



भारत
ICAR

fish technology

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Marketing of Sardines packed in Pouches
Dr. E. G. Silas, Director, C. M. F. R. I., handover the first packet to
Shri. P. K. Sadanandan, Vice President, Seafood Exporters' Association of India



CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY

(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)

MATSYPURI P. O., COCHIN - 682029

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Sardines Packed in Pouches

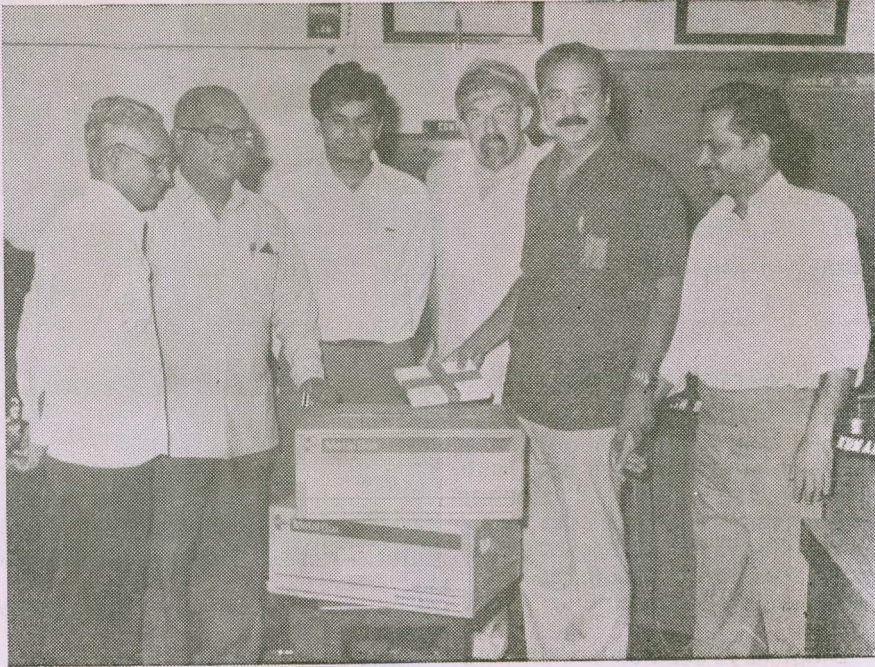
Test marketing programme launched

For the first time in the country, CIFT has launched the sale of sardines processed in a novel form of packaging.

Traditionally, sardines are packed in metallic cans. The new pack takes the form of a flexible pouch within a carton.

In a function held at CIFT on June 24, 1985, Dr. E. G. Silas, Director, CMFRI, Cochin, handed over the first packet of the pouch-packed sardine to Shri P. K. Sadanandan, Vice president, SFEAI. Mr. Amitabh Kant, IAS, General Manager of MATSYAFED, Kerala, presided over the function.

Welcoming the gathering Mr. M. R. Nair, Director, CIFT, said



Mr. Keith Derrek Juffs (3rd from right) with Shri M. R. Nair, Dr. E. G. Silas, Shri Amitabh Kant, Shri P. K. Sadanandan and Dr. K. Gopakumar

that the packs being distributed were produced using facilities made available to the Institute by the Metal Box P. I. C. England, in collaboration with the Tropical Development and Research Institute, London. CIFT had been

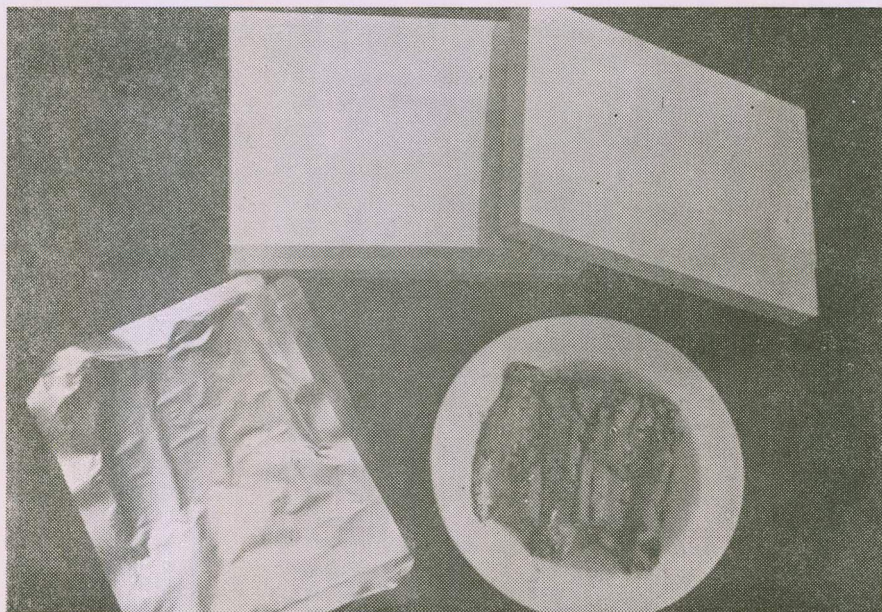
evaluating the use of these retortable packs for fish products for several years, he said.

Explaining the significant advantages of the use of the pack to the consumers, Mr. Nair said that heat processing time was less for the new packing method than that needed for canning and consequently the product would have improved texture and flavour. The pack was easy to store, could be opened without the use of implements and was simple to dispose of, he added.

Mr. Nair said the pouch would be produced by Indian packaging companies using indigenous raw materials. This was an important consideration since the plate for cans had to be imported.

Mr. Keith Derrek Juffs, Director, K. M. Packaging services Ltd., London, also spoke on the occasion.

Dr. K. Gopakumar, Project coordinator of the CIFT-TDRI collaboration project proposed vote of thanks. ○



Sardines packed in Pouches

Isinglass from Eel fish air bladders

Subratha Basu and
Dr. C. C. Panduranga Rao

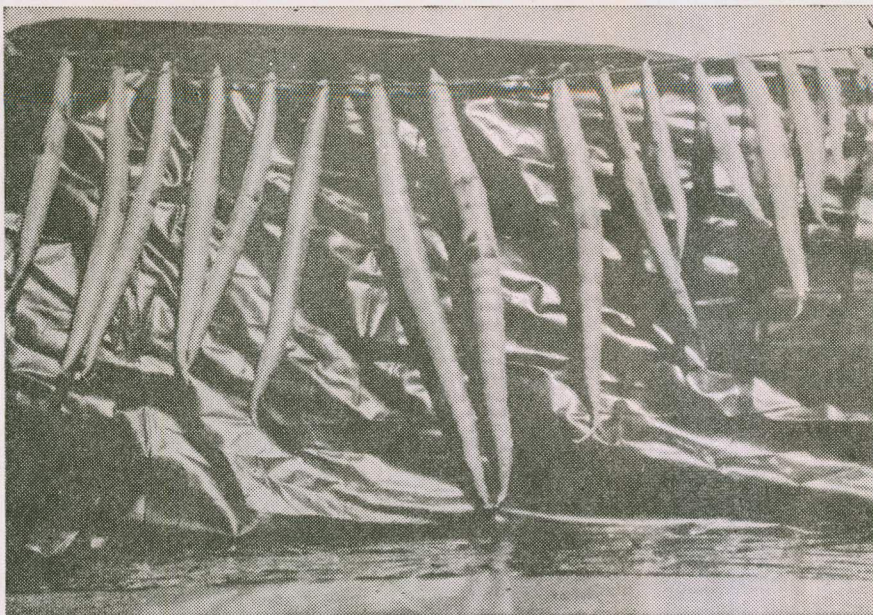
Scientists of Kakinada Research Centre
of CIFT

