

AVENUE TREES

சாலை மரங்கள்

வாழ்கை மரங்கள்.

C. RAJASEKHARA MUDALIAR & J. SAKHARAM RAO



THE DEPARTMENT OF AGRICULTURE, MADRAS.



E004432

Sarasvati Mahal Library, Thanjavur



AVENUE TREES

By

C. RAJASEKARA MUDALIAR, M.A.,
Systematic Botanist and Professor of Botany

and

J. SAKHARAM RAO, M.Sc.
Assistant Lecturer in Botany

PRINTED BY THE SUPERINTENDENT
GOVERNMENT PRESS
MADRAS
1953

Price Re. 0—5—0.

PREFACE

The Department of Agriculture, Madras, will be publishing shortly similar booklets in English on the following subjects:—

Banana cultivation.

Cultivation of tree spices in South India.

Plant Protection Work—Effective remedial measures.

Green manuring.

The publications will be available in all the offices of the Taluk Agricultural Demonstrators.

So for the following publications in English have been printed:—

Sugarcane.

Agricultural implements and tools.

Millets.

Tapioca.

Turmeric.

Cotton.

Rice.

Fruits.

Sweet potato.

Oilseeds.

Hedge plants.

Potato.

Chillies.

Vegetables.

Tobacco.

Reclamation of alkaline soils.

Pepper.

Fodder trees and fodder grasses.

AVENUE TREES

Trees on either side of roads, lend a picturesque view and the importance of avenue trees cannot be over emphasised. There are many majestic and enchanting trees which present a beautiful appearance by their magnificent growth giving character to the roads. During seasons when the trees are laden with flowers they please the eye and make the roads enchanting. Avenue trees mainly serve by giving shade and beauty to the roads besides helping in preventing soil erosion to certain extent. There are several trees available, but for avenues they must answer certain requirements, such as (i) suitability to the localities, (ii) drought resistant capacity, (iii) long-lived nature, (iv) quick growing capacity and (v) possessing a deep-root system. Sometimes trees which yield some economic products such as *Mangoes*, *Jack*, or *Tamarind* are grown along avenues; though these are very good avenue trees, they have to be particularly taken care of, as there is always the likelihood of their products being stolen. In a particular locality or soil many trees will not thrive well and it is of primary importance that trees should be decided for each locality before actual planting is done. Watering the trees set on road sides is not always easily possible and the seedlings after certain stage have to depend on the periodical rains. So trees which will demand less amount of water and which can tide over the summer droughts should be preferred unless water-supply will be available easily. Avenue tree planting is done once in a few decades and hence trees which are long-lived should be chosen. The tree must necessarily possess deep-root system as otherwise they may be uprooted by the heavy winds prevailing in certain parts of the state in some seasons. Quick growing trees if chosen will become full grown in 10 to 15 years and serve for a long time.

HOW TO RAISE GOOD AVENUES

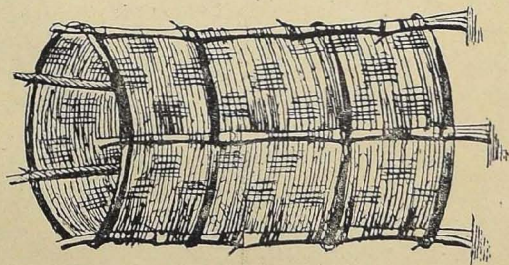
A knowledge of the method of raising different kinds of trees is necessary as some are raised by seeds, a few by cuttings and many by both. When raising seedlings by

seeds, in general, it is advisable to sow the seeds in a well prepared nursery bed. The bed may be prepared in advance with fine soil and manured suitably. After sowing the seeds, regular watering should be done for 4 to 6 months till the seedlings reach a height of one foot. At this stage the seedlings may be transferred to tube pots or baskets, so that they may be easily portable. The seedlings can be allowed to grow for six more months in the pots or baskets as the case may be. When they attain two to three feet in height they are fit for transplanting on the sides of the road. Meanwhile pits can be dug 2 feet by 2 feet by 2 feet on the sides of the roads and manured properly. During the beginning of monsoon, i.e., June-July the transplanting may be taken up taking care to select healthy seedlings. The seedlings must be removed from the pots or baskets with utmost care without disturbing the roots and placed in the pits, filled with good soil and watered immediately. The plants in the initial stages may be supported by stakes to ensure a straight growth. When the trees are raised by cuttings, the cuttings (18 to 24 inches, depending upon the plant) may be planted in the nursery and healthy plants transplanted thereafter. Direct planting of cuttings on the sides of roads is not advisable as the percentage of deaths in cuttings will be generally more. When a plant can be raised by seeds as well as cuttings, raising by seeds should be preferred as trees raised by seeds will possess deep-root system and as such will withstand climatic disturbances.

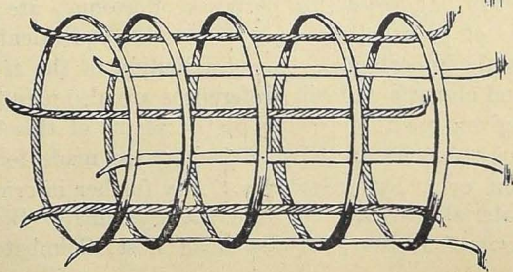
CARE OF SEEDLINGS

After the seedlings are transplanted great care has to be taken to protect the seedlings. For some days watering is to be done and the plants have to be protected from being eaten by cattle and goats which are the root cause for destroying the seedlings in many places. However healthy the seedlings may be, and care taken till transplanting, it is of no avail unless some solid protection is given to the seedlings. In many places this is not done and this is one of the causes for the death of many trees in the avenues in the initial stages. Guards for the seedlings can be provided

