegar is applied over fractures to reduce inflammation and swellings. The decoction of root is used as alterative and astringent, and also used to treat jaundice and paralysis. The decoction of roots is used to promote menstruation and to treat inflammatory condition of the chest; used to treat painful and difficult urination due to obstruction in urinary passage. The decoction of root is used to cure scanty discharge from vagina after delivery (Lochial) and to check excessive menstruation. The roots are used to lower the blood pressure and used in the treatment of dysentery, abnormal bleeding during urination, internal and external haemorrhages, bronchitis, rheumatism, removal of stone from kidney, urinary bladder and galls.

A drink of seeds prepared with vinegar and honey is used for treatment of swelling of spleen. The leaves and roots are squashed and put on freckles and other discolouration of skin.

**Chemical compounds**–Purpurin, Munjistin, Xanthopurpurin.

**Mode of propagation**–Propagated by seeds in sandy, loamy and clay soil. The plant prefers acidic, neutral and basic (alkaline) soils. It can grow in semi-shade. It requires dry or moist soil. Seed–best sown as soon as it ripe in a cold frame. Stored seed can be very slow to germinate

### ***Santalum album* Linn (SANTALACEAE)**

Vernacular names

English–*Sandalwood Tree*

Sanskrit–*Chandan, Ananditam, Taliaparnam*

Hindi–*Chaudan, Gondala, Sukhad, Safed chaudan, Shwet-chandan*

Bengali–*Chandan, Peetchandan, Srikhanda, Safed-chandan*

Marathi–*Chandan, Gandh-chakoda*

Gujarati–*Sukhad, Sukhet*

Telugu–*Chandanamu, Tellagandhpu-chettu, Gandhataruvu, Srigandhamu, Gandhapu-chekka*



Tamil–*Sandanam, Ulocidam, Kulavuri*  
Kannada–*Srigandha, Gandha, Agarugandha, Bavanna, Bhandarasr*  
Malayalam–*Cahndanam, Chandan-mutti*  
Oriya–*Chandono, Gandhasaro*

**Description**–A medium sized or small, evergreen, glabrous tree. Branches drooping. Leaves opposite, coriaceous, 3–5 cm long, elliptic-ovate or ovate-lanceolate, acute or sub acute, base narrowed in to a slender petiole, shining green above, glaucous beneath. Flowers small, 0.4 cm in diam., straw coloured at first, turning blood red afterward, arranged in terminal and lateral, paniced racemes. Drupes globos, size of cherry, black when ripe, flesh juicy. Seeds hard, globose, with 3–short ribs from the tip downwards.

**Flowers & Fruits**–June–September.

**Distribution**–The tree is indigenous to the tropical belt of the Indian peninsula, eastern Indonesia and northern Australia. There is still debate as to whether it is endemic to Australia or was introduced by



fishermen or birds from eastern Indonesian islands of Timor and Samba. The principal sandal tracts are most part of Karnataka and adjoining districts of Maharashtra, Tamilnadu and Andhra Pradesh in India.

*Part used*—Wood, wood oil, seeds.

*Herbal action*—Sedative, cardiac tonic, astringent, cooling, antidiaphoretic, haemoptysis, gonorrhoea, dysentery, antiphlogistic, prurigo, sudamina, hemicrania, antidote, antiseptic, demulcent, cystitis, urethral haemorrhage, putrid bronchitis, obstinate gleet, remittent fever, scabies, pimple.

*Uses*—The powder of wood is taken as sedative, cardiac tonic, astringent, febrifuge and to treat biliousness. In case of morbid thirst, the powder is taken with coconut water. In hot weather, the powder is rubbed over the body, after bathing to make the body cool and to check too copious perspiration (Antidiaphoretic). The powder is taken orally with milk to treat gonorrhoea and to check spitting of blood from the lungs or bronchial tube. Watery emulsion of powdered wood mixed with sugar, honey and rice water is taken to check gastric irritability and dysentery. The powder of wood is used to treat bacterial disease; applied to check a mucous discharge from the urethra in chronic gonorrhea (Obstinate gleet). A paste made of the wood by grinding with rose water is applied on skin to treat inflammation with associated redness. This paste obtained by grinding the wood on the stone is used to treat tiny white blisters in the mouth, small vesicles and chronic skin disease on a normal skin of body, marked by persistent eruptions of reddish pimples which itch intensely and prickly heat. The paste of wood is applied on forehead to treat Hemicrania or Migraine—a familial disorder marked by periodic, usually unilateral, pulsatile headache that begin in childhood or early adult life.

The oil extracted from wood is used on wounds as an antiseptic and an agent producing soothing effect on the skin and mucous membranes. About 3-4 drops of oil is taken orally twice a day to treat inflammation of urinary bladder caused by bacteria and to check bleeding from the duct carrying urine from the bladder out of body (Urethral haemorrhage) and to treat remittent fever, chronic form of bronchitis with foul

smelling sputum. The oil with little infusion of ginger is given orally to treat chronic and acute gonorrhoea. A mixture of sandal wood oil and mustard oil in ratio of 1:2 is very effective to treat scabies and pimples marked with small, inflamed swellings on the skin of face containing pus caused by bacterial infection in which pore is blocked with fatty secretions from the sebaceous glands.

*Chemical compounds*—Tannic acid, Santalol (alpha-santalol and beta-santalol), Isovaleric aldehyde, Santonone, Santalone, Ester, Free acids, Stearolic acid, Santalbic acid.

*Mode of propagation*—It grows best on sandy or rocky red soil. Propagation is easily done by direct dibbling of freshly collected ripe seeds in work up soil patches, with the onset of the monsoon, in the middle of the nurse bushes or in protected patches. Fresh seed has dormancy period of two months. It is partial parasite that attaches to the roots of other trees; it needs 'nurse' species in the area of planting out. Host plants that fix nitrogen and provide light shade are preferred. Trees are raised with a host plant, i.e. *Cajanus cajan*, *Cassia siamea*, *Terminalia*, *Lagerstroemia*, *Anogeissus*, *Dalbergia*, *Pongamia*, *Albizi* and *Acacia* species.

***Saraca asoka* (Roxb.) De Wilde  
(CAESALPINACEAE)**

*Syn*—*S. indica* Linn.

Vernacular names

English—*Ashoka Tree*

Sanskrit—*Asok*, *Ashoka*

Hindi—*Ashok*, *Sita Ashok*

Bengali—*Ashok*, *Sita Ashok*

Marathi—*Asoka*, *Jasundi*

Gujarati—*Ashopalava*, *Asupata*

Telugu—*Asoka*, *Kankali*, *Venjulumu*

Tamil—*Asogam*

Kannada—*Aksunkar*, *Asokadamara*, *Kenkoli*,  
*Anchange*

Malayalam—*Asokam*, *Vanjulam*, *Hemapushpam*

Oriya—*Oshoko*

*Description*—A small, spreading evergreen tree. Leaves sessile or sub sessile, abruptly pinnate, glabrous,

## Medicinal Plants of BSIP Garden



rigidly coriaceous; leaflets 6–12, oblong or oblong-lanceolate, acute or obtuse, 7.5–22 cm long. Flowers reddish orange or scarlet arranged in dense, large clusters of cymose panicles with sub petaloid reddish bracteoles. Pods flat, dehiscent, rigidly coriaceous. Seeds elliptic, oblong, grey in colour.

*Flowers & Fruits*–February–April

*Distribution*–Found throughout the hotter parts of India in Central and Eastern Himalaya ascending 700 m in Kumaon, East Bengal, Sri Lanka, Malacca and Malay Islands.

*Parts used*–Leaves, flowers, bark.

*Herbal action*–Alterative, dysentery, diabetes, astringent, leucorrhoea, menorrhagia, uterine fibroid, biliousness, uterine tonic.

*Uses*–The infusion of leaves is taken orally to treat colic and used to regulate the digestive system (Alterative).

The extract of flower is given orally in doses of one to two teaspoonfuls, thrice a day for treatment of blood dysentery and used to treat a digestive disturbance due to improper functioning of the liver causing constipation, headache, loss of appetite and vomiting of bile. The dried flowers are taken orally to cure complex metabolic disorder of carbohydrate, fat and protein characterized by passing large quantity of urine, excessive thirst and hunger. The disease occurs due to an accumulation of sugar in the blood and urine and is due to a lack of insulin production by

the pancreas, so that sugar is not broken down to release energy. Fats are thus used as an alternative energy source (Diabetes). It is also used as uterine tonic.

The decoction of bark is used to treat benign tumor found in the womb (uterus) composed of fibrous and muscular tissue and varying in size and weight (Uterine fibroid). They more commonly occur in childless women and those over the age of thirty five. Fibroid may cause pain, heavy and irregular menstrual bleeding, urine retention or frequent desire of urine (Micturition) and sterility. It is also used to treat internal bleeding and blood dysentery.

The decoction of wood is used as astringent and used to treat the disease of genital tract (Leucorrhoea). A decoction of wood prepared by boiling in milk and water has a stimulating effect on mucous membrane that lines the uterus (Endometrium) and ovarian tissue and is given in doses of one to two teaspoonfuls twice or thrice a day commencing from the fourth day of the monthly period and continued till the bleeding to check abnormally excessive menstruation (Menorrhagia). This decoction is also given to treat haemorrhoids or piles.

*Chemical compounds*–Catechol, Sterol, Haematoxylene, Tannin, Glucose, Galactose, Mannose.