Isinglass is fish air bladder, which is washed, dried and made into special form by mechanical means. Air bladder of fish is a sac with membranous walls and gaseous contents situated above the stomach and beneath the backbone. Its major function is to help the fish in maintaining its position in water.

Isinglass is used as a clarifying agent for beverages such as wine, beer, vinegar and also as an adhesive base in confectionary products. Considerable quantities of dried air bladders are exported from India mainly to serve as raw material for production of isinglass development of technology for production of isinglass indigenously, and export of finished product are expected to earn more foreign exchange for the country and better remuneration for the fishermen.

Kakinada Research Centre of C. I. F. T. has, as a result of research work carried out during the last few years, developed technology for the production of isinglass in strip form from air bladders of fish. The important steps in the preparation of isinglass as per CIFT method are as follows:

- i) Collect fresh air bladders from fish and wash thoroughly with water to remove sand and dirt.
- ii) Split open the bladder, and remove blood, membrane etc., with clean cold water.
- iii) Dry the washed bladders by hanging them from ropes in shade.
- iv) Cut the dried air bladders into 0.5 to 1 cm long strips of about 0.5 to 1.0 cm width.
- v) Pack the strips in polythene bag for clarification of beer.

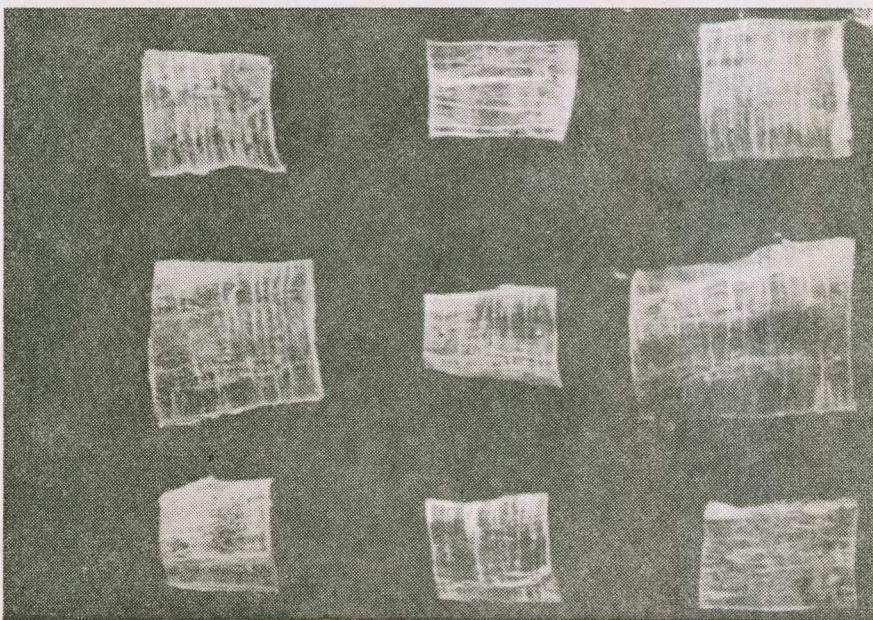


Eel fish air bladders

The isinglass in strips form is to be brought into colloidal suspension with sulphurous acid and tartaric acid before it can be used for beer clarification.

Isinglass developed by the Research Centre was tested under commercial conditions in Artos Breweries, Ramachandrapuram (A.P) employing over, 25,000 litres of beer at a time. The results demonstrated the advantages of using isinglass developed by CIFT.,

compared to the existing process of beer manufacture where isinglass is not employed. Use of isinglass was soon to reduce the suspended solids in the beer from 2% to 0.05%, increase filtration rate from 2500-3500 L/hr to 11400 L/hr and reduce consumption of filter aid from 100-150 gm. per 100L. to 53 gm. per 100L. This leads to a substantial saving to the beer manufacturers. Isinglass does not impart any undesirable property to the beer. ○



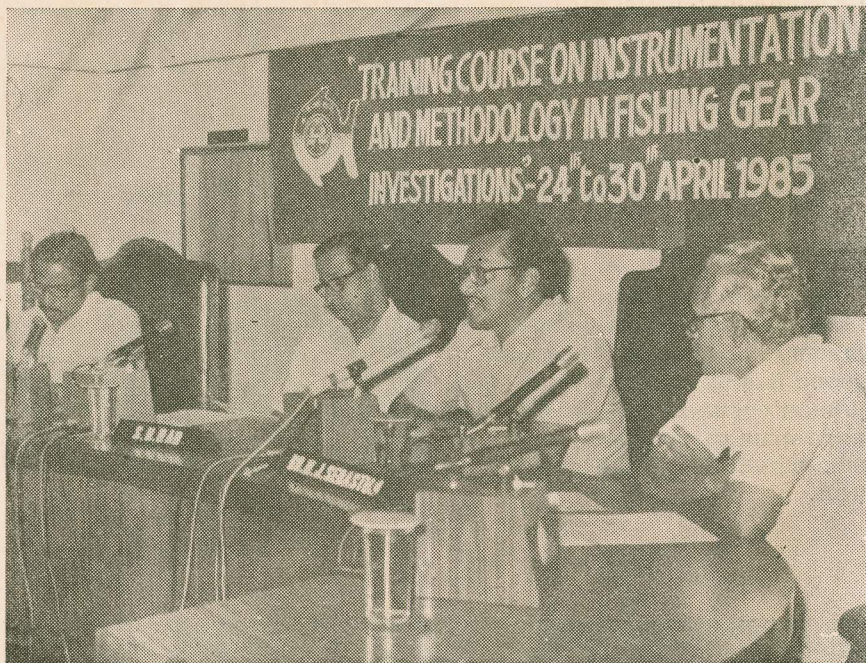
Isinglass strips from eel fish air bladders

The seven-day training on Instrumentation and Methodology in Fishing Gear Investigation concluded on April 30, 1985 at CIFT.