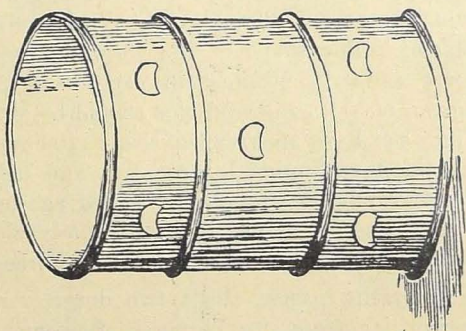
SEEDLING GUARDS



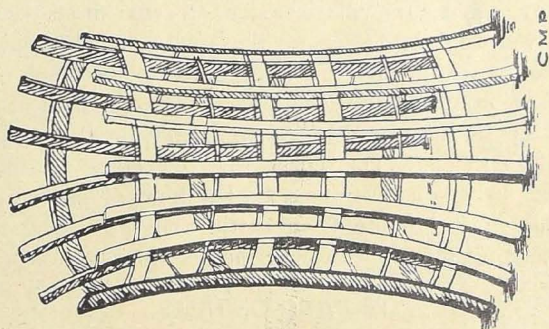
1



2



3



4

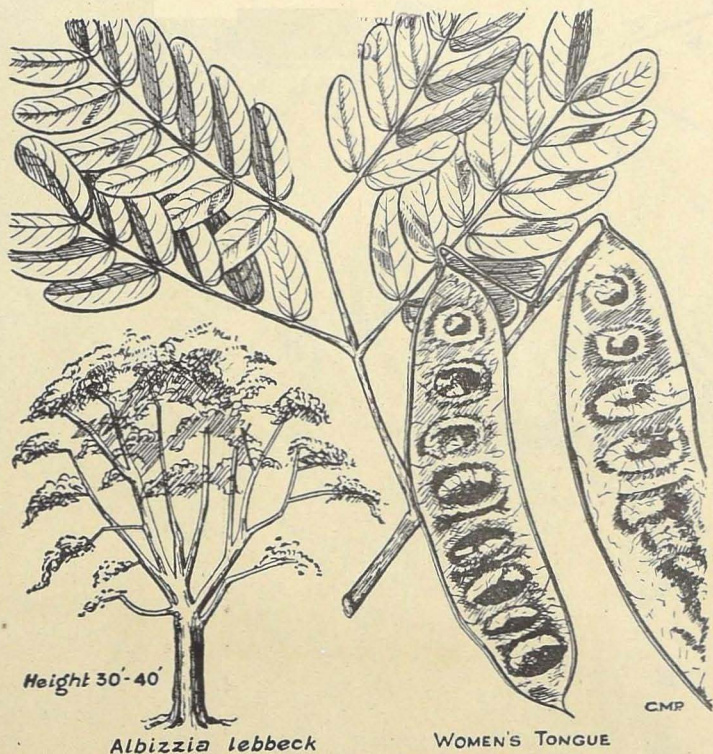
C.M.P.

in many ways. In village roads, thorny dried twigs are interwoven and placed around the seedlings, which are quite effective. In Municipalities iron guards and cement concrete guards are common and a cheaper device commonly adopted is to keep the old tar drums after removing the basal piece as well as the lid. On the sides a few holes are made for allowing air. Whatever may be the kind of protection, the seedlings must be safe from cattle and goats as otherwise their growing into well grown trees is almost uncertain.

PRUNING OF TREES

For avenues tall and well spreading trees not only give a pleasant appearance but also allow easy traffic movement to bigger vehicles. The shape of the trees can be got if the seedlings are properly pruned in early stages. Any low branches given off from the seedlings should be cut off so that the trees may not have an irregular shape afterwards. When the tree is old no pruning is necessary and indiscriminate pruning for fuel purposes must be guarded against. It is a pitiable sight to see trees cut indiscriminately along certain roads, spoiling the beauty of roads as well as trees.

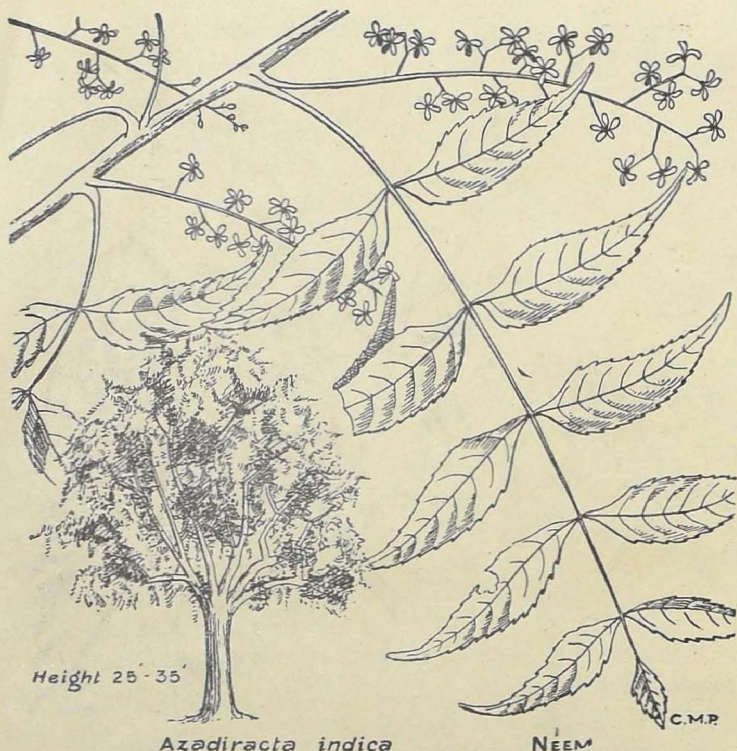
In the following pages, about two dozen very common and easily growing trees, for purposes of avenue, are given with details of propagation, their vernacular equivalents and their economic importance. The distribution of the trees in the state and climatic and soil preferences are also mentioned. The trees given are for growing in the plains of this State. For most of the trees included, drawings are made for easy identification even by a lay man. Any further information or seed material can be had from the Systematic Botanist and Professor of Botany, Lawley Road Post, Coimbatore.



ALBIZZIA LEBBECK, Benth. (Women's tongue.)

Tamil : *Vagai*. Telugu : *Darisanamu*. Kanarese : *Bage*.
 Malayalam : *Vaka*.

A large sized pretty tree coming up well in all situations in the plains. It is a rapid grower and is one of the best trees for avenues. The tree gives excellent timber especially for use inside water. It is propagated by means of seeds, the seeds being generally sown in well prepared beds and then transplanted during June-July. Suited for all districts in the plains.