*Mode of propagation*–Propagated by seeds in sandy loam soil during rainy season.

### ***Sida cordifolia* Linn. (MALVACEAE)**

Vernacular names

English–Country Mallow

Hindi–Bala, Bariar, Batyalaka, Chikana, Khareti

Bengali–Swetberela, Brela, Bala

Gujarati–Bal-baldana, Mahbala, Khapet

Telugu–Tellantisa, Tellagorra, Chirubendu, Suvarnamu

Tamil–Nilattuti, Paniar-tuthi

Kannada–Hettuthi, Hettugigada, Kisangi, Chittuharalu

Malayalam–Kurunthott, Vellurum, Kathuram

Oriya–Badianaula, Bisvokopori

**Description**—A annual or perennial, much branched, softly hairy, mixed all over with stellate hairs. Leaves 2.5–5.0 cm long, ovate, oblong and cordate, obtuse, margin with roundish teeth; petiole as long as leaves. Flowers small, yellowish, axillary and terminal. Capsules 10 awned, reticulated on the sides; awns longer than the calyx, covered with soft deflexed hairs.

**Flowers & Fruits**—July–January.

**Distribution**—Found throughout tropical and Sub-tropical India.

**Parts used**—Leaves, whole plant, seeds, roots.

**Herbal action**—Febrifuge, haemorrhoid, eye disease, spermatorrhea, gonorrhoea, rheumatism, elephantiasis, demulcent, aphrodisiac, laxative, colic, piles, cystitis, tenesmus

**Uses**—The infusion of leaves is used to treat fever, haemorrhoids or piles. The extract of leaves is used to treat dysentery and inflammation of eye. The

pounded leaves are used as poultice to promote suppuration of boils. The paste of leaves is applied as demulcent or emollient.

The extract of whole plant is used to treat an abnormally frequent involuntary loss of semen without any violent excitement and used to treat gonorrhea and rheumatism. The extract of plant mixed with ‘todi’ of ‘Tad’ (*Borassus flabellifer* Linn.) is used to treat a disease of the skin and sub cutaneous tissue causing hypertrophy of the affected parts (Elephantiasis) It is caused by infection of the lymphatics by filarial parasites of humans.

The seeds contain much more of the active principle in comparison to other parts. The decoction of seeds is used to increase sexual desire and to treat constipation, colic pain, piles, gonorrhoea, and inflammation of the urinary bladder (Cystitis), and used to induce quick discharge of faecal matter and urine from painful bladder.

The extract of roots is used as astringent, diuretic and tonic. The infusion of roots is given to treat urinary disease, inflammation of bladder, painful and drop-by-drop discharge of urine and passing of blood in urine. The paste of roots in combination with, asafoetida and rock salt is used to treat paralysis of one side of body, facial paralysis and sciatica. The powdered root is used with milk to treat leucorrhoea and frequent urination.

**Chemical compounds**—Ephedrine.

**Mode of propagation**—Propagated through seeds on any type of soil during rainy season.

### ***Solanum nigrum* Linn. (SOLANACEAE)**

Vernacular names

English—*Black Nightshade, Common Nightshade, Green Nightshade, Hound’s Berry, Morelle*

Sanskrit—*Kakamachi*

Hindi—*Kali Makoi, Gurkamai, Kabaiya, Kakamachi, Mako*

Bengali—*Gurkamal, Kakmach, Tulidum*

Gujarati—*Piludi*





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Telugu–*Kachchipunda, Kachi, Kamanchi, Gajlu, Chttu*  
Tamil–*Munatakali*

**Description**—An erect much branched and nearly glabrous, annual herb with angular stem and branchlets. Leaves 2.5–8.5 cm long, ovate or oblong, acute sinuate, toothed or lobed, Flowers white, small, drooping, sub-umbellate on extra-axillary peduncles. Berries 7 mm in diam, with permanent calyx, black when ripe. Seeds small, yellow minutely pitted.

**Flowers & Fruits**—August–December.

**Distribution**—Found throughout tropical and sub-tropical parts of India up to 3000 m on the W. Himalaya; also in Afghanistan, Bluchistan, and in all tropical and temperate regions of world.

**Parts used**—Leaves, fruit, whole plant.

**Herbal action**—Antiseptic, cirrhosis, dilation of pupil, gonorrhoea, inflammation, appetizer, jaundice, narcotic, antidycentric, grip, skin diseases, heart diseases, piles, enlargement of liver and spleen, diaphoretic, blood purifier, gout, diuretic, earache, whitlow, dropsy, dyspepsia, anthrax pustules, anasarca, diarrhea.

**Uses**—Fresh extract of leaves is taken to treat a chronic disease of the liver caused by virus or bacteria and also may be due to nutritional deficiency and alcoholic poisoning showing symptoms of anorexia, chronic dyspepsia, indigestion, nausea and vomiting, constipation or diarrhea, and dull aching abdominal pain; bleeding tendencies such as easy bruising, frequent nosebleeds and bleeding gums (Cirrhosis). The leaf extract mixed with vinegar is used as gargle or mouth-wash to get rid of bad breath; used as eye drop to produce dilation of the pupils and as ear drop to get relief from earache; taken orally to get relief from pain in urinary bladder, and in virulent gonorrhoea; applied on ringworm and gout for treatment. The vegetable made of leaves and tender shoots is eaten to treat jaundice, hepatic dropsy, enlargement of liver and spleen, and to increase appetite. The leaves are used to treat heart diseases, piles, dysentery and intermittent severe pain in the bowels (Gripes). An infusion of leave made in boiling

water is taken to induce copious secretion of sweat (Diaphoretic) and to promote urination. It is also used as blood purifier. A poultice of lukewarm leaves is applied on testicles for relief from inflammation and pain. The paste of leaves is used to treat burns and septic inflammation of the tissue surrounding the nail or of the bone of the distal joint of a finger or toe (Whitlow).

An extract of plant is taken orally to treat cough and fever. The decoction of plant has narcotic property. Extract of plant is used to treat common, chronic and eruptive skin diseases marked by rounded red patches covered with white scale. It is also used to improve disordered processes of digestion (Dyspepsia). The infusion of herb is taken to treat pain in inflammation of kidney, over corroding ulcers, suppurating cancer, sever burns and herpes. This infusion is also used to treat an acute, infectious disease caused by *Bacillus anthracis*, usually attacking cattle, sheep, horses and goats. Workers who handle wools and hides, and manufacture brushes are commonly affected. More commonly anthrax occur in the form of a pustule called an anthrax boil or malignant pustules



characterized by redness, vesiculation and induration with central ulceration and development of black eschar (Anthrax pustules).

The berries are used to improve the proper function of digestive system and to increase the amount of urine (diuretic); used to treat anasarca, heart diseases, diarrhoea, dropsy, fever, heart and eye diseases. The paste of green fruit is applied over ringworm for treatment; and used as tonic and cathartic.

*Chemical compounds*—Solanine, Solasodine.

*Mode of propagation*—Easily grown by seeds.

***Solanum surattense* Burm.f. (SOLANACEAE)**

*Syn.*—*S. xanthocarpum* Schrad & Wendl.

Vernacular names

English—*Indian Solanum*

Sanskrit—*Kantakari, Nidigadhika*

Hindi—*Bhat kataya, Katai, Kataikhudda, Kateli, Laghu.*

*Katai, Rangini, Satyanasi*

Bengali—*Kantakari*



Marathi—*Bhuiringani*

Gujarati—*Bhoyaringani*

Telugu—*Pinnamulaka, Nelamulaka, Vankuda*

Tamil—*Kandunkattiri*

Malayalam—*Kandunkattiri*

Oriya—*Bheyi-begun, Ankranti*

*Description*—A much prickly, diffuse, bright-green, perennial herb, young parts stellate tomentose. Stem flexuose woody at the base, branches many, armed with compressed, straight or somewhat curved, and yellow, glabrous, shining prickles. Leaves 5–10 cm long, ovate or elliptic, sinuate or sub-pinnatifid, rounded or unequal sided at the base, the midrib and lateral nerves armed with long, straight and yellow spines, margin deeply cut. Flowers few in extra-axillary, short peduncled cymes or solitary, blue-purple or white. Berries 1.2–2.00 cm in diam, yellow or white streaked with green, globose with whitish blotches when unripe and yellow at maturity. Seeds flat glabrous, brown.

*Flowers & Fruits*—June–December.

*Distribution*—Found throughout tropical and sub-tropical parts of India ascending to 2000 m on the Himalaya; also in Sri Lanka extending to Malaya, Tropical Australia and Polynesia.

*Part used*—Leaf, stem, root, whole plant.

*Herbal action*—Cough, bronchitis, asthma, chest pain, muscular pain, diuretic, stones, rheumatism, ignipedites, epiphora, sore throat, toothache, dropsy, vermifuge, dengue fever.

