evergreen

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september 1981

Evergreen, the KFRI Newsletter is currently brought out in March and September each year and is intended for free private distribution within the Institute and the Kerala Forest Department. Free copies will also be sent, upon request, to other persons or institutions connected with forestry activities. The views expressed here are those of the authors and do not necessarily reflect views of the Institute. All interested persons are invited to send comments, opinions and short articles for inclusion in **Evergreen**. The Newsletter Committee reserves the right to choose among contributions and edit, when necessary. Address all communications to:

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Cover design and photography — Subhash Kuriakose

Editor's Column

This is the seventh issue of **Evergreen**, the newsletter of the Kerala Forest Research Institute. The newsletter started in March 1977 as an occasional means to pass on information on our activities, progress and problems to interested persons, mainly professional foresters of the State Forest Department. At first we simply called it 'Newsletter'; in March 1979, starting with the fifth issue, we named it **Evergreen**. The sixth issue was released in September 1979, after which there has been a gap of two years, as you will notice, before we could bring out this issue.

With this issue **Evergreen** is taking on a new format. It will be printed, instead of cyclostyled. It will also appear at regular intervels — in March and September each year, to begin with. The objectives, however, will not change. **Evergreen** will continue to be a means of communication between the researchers and the professional, often called, 'practising', foresters. An effective communication medium must have facility for communication both ways. We found that the organisational frame-work of **Evergreen** did not permit this in the past; consequently the flow of information has remained unidirectional.

We are now introducing a new feature — interviews with professional foresters and others connected with forestry activities — to break communication barriers and help crossfertilisation of ideas and concepts. We were fortunate enough to have an eminent forester to talk to **Evergreen** for the inaugural interview printed in this issue.

An additional feature we wish to introduce from the next issue onward is an 'Opinion Page'. Any interested reader from within the Institute or the Forest Department or outside may send short write-ups on any topic related to forestry, consisting of opinions, suggestions or queries, including criticism (compliments are also welcome !) of the contents of **Evergreen**. The communications will be edited, when necessary and printed in the 'Opinion Page'. Understandably, the Newsletter committee will reserve the right to select material for printing. We look forward to your co-operation.

How KFRI Can Help Foresters

P. M. Ganapathy, Director

The main objects with which the Institute is established are to undertake advanced studies in forestry, wood science and technology, and forest environment including flora and fauna to contribute towards better management of forests and utilisation of forest produce. A multi-disciplinary team of scientists is engaged in investigations in their respective fields of specialisation to develop in course of time a package of practices suitable to our conditions. Scientists in most of the disciplines contemplated are now in position and apart from building the infrastructure; they are carrying out investigations, the results of which are disseminated through Research Reports, publications in Journals and Information Bulletins. ' Interim results of immediate practical value are communicated in this newsletter.

Each of the major disciplines is organised as a Division with a senior scientist in charge of it. The functions and areas of interest of the Divisions are outlined below to enable the foresters to seek the help and assistance of the concerned scientists, when required.

1. Botany (Physiology)

The possibilities of rooting of stem cuttings of commercially important tree species, bamboos and 'reeds' are investigated to develop suitable techniques of vegetative propagation. Induction of flowering by chemical treatments is also studied to obtain early flowering in seed orchards and for hybridisation purposes.

2. Botany (Taxonomy)

A herbarium of forest tree species for reference and study and live collections of orchids and medicinal plants found in our forests are being organised. Identification of plants and updating of botanical nomenclature are looked after in this Division.

3. Ecology

The forest environment and eco-taxonomic features of juvenile and mature plants of commercial importance are studied to work out sound systems of management of natural forests and to identify trees, saplings and seedlings in the field.

4. Entomology

The insect pests in nurseries and plantations are studied to identify them and to evolve economical pest control strategies. Information is also gathered on the ecology of forest insects, in general.

5. Genetics

Establishment of seed orchards of important tree species to ensure supply of genetically improved seed material for future plantations, location of suitable provenances for plantation purposes and hybridisation to obtain the advantages of vigour and resistance to pests and diseases are among the activities of this Division.

6. Pathology (Fungal diseases)

Fungi causing diseases like damping off, wilt, canker, decay, etc. are isolated, identified and strategies for their control in nurseries and plantations are worked out.

7. Pathology (Non-fungal diseases)

Parasites like *'Loranthus'*, bacteria, viruses, etc. are studied to attempt economical control of damages caused by them to important plantation species.

3. Silviculture

Studies on nursery behaviour of species under local conditions, development of planting techniques in respect of lesser known species of commercial importance and studies on silvicultural treatments for management of natural forests are undertaken by this Division.

9. Soil Science

Investigations cover analyses of forest soils to find out soil improvement strategies for plantations, economical conservation measures to check erosion in plantations and fertilisation requirements to obtain better yield.

10. Statistics

Assistance is rendered in laying out properly designed experiments. Statistical analyses of data, and storage and retrieval of information of relevance to forestry activities are organised.

11. Wildlife

Survey and behavioural as well as ecological studies of larger mammals and birds in forests are undertaken to provide information for management of national parks and sanctuaries.

12. Wood Science and Technology

Studies are made on structure, properties, seasoning and preservation of lesser known species to suggest methods for rational utilisation of timber, bamboos, 'reeds' and canes.