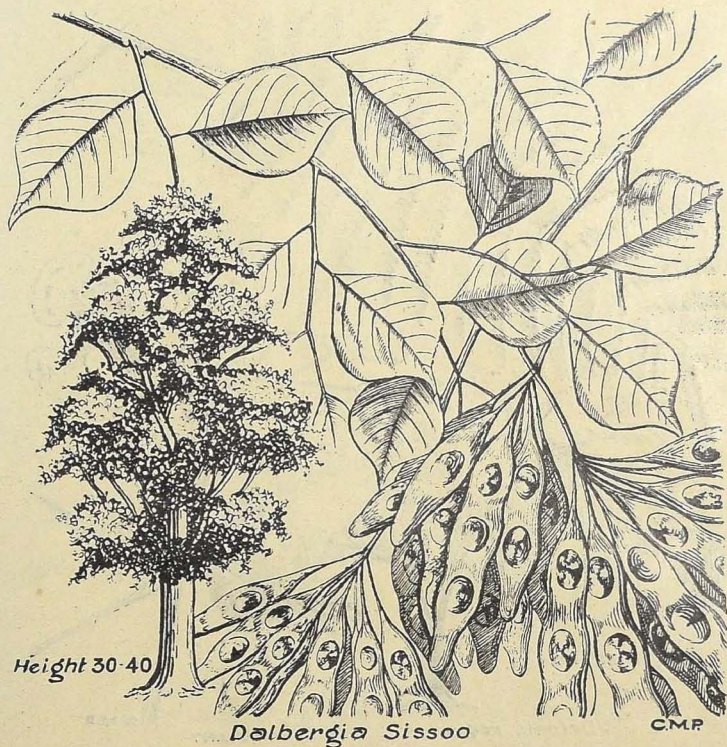


AZADIRACTA INDICA, A. Juss. (Neem.)

Tamil : *Veppamaram*. Telugu : *Vepa, Vemu*.

Kanarese : *Bevu*. Malayalam : *Veppu*.

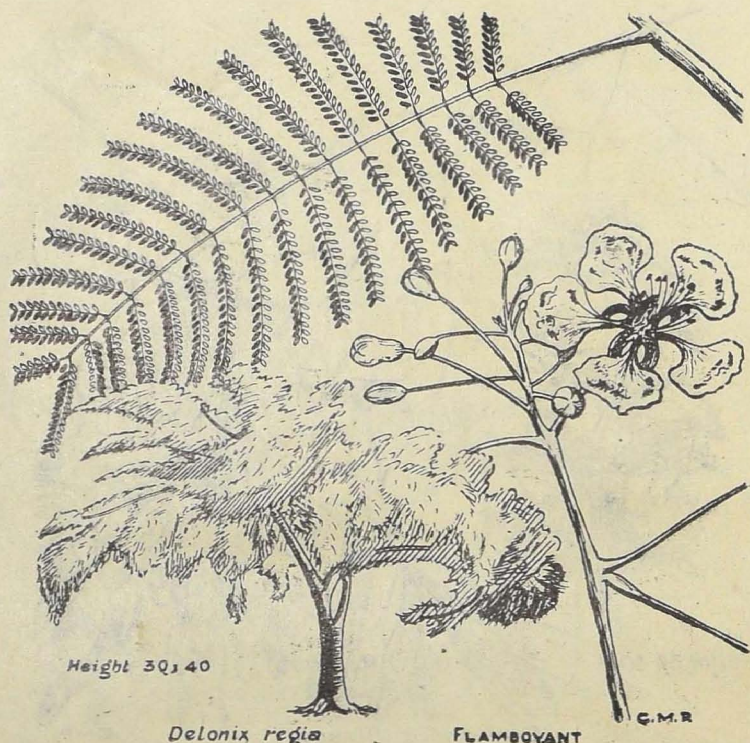
A much planted avenue tree, medium sized, evergreen standing drought well. An economically important tree the wood being used for fuel, seeds for extracting neem oil and the other parts useful in native medicine. Easily raised by means of seeds though growth is rather slow. Sometimes the tree reaches 40 to 50 feet. The green twigs are used for cleaning teeth. The wood is white-ant proof as it is very bitter. Thrives well in all the districts in the plains.



DALBERGIA SISSOO, Roxb. (Sissoo.)

Tamil : Itti, Cicu. Telugu : Errasisu. Kanarese : Agaru, Biridi. Malayalam : Iruvil.

A straight upright tree coming up well in low elevations, reaching a height of 60 to 70 feet sometimes. The stem affords a very valuable timber. Propagated mainly by seeds. The seeds may be sown in nursery and then transplanted during rains when the seedlings are 18 inches in height. Suited to Salem, Mysore, Bangalore, Chingleput, Malabar and Travancore.



DELONIX REGIA, Raf. (Gul Mohar, Flamboyant.)

Tamil : *Vadanarayana*. Telugu : *Peddaseribeseri*.
 Kanarese : *Doddarathra gandhi*. Malayalam : *Alasippu*.

One of the most common ornamental trees of the tropics very striking when it is in flowers, with its scarlet flowers. Well suited to broad thoroughfares being a rapid grower. Thrives especially in coastal districts. Easily propagated by means of seeds as well as cuttings. The seeds are sown *in situ* or in nurseries and then transplanted during monsoon. Thrives exceedingly well in all districts in plains.



Height 30-40'

C.M.P.

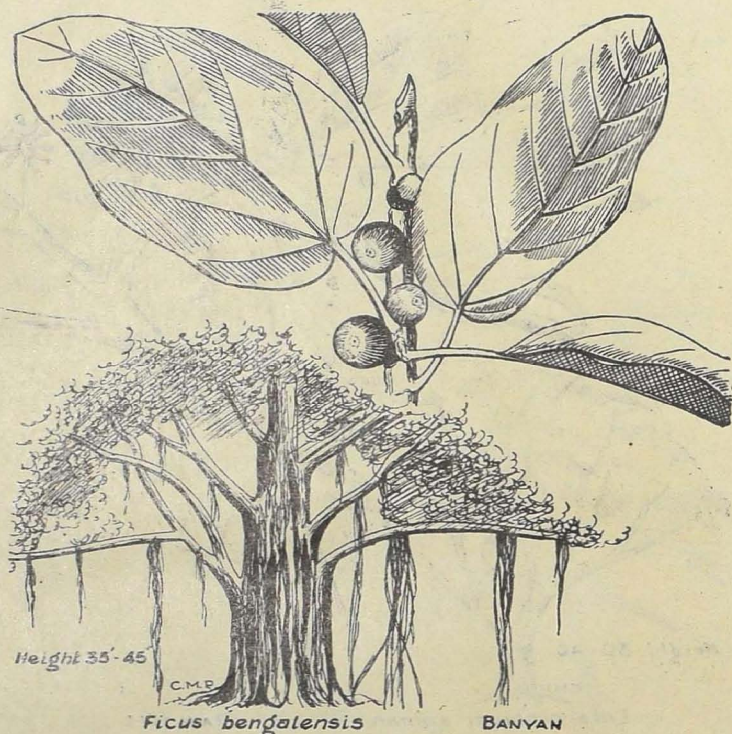
Enterolobium saman

RAIN TREE

ENTEROLOBIUM SAMAN, Prain. (Rain tree.)