*Uses*—The paste of stem is applied to treat inflammation of the nerves of soles of the feet in which vesicular, watery eruptions develop causing acute burning pain in the soles (Ignipedities). The fresh extract of whole plant mixed with an equal quantity of juice of ‘anantmul’ (*Hemidesmus indicus* R.Br.) is used with butter as strong diuretic for the treatment of dropsy. The decoction of whole plant or its fresh extract is used to treat constipation, stomachache, cough, asthma, flatulence, heart disease, chest pain, gonorrhoea and dropsy; it is also used to expel intestinal worm (Vermifuge), and used to check bleeding from wounds. The extract of leaves mixed

with black pepper (*Piper nigrum* Linn.) is applied on rheumatic joints to allay pain. The decoction of stem made with leaf mucilage of 'guar-patha' (*Aloe barbadensis* Mill.), whole plant of 'bhumi-anwala' (*Phyllanthus fraternus* Webster) and 'aswagandha' (*Withania somnifera* Dunal.) is taken orally twice or thrice a day to treat a febrile disease marked by sudden onset, with headache, high fever, prostration, irritation in eyes and intolerance of light, sever joint and muscle pain and a rash that appears simultaneously with temperature rise, bleeding from mouth, nose and gums, nausea and vomiting (Dengue fever or Break bone fever or Chikungunya). Dengue is caused by Group B arbovirus transmitted by mosquitoes (*Aedes aegypti*).

The decoction of flowers is taken orally with a little amount of common salt for treatment of an abnormal overflow of tears come from eye due to excess secretion of tears or obstruction of the lachrymal duct caused by brain deficiency (Epiphora). This solution is also used to treat the burning sensation in the feet accompanied by vesicular watery eruptions. The decoction of fruits is used as gargle for treatment of sore throat, toothache and used as expectorant in cough and asthma.

The decoction of dried roots is used to dissolve stones of urinary bladder. The chemical *Solasodine* has gained new importance for the preparation of a steroid that helps the body to remove stress and balance the body fluid. It also helps to treat inflammation and promotes healing of wound by tissue regeneration. The root has high concentration of *Solasodine*, a raw material for the manufacture of cortisone and sex hormones. The extract of roots is taken as expectorant and used in treatment of cough, asthma, chest pain, flatulence, sore throat and toothache. The mixture of powders of the roots of 'kantkari', leaves of 'tulsi' (*Osimum tenuiflorum* Linn.), root of 'dhatura' (*Datura metel* Linn.) and black pepper (*Piper nigrum* Linn.) is very effectively used to induce conception in females.

**Chemical compounds**—Solasodine, Solasoline, Carpesterol.

**Mode of propagation**—Commonly grow by seeds on dry areas.

***Syzygium cumini* Skeels. (MYRTACEAE)**

Syn.—*Eugenia jambolana* Lamk.,  
*Eugenia cuminii* Druce.

Vernacular names

English—*Black Plum*, *Indian Blackberry*, *Java Plum*,  
*Jambul*

Sanskrit—*Jambu*

Hindi—*Jamun*, *Jam*, *Jambul*, *Pharenda*, *Phalenda*,  
*Kala jam*.

Gujarati—*Jambu*, *Jamli*

Marathi—*Jaman*, *Jambul*

Telugu—*Neredam*, *Naval*, *Sambal*

Kannada—*Nerale*

Malayalam—*Naval*, *Perinnaral*

Oriya—*Jamo*

**Description**—A medium sized tree. Leaves 6–10 cm long, lanceolate or elliptic ovate to oblong-ovate, bluntly acuminate, sub acute or obtuse, solitary narrowed at the base, dark green above and pale beneath, smooth with entire margin. Flowers many, whitish, sessile, arranged in dense terminal cymes or in terminal or lateral, 3–chotomous panicles. Fruit





oblong or ovoid—oblong or elliptic, dark purple or black and juicy when ripe. Seeds one, oblong, whitish.

*Flowers*—February–March; *Fruits*—April–July.

*Distribution*—Found throughout moist tropical and sub-tropical India in both the peninsulas and in Sri Lanka from the plain to 1700m; also distributed in Malay Archipelago to Australia.

*Parts used*—Leaves, bark, fruits, and seeds.

*Herbal action*—Astringent, blood dysentery, diarrhea, spongy gum, ulcer, stomatitis, menorrhagia, stomachic, carminative, antiscorbutic, diuretic, sore throat, skin diseases, glycosurea.

*Uses*—The extract of leaves is applied on fresh cut and wound to stop secretion and bleeding (Astringent). The fresh extract of leaves and fruit of emblic myrobalan (*Emblica officinalis* Gaertn.) is given orally with goat's milk and honey for treatment of dysentery with bloody discharges and diarrhoea in children.

The decoction of bark is used as mouthwash or gargle to treat ulceration of mouth and spongy gums and inflammation of the mucous membrane of the mouth in which the patient suffering from this disease is unable to take his food (Stomatitis). The powdered bark is taken orally with curd to check abnormally excessive menstruation (Menorrhagia).

An extract of unripe fruit is used as gargle for treatment of painful ulcer or lesion of mucous membrane (Sore throat). The lotion of unripe fruit is applied to treat ringworm and scalp. The ripe fruit is taken to improve digestion and appetite (Stomachic); to treat stomachache, and used for relief from flatulence and the feeling of over fullness of the stomach (Carminative). The decoction of fruit is used to treat bleeding gum, sub-cutaneous bleeding, bleeding into joints, ulcers, anaemia, and diarrhea, caused due to deficiency of vitamin C (Antiscorbutic). The extract of ripe fruit or decoction or vinegar of it is used to treat enlarged spleen and to promote urination when there is scanty or suppressed urine (Diuretic). The drink prepared by extract of ripe fruit and mango juice in equal amount is used for quenching thirst in

diabetes. The extract of fresh seeds or powder of dried seeds is used to reduce excess excretion of sugar in the urine, which is usually due to diabetes mellitus (Glycosurea). The powder of dried seeds alone or the mixture of mango seed powder in equal proportion is taken orally with curd to cure dysentery and diarrhea.

*Mode of propagation*—Easily grown by seeds during rainy season.

### ***Terminalia bellirica* Roxb. (COMBRETACEAE)**

Vernacular names

English—*Beleric Myrobalan*, *Bedda Nut*, *Bastard Myrobalan*

Sanskrit—*Bahira*

Hindi—*Bahera*, *Behada*, *Tani*

Bengali—*Bhairah*

Marathi—*Beheda*

Telugu—*Tani*

Tamil—*Tani*



Malayalam–*Thani*  
Oriya–*Bharo*

**Description**—A large, deciduous tree. Leaves alternate, 7.5–20 cm long, crowded towards the end of branches, obovate or broadly elliptic with entire margin, apex acute or acuminate, often unequal at the base. Flowers small, whitish or greenish–yellow, fragrant sessile, arranged in compact spike. Fruit a drupe, not winged, obovate or globose or ovoid and stony, grey–tomentose, obscurely angled when dry. Seed solitary, exalbuminous.

**Flowers**—April–June; **Fruits**—November–February.

**Distribution**—Found throughout the tropical and sub-tropical India; distributed in Sri Lanka, Malacca and Malaya.

**Parts Used**—Bark, fruit, seeds.

**Herbal action**—Diuretic, astringent, febrifuge, constipation, piles, diarrhoea, sore throat, dyspepsia, ophthalmia, purgative, demulcent.

**Uses**—The decoction of bark or fresh extract of bark is used to increase the amount of urine formation and excretion that may work specially within the kidney by prevention of sodium and water re-absorption (Diuretic). The decoction or infusion of bark is taken orally to treat diarrhea, fever and to alleviate the condition in which the bowels are opened too infrequently and the faeces become dry hard and difficult and painful to pass. (Constipation). The decoction is taken orally and the paste is applied on affected part to alleviate the diseased condition of the blood vessels causing painful swellings and bleeding in the region of the anus (Piles). The paste of bark is applied to produce soothing effect on skin and mucous membranes (Demulcent).

Due to presence of oil in fruits having properties similar to those of Castor oil, the powder of half-ripe fruits is used as purgative. The oil is applied to get relief from rheumatic swellings. The pulp of fruit mixed with salt, long pepper (*Piper longum* Linn.) and honey is used to cure cough, and ulcers or wounds in mucous membrane of mouth. It is also used to treat dyspepsia. The distil water obtained from boiling of pulp of ripe fruit mixed with honey is used to treat inflammation

or irritation of the conjunctiva or the mucous membrane covering the eyeball and lining the eyelids (Conjunctivitis or Ophthalmia). The paste of mature fruits in combination with chebulic myrobala (*Terminalia chebula* Retz.) is applied as substance that causes cells to contract by losing proteins from the wounded surface. They cause localized contraction of blood vessels and are applied to minor wounds of the skin, and are used in mouth washes and eye drops (Astringent).

**Chemical constituents**—Gallic acid, Ellagic acid, Chebulic acid, Bellericanin,  $\beta$ -Sitosterol.

**Mode of propagation**—Propagated by seeds.

### ***Terminalia chebula* Retz. (COMBRETACEAE)**

Vernacular names

English—*Chebulic Myrobalan*, *Black Myrobalan*

Sanskrit—*Harra*

Hindi—*Harra*, *Harar*, *Hirda*

Bengali—*Hartaki*

Marathi—*Hirda*

Gujarati—*Harda*

Telugu—*Karakkai*



Tamil–Kadukkai  
Oriya–Haridra

**Description**—A medium or large, deciduous sized tree; young part rusty pubescent. Leaves 7.5–15.0 cm long, mostly sub opposite or alternate, ovate or elliptic, usually acute at apex and rounded or subacute at the base, more or less hairy when young, two or more glands present at the attachment of petiole. Flowers cream coloured, small, arranged in long spike, strong scented. Fruit a drupe, 2.5–3.5 cm long, ovoid or obovoid, base cuneate, more or less 5-ribbed and wrinkled, and black when dry. Seed one, ovoid.