Thirty persons representing eight States participated in the course. The aim of this training course was to make aware of the instrumentation technology developed in CIFT to the concerned scientists/engineers/teachers in the country and train them to use it for acquiring the relevant data on the operational features of the fishing gear system and the marine environment so that the related fishing gear investigations can be carried out systematically with faster and time bound results.

The modern approach in fishing gear research involves an additional component, namely, analysis of the fishing gear as a hydrodynamic system rather than a more biological device. This is possible only if the relevant operational parameters of the system could be monitored simultaneously and instantaneously. The electronic wire telemetering instruments developed in CIFT could monitor the parameters separately. A new equipment recently developed in CIFT, namely, "Universal Marine Telemeter", can

Training on Instrumentation and Methodology in Fishing Gear Investigations



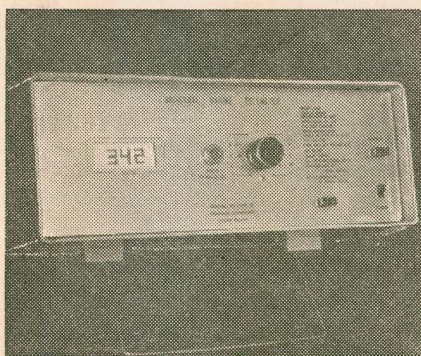
monitor more than 15 parameters relevant to the operation of the system under water, the operation of the craft and the environmental features of the gear under water. The data thus obtained are useful for better understanding of the underwater system and the correlation between the environmental parameters and the catch obtained.

The programme included theoretical aspects of the hydrodynamics, the scope of utility of wire telemetering instruments, extensive operation of instruments in the field and acquisition of data under operating conditions of the craft and gear. Theory classes on the hydrodynamic analysis of the gear system were also conducted.

The instruments developed at the Institute for acquisition of the relevant data simultaneously were

put to operation for three days in sea during the training course. The parameters of the gear system and its environment, which were monitored are:

1. Speed of motion
 - (2) warp load
 - (3) trawl depth
 - (4) net-resistance
 - (5) side way tilt of otter board
 - (6) fore and aft tilt of otter board
 - (7) angle of attack of otter board
 - (8) mesh shapes of the net
 - (9) water flow inside the net
 - (10) catch in the code-end
 - (11) vertical opening of the net
 - (12) temperature at trawl-depth
 - (13) salinity at trawl-depth
 - (14) solar radiation at trawl-depth
 - (15) water current and
 - (16) catch load.
- The main instrument used for the studies, namely, the Universal Marine Telemeter, has got facilities for monitoring more than 15 parameters mentioned above. ○



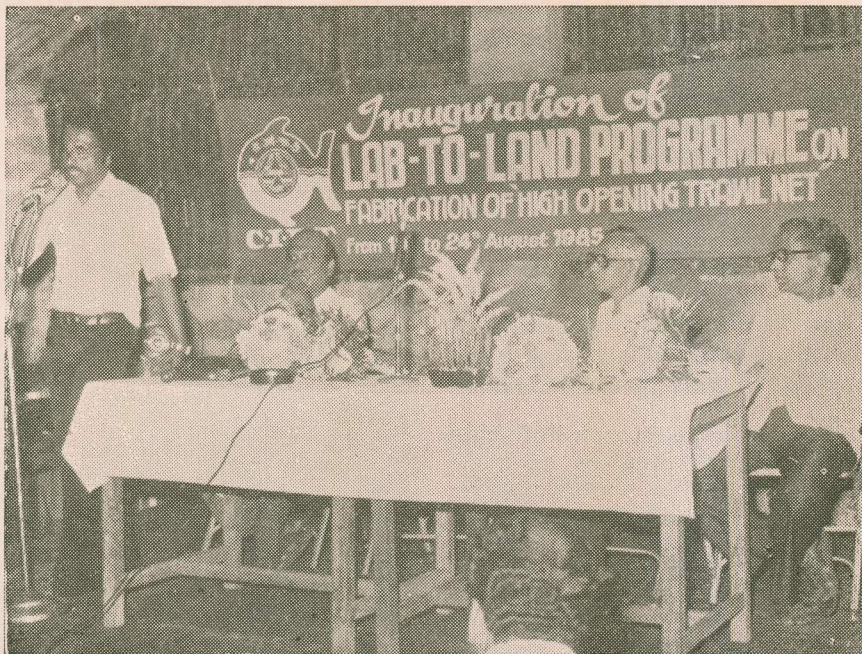
The receiver unit of the Marine Telemeter which is kept onboard the vessel for simultaneous acquisition of 15 parameters from the under water system and that of the craft

HIGH OPENING TRAWLS CATCH MORE FISH

High opening trawls are improved type of nets designed and developed by CIFT. It has been proved that catch of fish is considerably more in high opening trawl nets as compared to the ordinary trawl nets being operated at present.

In the third phase of the Lab-to-Land programme, CIFT adopted 35 fishermen families at Puthiyappa in Calicut District. The aim of the programme was to teach them how to fabricate different size of high opening trawls according to the designs. This included reading of the designs, cutting and tailoring of the webbing, and the final assembling of nets.

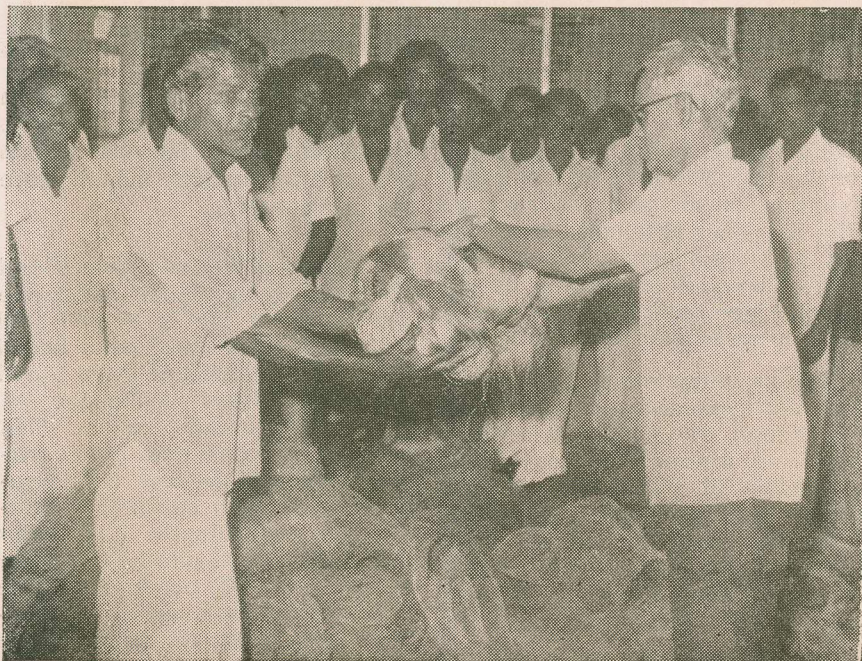
All the participants were traditional fishermen, fishing being the primary occupation. They used to spend five to six months in their primary occupation. Net mending and repairing are their subsidiary occupation during the rest of the year.