Tamil : *Seemai vagai*, *Tungumunji*,
Telugu : *Kundasirisama*, *Nidraganneru*.

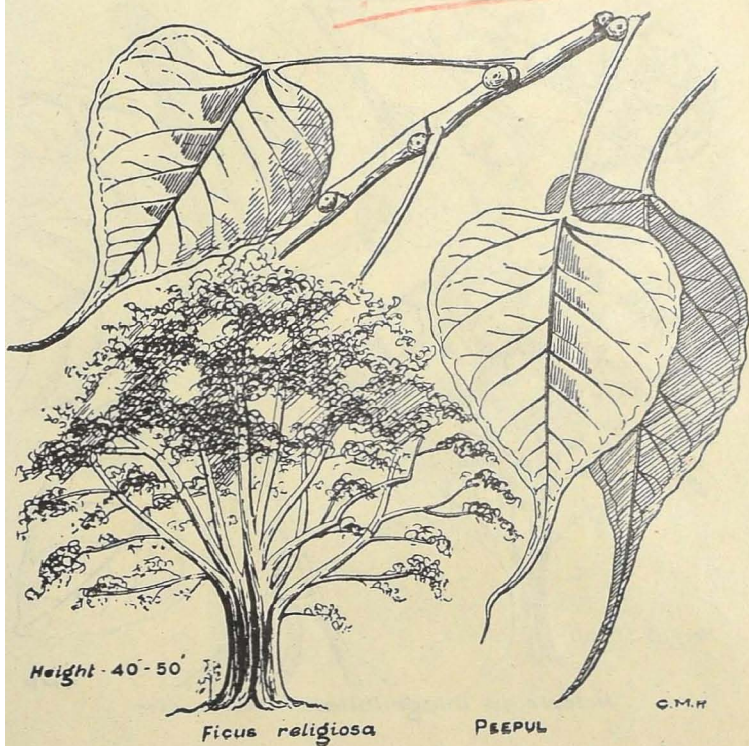
An excellent tree for roadside regions which assumes enormous size. It has a shallow spreading root system. Grows rapidly to an enormous size, especially at low elevations, in all districts. The brown flattish pods produced during the months March-May contain a quantity of sweet sugary pulp, which is relished by cattle. The pods are known to increase milk yield. The tree thrives well in moderately dry areas. Propagation is effected by means of seeds. The plants may be raised in nurseries and transplanted when they are 2 to 2½ feet in height. The wood is useful for fuel,



FICUS BENGALENSIS, Linn. (Banyan.)

Tamil : Alamaram. Telugu : Bhandiramam, Marri.
 Malayalam : Ala, Peral. Kanarese : Ala.

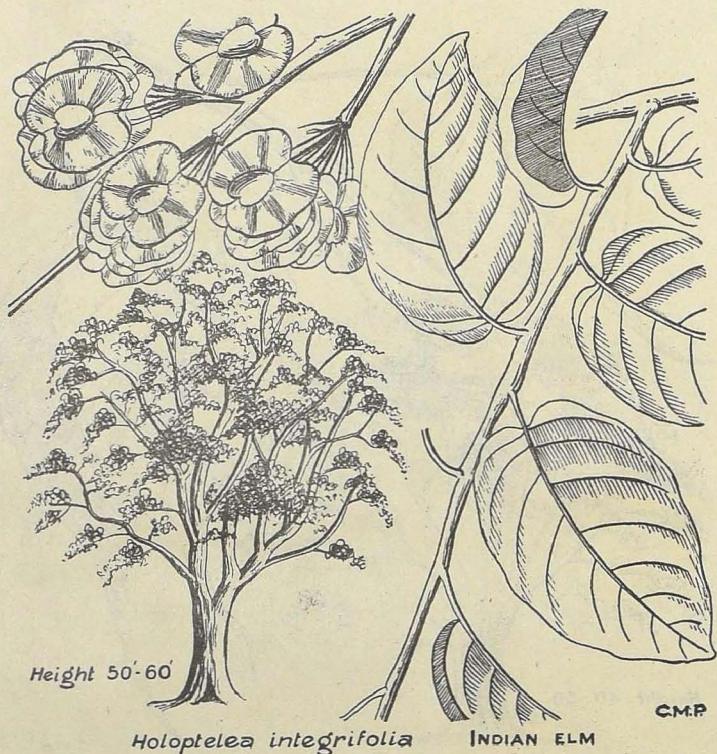
A tall spreading tree, generally grown along broad thoroughfares and country roads. A good drought resistant, thriving well in all dry districts and coastal areas. The wood is an inferior fuel. Propagation is done by means of seeds as well as cuttings. The tree does not demand much attention. Comes up well in all districts in plains.



FICUS RELIGIOSA, Linn. (Peepul.)

Tamil : Arasamaram. Telugu : Aswatham, Ravi.
 Kanarese : Aswatha. Malayalam : Aswatham Arayal.

A well known avenue tree sometimes growing to 80 to 100 feet. It is completely or partially deciduous. Well suited for all wet and dry areas in the plains. Propagated by means of seeds as well as cuttings and the tree is a rapid grower. Thrives splendidly in all the districts of plains and the tree is grown in temples invariably.