**Flowers**—April–June; **Fruits**—November–March.

**Distribution**—Found throughout tropical and sub tropical parts of India; distributed in Sri Lanka, Myanmar and the Malay Peninsula, also found in Siam and Malaya.

**Parts used**—Bark, fruits

**Herbal action**—Astringent, alterative, laxative, stomachic, asthma, diuretic, cardiotonic, constipation, piles, diarrhoea, dysentery, enlargement of spleen and liver, vulnerary, caries, dentifrices.

**Uses**—The decoction of half matured fruit made with clove (*Syzgium aromataicum* Merrill & Perry) and 'dal-chini' (*Cinnamomum tamata* Nees & Eberm.) is used as laxative. The laxative principle present in fruits is a glycoside, which may be similar to 'Sennoside'. The decoction of fruits mixed with a little amount of common salt is taken orally in doses of half to full cup, thrice a day to treat a disease of the bronchial tubes causing recurrent attack of breathing troubles and coughing due to narrowing of the airways (bronchi) of the lungs (Asthma). It is also used to treat enlarged spleen and liver. The extract of fruit is applied to minor wound and cut of the skin to check bleeding. The overnight soaked unripe fruits, garlic and 'munakka' (*Vitis vinifera* Linn.) is chewed and swallowed early in the morning to alleviate the condition of constipation and to purify blood. The powder of mature fruit is used to stimulate the liver for normal function and used to treat piles, colitis, irritable bowel, dysentery, and diarrhoea. which is

usually caused by food poisoning. The most popular drug 'Triphala' made by the mixture of powdered fruits of chebulic myrobalan, billeric myrobalan (*Terminalia bellirica* Roxb.), emblic myrobalan (*Embllica officinalis* Gaertn.), and black salt is taken orally with lukewarm or cold water after meal to regularize and restore the normal function of digestive system. The finely powdered fruit is dusted on ulcers and wounds for quick healing and used as tooth powder to treat decay of teeth and bleeding ulceration of gums. The decoction of bark is taken orally as cardio tonic and diuretic.

**Mode of propagation**—Easily propagated by seeds during rainy season.

***Tinospora cordifolia* Miers.  
(MENISPERMACEAE)**

Vernacular names

English—Heart-leaved Moonseed

Sanskrit—Amrita, Galuchi, Jwarari

Hindi—Gureh, Giloi, Amnita, Gulancha, Gulbel,

Gulooehi, Madhuparni

Bengali—Golaneha





## Medicinal Plants of BSIP Garden

Gujarati–*Gulvel*

Marathi–*Gulvel*

Telugu–*Tippateege*

Tamil–*Amudom*

Kannada–*Amrutaballi, Madhuparni, Uganiballi, Chittamritam*

Malayalam–*Amrytu*

Oriya–*Gulochi*

**Description**—A large, glabrous twining herb, with succulent stem; bark rough and corky with papery peelings. Long filiform aerial roots are frequently developed from the branches. Leaves 5–10x3–8 cm, broadly ovate, smooth, cordate, acute or acuminate, margin entire. Flowers small, yellowish, appearing on nodes of the old stem in racemes or panicles. Drupes small, globose, red at maturity. Seeds grooved, ventrally or curved round the intruded and 2-lobed endocarp; albumen ventrally ruminant.

**Flowers & Fruits**—May–October.

**Distribution**—Commonly found throughout tropical and sub-tropical parts of India from Kumaon to Assam and Myanmar, and from Bihar and Concan to Sri Lanka and the Carnatic.

**Parts used**—Whole plant.

**Herbal action**—Diuretic, rheumatism, antipyretic, antiperiodic, urinary diseases, syphilis, *skin disease*, piles, bronchitis, chylous urine, impotence, gonorrhoea, tonic, diabetes, insect bites, diarrhoea, antacid, leucorrhoea, jaundice, alterative, antidote, carminative, tonic, anodyne, antiphlogistic, gout, spasmolytic, emetic, leprosy, dyspepsia.

**Uses**—The leaves are rich in protein, calcium and phosphorus. The decoction of leaves is given orally to treat the gout caused by imbalance of uric acid in the body. The kidneys normally excrete uric acid but sufferer of gout has an excess in their blood stream, which is deposited in joints as salt of the acid. This causes inflammation of the affected joints and painful gouty arthritis with destruction of the joints. The kidney may also be damaged, with formation of stone. Deposition of the salts may reach the stage where they prohibit further use of the joints, causing hands and feet to be set in a particular position. The

past of leaves is applied to counteract the poisonous effect of insects—bite and stings of bees.

The stem is chewed to get relief from dyspepsia. The drug has also a power to depress the central nervous system, thus, it may be used to reduce colic pain. Infusion of small pieces of stem made in cold water with clove is used to treat common fever and controls early stage of periodic attack of malarial fever, but in case of chronic malarial fever, it does not seem to be much useful. This infusion is used to treat piles, rheumatism, skin disease, acidity of urine and other renal diseases. The infusion of stem is used to treat a sexually transmitted infectious disease, caused by the bacteria (Syphilis). The infusion of stem is taken to treat bronchitis, showing symptom of inflammation of the bronchi caused by bacteria or virus infection, characterized by painful coughing, wheezing, throat and chest pain and the formation of purulent mucus (pus-containing). It is used to treat the Chylous urine disease in which the milky white urine suspended with fat globules is passed out and also used to induce the secretion of urine (Diuretic). The infusion of stem is very effectively used to treat the inability of penile erection (Impotence). The fresh extract of plant mixed with long piper (*Piper longum* Linn.) and honey is given to treat an infectious venereal disease (Gonorrhoea). The aqueous or alcoholic extract is taken with milk as general tonic to stimulate the pancreas for secretion of 'insulin' which keep control on blood sugar level and reduce the blood sugar and to increase the glucose tolerance in diabetic patients. It has been suggested that the action of drug is due to its effect on the endogenous insulin secretion, glucose uptake and inhibition of peripheral glucose release.

The decoction or powder of the stem mixed with 'neem' (*Azadirachta indica* A. Juss.), 'kalmegh' (*Andrographis paniculata* Wall. ex Nees or *Swertia chirayita* Karst.), 'kutki' (*Picrorhiza kurroa* Royle ex Benth.), 'sudarsan' (*Crinum asiaticum* Linn.), 'ghritkumari' (*Aloe barbadensis* Mill.) and 'aswagandha' (*Withania somnifera* Dunal.) is taken orally twice or thrice in a day to treat a febrile disease marked by sudden onset, with headache, high fever, prostration, severe joint and muscle pain and a rash that appears simultaneously with temperature rise and vomiting (Dengue fever or Break bone fever or

Chikungunya). Dengue is caused by Group B arbovirus transmitted by mosquitoes (*Aedes aegypti*). The dried starchy powder obtained from extract of stem and root is given to patient suffering from acute dysentery and diarrhoea. It is also used to neutralize the acidity of gastric juice of intestinal canal and intestinal irritability and to regularize the digestive system of patient who has inability to digest any kind of food. The powder possesses one-fifth of the analgesic effect of Sodium salicylate, therefore it may be used as pain relieving medicine (Anodyne). This starchy substance is also used as an effective tonic.

The extract of stem is used to treat leucorrhoea and used as carminative. The fresh extract of stem is used to treat jaundice marked by a yellowish staining of the tissues and excretion with bile. This is due to unusual presence of bile pigment in the blood. The bile produced in the liver passes into the blood instead of the intestines and because of this, there is a yellowing of the skin and the white portion of the eyes.

The paste of roots with or without rice water is given orally to the patient to treat the irritation in stomach and visceral obstruction. The extract or decoction of root is applied over bitten part and dropped in the eyes to reduce the poisonous effect of snakebite (Antidote). The root is a powerful emetic, thus, the extract of roots is given to expel the poisonous substances by vomiting from the stomach of patients who have swallowed poison. The paste of roots is used to treat a serious skin disease (Leprosy) caused by the bacteria that attacks the skin, nerves and mucous membranes creating lumps in the skin, thickening of skin and nerves, inflammation of the iris, numbness of the skin with weakness of muscle and paralysis. In serious condition it leads to deformity, considerable disfigurement of body and sometimes blindness.

*Chemical compounds*—Berberine, Geloin, Geloinin, Columbin, Chasmanthin, Palmarin, Tinosporic acid, Tinosporol, Gilo-sterol.

*Mode of propagation*—Propagated by seeds.

***Tylophora indica* (Burm.f.) Merr. (ASCLEPIADACEAE)**

*Syn.*—*T. asthmatica* Wt. & Arn.

Vernacular names

English—*Vomitting swallow-wort, Country Ipecacuanha*

Sanskrit—*Latakshiri*

Hindi—*Antamul, Jangali pikvan.*

Bengali—*Antomul, Ananthamul*

Marathi—*Khodike*

Gujarati—*Dammivel*

Telugu—*Verripaala, Nettiapaala, Tellavedavella*

Tamil—*Nach-churuppam*

Kannada—*Adumutadhagida*

Oriya—*Vallipaala*

*Description*—A twining and much branching smooth or hairy perennial herb. Root many, long, fleshy. Leaves opposite, 5-10 x 2.5-5 cm, ovate or elliptic-oblong, acute at the apex, often apiculate, with rounded or unusually cordate base. Flowers axillary, greenish-yellow with dark purple center, arranged in umbellate cymes. Follicles 5-10 cm long, tapering to a fine point at the apex, scarcely tapering towards the base, finely striate.