While the emphasis is on applied research to find solutions to identified problems, studies of academic nature which form the basis for applied research are also undertaken to enlarge the frontiers of knowledge. It is our endeavour to develop a sound research base for enlightened forest management and help the forester in his task.

"Research is to see what everybody has seen and to think what nobody has thought".

—Albert Szent Gyorgi

A Simple Method for Extraction of Seeds of *Anthocephalus chinensis* *

The seeds of *Anthocephalus chinensis* are borne inside capsules which are aggregated on a fleshy, globose, receptacle. What is popularly called the fruit consists of the capsules together with the receptacle. Usually the 'fruits' ripen in September and turn orange-brown in colour when ripe.

For extraction of seeds, the 'fruits' are collected from the trees or from ground and dried in the sun.

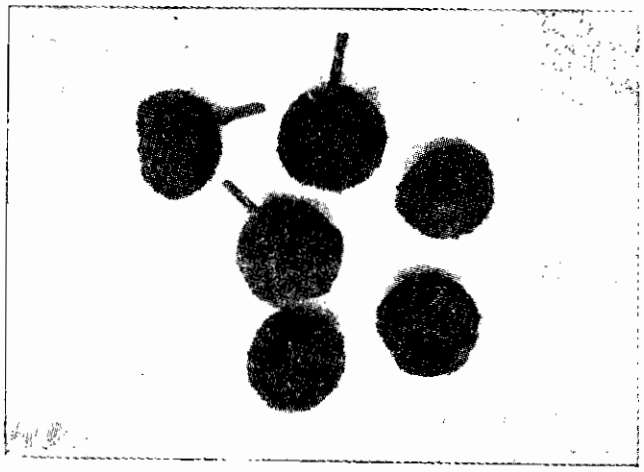


Fig. 1

The dried 'fruits' (Fig. 1) are rubbed against the rough surface of a simple device made as follows, until only the receptacle remains. A tin sheet of 0.1 mm thickness and of any convenient size (say, 20 cm x 20 cm) is chosen. Holes of about 0.4 cm diameter are made on this tin sheet by hammering with a nail repeatedly from one side. The uneven projections that appear on the reverse side (Fig. 2) act as the rubbing surface. During the process of rubbing, the capsules break and the seeds are freed. The disintegrated fruit-parts are collected and passed through a fine sieve (hole size about 0.5 mm). The finest kitchen sieve locally available is appropriate. The seeds, together with some fine particles pass through the sieve. This, when winnowed

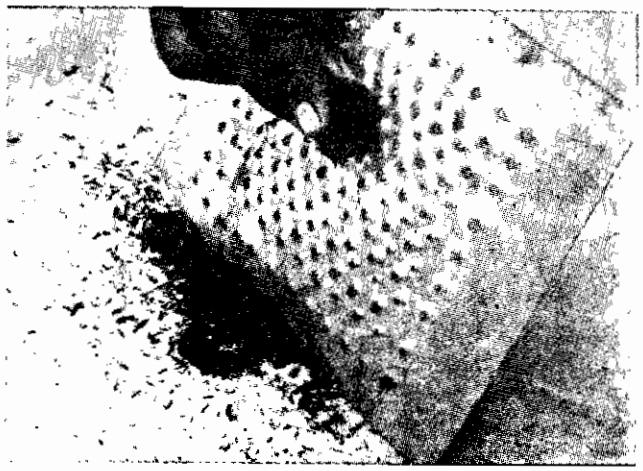


Fig. 2

(Fig. 3) gives seeds of about 95% purity. About 6 kg of dry fruits can yield 1 kg of seed.

Good germination was obtained when seeds were separated by this method, showing that the seeds were not damaged by rubbing.