None of the 35 participants in the training programme possessed his own fishing craft and gear. All are employed as labourers in sea fishing. The fishing season is around the year and the peak season for fishing is reported to be August-September.

Sardine, mackerel, prawn, sole, ribbon fish and silverbelly are the common fishes caught in this area. Ninety percent of the catch is sold to dry fish merchants and the remaining quantity processed into cured products by the fishermen and sold in the market.

The programme was inaugurated by Shri M. R. Nair Director, CIFT in a function held at Govt Fisheries High School, Puthiyappa, on 19th August 1985. Shri. T. Aravindakshan, Deputy Director of Fisheries, Calicut, presided over the function. Chelannoor Block Development Officer also spoke on the occasion. Shri M. K. Kandoran welcomed the gathering and Shri. Unnikrishnan Nair proposed vote of thanks.



Shri. M. R. Nair, Director, CIFT distributes inputs

IMPROVED CLAM PROCESSING BRINGS MORE INCOME

Clam is a food item rich in protein and minerals. The Vembanad lake which extends from the south of Cochin Port to the extensive paddy fields of Kuttanad in Kerala is the richest source of clams. The shell of clam is the most important source of calcium carbonate made use of in the cement industry. A small portion of clam collection is boiled to recover the meat which is sold in local markets for human consumption. But no serious attempt was made in its preservation and utilization by applying appropriate technology.

Clams are heated in suitable vessels for about 30 minutes. Then the meat and shell are sep-

arated by rigorous shaking through a specially designed basket. Cost of fuel material for boiling clam is a major problem for womenfolk as it is very costly. They have either to go to distant places for collecting fuel material or purchase it locally. Each family spends about Rs. 8/- a day for fuel alone. Therefore, CIFT designed and developed an improved hearth for heating clam with paddy husk as fuel. This reduced the cost of fuel to Rs. 2/- only, thus saving Rs. 6/- per family per day.

In the third phase of the Lab-to-Land programme taken up in February - March 1985, fifteen families engaged in clam collection were adopted in Vaikom. Each adopted family was pro-

vided with one hearth. Several demonstrations were also held to train them on the use of the new hearth.

Improved methods for handling and packing clam meat were also demonstrated. Required inputs were supplied to the adopted families. This hygienic way of handling and packaging clam meat resulted in selling it at higher prices in local markets for home consumption.

As a result of adopting the improved hearth for cooking clam meat and its handling and packaging, the income of an adopted family has been increased to the extent of Rs. 150-200 per month.

○

ICAR LLP ADVISORY COMMITTEE MEETS

The Zonal advisory (Zone VIII) committee of the ICAR Lab-to-Land Programme in Kerala met in Cochin on December 12, 1985 to review the progress of its third phase. Representatives of Kerala Agricultural University, Trichur, Krishi Vigyan Kendra, Mitraniketan, Trivandrum and four ICAR institutes—CIFT, Cochin, CMFRI Cochin, CTCRI, Trivandrum and CPCRI, Kasaragod—took part in the meeting held at the conference hall of CIFT, Cochin.

Inaugurating the meeting, Mr. M. R. Nair, Director of CIFT, said that the transfer of technology programme launched by the Indian Council of Agricultural Research in 1979 in connection with its

Golden Jubilee Celebrations would continue for another three years, in spite of the fact that no special provision had been earmarked for this in the VIIIth Five Year Plan. "In the third phase of the programme which commenced in April 1985, 2079 families have been adopted in 13 districts of the state covering 53 villages". Giving further details about the adopted families Mr. Nair said that they include marginal farmers (46 per cent) small farmers (18 per cent), and landless agricultural labourers (36 per cent). While adopting these families on the basis of socio-economic survey, special attention was given to families belonging to scheduled castes and scheduled tribes. Thirty eight per cent of the

adopted families belong to scheduled castes and scheduled tribes, Mr. Nair said.

Lab-to-Land Zonal co-ordinator, Dr. S.D. Rai, gave a brief account of the implementation of the programme in Kerala. He emphasised the need for involving more and more women as the beneficiaries of the programme. "This is the current thinking of the Ministry", he said. Dr. Rai stressed the need for linkage between the beneficiaries and the would be beneficiaries with the help of the State and Central Government Officials.

The representatives of each institute reviewed the progress of

(Continued on page 9)

Curing is the traditional, cheapest and oldest method of fish preservation in our country. We used to export sizable quantities of cured fish to Malayasia, Singapore, Srilanka, African countries and also to some Western countries. With the advent of freezing and canning, the importance of curing as a fish preservation method diminished.

Taking sea fresh fish in prime condition to the interior parts of the country is, as yet, a bit difficult and costly in our country.

Curing, however, remains the only cheap and acceptable method of making fish available to the rural poor, in the interior parts of the country and therefore still continues to be an important method of fish processing.

By and large, the people engaged in curing are a bit reluctant to adopt scientific methods of processing. Compared to the industrialists in the freezing and canning fields, the fish curers are backward educationally as well as financially. Because of this, fish curing industry continues to be rather primitive even today.

IMPROVED METHOD OF FISH CURING

The present method of fish curing is most unscientific, generally, poor quality fish is used for making cured products and the salt used is mostly of a very low quality containing a lot of dirt and sand. Fish using this type of salt, without proper care for the hygienic conditions, are naturally of low quality. Even good quality water is not available in such fish curing yards.

The fish landed are just stacked in big cement tanks with alternate layers of salt. The importance of keeping the premises neat is also often not realised. After keeping the fish in salt in this type of tank for two or three days, the fish is taken out and sun dried on the open beach. In this process, it gets contaminated with a lot of sand and mud; and this is then heaped on the ground itself without proper packing.

Fish cured in this way often shows contamination with red halophilic bacteria and these products cannot be stored for more than two or three weeks at the most.

The CIFT has standardised a method for preparing good quality cured fish, a brief outline of which is given below.