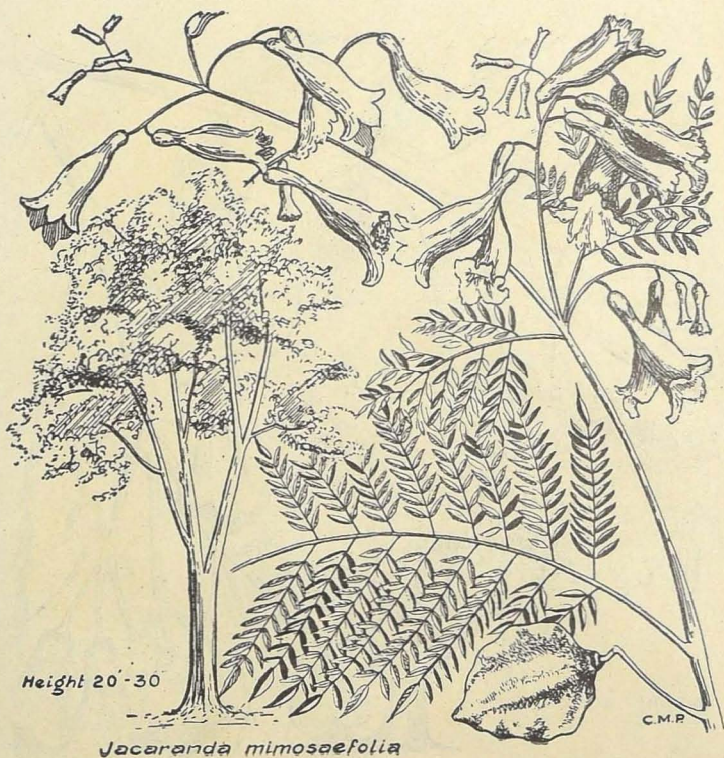


HOLOPTELEA INTEGRIFOLIA, Pl. (Indian Elm.)

Tamil : *Ayil*; *Tambachi*. Telugu : *Thapasi*, *Nauli*.

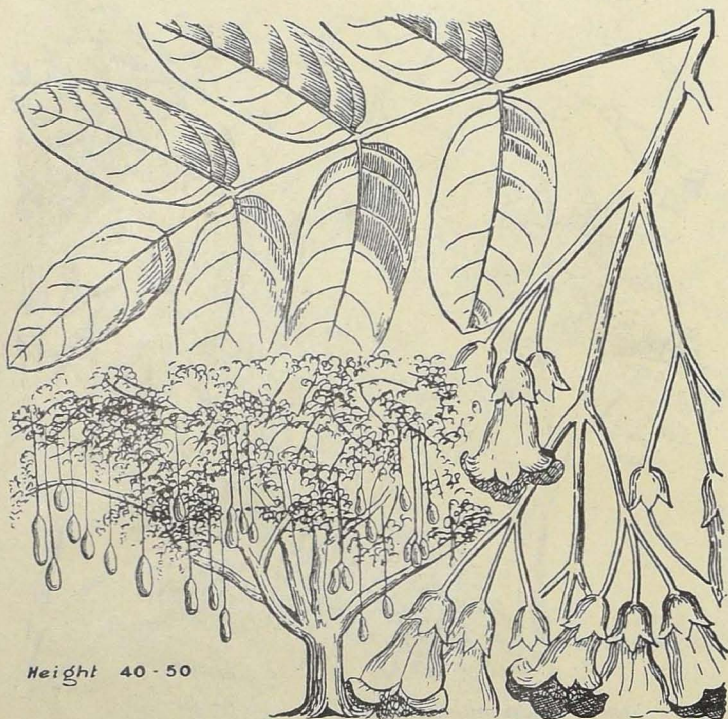
Malayalam : *Aval*. Kanarese : *Thavasi*.

A large symmetrical tree coming up well in dry as well as wet areas. The wood is used for fuel. Commonly found in the forest of Western Ghats. Suited to Northern Circars, Malabar, Travancore and Coimbatore districts. Deserves to be popularized.



JACARANDA MIMOSAEFOLIA.

Most handsome tree for avenues and gardens and it is unfortunate that the tree has not become very popular. The leaves as well as the light blue flowers have a charm of their own and the flowers are shed on the ground after blossom which presents a beautiful appearance to the roads. The tree is raised by seeds and in long avenues this can be alternately placed with *Spathodea campanulata* or *Peltophorum ferrugineum*. Comes up splendidly in Bangalore and Mysore, and lower elevations in Nilgiris.



Height 40 - 50

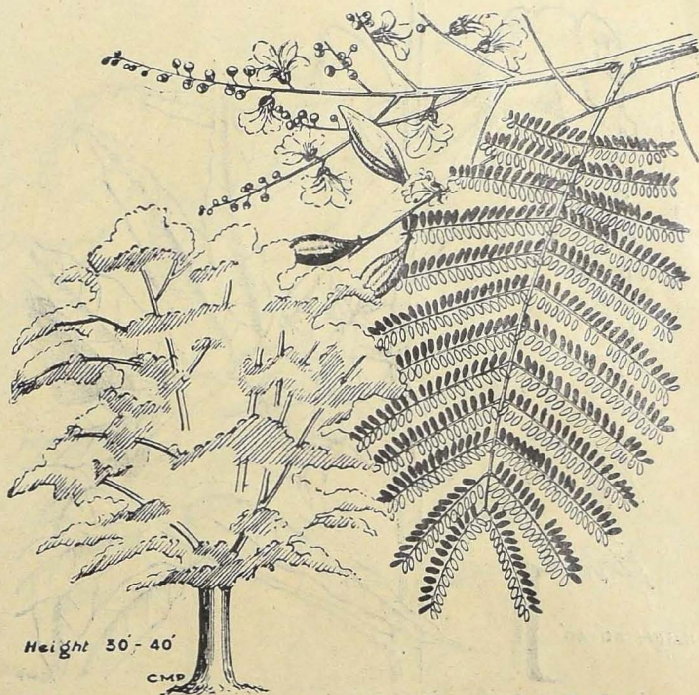
Kigelia pinnata SAUSAGE TREE

C.M.P.

KIGELIA PINNATA, DC. (Sausage tree.)

Tamil : *Sivan Kundalam*. Telugu : *Kijili*.

A large spreading tree with curious gourd-like hanging fruits. Comes up well in sandy tracts especially very near the sea. The fruit is used in medicine but not consumed. Propagated by seeds or by raising a nursery and then transplanting the seedlings when they are six months old. Suited for Chingleput, Bangalore and Coimbatore districts.



Height 30' - 40'

C.M.D.