K. C. Chacko
Division of Silviculture

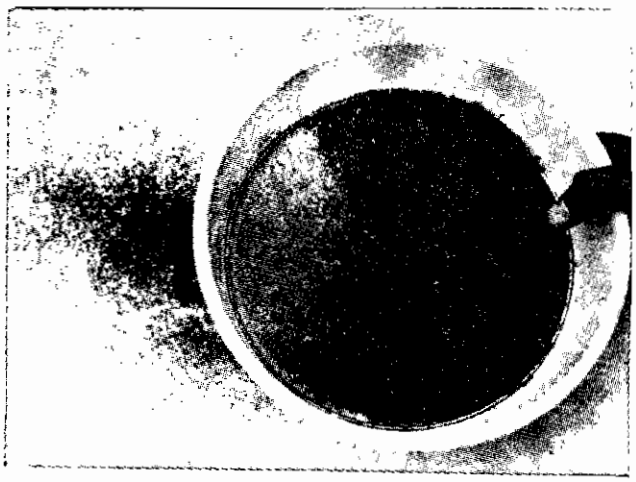
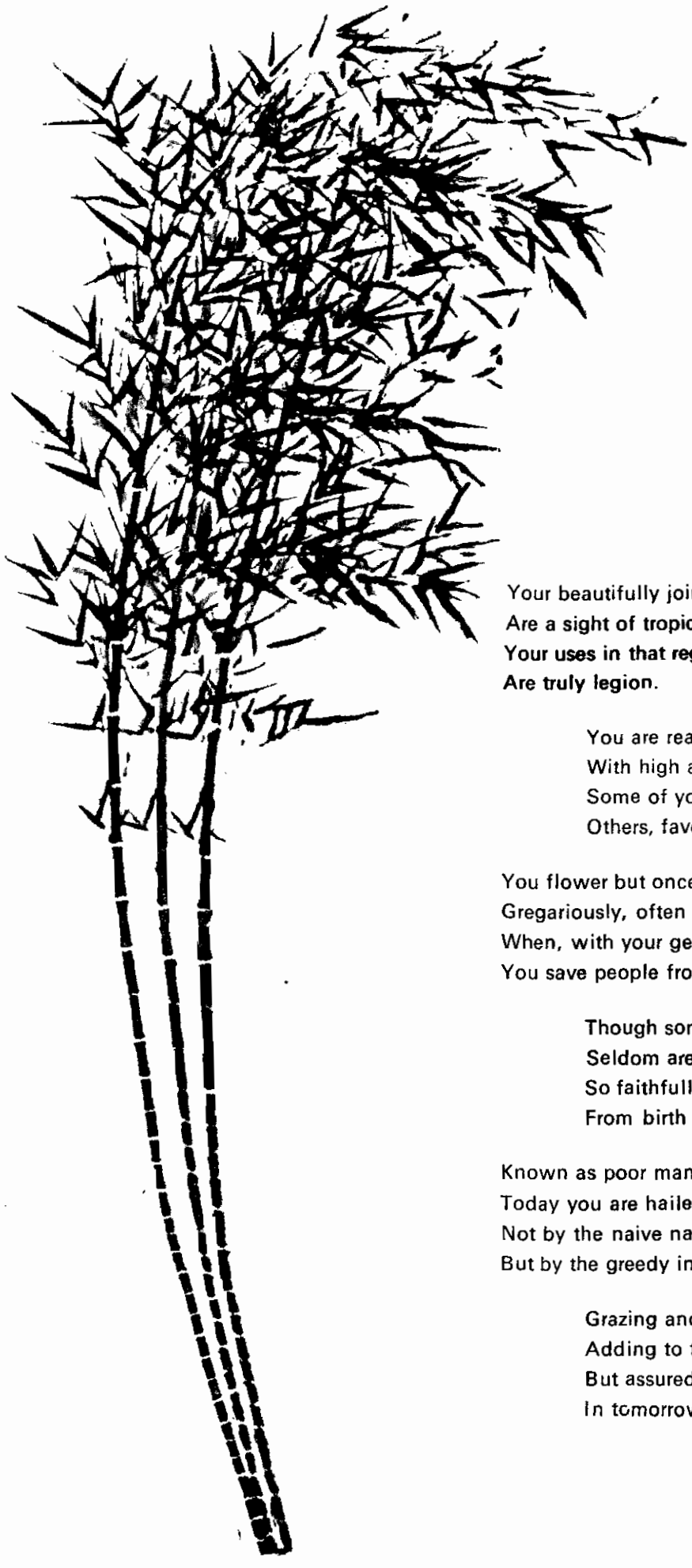


Fig. 3

* *Anthocephalus chinensis* (Lamk.) Rich. ex Walp. (Rubiaceae)
(Syn. *A. cadamba; A. indicus*)

Trade name — kadam

Local names — kadamba, attu-theku



BAMBOO

C. S. Venkatesh
Division of Genetics

Your beautifully jointed culms
Are a sight of tropical realms;
Your uses in that region
Are truly legion.

You are really grass
With high and woody phytomass;
Some of you are in fact giants,
Others, favourite browse of elephants.

You flower but once in your lifetime,
Gregariously, often coincident with famine,
When, with your generous seeding,
You save people from starving.

Though sometimes as thin as a reed
Seldom are you an unwanted weed;
So faithfully you serve man's every need,
From birth till death indeed.

Known as poor man's timber in times old,
Today you are hailed as green gold,
Not by the naive naturalist
But by the greedy industrialist.

Grazing and fire are your formidable foes,
Adding to the forester's woes;
But assured is your future,
In tomorrow's Agri-Silviculture.

Our Vanishing Medicinal Trees – 1. *Aegle marmelos*

या: फलिनीर्या अफला अपुष्पाया श्च पुष्पिणी: ।
बृहस्पति प्रसूतास्तानो मुञ्चन्त्वंहस: ।।

—Yajurveda

(Those with flowers and fruits and those without
All through Brihaspathi born
Oh! medicinal plants of forests
Pray, cure all our diseases and rid us of our miseries) *

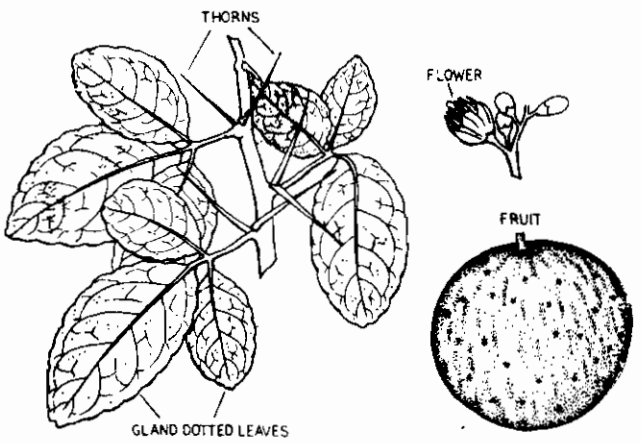
Apart from herbs and shrubs, trees provide some of the important ingredients of Ayurvedic medicines. For example, 4 of the 10 principal constituents of the well-known 'Dasamoolarishta' are obtained from trees. Starting with this issue of **Evergreen**, Professor V. P. K. Nambiar, who combines professional expertise in plant taxonomy with traditional knowledge of Ayurvedic practice and literature, will write a series of articles introducing some of our valuable, but vanishing medicinal trees. With ruthless exploitation and dwindling forest cover, many of our medicinal plants are being pushed into the list of 'endangered' species. Let us try to save them, as best as we can. (Ed.)