METHOD:

The fresh fish landed is immediately washed in clean sea water to remove slime, adhering dirt, etc. These are then taken to the fish - curing yard where very strict care is to be taken to maintain hygienic conditions and quality. Processing work should be done on carefully cleaned tables to avoid contamination with sand, dirt etc. It is advisable to use water chlorinated upto 10 p. p. m. for all these cleaning operations. On the processing tables, the fish is dressed, removing the viscera. In the case of fishes like sardines etc. it is advisable to remove the scales also to improve the appearance of the final cured product. The viscera should be immediately removed to the waste basket kept under the tables. Care should be taken to keep the tables always clean. In the case of small fishes, evisceration and scaling is not practicable commercially. In such cases fish is salted directly.

The dressed fish is then washed in good quality water and the water is allowed to drain completely. This can be easily done in perforated plastic containers. After complete draining, the fish is taken to the salting table where good salt is applied to the fish uniformly by hand. Care must be taken to keep the hands of workers clean for this operation. In general, the salt-to-fish ratio can be 1:3, 1:5



Traditional method of Fish drying

and 1:6 for large, medium and small fish respectively.

After salting, the fish is stacked very carefully in cleaned cement tanks and kept for at least 24 hours in these tanks. After this, the fish is taken out and just rinsed in salt water to remove excess solid salt adhering to its surface.

The salted fish is then dried to a moisture content of 25% or below on clean raised drying platform. At every stage, extreme care must be taken to maintain proper standards of hygiene.

The common defect observed in salt cured fish is the attack of fungus and red halophilic. This can be effectively controlled by the treatment with calcium propionate. Dried fish is sprinkled with 0.1% calcium propionate before packing the treated fish which can be packed in suitable lots in polythene bags for retail marketing. For wholesale marketing, the fish can be packed in alkathenelined gunny bags. This type of packing prevents excessive dehydration during storage as well as contamination with harmful bacteria.

When the fish is soaked in water just before cooking to remove excess salt, this preservative is also removed. Calcium propionate is known to be a completely safe, harmless and acceptable chemical preservative



Improved method of Fish drying

for food materials. Fish preserved by this method can be kept in very good condition for a minimum period of eight months.

ADVANTAGES OF THE METHOD

1. The method is very simple and can be easily adopted by the common man.
2. It prevents contamination with halophilic and other harmful bacteria and enhances the storage life of the cured fish considerably.
3. Calcium propionate does not affect the colour, smell, or taste of the cured fish in any way.
4. It is comparatively a very cheap method. Considering the enhanced shelf life and increased price that can be realised by curing fish by this method, the slight increase in the cost of production can be treated as negligible. ○

(Continued from page 7)

implementation in their respective fields since the last meeting of the committee. Mr. M. K. Kandoran, Scientist - in - Charge, Extension, Information & Statics Division of CIFT, informed the committee that the institute had adopted 100 families, 35 in Kozhikode district, 15 in Kottayam district and 50 in Trivandrum district. In Kozhikode district intensive training was given to fisherwomen to fabricate high opening trawl nets developed by CIFT. Fishermen were also

trained to reorient them towards the new technology, he said.

In Kottayam District, the use of a special hearth designed and developed by CIFT for boiling clam meat was popularised. This low-cost fuel-saving hearth would increase the income of the fishermen.

Fabrication of 50 lobster traps as designed by CIFT has been completed in Trivandrum and this would be distributed among fishermen, he said.

In his concluding remarks, the zonal Co-ordinator suggested that necessary inputs should be made available to the adopted families without waiting for formal sanction from the Council so that the programme could be implemented speedily and effectively.

Earlier, Dr. K. Gopakumar, SIC, Processing Division of CIFT welcomed the members of the committee. Mr. MK. Kandoran proposed vote of thanks. ○

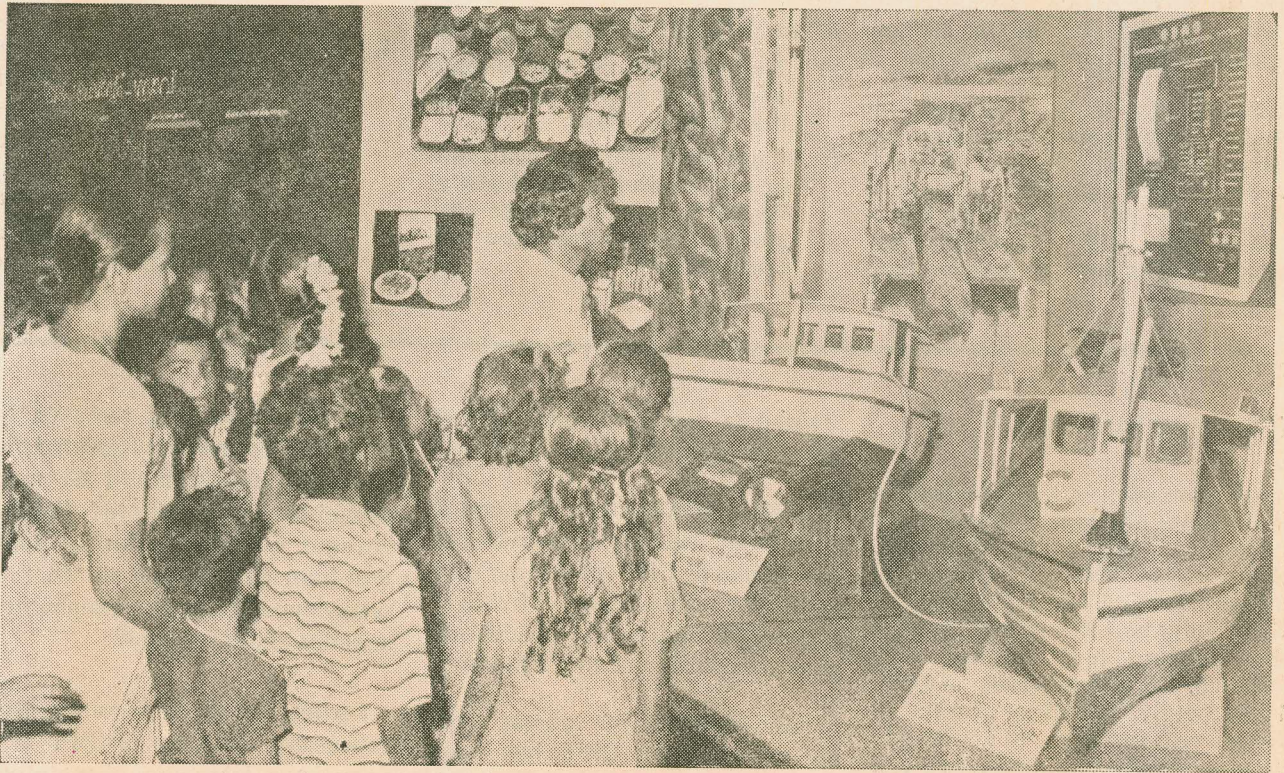
Exhibitions

CIFT STANDS FIRST

The stall put up by CIFT at the Fisheries Carnival - Matsyamela 1985 at Kanakakunnu Palace in Trivandrum has been adjudged best among the Central Government stalls. The exhibition was organised by the MATSYAFED during May 17-19, 1985.