## Medicinal Plants of BSIP Garden

*Flowers & Fruits*–July–October.

*Distribution*–Commonly found in tropical and sub-tropical parts of India.

*Herbal action*–Asthma, bronchitis, whooping cough, lochia, gout, cathartic, emetic, expectorant, appetizer, skin disease, syphilis, leucorrhoea, stomachic, diaphoretic, diarrhoea, dysentery.

*Parts used*–Leaves, root.

*Uses*–The leaf contains *Tylophorine* and *Tylophorinine* alkaloids which cause dermatitis. Fresh or dried leaf along with clove (*Syzgygium aromaticum* Merr.&Perry) and cardamom (*Elettaria cardamomum* Maton) in the ratio of 1:1:1 is chewed and swallowed once a day in the early morning in empty stomach, for seven days to treat asthma. But it should not be given to the patient suffering from syphilis and gonorrhoea because it produces vomiting and acrid feeling in the mouth and throat, followed by nausea, vomiting, purging and collapse. Sometimes it may cause death of patient. The infusion of leaves is used to treat the inflammation of bronchi caused by bacteria or virus infection (bronchitis and other respiratory diseases). This infusion of leaves is used to cure whooping cough caused by the bacteria in which the mucous membranes lining the air passages are affected and after one or two weeks, fever, catarrh and cough developed. The cough becomes paroxysmal with a number of short coughs punctuated with the 'whooping' drawing in of breath. Nosebleeds and vomiting may follow a paroxysm. The infusion is also used to enhance and strengthen the human immune system. Leaves are given orally to women to increase the vaginal discharge from uterus after childbirth that takes a few weeks. Initially it consist mainly of blood, then it becomes more mucous but with some blood and then a whitish mixture of cell fragments and microbes (Lochia). The poultice of leaves is applied on gout to relieve from pain.

The infusion of root is used as cathartic; the large does cause vomiting and helps in removing the phlegm. It is also used to increase the bronchial secretion and to facilitate its removal. The infusion of roots is used to treat loss of appetite, fever, skin disease, syphilis and used to treat vaginal discharge

of a white fluid containing mucous and pus cells (Leucorrhoea). The extract of roots is used to induce copious secretion of sweat. The decoction of roots is taken to improve digestion and appetite, and to cure diarrhoea and dysentery.

*Chemical compounds*–Tylophorine, Cryptopleurine, Septicine, Tylophorinine, Querectin, Kaempferol, Cryptopleurine,–Amyrin,–Fagarin.

*Mode of propagation*–The plant is easily propagated by stem cuttings, layering and root suckers during rainy season in sandy-loam soil.

### ***Urgenia indica* Kunth. (LILIACEAE)**

Vernacular names

English–*Indian Squill*

Sanskrit–*Vanapandan, Kolkanda*

Hindi–*Ban piyaz, Jangali piyaz, Ban Kanda, Jangali kamda, Kol kanda*

Marathi–*Ranacha kanda, Rankanda*

Gujarati–*Jangali kanda Rankanda*





Teugu–Nakkavulligadda, Adavithellgadda

Tamil–Narivangayam

Kannada–Adairirulli

Malayalam–Kattulli

**Description**—A bulbous, glabrous herb. Bulbs 5–10 cm in diam, ovoid, white. Leaves 15–45 cm long, narrow, linear, strap shaped, acute, nearly flat. Flowers white, fragrant, large, drooping or spreading on 30–45 cm long, leafless, brittle scape, often appearing before the leaves. Fruits 1.2–2 cm in diam, oblong, 3–quetrous, loculicidal capsule. Seeds 6 mm in diam, usually many in each cell, compressed, testa black, marginally winged.

**Flowers & Fruits**—April–June.

**Distribution**—Found in Western Himalaya below 500 ft., Salt Range, Western Peninsula, especially near the sea. Distributed throughout tropical parts of India and Myanmar and tropical Africa.

**Parts Used**—Bulbs.

**Herbal action**—Carminative, diuretic emmenagogue, deobstruent, rheumatism, antilithic, acute bronchitis, emphysema, empyema, warts, corn, cardiac medicine, anti-cancerous, cardiotonic, cathartic, hypoglycaemia, expectorant.

**Uses**—The extract of bulbs is used as carminative, diuretic, emmenagogue; used to remove the obstruction to secretion or excretion in abdomen (Deobstruent); used to treat cough and asthma caused by allergens inhaled from the air [pollen, mold spores, animal dander or dust, occasionally by food (egg, shellfish or chocolate)] or indoor inhalants such as tobacco smoke, and strong odors; applied to get-rid-of pain of joints; used to treat several skin diseases and Leprosy - a serious disease caused by the bacteria. The bulb is used to check the development of stones in kidney, urinary bladder, and uterus (Antilithic). A confection of the bulb prepared with dry figs (*Ficus carica* Linn.), dry black grape (*Vitis vinifera* Linn.) and is used with honey to promote bronchial secretion and to facilitate its removal; also used to treat acute bronchitis marked by inflammation of the mucous membrane of the bronchial airways characterized by chilliness, malaise, soreness and constric-

tion behind the sternum, coughing and fever. At first, the cough may be dry and painful, but later it produces mucopurulent expectoration that becomes free as inflammation subsides. This confection is taken to treat the primary infection in the lungs and the chronic pulmonary disease (Chronic obstructive lungs disease) marked by an abnormal increase in the size of air spaces, distal to the terminal bronchiole with destructive change in their walls and pus formation in a body cavity, especially in the pleural cavity (Pyothorax), marked by chills, high fever and sweating. The skin is gray and malar flushed, appetite is poor with marked malaise, and chest pain, cough and emaciation are present (Emphysema). The powdered bulb is applied to remove a solid, benign growth in the skin resulting from hypertrophy of the papillae and epidermis (Warts). Papilloma virus causes it. They are infectious and spread rapidly on foot and genitals. The roasted and crushed bulb is applied to remove small, conical hardened, thickened and painful overgrowth of horny layer of skin, occurring on or between the toes (Corns). The bulb causes vomiting (Emetic), used to induce active movement of the bowel (Cathartic), and may cause cardiac depression; traditionally it is used to cure cardiac and renal dropsy. Like *Digitalis purpurea* Linn., it is also used as cardiac stimulant which influences the force of muscular contractility (Cardiotonic or Inotropic). The heart patients sensitive to *Digitalis* drugs are treated with *Urginea* Steinh. Recently it has gained great importance as a very good substitute to *Digitalis purpurea* Linn., for cardiac medicine and for its anti-cancerous properties. The alcoholic extract of bulb possesses anticancerous property against human epidermoid carcinoma of the nasopharynx. The bulb is used to treat hypoglycemia marked by loss of sugar in the blood, which occurs in starvation and with diabetes mellitus when too much insulin has been given and insufficient carbohydrate have been eaten. The disease shows symptoms of acute fatigue, restlessness, weakness, sweating, light-headedness, tremor and can lead to coma stage.

**Chemical compounds**—Digitoxin, Digitalin,

**Mode of propagation**—The plant is propagated by bulbs and seeds.

***Vernonia cinerea* Less. (ASTERACEAE-  
Compositae nom. alt.)**

Vernacular names

English–Ash-coloured Fleabane

Sanskrit–Sahadevi, Ddotpal, Ghaudavali, Devasahra

Hindi–Sahdei, Sahdevi, Sadori, Dudotpala

Bengali–Kaljira, Kuksim

Marathi–Osari, Sadodi

Gujarati–Sadori

Telugu–Garitikamma

Tamil–Mukuttipundu, Sarashangalamir, Sahadevi,  
Puvankodanthel

Kannada–Sahadevi

*Description*–An erect, rarely decumbent, herbaceous, perennial herb, very variable in habit and foliage. Leaves variable, shortly petioled, 1–8 cm long, ovate or oblong or lanceolate, obtuse or acute, with wavy margins or obscurely or deeply crenate or serrate, hairy on both surfaces. Flowers purple, pink or lilac in rounded or open and flat-topped corymbose head of about 6 mm in diam. Achene 2–3 mm long, terete, not ribbed, clothed with appressed white hairs; pappus 4 mm long, white or dirty white.

*Flowers & Fruits*–February–October.

*Distribution*–Commonly found throughout India up to 2000 m on the Himalaya also in China, and Australia. Presumably indigenous in southeast Asia and Malaysia, now adventives in most southern Pacific archipelagoes and elsewhere in the tropics, including Australia, New Zealand, Africa, and America.

*Part used*–Whole plant.

*Herbal action*–Blood dysentery, rheumatism, conjunctivitis, collyrium, anthelmintic, stomachic, dysuria, carminative, leucoderma or vitiligo, alexipharmic or antidote, insecticide, diaphoretic, strangury, blood pressure, diabetes, psoriasis.

*Uses*–The fresh extract of leaves is taken to treat blood dysentery. Poultice of leaves is applied to expel maggot from wound or ulcers. It is also used to treat muscular and joints pains.