Commonly called 'bael' in English, 'vilwam' in Sanskrit and 'koovalam' in Malayalam, *Aegle marmelos* (L.) Correa (Family Rutaceae) is a medicinal tree that is fast disappearing in Kerala. In earlier times they were common in temple premises and house compounds. The Hindus consider the tree sacred and use its leaves for worship of Lord Siva. The tree is regarded as an emblem of prosperity and its destruction is believed to portend disaster.

The root of *Aegle marmelos* forms an important constituent of several Ayurvedic preparations. It is one among 'Dasamoola' and 'Panchamoola'. Ripe and unripe fruits, leaves, flowers and rind of the ripe fruits are also used in Ayurvedic medicine. The medicinal value is attributed to the presence of 'marmalosin', a furocoumarin-active constituent in the stem and root, tannin in the rind, fatty oil in the seeds and essential oil in the leaves.

At present, there is severe shortage of this important raw material for manufacture of Ayurvedic preparations. This has led to substitution by spurious materials which can produce undesirable and often dangerous results. We must take urgent and effective steps to protect the existing trees and to raise plantations of this species to meet the requirements, especially of roots, for Ayurvedic preparations.

The tree also has other uses. The wood is used for carving and for making charcoal. The gummy mucous substance covering the seeds is a good adhesive; it is also used to make varnish for pictures and to add brilliancy to water colour paints.



* Paraphrased by Dr. C. S. Venkatesh

Aegle marmelos is a deciduous thorny tree reaching a height of about 10 metres. Its bark is grey and wood is yellowish-white and lustrous. Alternate gland-dotted leaves with 3-5 leaflets, sweet-scented bisexual greenish-white flowers, and globose yellowish-grey fruits with hard rind enclosing many seeds in orange-coloured sweet pulp are other characteristics of the tree. In natural conditions it is found in association with *Randia dumetorum, Butea monosperma, Holarrhena antidysenterica, Ichnocarpus frutescens, Flacourtia indica,* etc.

The tree is reported to occur in sub-Himalayan forests, Central and Southern India and also in Bangladesh and Burma. It occurs in regions where the annual rainfall ranges from about 60 cm to 200 cm. It is seen scattered in deciduous forests throughout Kerala.

It is a drought-hardy species capable of tolerating considerable shade. It has moderate coppicing power and its superficial root system produces an abundance of root suckers. It is usually resistant to pests and diseases.

Natural regeneration occurs through seeds as well as root suckers. The plants can also be raised from seeds. The tree flowers during February / March. The fruits ripen in April. For artificial regeneration, ripe fruits should be collected from the tree and seeds separated. The seeds should be washed several times to remove the sticky pulp, rubbed with ash and then dried in the sun for a few days. The dried seeds can be stored and sown in May. The seeds germinate within three weeks. Seedlings raised in polythene bags can be transplanted in late July or early August in pits, 30 x 30 x 30 cm.

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Await !

A tentative check-list of medicinal plants of Kerala Forests giving Malayalam names, corresponding botanical names and families will shortly be released as KFRI Information Bulletin. This is being prepared by the Botany division.

Spike Disease of Sandal Spreads to Kerala

Till recently Kerala was known to be free from spike disease of sandal. Early last year, some abnormal trees were spotted at Marayur (Munnar) by Shri B. Radhakrishnan, Forest Range Officer. Detailed examination including grafting tests revealed that the affected trees had spike disease. The diseased trees can be distinguished from healthy ones by very small-sized leaves, shortened internodes of branches and sprouting of axillary buds. This disease has so far been reported only in Karnataka, Tamil Nadu and Andhra Pradesh. We are currently studying various aspects of the problem.

—Division of Pathology
(Non-fungal Diseases)

Tales Tree Rings Tell

As well as indicating the age of trees, annual growth rings can also reveal the dates of natural phenomena such as forest fires.

When low intensity fires spread through the forest the trees are for the most part unharmed, except for the formation of a few fire scars. A small portion of the cambium, the zone of tree growth, is killed by the heat of the fire and the bark falls away, leaving the scar.

By analysing these scars, foresters can determine the dates of past fires with surprising accuracy. A recent study found that Douglas fir and ponderosa pine forest near Kamloops experienced at least 22 ground fires between 1542 and 1927.

The study of the fire scars enables foresters to estimate how often fires have burned through particular forests, how large an area these fires covered, and what effects periodic burning has had on the vegetation.

—Source: Forestalk, Winter, 1980

Termites Attack Ipil-Ipil too

Shri V. V. Sudheendrakumar reports from Nilambur that termites attack seedlings of ipil-ipil also as in the case of eucalypts. About 25-50% of the seedlings in nursery beds were killed by termites at Nilambur this year. This nature of damage is similar to that in eucalypts.