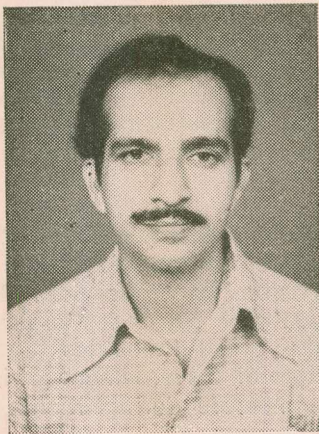


Chief Minister Shri. K. Karunakaran presents the shield



A view of the CIFT stall at Marine Drive, Ernakulam, in connection with Indian National Congress Centenary Exhibition in December, 1985

Three Scientists of CIFT have been awarded Ph. D. Degrees. Mr. K. G. Ramachandran Nair was awarded the doctorate by the University of Kerala, and Mrs. Chinnamma George and Mr. N. Unnikrishnan Nair were awarded doctorates by the Cochin University of Science and Technology. Dr. K. G. Ramachandran Nair and Dr. Mrs. Chinnamma George conducted their studies under the guidance of Dr. K. Gopakumar, Scientist - in - Charge, Processing and Packaging Division of CIFT. Dr. N. Balakrishnan Nair, Professor and Head of the Department of Aquatic Biology and Fisheries, University of Kerala, guided Dr. N. Unnikrishnan Nair in his research.



Dr. Ramachandran Nair

"Biochemical Investigations on Fish lipids" was the subject on which Dr. Ramachandran Nair conducted his studies. The fatty acid distribution pattern in fish and marine animal oil is very complex from the stand point of molecular structure and overall composition at any given time for each species. Similar to the influence of maturity and sex of fish on fatty acid composition, the environmental factors also affect the make up of body oil fatty acids. It varies from species to species and also to an even great extent among individual fish within the species, depending on the environmental conditions. Many biologists have put forward

Doctorates Awarded

theories based on observations on variations in fatty acid composition in relation to the natural environmental conditions. Dr. Ramachandran Nair studied the effect of dietary constituents and environmental conditions along with effect of age, sex and spawning on the fatty acid composition of *Tilapia mossambica*, a common fresh water fish, under artificially created and controlled conditions. These included the effect of dietary fatty acids, temperature, starvation and change of habitat. The investigations also included the study of the fatty acid and phospholipid composition of a number of marine fish.

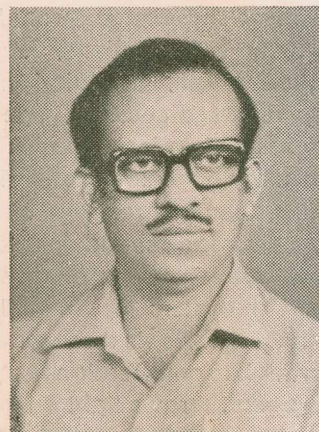
The study revealed that lipid composition depends on a number of factors, and the dietary fat temperature and habitat have immense influence on the depot fat composition of fish, besides resolving the many aspects of fish biochemistry which remained unsolved till this investigation was initiated.

The subject of study of Dr. Chinnamma George was "Biochemical changes associated with processing of shell fishes and flavour constituents of bodymeat and clawmeat of crab". In her studies she has made detailed investigations on the biochemical composition of crab, mussel and clam muscle with particular emphasis on protein fractions, amino acid composition, and flavour bearing components. Influence of season on the chemical composition of the muscle of these shell fishes has also been elucidated. The role of proteolytic enzymes like cathepsins and peptidases on the spoilage of crab meat during storage under various temperatures both ambient and refrigerated has been brought out. The storage characteristics of these shellfishes as



Dr. Chinnamma George

frozen and iced, has also been studied. The muscle of crab, mussel and clam could be stored in good condition for 10-11, 8-10 and 9 days respectively in ice and 52, 40 and 35 weeks in frozen condition. The pre-iced and cooked samples had a longer shell-life than pre-cooked and iced samples, during frozen storage. Regarding food value, clam meat was slightly inferior to crab and mussel meats.



Dr. Unnikrishnan Nair

The subject on which Dr. Unnikrishnan Nair carried out his research was "Studies on the backwater oyster *Crassostrea madrasensis* (Preston) of the Cochin Harbour". *Crassostrea madrasensis* (Preston) is the common edible backwater oyster of commercial value in the country. They are found inhabiting all along the coastal strips, estuaries and backwaters where suitable substrata are available for their young ones to settle. They grow abundantly in a wild state and extensive beds of these oysters are available on the east and west coasts of India.

Crassostrea madrasensis (Preston) assumes special significance as they lend very well to culture and yield nearly 150 tonnes per hectare. Several aspects of the biology of this commercially important oyster are not known. Apart from being an edible bivalve mollusc, it is an important member of the marine fouling complex that accumulate on the hulls of boats and contribute substantially to surface coverage, volume and weight in fouling. Dr. Nair has made a comprehensive study of several biological aspects of this oyster which includes physico-chemical and biofouling, its habitats, period and factors influencing settlement, morphometry of shells and their inter-relations, length-weight relation, condition index and percentage edibility, age and growth, biochemical changes and seasonality in trace metal distributions, the occurrence of predators, commensals and parasites. Pearl formation, a rare phenomena in edible oysters has also been observed. Dr. Nair's dissertation is a worthwhile contribution to oyster biology and throws light on many aspects of its little known ecology.

Visits

Shri M. R. Nair, Director, CIFT visited Japan as member of the Indian seafood trade delegation during April 1985. Led by MPEDA Chairman, Shri. T. K. A. Nair, the trade delegation made in-depth discussion with authorities of Japanese Marine Products Importers Association and the Department of Health and Welfare on issues relating to export of Indian shrimps. Other members of the delegation were Dr. B. C. Deb, Dy. Director, National Institute of Cholera and Enteric Diseases, Calcutta, Shri D. C. Majumdar, Director (Inspection & Quality Control), Export Inspection Council, New Delhi and Shri C. Cherian, President, Seafood Exporters Association of India.

Dr. K. Gopakumar, Head of Processing Division of CIFT, visited United Kingdom under the TDR/IDRI Project to carry out analysis of pouched sardines and its quality assessment. During his four-week stay (August-September, 1985) in U. K., Dr. Gopakumar also attended the IIR Conference at Aberdeen, Scotland.

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Shri P.R. Girija Varma, Scientist, CIFT, underwent eight-week training in Fish quality control with emphasis on toxic amines at the Tropical Research Institute, London from August 27, 1985. This was under the Colombo Plan.