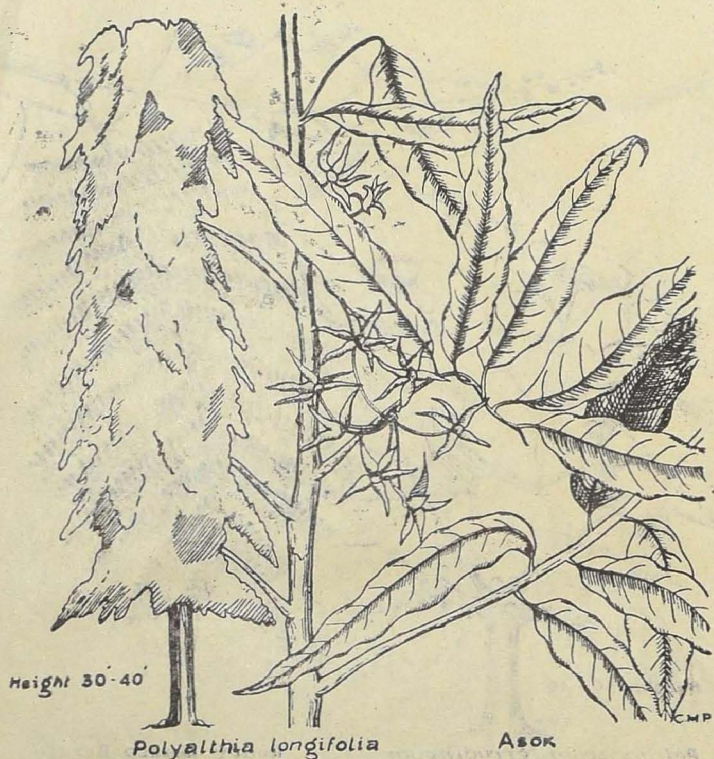
Peltophorum ferrugineum

RUSTY SHIELD BEARER

PELTOPHORUM FERRUGINEUM.

Tamil : *Iyalvazai*. Telugu : *Kondachinta*.

A pretty symmetrical tree which is growing in popularity. Tall and quick growing bearing a profusion of bright yellow flowers and it is a magnificent sight to see it in flower. Suited to dry as well as moist regions up to 2,000 feet. The tree is propagated by seeds, the seeds being sown in well prepared nurseries and then transplanted. Wood is used as timber and for fuel. A good drought resistant, coming up well especially in Coimbatore, Thiruchirappalli, Madurai, South and North Arcot districts.

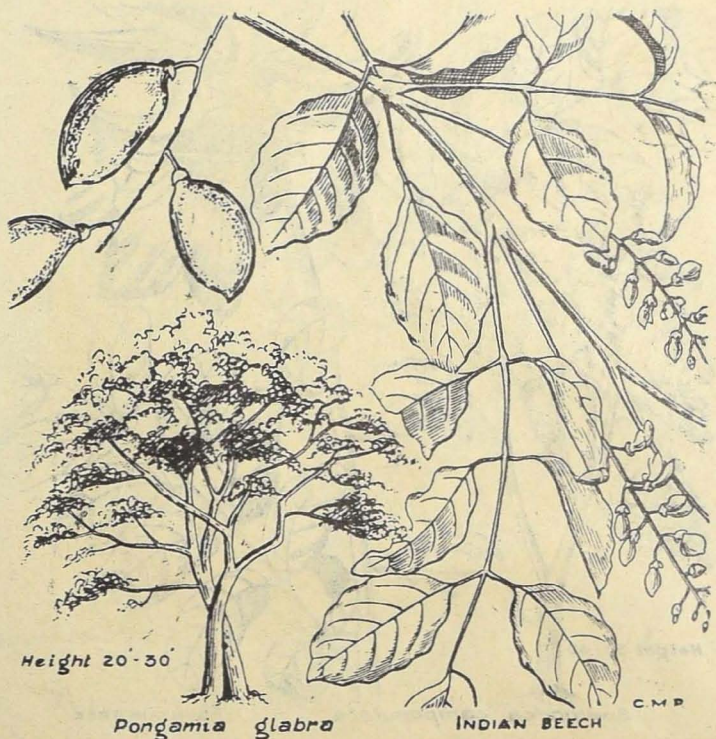


POLYALTHIA LONGIFOLIA, Hk. f. & T. (Asok.)

Tamil : *Nettilingam*. Telugu : *Asokamu*.

Kanarese : *Putrajivi*. Malayalam : *Aruna*; *Asokam*.

A tall handsome evergreen tree extensively planted as a road side tree in India. The bark is said to yield a good fibre and the soft wood is used for pencils and boxes. Propagated by seeds. Seeds should be sown soon after they ripen as they do not keep well. Well suited for Chingleput, Coimbatore, South and North Arcot districts.



PONGAMIA GLABRA, Vent. (Pungam.)

Tamil : *Pungamaram*. Telugu : *Kanuga* (Pungam).
 Kanarese : *Honge*, *Batti*. Malayalam : *Punnumimari*.

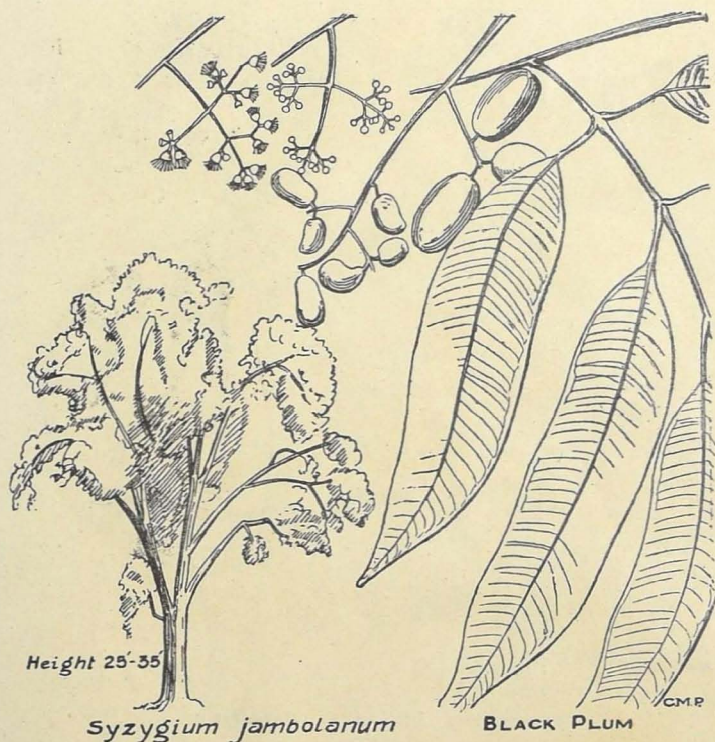
A moderate sized tree sometimes reaching 50 feet. Commonly met with along coasts, tidal forests, chiefly along river banks. The tree is pruned suitably when young to ensure straight growth. The leaves are fed to cattle and more commonly ploughed into the field as an efficient green manure. Seeds give an oil which is useful for burning lamps. Easily raised by seeds. Seeds are first sown in pots and then transplanted to the road side at the commencement of monsoon. Well suited for Tanjore, Tiruchirappalli, Madurai, Coimbatore, Krishna, East and West Godavari.