Control methods recommended for eucalypt seedlings (vide KFRI Information Bulletin 3) should prove effective for ipil-ipil also.

— Division of Entomology

Forestry Is About People

Says **Dr. C. Chandrasekharan,**
Senior Forestry Planning Officer, FAO.

During his informal visit to the Institute on 13, August 1981, Dr. C. Chandrasekharan, Senior Forestry Planning Officer, FAO, Rome and formerly Director, KFRI was interviewed by Dr. R. Gnanaharan and Dr. K. S. S. Nair on behalf of **Evergreen.** Here is how the interview went.

Evergreen: Would you tell us in general about what FAO is doing in the field of Forestry ?

C. C.: FAO is the only world organisation which covers forestry in all its integrated aspects — from forest end to the market end. There are other organisations which deal with some aspects of forestry. For example, IUFRO deals with research, IUCN deals with conservation, water-shed management, etc. and UNESCO deals with scientific and educational aspects. Other specialised agencies of the UN like ILO, UNCTC, UNIDO, UNEP are also concerned with certain aspects of forestry.

Forestry is one of the several departments of FAO, which deals with food and agriculture.

Evergreen: One wonders why FAO is 'Food and Agriculture Organisation', and not, 'Forestry and Agriculture Organisation'. Does it indicate that forestry is a neglected area ?

C. C.: When FAO was formed nearly 30 years ago, the problem facing the countries was development of agriculture for production of food and the distribution of food, essentially.

Agriculture is an aspect of land use and forestry is also an aspect of land use. In any sound system of land use, agriculture and forestry must be integrated. The word 'agriculture' is often used in a broad sense to include forestry, fisheries, animal husbandry, etc.

Evergreen: Shall we go back to the FAO set-up?

C. C.: At present, forestry activities of FAO are grouped under four divisions — Forest Resources, Forest Industries, Policy & Planning and Operations. These divisions are subdivided into units dealing with (i) forest management including resources survey, man-made forests etc., (ii) forest conservation and wild-land management, (iii) forestry institutions, (iv) logging and transport, (v) mechanical forest industries, (vi) pulp and paper, (vii) project and sector planning, (viii) investment analysis, (ix) forestry statistics and (x) trade and marketing.

Evergseen: What is the necessity of the Policy and Planning Division? Does FAO influence policy matters ?

C. C.: FAO does not try to influence policies. Its contributions in this regard is through providing pertinent information and tools needed for problem identification and for formulating policies, programmes or plans.

Evergreen: Is it that the FAO presents the status as it is and the policy options ?

C. C.: More or less, yes, upon request by the countries.

Evergreen: What does planning involve ?

C. C.: Planning includes what to be done, how to be done, how to correct mistakes, how to evaluate and how to monitor. Planning needs information on resources available, cost benefit relationship and financial as well as socio-economic factors.

A project may be financially sound but may not exactly apply to a society. A benefit to a person may be a cost to the society. For example, quarrying or removal of a forest from a village may provide immediate profit or financial benefit but in the long run, may be a cost to the society because

of repercussions like drying up of springs, change in weather pattern, etc.

Evergreen: In general, there is a feeling that economists often convert everything into financial terms. Is there a mechanism by which tactors such as aesthetics can be taken into consideration in economic analysis ?

C. C.: Yes, even though it may not be perfect. There is difference between the economists and environmentalists in the way they approach a given problem, with consequent misunderstandings.

Quantitative sciences like physics, mathematics, etc. can rely on quantitative or cardinal measures. But, economists have often to satisfy themselves with less perfect methods of quantification and use approximations or ordinal values.

Evergreen: To come down to a specific case, in the context of the present Silent Valley debate, based on economic analysis, is it possible to come to a conclusion whether a dam should be built or not in Silent Valley ?

C. C.: Theoretically, yes, if we have full and perfect knowledge. Perfect conclusion is possible only when there is perfect knowledge. But, available knowledge is usually scanty and imperfect. In this particular case, most of the data we can feed into the analysis are subjective. Most people, for and against Silent Valley project, appear to be talking more on emotional plane rather than with any definite information.

In any situation of our planning, you cannot neglect the human being, who is the centre of attention, any way. When people live in substandard conditions, to what extent we can preoccupy ourselves with the environmental or ecological questions is debatable.

For example, is one and a half million tonnes of soil being washed into the Arabian sea a worst crisis than six million people living in dire malnutrition? We will have to leave it to the society to decide which one they price more.

Evergreen: Coming back to the FAO activities, how are the FAO operations in various countries funded ?

C. C: The field operations of the FAO Forestry Department which are aimed at strengthening the technical and scientific capabilities of the countries in the field of forestry and providing assistance to solve forestry problems are mostly financed by funding agencies like UNDP. The recipient countries decide priorities based on the national goals and objectives. For example, India is currently having projects related to crocodile farming, and development of alternative raw material for pulp and paper, funded by UNDP. On a smaller scale, field projects are also taken up utilising FAO's resources, under Technical Co-operation Programme.

Evergreen: What is FAO's philosophy for forestry development ?

C. C: During the last 10 years, there has been a growing realisation that forestry is more a matter concerning people than concerning trees. Essentially all the activities under forestry are meant for poeple. 'Forestry for People' was the theme of the World Forestry Congress held in 1978 in Jakarta.