The water obtained from distillation of flowers is used as eye drop to treat conjunctivitis or ophthalmia characterizing by inflammation or irritation of the conjunctiva or the mucous membrane covering the eyeball and lining the eyelids marked by eye pain, intolerance to light and tearing (lacrimation). The extract of flowers is used as eye wash (Collyrium). The infusion of the seed powder mixed with honey is taken orally to kill or destroy the roundworm and threadworm, and used as tonic to improve appetite and digestion. The extract of plant or powdered seeds mixed with black pepper (*Piper nigrum* Linn.) or black sesame (*Sesamum indicum* Linn.) in equal proportion is given orally with honey to treat pain of urinary bladder, and painful drop by drop discharge of urine (Dysuria or Cystitis), it is symptomatic of an irritation of the base of the bladder by stone or ancer (Strangury). The powdered seeds are used to treat flatulence and intestinal colic. The decoction of seeds with emblic myrobalan (*Emblica officinalis* Gaertn.) and catechu (*Acacia catechu* Willd.) is given to treat a skin disease marked by white patches, surrounded by areas of normal pigmentation (Leucoderma or Vitiligo). Although the cause is unknown, the



condition may be associated with systemic diseases such as hypothyroidism or hyperthyroidism, diabetes mellitus, addison's disease and leprosy. The seeds are also used as alexipharmic or antidote. A paste of seeds made with lime juice is applied in hairs to kill lice and their pediculi.

The decoction or infusion of whole plant is used to induce secretion of sweat and used to treat the inability to retain urine because of loss of sphincter control of bladder (Incontinence) in children. The fresh extract of the plant is used to treat diabetes, blood pressure and piles.

The paste or decoction of root is very effective against thread worm and round worm (Vermifuge). It is also applied on rheumatic joints to get rid of pain. The paste of roots is applied to treat a common, chronic and eruptive skin disease marked by rounded red patches covered with white scales (Psoriasis). This may be in any part of body, but frequently are located on the scalp, knees, elbows, umbilicus and genitalia.

*Mode of propagation*—Easily propagated by seeds in all kinds of soils.

### ***Vitex negundo* Linn. (VERBENACEAE)**

Vernacular names

English—*Indian Privet*

Sanskrit—*Nirgundi*

Hindi—*Nirgundi, Nirgandi, Nengar, Shiwari, Nagdoz, Indrani*

Bengali—*Nisinda, Samalu, Nirgundi*

Marathi—*Nirgundi, Nisind, Nirgudi*

Gujarati—*Nagoda, Nagaul*

Telugu—*Voavilli, Tellavaavitti*

Tamil—*Vellai-nacohi, Nirkkundi, Venmoch*

Kannada—*Lakkigida, Nakkilu, Nekki*

Malayalam—*Vellanocchi*

Oriya—*Beygune, Begundia, Nirgundi*

*Description*—A finely hairy large shrub or small tree. Branches 4-angled, densely white-tomentose. Leaves three to five foliolate; leaflets stalked, 5–7 cm long, lanceolate, acute, entire or rarely crenate, subglabrous, ovate, white-tomentose beneath. Flowers lavender or blue, peduncled, arranged in cymes



forming large terminal and axillary often compound pyramidal panicles. Drupes about 5 mm in diam, black when ripe globose or obovoid, supported by the enlarged calyx. Seeds obovate or oblong.

*Flowers & Fruits*—February–November.

*Distribution*—Found throughout tropical and subtropical parts of India and Sri Lanka, N.W. Himalaya, up to 1500 m and westward to Peshawar and Afganistan, extending to Tropical Africa, and Madagascar and to China and Phillipines.

*Parts used*—All parts.

*Herbal action*—Fever, cold, rheumatism, spleen, sprain, scrofula, headache, flatulence, eye sight, dandruff, skin diseases, leprosy, tranquilizer, cancer, diarrhoea, cholera, astringent, liver diseases, nervine tonic, emmenagogue, vermifuge, leprocy, dyspepsia, dysentery, piles, typhus fever, hirudiniasis, demulcent.

*Uses*—A decoction of leaves with addition of long pepper (*Piper longum* Linn.) or paste of young leaves



## Medicinal Plants of BSIP Garden

with black pepper (*Piper nigrum* Linn.) is used to treat fever. The fresh extract of leaves mixed with 'ghee' and black pepper cures rheumatism. The extract of leaves mixed with cow's urine in equal amount is used for treatment of enlarged liver and spleen. The fresh leaves fried (without oil) in earthen pots and applied as poultice for treatment of sprains, swollen testicles, inflammatory swellings of joints, and infestation by leeches (Hirudiniasis). The extract of leaves used to expel maggots from ulcers and to get rid of foetid discharge from ulcers. The ointment made of the leaf extract is applied in hairs to encourage growth of hair. The mustard oil boiled with leaves of this plant is rubbed on the tubercular swelling of glands on the neck (Scrofula) for treatment. The decoction of leaves is used to treat cold, headache and flatulence. It is also useful in leprosy. Recently it has gained great importance as an herbal drug for good eyesight and improving intelligence and memory power in children. The decoction of leaves is used as tranquillizer. Extract of leaves showed anticancerous activity against Ehrlich ascites tumor cells.

The flowers are used to treat diarrhoea, cholera, fever, blood dysentery and liver complaints, and as astringent. The powder, decoction, or extract of fruits or roots is used as nervine tonic; it is used to promote menstruation or to regulate the menstrual period; used to destroy parasitic intestinal worm (Anthelmintic). The seeds paste is applied to treat skin diseases and leprosy.

The extract of root is given to treat fever, cough, diarrhoea, dysentery, stomachache, piles, rheumatism and leprosy. The decoction of root is taken to treat intermittent and an acute, contagious and infectious disease, marked by high temperature, acute depression and eruptions (Typhus fevers). Tincture of root bark is given to cure irritable bladder and rheumatism.

The paste of root, leaves and bark is used as antidote; fresh leaf extract is poured into each nostril in case of coma or stupor. The decoction of root and bark is believed to be useful in reducing the poisonous effect of cobra bites. The extract of roots is used as tranquillizing agent. The decoction, extract, or powder of roots is used as febrifuge, diuretic and demulcent, and used in treatment of rheumatism, dyspepsia, dysentery, and piles.

**Chemical compounds**—Limonene, Camphene,  $\beta$ -phellandrene, Caryophyllene, Camphor, Terpinol, Cinnamaldehyde,  $\beta$ -sitosterol, Vitexin, Flavanoids, Glucosides.

**Mode of propagation**—The plant is propagated by seeds.

### ***Withania somnifera* Dun. (SOLANACEAE)**

Vernacular names

English—Winter Cherry

Sanskrit—Aswagadh, Turangi-gandha

Hindi—Asgundh, Ashvagandha, Asana

Bengali—Asvagandha

Marathi—Askandhatilli

Gujarati—Ghodakun, Ghodo, Asoda, Asan

Telugu—Pulivandrum, Pannerugadda, Panneru

Tamil—Amukkura, Amkulong, Amukkuram-kilangu,

Amilang-kalung, Aswagandha

Kannada—Viremadiragadha, Pannaeru, Asurgandhi,

Kiremallinagida



**Description**—An erect much branched under shrub, covered with whitish stellate hairs. Branches flexuose, terete, densely tomentose. Leaves petioled, 5–10 cm long, ovate, apex subacute, base acute. Flowers are greenish or lurid–yellow, usually about 5 together in sub sessile umbelliform cymes. Berries 6–8 mm in diam, partially covered by much enlarged, papery, inflated somewhat 5–angled, pubescent calyx, globose red at maturity. Seeds many, discoid, yellow, 2–3 mm in diam, ovoid or ovate, smooth.

**Flowers & Fruits**—Throughout the year.

**Distribution**—A native of India, Pakistan and Sri Lanka extending to Persia, Arabia, the Mediterranean region, the Canaries and to Tropical and South Africa.

**Parts used**—Leaves, roots

**Herbal action**—Vermifuge, antipyretic, piles, insecticide, bed-sores, asthma, diuretic, skin diseases, scrofula, aphrodisiac, seminal debility, lumber pain, abortifacient, erysipelas, anthrax pustule, asthma, aphrodisiac, chilblain, antisterility, leucorrhoea, spermatorrhoea, carbuncle, cachexia, arthritis, tremor, headache, anorexia, dyspepsia, fatigue, inflammation, nutrient and health restorative.

**Uses**—The extract or infusion of leaves is used as vermifuge and antipyretic. The decoction of leave is used externally and internally for treatment of piles; it is used to produce sleep during alcoholism and used as fomentation of sore eyes, boils, and body swellings. The paste of leaves is applied to kill lice. It is used to treat syphilitic sores and acute suppurative inflammation of the skin and tissue under the skin which, rapidly spreading around the original points of infection (Erysipelas). The symptoms include fever, chills, nausea, vomiting, painful and warm skin, and hot, red lesions on the face and head. The ointment prepared by boiling the leaves in coconut oil is used to treat bedsores and wounds. The fresh extract of leaves is use to treat anthrax pustules which is an acute, infectious disease caused by *Bacillus anthracis* usually attacking cattle, sheep, horses and goats. People can be infected by handling contaminated skin of these domestic animals, the spores may be inhaled or enter through a cut in the skin. The disease may attack the lungs or loose connective tissues giving

rise to malignant edema, necrosis of mediastinal lymph nodes, and pleural effusion followed by respiratory distress, cyanosis, socks, and coma. More commonly, anthrax occurs in the form of a pustule called an anthrax boil or malignant pustule. This cutaneous form exhibits redness, vesiculation and indurations with central ulceration, and development of a black eschar. The leaves have significant anti-tumorous activity.