SPATHODEA CAMPANULATA, Beauv. (Fountain tree.)

Telugu : Patade. Kanarese : Nirukaye.

A tall erect introduced tree which is strikingly charming and conspicuous with its scarlet flowers held at the tips of branches. Comes up well in places having an annual rainfall of 30 to 40 inches and thrives up to 4,000 feet. The tree is soft wooded. Propagation is effected by means of seeds as well as cuttings. When raised by cuttings, they are planted direct and when seeds are used, nurseries are raised and seedlings transplanted. Thrives well in Travancore, Bangalore, Mysore and low elevations in hills.

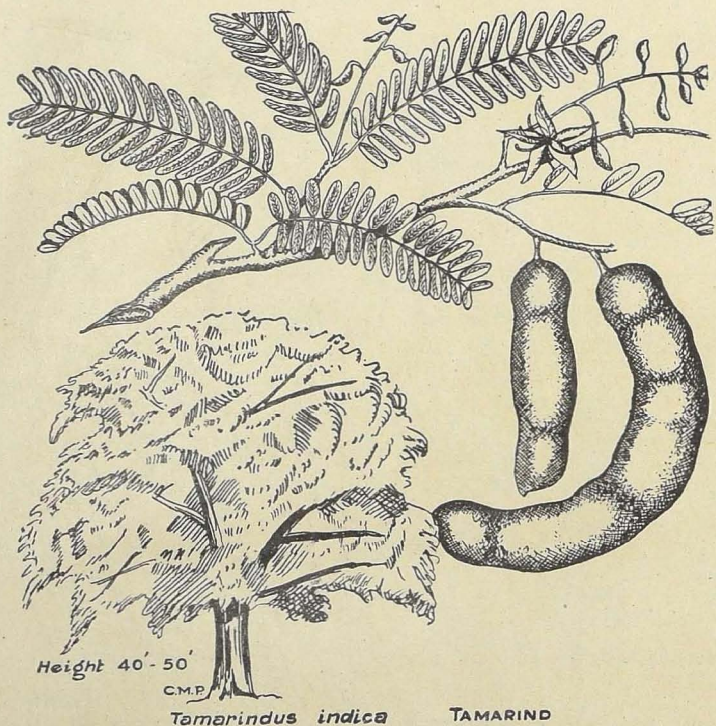


SYZYGium JAMBOLANUM, DC. (Black Plum.)

Tamil : Naval. Telugu : Jambuvu, Neredu.

Kanarese : Nerale. Malayalam : Naga.

A large evergreen tree with dense foliage, sometimes reaching 60 to 70 feet in height. Bark of the tree is used in dying and tanning and is employed in medicine as a remedy for dysentery. The fruit is very tasty and is used in the manufacture of vinegar and wine. Timber is useful for making agricultural implements. Thrives well in all the districts in plains.



TAMARINDUS INDICA, Linn. (Tamarind.)

Tamil : *Puliyamaram*. Telugu : *Amblica*.

Kanarese : *Hulimara*. Malayalam : *Puli*.

A large-sized tree sometimes reaching 80 feet. Largely planted along road sides in India. Comes up well in warmer parts of the State. The timber is hard, close grained and is used for tools and furniture and commonly for fuel. The tree yields tamarind of commerce. Propagation is done by means of seeds, the seeds being either sown *in situ* or in nurseries and transplanted thereafter. A hardy tree thriving in all parts of the State.

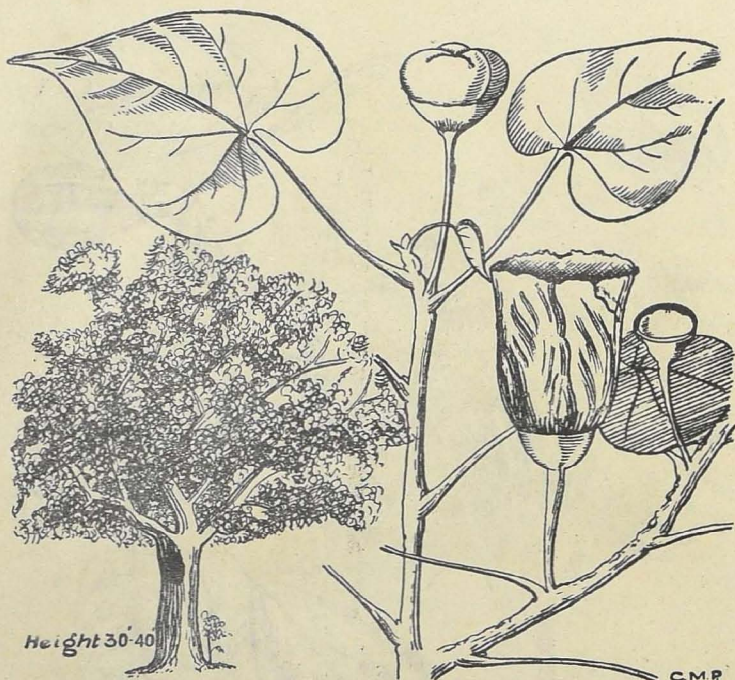


TERMINALIA ARJUNA, W. & A.

Tamil : *Vellaimarudu*. Telugu : *Tella madi*.

Kanarese : *Ariyan*; *Bilimathi*. Malayalam : *Vellamaruka*.

A large-sized majestic tree which thrives best as an avenue tree in certain parts of the State like Tirunelveli and Ramanathapuram districts where most of the roads are found occupied by this. Propagation is done by seeds which are either sown *in situ* or in nurseries and then transplanted during suitable seasons. The tree deserves to be more popular. Comes up well in Ramanathapuram, Madurai, Cuddapah, Godavari, Mysore and Tirunelveli districts.