There are several ways in which forestry can help people—for food, for development of village level industries, for improving quality of life, for ensuring fuel wood supply, etc. Forestry is clearly a multi-purpose activity. There has also been a growing emphasis in recent years on the need for integration of forestry with other land using activities including agroforestry.

Evergreen : In the specific situation of our State, do you think we have succeeded in taking forestry to the people ?

C. C: You should know it better. I would not like to make any comment.

Evergreen: What is your view on forestry educatton — whether it should be Universitv-type education or in-service training as it is practised in India now ?

C. C: Facilities for forestry education at professional level and training at sub-professional and lower levels are grossly inadequate in most developing countries. In many countries, it has gone through a series of changes. Some countries, for example, Thailand, Philippines and Indonesia, have developed University-based forestry education. There is a general opinion in many developing countries in favour of University-based forestry education, especially, because the old type of training was meant essentially to keep the forest estate protected from the public and did not have development orientation.

Evergreen: What has been the contribution of FAO to Indian forestry ?

C. C: The main contribution has been the strengthening of technical and planning capabilities through the field projects implemented by FAO in co-operation with the Government. For example, the project 'Pre-Investment Survey of Forest Resources' during 1965-1970 provided valuable information base for forestry development and helped to improve the methodology related to forest inventory, pre-investment appraisal, etc. FAO also in turn benefits from the experience of the countries.

Evergreen: As the first director of this Institute, what is your impression on the growth of KFRI in the last six years ?

C. C: The growth of KFRI has been extremely impressive in respect of infrastructural development as well as research activities. You are already handling many important problems and have been able to produce useful research results even in these formative years.

Evergreen: What do you think KFRI should be doing in the next 10 years ?

C. C: KFRI can contribute considerably to take forestry to the people and to raise their awareness regarding the importance of forestry for improving their lives.

Of course, your main mandate is to find solutions for forestry problems of the Kerala State through meaningful research. However, I feel that it should be, and is, more than a research institution of the State. The research carried out in KFRI will have an impact on, and relevance to, the forestry practices in other tropical areas. I wish KFRI will grow into an institution of national and international importance.

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Two More Teak Seed Orchards

This year KFRI has established two more teak seed orchards — at Palappilly and Arippa.

These are the second and third of its sort. The first teak seed orchard was planted at Nilambur in 1979. Forty selected teak plus trees of Kerala are represented in these seed orchards. This work was undertaken as part of the project on genetic improvement of teak in Kerala.

—Division of Genetics

BOOKS OF INTEREST

Tropical Forestry Papers No. 15 : **A guide to species selection for tropical and sub-tropical plantation**—by D. B. Webb, P. J. Wood & J. Smith

Commonwealth Forestry Institute, University of Oxford, 1980.

This is the 15th publication in an interesting series brought out by the Commonwealth Forestry Institute, University of Oxford, in which useful information on *Gmelina arborea* (No.1, 1968), *Terminalia ivorensis* (No. 5, 1968), *Pinus caribaea* (No. 6. 1973), etc., had been disseminated earlier. The present volume is a summation of experience of foresters engaged in species trials and plantation development in the tropics and sub-tropics. The object of the compilation, according to the authors, is to assist the foresters in proper selection of species in the initial phase of species trials programmes.

The choice of species for inclusion in the trials is based on (a) Objects of afforestation (b) Site factors, and (c) Propagation feasibility, which includes availability of seed, susceptibility to pests and diseases, etc.

Three methods have been suggested for arriving at an objective selection:

1. Computerised data base and retrieval programme.
2. Perforated card key.
3. Species selection tables.

A computerised species data base and retrieval programme has been set up in the Commonwealth Forestry Institute, covering 125 species, varieties and provenances. Workers who wish to select species suited to their site/production requirements are advised to write to Commonwealth Forestry Institute, South Parks Road, Oxford, OX1 3RB, United Kingdom. Suggestions are given for preparation of Perforated Card Key. Selection by Species Selection Tables, though tedious and least efficient, is considered the simplest method. Tables based on (a) Rainfall and temperature altitude and (b) Tolerance in different soil conditions, are given for elimination. Finally, data sheets are given for each species, in which relevant data have

been summarised to facilitate final selection. This includes taxonomy, natural occurrence, suitable ranges of climate and soil, silviculture, estimated yield per hectare, properties of timber, utilisation, nursery and planting practices and principal pests and diseases. For more detailed information, principal references have also been cited.

Among the important species included are, *Acrocarpus fraxinifolius*, *Albizia falcataria*, *A. lebbek*, *Anthocephalus chinensis*, *Aucoumea klaineana*, *Azadirachta indica*, *Casuarina equisetifolia*, *Cedrela odorata*, *Eucalyptus deglupta*, *E. grandis*, *E. tereticornis*, *Gmelina arborea*, *Grevillea robusta* (Queensland and New Guinea provenances) *Leucaena leucocephala*, *Maesopsis eminii*, *Samanea saman*, *Swietenia macrophylla*, *Tectona grandis*, *Terminalia ivorensis*, *T. superba* and *Toona ciliata*.

This publication containing basic information is helpful to those interested in making an objective choice of species for a particular situation. Experienced foresters can supplement the information given with local knowledge.