The whole plant is used to treat anxiety disorders, panic attack and similar mood phobias. This herb is also used for the treatment of manic depression, alcoholic paranoids, and schizophrenia. Learning enhancement and memory retention is improved substantially when taken with leaves of *Ginkgo biloba* Linn. The infusion of bark is taken orally to treat asthma.

The ripe berries are used to treat chest disease and to induce the secretion of urine (Diuretic). The ointment prepared from ripe fruits is used to treat ringworm. The paste of tender twigs is applied to treat saddle sores and girth-galls in horses. The seeds possess the property of coagulating milk, but they also possess poisonous properties.

The decoction of root is used to treat scrofula. The decoction, mixed with long pepper (*Piper longum* Linn.), butter and honey is used with milk to increase sexual desire (Aphrodisiac) and seminal debility. The decoction of roots is used as nutrient and health restorative to the pregnant women and old people. The decoction of roots, milk and 'Ghee' is given soon after the menstrual period for curing the sterility of women. The decoction is given to get relief from chest complaints, cold and a round itchy inflammation of the skin, which usually occurs on the toes or fingers in cold weather. It is generally caused due to localized deficiency in the blood circulation (Chilblain). The decoction of roots is taken orally twice a day in a dose of 25 ml for one month to treat an involuntary movement of whole of a muscle or only part of it produce fine trembling or more pronounced shaking (Tremor), headache, loss of appetite (Anorexia), lack of concentration, dyspepsia, fatigue and intestinal irritability. The paste of root is given orally as sedative and abortifacient, and to get relief from pain in lower back (Lumbar pain). The paste of root and leaves is applied to treat acute suppurative inflammation of

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the skin and tissue under the skin, rapidly spreading around the original point of infection (Carbuncle), ulcers and painful rheumatic swellings. The paste of fresh root mixed with cow's urine or water is heated and applied to the affected part for treatment of scrofulous and other glandular swellings. The powder of roots mixed with 'Ghee' is used as nutrition to increase the strength in children. The powdered root is taken with sugar candy for treatment of bloody discharge and leucorrhoea. The root powder mixed with honey, sugar, long pepper and milk is taken orally to get strength and to stop involuntary discharge of semen during sleep (Spermatorrhoea). The powder of root is considered to be very efficacious for toning up the uterus of women suffering from habitual abortion. The root powder in a dose of 3 gm thrice a day for 3–4 weeks is used to treat arthritis. The powder is used externally to relieve inflammation and skin disease. For a great facial, this powder helps to remove dark circles below the eyes. The fresh roots are eaten to improve health (Cachexia). The roots are used to accelerate the growth in children and retard the process of ageing in old people. The mixture of powder of the plant, rose petals, 'neem' leaf and sandal wood in equal part is made in to a paste with 1–2 tablespoons of mucilage of 'ghrit kumari' (*Aloe*

*barbadensis* Mill.), and 1ml each of sandal wood oil, peppermint oil and 1 rosehip seed oil. This paste is applied on face for 10 minutes and then rinse with warm water to produce the glow on the face.

The compound known as Withanolides are believed to account for the multiple medicinal applications of 'ashwagandha'. These molecules are steroidal and bear a resemblance in their both action and appearance, to the active constituents of Asian ginseng (*Panax schinseng* Nees) known as ginsenosides. Sometime people do call 'asshwagandha' as semen. It is one of the best herbs for the mind (clarity, nurturing). Generally, 'ashwagandha' stimulates the immune system. It has also been shown to inhibit inflammation and improve memory. It counteracts the effects of stress and generally promotes wellness.

*Chemical compounds*–Withanolide–D, Withaferin–A, Choline, Tropanol, Isopelletierine, Anarferine, Anahygrine, Wthasomnine.

*Mode of propagation*–Propagated by seeds in well irrigated soil.



## GLOSSARY

**Abortifacient**—Induce abortion.

**Alexiteric**—Counteract the effect of a particular poison.

**Alopecia**—Used to check hair fall.

**Alterative**—Used to correct disordered processes of nutrition, and to restore the normal function of an organ or of the system.

**Anodyne**—Used to get relief from pain.

**Anthelmintic**—Drug used to expel intestinal worm.

**Anthrax**—Acute, infectious disease caused by *Bacillus anthracis*, usually attacking cattle, sheep, horses and goats. Workers who handle wools and hides, and manufacture brushes are commonly affected. More commonly anthrax occur in the form of a pustule called an anthrax boil or malignant pustules characterized by redness, vesiculation and induration with central ulceration and development of black eschar.

**Antidepressant**—Drug used to treat the patient who wrongly believed that he or she is suffering from number of illness and is extremely anxious and depressed.

**Antidote**—Slowing the effect of snake venom on nervous system, in the case of snake-bite.

**Aphrodisiac**—Drug used to promote sexual vigor.

**Apthae**—Minute white ulcers on the mucous membrane of the mouth and throat.

**Asthma**—A disease of the bronchial tubes causing recurrent attack of breathing troubles and coughing due to narrowing of the airways (bronchi) of the lungs.

**Astringent or Styptic**—Drug which induces contraction of tissue or to arrest secretion or bleeding.

**Beriberi**—A disease causing inflammation of the nerves and due to a dietary lack of vitamin B1 (Thiamine) which results in fever, paralysis, palpitation and occasionally precipitate heart failure.

**Biliousness**—Digestive disturbances caused by improper functioning of the liver.

**Bruises**—Injuries of the subcutaneous tissues, but without an open wound, in which minute vessels ruptured and blood occupies the skin in the immediate area and produce blue and black coloured symptom, followed by brown and yellow as the blood pigment is reabsorbed.

**Carbuncle**—Acute suppurative inflammation of the skin and tissues under the skin, rapidly spreading around the original point of infection.

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**Chikungunya**—A febrile disease marked by sudden onset, with headache, high fever, prostration, severe joint and muscle pain and a rash that appears simultaneously with temperature rise, bleeding from mouth, nose and gums, nausea and vomiting. Dengue is caused by Group B arbovirus transmitted by mosquitoes (*Aedes aegypti*).

**Cholagogue**—Agent that promotes flow of bile.

**Cirrhosis**—A chronic disease of the liver caused by virus or bacteria and also may be due to nutritional deficiency and alcoholic poisoning showing symptoms of anorexia, chronic dyspepsia, indigestion, nausea and vomiting, constipation or diarrhea, and dull aching abdominal pain; bleeding tendencies such as easy bruising, frequent nosebleeds and bleeding gums.

**Coma or Stupor**—Condition of unconsciousness occurring as a result of illness or injury caused by trauma to the head or circulatory accidents in the brain due to hypertension, arteriosclerosis, thrombosis, tumor, abscess formation, or insufficient blood flow to the brain.

**Contusion**—Injury of the soft parts in which the skin is unbroken.

**Coryza**—An acute catarrhal inflammation of the nasal mucous membrane accompanied by profuse discharge.

**Croup**—Diseased condition of larynx of children, characterized by difficult and noisy breathing accompanied by hoarse cough.

**Dandruff**—Inflamed condition of the scalp, characterized by the presence of white scales in the hair due to exfoliation of the horny cell of the scalp.

**Debility**—Taken to treat weakness of mind.

**Demulcent**—An agent having a soothing effect on skin and mucous membranes.

**Dengue fever or Break bone fever or Chikungunya**—A febrile disease marked by sudden onset, with headache, high fever, prostration, severe joint and muscle pain and a rash that appears simultaneously with temperature rise, bleeding from mouth, nose and gums, nausea and vomiting. Dengue is caused by Group B arbovirus transmitted by mosquitoes (*Aedes aegypti*).

**Diabetes**—A complex metabolic disorder of carbohydrate, fat and protein characterized by passing large quantity of urine, excessive thirst and hunger. The disease occurs due to an accumulation of sugar in the blood and urine and is due to a lack of insulin production by the pancreas, so that sugar is not broken down to release energy. Fats are thus used as an alternative energy source.

**Diarrhoea**—Stomach disorder in which there is too frequent evacuation of more or less watery stools.

**Diuretic**—To increase the amount of urine formation and excretion and which may work specially within the kidney by prevention of sodium and water re-absorption.

**Dysentery**—Infectious disease having ulceration of the lower part of the bowels, characterized by acute diarrhoea accompanied by griping pain, and passage of mucus and blood in stool.

**Dysmenorrhoea**—Pain of a severe shooting or stabbing character along nerve and also in treatment of unusually painful and difficult and irregular menstruation. The pain usually begins just before or at menarche which is spasmodic and located in the lower abdomen, but it may be also radiate to the back and thighs.

**Dyspepsia**—In which patient feels discomfort in the upper abdomen and lower chest with heartburn, nausea and flatulence accompanying a feeling of fullness after taking food.

**Ecboic**—For quick delivery.

**Elephantiasis**—Disease of the skin and sub cutaneous tissue causing hypertrophy of the affected parts; it may attack any part of the body, but it chiefly attacks the scrotum and legs. Elephantiasis is caused by infection of the lymphatics by filarial parasites of humans.

**Emmenagogue**—Promote menstruation or regulate the menstrual flow.

**Endometritis**—Inflammation of mucous membrane lining the uterus caused commonly by bacteria but can also be due to a virus, parasite or foreign body. It is associated with fever and abdominal pain and occurs mostly after abortion or childbirth or women with an intrauterine contraceptive device.