MPs Visit Goa Research Centre of CIFT

A five member Parliamentary Sub-Committee of the Official Language Implementation Committee visited the Goa Research Centre of CIFT on Sept. 20, 1985. Members of the committee were S/Shri Chintamani Jona, Amar Roy Pradhan, P. Shanmugan and Smt. Indubala Sukhadia with Shri Tombi Singh as the Convener.

Shri M. R. Nair, Director, CIFT appraised the progress of implementation of Hindi in the Institute and its regional centres.

Seminars/Symposia/ Work shops

SEMINARS

Shri S. Ayyappan Pillai, Scientist, attended the National Seminar-cum-Exhibition Machinery Equipments and Accessories for Food Processing and Packaging held during September 5-6 at Madras organised by the Association of Food Scientists and Technologists (1) Madras Chapter and Small Industries Service Institute Madras.

Shri K. Ramakrishnan, Scientist, attended the Seminar on 'Remote sensing in Marine Resources' conducted at CMFRI, Cochin, on April-17

Symposia

Shri R. Balasubramanyan, Scientist, participated in the 'Symposium on Endangered Marine Animals and Marine Parks' organised by the Marine Biological Association of India, at Cochin during Jan vary 12-16.

Shri R. Balasubramanyan delivered the keynote address in the symposium on "Fibreglass Reinforced Plastic Industries" organised by the Small Industries Service Institute of Government of India at Coimbatore during March 6-7.

Shri K. Ramakrishnan, Scientist, attended the second Indo-Pacific and 4th All India Symposium on Invertebrate Re-production held at Presidency College, Madras, during June 25-27.

Work shops

Shri R. Balasubramanyan, attended a workshop on "Biodeterioration of Materials" held in Goa, during April 23-24

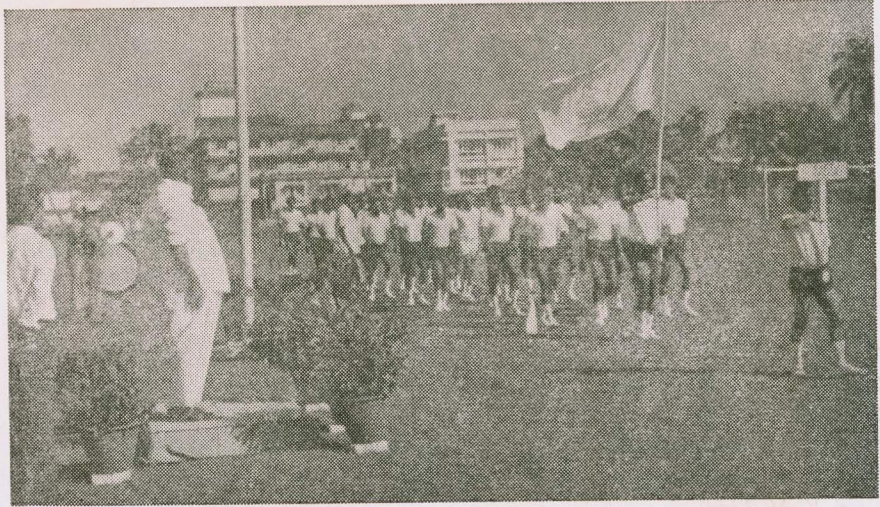
Shri S. Ayyappan Pillai, Scientist, attended the work shop on "Stirling Cycle liquid Nitrogen Plants Maintenance and Trouble Shooting" organised by the Indian Cryogenics Council (West Zone) at IIT, Bombay, during June 17-12

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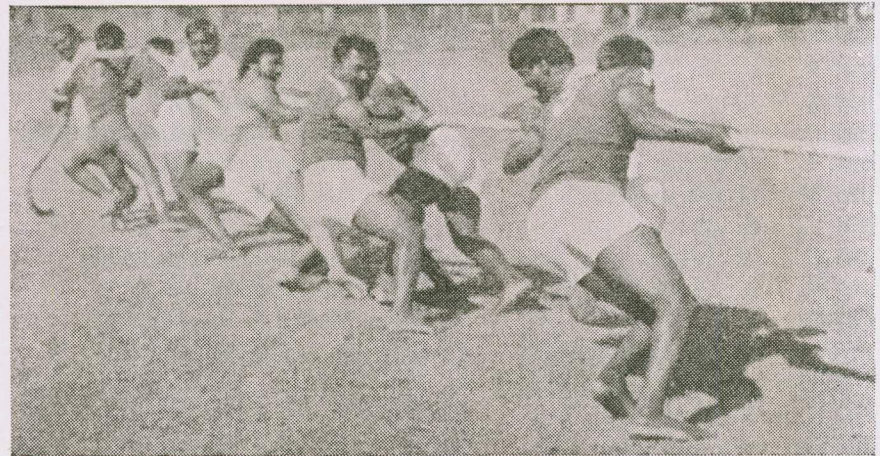
FIFTH ICAR SPORTS MEET 1985

*Shri. A. L. Jacob, receives
Salute of the March Past*



The Six-day South Zone (Zone V) ICAR sports meet was conducted in Cochin during November 25-30, 1985. Central Plantation Crops Research Institute (CPCRI), Kasaragod bagged the prestigious G.K. Kuriyan Memorial Rolling Trophy for its over-all championship. (This trophy was instituted in memory of the late G. K. Kuriyan, former Director, Central Institute of Fisheries Technology Cochin). Shri Jacob Kuriyan of CPCRI was declared the Individual Champion of the meet.

An exciting event in the meet

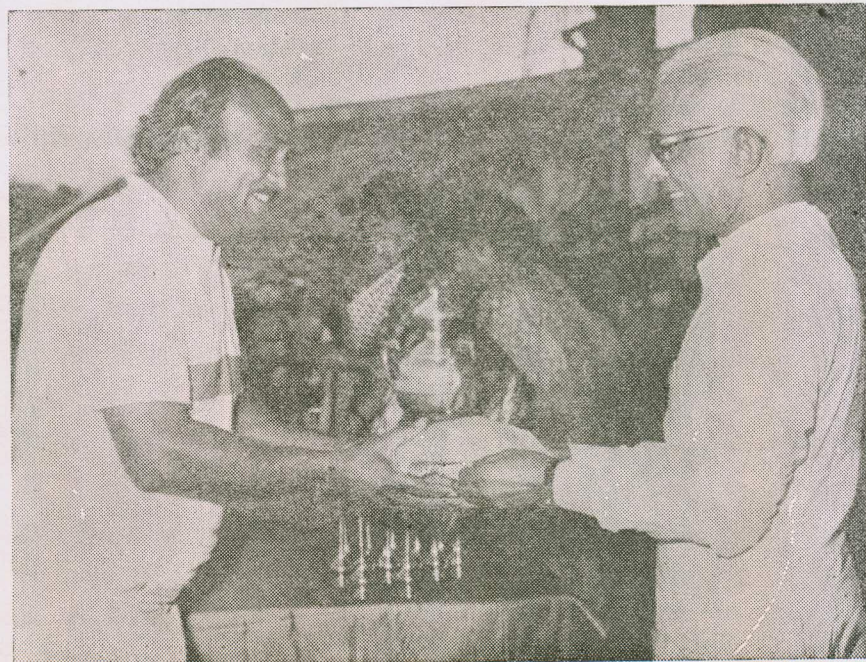


Shri A. L. Jacob, Minister for Agriculture, Kerala inaugurated the meet on November 25 at Maharaaja's College Ground.