P. M. Ganapathy

RECENT PUBLICATIONS

Published in Journals

Mathew, G. 1981. A new report of *Pentalitomastix nacoleiae* Eady (Hymenoptera, Encyrtidae) as a polyembryonic parasite of *Parotis vertumnalis* Guen. (Lepidoptera, Pyraustidae) in Kerala, India. Entomon, **6** (2): 125.

Nair, K. S. S., Mathew, G. and Sivarajan, M. 1981. Occurrence of the bagworm, *Pteroma plagiophleps* Hampson (Lepidoptera, Psychidae) as a pest of the tree, *Albizia falcataria* in Kerala, India. Entomon, **6** (2): 179—180.

Venkatesh, C. S. 1981. Botanical research in relation to forestry. Indian J. Forestry, **4** (11): 1—15.

KFRI Research Reports

Nair, K. S. S. and Varma, R. V. Termite control in eucalypt plantations. KFRI Research Report 6— Final report of the research project, Entom 01/1976, February 1981.

Alexander, T. G., Balagopalan, M., Thomas, T. P. and Mary, M. V. Properties of soils under teak. KFRI Research Report 7— Final report of the research project, Soils 02/1977, June 1981.

Alexander, T. G., Balagopalan, M., Mary, M. V. and Thomas, T. P. Properties of soils under eucalypts. KFRI Research Report 8— Final report of the research project, Soils 03/1977, June 1981.

KFRI Information Bulletin

Termite control in eucalypt plantations. KFRI Information Bulletin 3, April 1981 (Division of Entomology)

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For KFRI Publications

write to :

Librarian,
Kerala Forest Research Institute,
Peechi - 680 653.

SEMINAR, CONGRESS, LECTURE.....

Dr. C. S. Venkatesh, Genetics, attended the 'National Seminar on Tree improvement' at Trichy in January 1981 and presented a paper entitled 'Improved eucalypts for planting'.

Dr. K. Balasubramanyan, Ecology, and **Dr. K. S. S. Nair,** Entomology, attended the 'All India Seminar on Status of Environmental Studies in India' at the Centre for Earth Science Studies, Trivandrum in March 1981.

Dr S. K. Ghosh, Pathology (NF), attended the '22nd All India Sandal Seminar' at Salem in May 1981 and presented a paper entitled 'Occurrence of spike disease of sandal in Kerala' by S. K. Ghosh, M. Balasundaran and Joseph Thomas.

Dr. S. K. Ghosh, Pathology (NF), gave an invited lecture on 'The technique of plant protoplast culture' at the Department of Microbiology, Indian Institute of Science, Bangalore in May 1981.

Dr. K. S S. Nair, Entomology, gave an invited lecture on 'Pest problems in natural versus man-made forests' at the Centre for Theoretical Studies, Indian Institute of Science, Bangalore in June 1981.

Shri M. Balagopalan, Soil Science, attended the '46th Annual Convention of the Indian Society of Soil Science' at IARI, New Delhi in August 1981 and presented a paper entitled 'Effect of lime on the growth of *Eucalyptus grandis* seeelings' by M. Balagopalan and T. G. Alexander.

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XVII IUFRO World Congress

Dr. J. K. Sharma, Pathology (F), attended the 17th IUFRO World Congress held at Kyoto, Japan from 6—12 September 1981 and presented two papers entitled '*Cylindrocladium* spp. associated with various diseases of *Eucalyptus* in Kerala' and 'Chemical control of *Cylindrocladium* causing damping-off, seedling and shoot blights of *Eucalyptus* in nursery', both by **J. K. Sharma** and **C. Mohanan. Dr. Sharma's participation in the Congress and the post-Congress study-excursion on** Forest Pathology from 13—17 September was made possible by a scholarship from **NORAD (Norwegian** Organization for Research and **Development).**

Also for the same Congress, **Dr. C. S. Venkatesh** contributed an invited paper entitled 'A strategy for accelerated selection and release of advanced-generation eucalypt species hybrid'. Another invited paper entitled 'Sandal spike diagnosis by visual observation and electrical resistance — a preliminary study in the field' was contributed by **Dr. S. K. Gosh, Shri. M. Balasundaran and Dr. R. Gnanaharan.**

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"We have modified our environment so radically that we must now modify ourselves in order to exist in this new environment".

—Norbert Wiener

KFRI Completes a DST Project

'Studies on changing pattern of man-forest interactions and their implications on ecology and management: A case study of the reserved and vested forests in Attappady in Kerala', has been successfully completed by KFRI. The project was sponsored by the Department of Science and Technology, Government of India. Divisions of Ecology, Soil Science, Botany and Statistics were associated with this project.

How was the gap filled ?

According to National Commission on Agriculture, in 1975, the projected requirement of fuel wood in India was 165 million cu.m. The recorded fuelwood production from forests was only about 17 million cu. m. Apparently, a large part of the requirement was met somehow. From where did the extra fuelwood come ? Obviously from farm lands, avenue trees and illicit fellings from forests.

—Extracted from: International Tree Crops Journal, vol. 1(1), 1980.

Campus news • Campus news

Water, water, everywhere, but not a drop to drink...

Though situated near the well-known Peechi Dam, KFRI is not fortunate enough to use the dam water. So KFRI had to make its own infiltration well and pumping system beside the Kannara river. Work on the water purification plant is yet to start. It seems KFRI has to go 'thirsty' for many more months.