**Epilepsy**—Chronic neurological disorder involving repeated convulsions, seizures and loss of consciousness. There are many possible causes or associations of epilepsy, including cerebral trauma, brain tumor, cerebral haemorrhage and metabolic imbalances as in hypoglycaemia. Usually an epileptic attack occurs without warning, with complete unconsciousness and some muscle contraction and spasm.

**Expectorant**—To remove broncho pulmonary mucous membrane secretions.

**Galactagogue**—Strengthens the mammary gland and gives strength to women to nurse better by promoting the secretion and flow of milk.

**Gonorrhoea**—Contagious, catarrhal inflammation of the genital mucous membrane of either sex. In men, it is characterized by slow, difficult and painful urination and yellow mucopurulent discharge, resulting from inflammation of urethra, which may become deep seated and affect the prostrate piles and in women, the symptoms include urethral or vaginal discharge, painful or frequent urination, lower abdominal pain and acute pelvic inflammatory diseases.

**Gout**—Swelling of joints which is a hereditary disease caused by an imbalance of uric acid in the body. This causes inflammation of the affected joints and painful gouty arthritis with destruction of the joints. The deposition of salts (called *trophy*) may reach the stage where they prohibit further use of the joints, causing hands and feet to be set in a particular position. Hypertension, backache low-grade fever may be present.

**Haemorrhoid**—Marked by varicose and inflamed veins around the lower end of bowel situated in the wall of the anus. They are commonly caused by constipation or diarrhoea especially in middle and old age. Symptoms of this disease are bleeding and pain.

**Haemostasis**—Promotes natural process to arrest bleeding involving blood coagulation of a ruptured blood vessel.

**Heartburn**—Feeling of burning pain or discomfort felt in the region of heart and stomach caused by rising of acid fluid from the stomach to the mouth, generally due to indigestion.

**Hoarseness**—Rough quality of voice caused by simple inflammation in throat or by tobacco or alcohol.

**Hodgkin's disease**—Solid tumor of the lymphoreticular system that may originate in any lymphoid tissue. This disease is characterized by painless enlargement of the lymph node beginning in the cervical region. There are signs of swelling due to pressure from lymphoid infiltration of blood vessels and organs such as the liver, heart, and spleen. Other symptoms include fever, night sweats, loss of appetite, and weight loss.



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**Hysteria**—Temporary mental disorder or disease in which the patient, who is physically healthy, suffers from imaginary diseases and has lost control over acts and feeling.

**Ignipedites**—Inflammation of the nerves of sole of the feet in which vesicular, watery eruptions develop causing swelling of feet and acute burning sensation and pain in soles.

**Influenza**—A highly infectious disease caused by virus that affects the respiratory tract. Symptoms include headache, weakness and fever, appetite loss and general aches and pains. Sometimes there is complication of a lung infection.

**Insanity**—Mental condition, characterized by the inability to distinguish between rights and wrong.

**Insomnia**—Inability to sleep when sleep would normally occur, the difficulty may be in failing asleep, remaining asleep or both.

**Jaundice**—Yellowish staining of the tissues and excretion with bile. The bile produced in the liver passes into the blood instead of the intestine and because of this there is a yellowing of the skin and the whites of the eyes.

**Lactagogue**—Promotes secretion or increase the flow of breast milk.

**Leprosy**—A serious and progressively destructive form of disease caused by bacteria that attacks the skin, nerves and mucous membranes, creating lumps in the skin, thickening of skin and nerves, numbness and paralysis. The more serious case shows deformity and considerable disfigurement and sometimes blindness.

**Leucoderma**—Skin diseases characterized by white patches, surrounded by areas of normal pigmentation.

**Leucorrhoea**—Discharge of white or yellow coloured mucus from the vagina which may be due to infection somewhere in the genital tract.

**Litholytic**—Agent used to break the stone formed in body especially in the bladder, kidneys and ureters

**Melancholia**—Disorder of mind marked by depression of spirits, mental sluggishness and apathy to one's surroundings.

**Orchitis**—Inflammation of testicles.

**Pharyngitis**—Inflammation of the pharynx and throat due to viral infection, resulting sore throat.

**Photophobia**—Eye disease marked by unusual intolerance of light, occurring in measles, rubella, meningitis, and inflammation of eye.

**Pneumonia**—A disease in which there is a bacterial infection of lung resulting in inflammation and filling of the alveoli with pus and fluid. As a result the lung becomes solid and air can not enter. The symptoms vary depending upon how much of the lung is unavailable for respiration, but commonly there will be chest pain, coughing, breathlessness, fever and possibly cyanosis. Pneumonia may be caused by several bacteria, virus or fungi, but bacterial infection is commonest.

**Prurigo**—Chronic skin diseases marked by a persistent eruption of reddish pimples which itch intensely.

**Puberty**—Absence of menstruation in girls after attaining sexual maturity.

**Purgative**—It produces strong action by increasing the muscular contraction of the intestine or by increasing the fluid in the intestine to evacuate the bowels.

**Pyorrhoea alveolaris**—Caries of teeth and a suppurative disease of the tooth sockets, causing shrinkage of the gum and loosening of teeth.

**Scabies**—Highly communicable skin disease caused by the itch mite. Scabies manifests as papules, vesicles, pustules and burrows, and causes intense itching resulting in eczema. The body parts most commonly affected is the hand, between the fingers, the wrists, axillae, genitalia, beneath the breasts and the inner aspect of the thighs.

**Scaly disease of scalp**—Shedding of small, thin and dry exfoliation from hairy integument of the head.

**Sciatica**—Neuralgic pain in the leg along the course of the sciatic nerve felt at the back of the thigh and running down the inside of the leg. This condition may begin abruptly or gradually and is characterized by a sharp shooting pain running down the back of thigh. Movement of the limb generally intensifies the suffering. Pain may be uniformly distributed along the limb, but frequently there are certain spots where it is more intense. Numbness and tingling may be present, and the nerve may be extremely sensitive to touch.

**Scrofula**—Enlargement of gland below the lower jaw of the young, marked by want of resisting powers making the patient susceptible to tuberculosis, especially of the glands, bones and joints, eczematous eruptions, ulcerations, glandular swellings.

**Scurvy**—A deficiency disease caused by lack of vitamin C (ascorbic acid) due to a dietary lack of fruit and vegetables. Symptoms begin with swollen, bleeding gums and then subcutaneous bleeding, bleeding into joints, ulcers, anaemia and then fainting, diarrhoea, and trouble with major organs.

**Syphilis**—An infectious sexually transmitted disease is caused by the Bacterium *Treponema pallidum*. In the secondary syphilis, the symptom appears about two months after infection which include fever, pains, enlarged lymph nodes and a faint rash on the chest.

**Senility**—The herb is used to promote longevity and mental or physical weakness that may be associated with old age.

**Spasmod Antispasmodic**—Drug used to treat involuntary muscular contraction which may be part of a more disorder such as spastic paralysis, convulsions or they may be specific such as cramp, colic, etc.

**Spermatorrhoea**—An abnormally frequent involuntary loss of semen without orgasm.

**Stranguary**—Painful and drop by drop discharge of urine.

**Tonsillitis**—An inflammation of tonsil caused by bacterial or viral infection. The symptoms include a severe sore throat causing painful swallowing, accompanied by fever and earache, especially in children. The tonsils are swollen and white in appearance due to infected material exuded from them and glands in the neck are enlarged.

**Typhoid**—An acute infectious disease, marked by ulceration of the intestine, eruption of rose colored spots, and a characteristic course of temperature.

**Urticaria**—Heat and itching in allergic reaction by an individual to some substances to which they are hypersensitive, in which the allergic response is manifested on the skin. Raised red patches develop which

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may last for hours or days. The sensitivity may be to certain food and the effect may occur anywhere on the body, but commonly erupts on the face and trunks.

**Vertigo**—False sensation of imbalance and of the surroundings moving. It is commonly a sensation of spinning but may be as if the ground is tilting. This is due to some problem with the mechanism in semicircular canal of the ear.

**Vitiligo**—An acquired dermatological disorder characterized by white patches, surrounded by areas of normal pigmentation.

**Whitlow**—Septic inflammation of the tissues surrounding the nail or of the bones of the distal joint of finger or toe.

**Whooping cough**—an infectious disease in which the mucous membranes lining the air passage are affected and after a one to two week incubation period, fever, catarrh and a cough develop. The cough then becomes paroxysmal with a number of short coughs punctuated with the 'whooping' drawing in of breath. Nosebleeds and vomiting may follow a paroxysm. Whooping cough is not usually serious and however, children may be susceptible to pneumonia and tuberculosis during disease.



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**India is bestowed with rich wealth of medicinal plants. Phyto-medicines derived from plants have shown great promise in the treatment of various diseases. Owing to the scarce availability of literature having good materials (photographs, illustrations and detail description) for easy identification of medicinal plants and lack of competent human resources capable of recognizing the medicinal plants, the common people are unable to get relevant sample of herbal medicine.**

**In order to provide required materials for easy recognition of common medicinal plants and their usage in treatment of multifarious diseases, the present book provides detailed description and coloured photograph of 61 plant species belonging to 57 genera and 42 families.**

**This book will serve as an excellent reference literature and a practical guide for vaidyas, folk healers, research workers and students in the fields of Ayurveda, Siddha, Unani, Tibet and Homoeopathy.**