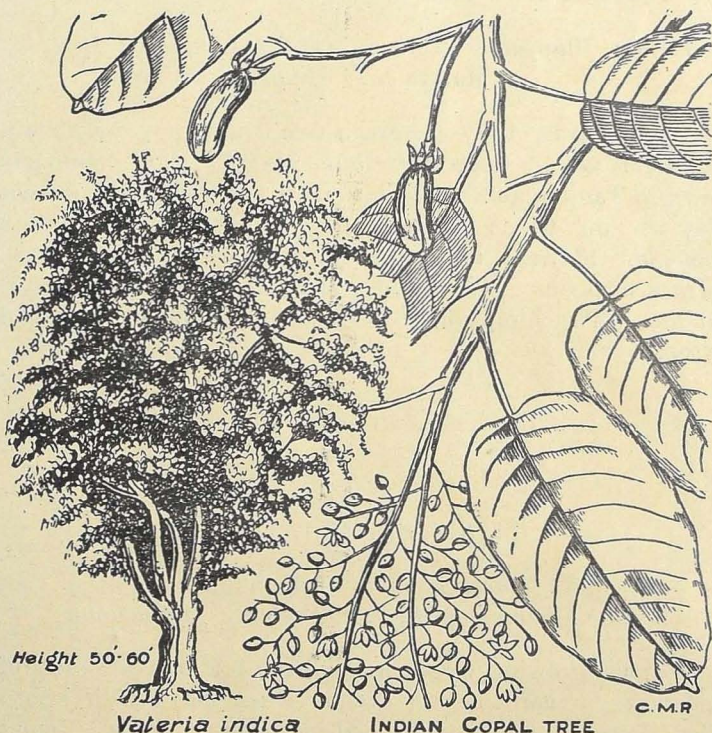


Thespesia populnea TULIP TREE

THESPESIA POPULNEA, Cav. (Portia, Tulip tree.)

Tamil : *Poovarasu*. Telugu : *Gangaravi*.
 Malayalam : *Poovarasu*. Kanarese : *Jogirale*.

A small well-branched symmetrical tree planted along road sides, in many parts of the State. The tree prefers light porous soil and thrives best in coastal regions. The bark produces strong fibre and the undeveloped fruits yield an yellow dye. Propagation is by means of cuttings of 18 to 24 inches which are planted along road sides during rains. Flowers yellow turning red. Flowers throughout the year. Suited for all districts in plains.



VATERIA INDICA, Linn. (White dammer or Indian Copal.)

Tamil : *Attam*. Telugu : *Dupadamaru*.
 Malayalam : *Kunturukkam*. Kanarese : *Bilidupa*.

A tall and majestic tree which is specially suited for regions heavy rainfall. Comes up exceedingly well in South Kanara and Malabar sometimes reaching 80 to 100 feet in height. Yields a resin. It is propagated by means of seeds. Very well suited to South Kanara, Malabar and Coimbatore. May be tried in other parts of the State with heavy rainfall.

BASSIA LONGIFOLIA, Roxb. (Honey tree.)

Tamil : *Illuppai*. Telugu : *Ippa*. Kanarese : *Ippe*.
Malayalam : *Irippe*.

A symmetrical leafy evergreen tree coming up well in wet and dry situations especially along coasts. Very commonly grown in Tanjore and South Arcot districts. The fleshy seeds yield an oil which is used for cooling and is valued in medicine. Flowers in February. Comes up well in all districts in plains especially in South Arcot and North Arcot, Tanjore, Tiruchirappalli, Coimbatore, Travancore and Mysore.

CASSIA SIAMEA, Lam.

Tamil : *Manja konnai*. Telugu : *Karumbi*.
Kanarese : *Semetangedi*. Malayalam : *Mannakonna*.

A quick growing small tree which presents a beautiful appearance in gardens and avenue when laden with bright yellow flowers. Easily multiplied by means of seeds. Comes up well in all plain districts especially Coimbatore, Madurai and Tirunelveli districts.

DELONIX ELATA, Gamb.

Similar to *Delonix regia*, but carries whittish yellow flowers. The tree is a good drought resistant and is becoming popular. Prefers sandy soil and thrives especially well along coastal districts. Thrives well in all the districts in plains especially Salem, Coimbatore, Madurai and Chingleput districts.

FICUS TSIELA, Roxb.

Tamil : *Kalicci*. Telugu : *Pedda juvvi*.
Kanarese : *Bilibasari*. Malayalam : *Kayali*.

A large spreading handsome tree with smooth bark, attaining a height of 80 to 100 feet. Suited for dry as well as wet areas and coastal areas. Propagated by means of seeds and cuttings. Bark gives a good fibre. Thrives well in Godavari, Cuddapah, Anantapur, Kurnool and Chingleput districts.

சிந்தாம தபோவன
வாசக சாலை.

HIBISCUS TILIACEOUS, Linn.

Tamil : *Malapoovarasu*. Telugu : *Erragogu*.
Malayalam : *Nirparuthi*.

A moderate-sized semi-deciduous tree reaching 35 to 45 feet well adapted to sandy coastal tracts. The wood is used for fuel and leaves as green manure. The bark gives an useful fibre which is employed in the manufacture of mats. Propagated by seeds as well as stumps. Well adapted to Ramanathapuram, Tirunelveli, Tiruchirappalli, Madurai and Chingleput districts.

MILLINGTONIA HORTENSIS, L.f. (Indian Cork tree.)

Tamil : *Maramalli*. Telugu : *Akasa malle*.
Kanarese : *Beratee*. Malayalam : *Katesam*.

A very tall straight evergreen tree sometimes reaching a height of 80 feet. Much used in upper and western India for avenues. The wood is used in timber and bark gives an inferior cork. Mostly propagated by cuttings as the tree does not seed in many localities. Comes up in Bangalore, Coimbatore, Tiruchirappalli, Chingleput, Kurnool and Travancore.

NOTICE

The Department of Agriculture, Madras, is publishing a journal monthly in Telugu, Tamil, Malayalam and Kannada.

2. It contains useful articles for the cultivators. The annual subscription is Rs. 2-4-0.

The subscription should be paid in person or sent by money order to the Agricultural Demonstrator of the taluk.

3. Agents are wanted in every village for selling the above journals on a commission of 25 per cent. These journals are available for sale in all Railway book-stalls run by Higginbothams.

4. The following are the advertisement rates for publication in each of the above journals:—

Full page	..	Rs. 25	} per insertion.
Half page	..	Rs. 15	
Quarter page	..	Rs. 10	

5. Agents are also wanted for securing advertisements in the above journals, on a commission of 25 per cent.