Eminent architecht to design KFRI auditorium interior

The KFRI auditorium is getting ready. Construction of the main structure is over. Prof. B. S. Ramakrishna, Vice-Chancellor, University of Hyderabad is designing the interior of the auditorium.

Dream come true!

The long-delayed construction of KFRI residential quarters is showing marked progress. Already 16 type I quarters have been occupied and 20 type II quarters are almost ready for allotment. The construction of type III quarters is progressing.

Joined KFRI recently

Scientific staff

E. Muhammed, B. A.	—	Silviculturist
S. Sankar, Ph. D.	—	Scientist, Soil Science
M. I. Muhammed Ali, M. Sc.	—	Research Assistant, Plant Pathology
C. N. Krishnan Kutty, M. Sc.	—	Research Assistant, Statistics
P. V. Unneen Kutty, M. Sc.	—	Research Fellow, DST Project
M. K. Raveendranathan, M. Sc.	—	Research Fellow, DST Project
K. Chandrasekharan Unnithan, M. Sc.	—	Research Fellow, DST Project

Technical staff

K. R. Mukundan, B. Sc. (Engg.)	—	Engineer
N. Sarojam, B. Sc., B. Lib. Sc.	—	Library Assistant
A. K. Sumam, B. Sc., B. Lib. Sc.	—	Library Assistant
V. Y. John	—	Overseer

Administrative staff

Muhammed Usman, B. A.	—	Registrar
V. K. Mohanan, B. A.	—	Office Assistant
K. K. Thomas, B. A.	—	Office Assistant
P. C. Shelly	—	Stenographer
C. K. Vincent	—	Bus Conductor
K. P. Balan	—	Cook cum attendent
M. K. Krishnankutty	—	Watcher
V. N. Balakrishnan	—	Watcher

Left KFRI recently

Scientific staff

Prof. B. S. Rao, Ph. D.	—	Scientist, Wood Science
P. V. Balakrishnan, M. Sc.	—	Research Assistant, Wildlife
Joseph Thomas, Ph. D.	—	Research Assistant, Plant Pathology

Technical staff

V. N. Vappicha, Ph. D.	—	Project Engineer
R. Manoharan, B. Sc., B. Lib. Sc.	—	Library Assistant
V. K. Anilkumar, B. Sc., B. Lib. Sc.	—	Library Assistant

Administrative staff

M. P. Madhavan Nair, B. A.	—	Registrar

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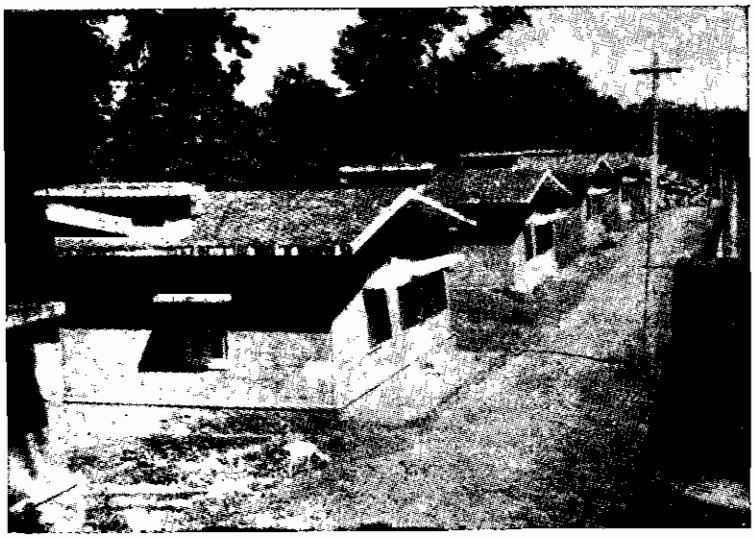
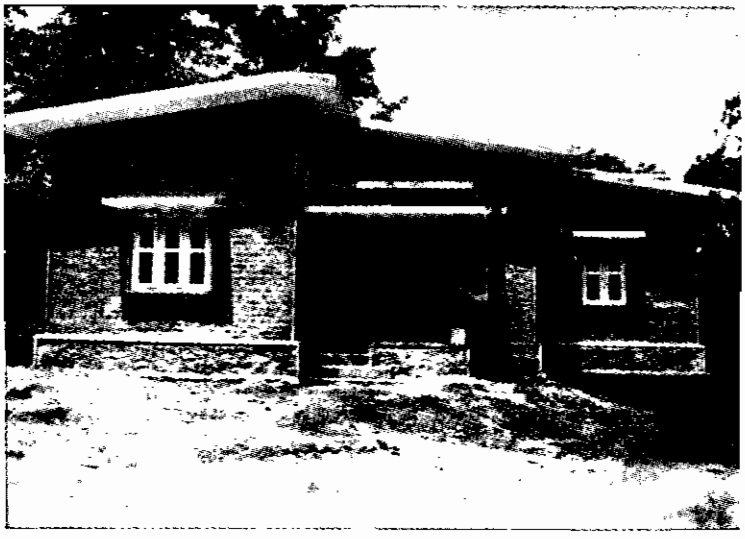
KFRI Residential Quarters at Peechi

Occupied →





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