Hosted by CIFT with its Director Shri M. R. Nair as Chairman and Shri S. Gopalan Nair as General Convener of the management committee, over 350 athletes from ten ICAR research institutes participated in the meet.

In the concluding ceremony Shri Paul P Mani, Chairman, Greater Cochin Development Authority gave away the prizes to the winners. Dr. PSBR James, Director, Central Marine Fisheries Research Institute welcomed the gathering and Shri S. Gopalan Nair proposed a vote of thanks. ○

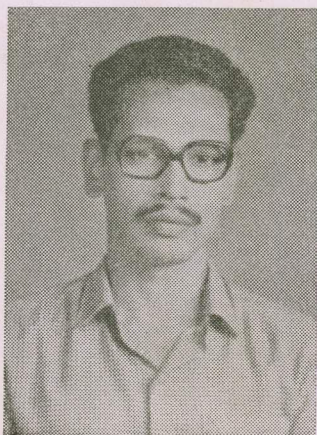
*Shri. Paul P. Mani
gives away prizes*



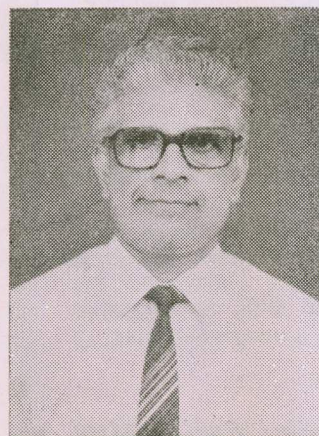
CIFT Appointments, Promotions etc.

Appointment

Shri V. A. Sudhakaran	Plumber	Cochin
Smt. P. A. Sathy	Jr. Clerk	Cochin
Shri K. N. Karunakaran	Jr. Stenographer	Veraval R. C.
Shri K. K. Karthikeyan	SSG. I.	Cochin
Shri K. V. Mathai	Jr. Stenographer	Cochin
Shri K. A. Gopinath	Vessel oilman	Cochin
Shri G. Jyothikumar	Driver	Cochin
Shri Milind S. Bhatker	Assistant	Bombay. R. C.
Shri P. Nirmala Raju	Jr. Clerk	Kakinada R. C.
Shri K. D. Jos	Field Assistant,	Cochin
Shri P. J. Joseph	Asst. Administrative Officer	Cochin
Smt. K. A. Devaky	Superintendent	Cochin
Shri M. Gopalakrishnan	Assistant	Cochin
Shri Veer Singh	Jr. Clerk	Veraval R. C.
Shri C. R. Gokulan,	Instrument Technician,	Cochin
Shri R. Thiagarajan	Scientist-S1	Cochin
Shri Santhosh	SSG. I.	Cochin
Dr. P. G. Viswanathan Nair	Scientist S3	Veraval R. C.
Smt. Gangaben Narah Chorwadi	SSG. I	Veraval R. C.
Shri V. R. Kesavan	Sr. Clerk	Cochin
Shri Rajendra Badonia	Scientist S2	Veraval R. C.
Shri T. Velayudhan Asari	Accounts Officer	Cochin
Smt. C. Ammini	SSG. I.	Cochin
Shri S. Gurumoorthy,	Superintendent	Cochin
Shri M. S. Susanna	Assistant	Cochin
Shri P. Krishnakumar	Jr. Clerk	Cochin
Shri M. V. Danaseelan	Jr. Clerk	Cochin
Shri M. P. Rajasekharan	Senior Administrative Officer	Cochin



Shri V. Velayudhan Asari



Shri M. P. Rajasekharan

Smt. K. P. Ambika
Shri K. Dinesh Prabhu
Shri P. P. Varughese
Shri P. T. Chandran
Shri K. C. Baby
Shri C. C. Adhikari
Shri T. V. Viswanathan
Shri M. M. Devasya

Jr. Clerk
S.S.G. I.
S.S.G. I.
S.S.G. I.
Jr. Clerk
Jr. Clerk
Jr. Clerk
Senior Library Assistant

Cochin
Cochin
Cochin
Cochin
Cochin
Burla R. C.
Veraval R. C.
Cochin

Transfer

Shri S. Sadanandan,
Shri V. Narayanan Nambiar
Shri H. K. Bori
Shri N. M. Vasu
Shri T. V. Sankar
Shri M. M. Prasad
Shri A. Ramachandran
Shri K. K. Kunjipalu
Shri A. C. Joseph
Shri T. Joseph Mathai
Shri K. J. Francis Xavier.
Shri H. N. Malathkar
Shri Mohan Rajan
Shri K. T. Abubaker
Shri M. S. Fernande
Shri P. Vijayan
Shri C. K. Sukumaran

Asst. Admn-cum-Accounts Officer,
Scientist S1,
Scientist S1,
Technician, T4
Scientist S1
Scientist S1
Scientist S1
Scientist S2
Scientist S2
Scientist S2
Skipper
Scientist S2
Scientist S2
Accounts Officer,
Skipper
Sr. Clerk
Jr. Clerk

C. H. E. S. Ranchi
Cochin
Bombay (R. C.)
Cochin
Veraval (R. C.)
Kakinada (R. C.)
Veraval (R. C.)
Cochin
Cochin
Goa R. C.
Veraval (R. C.)
Cochin
Veraval R. C.
CBRI, Cuttack
Cochin
CTCRI, TVM
Cochin

Retirements

Shri A. P. Valsan
Shri S. M. S. Yadav,
Shri M. Abdulsathar,
Shri R. Balasubramanian,

Technical Officer,
SSG. III
Media Supervisor,
Scientist S3

Bombay. R. C.
Veraval. R. C.
Cochin
Cochin

Death

Shri Nalla Babu Rae,

SFA,

Kakindda (R. C.)

Resignations

Shri M. K. Sreedharan Nair,
Shri A. T. Baby,
Shri T. S. Laurence,
Shri P. V. Narayanan,

Junier Clerk,
SSG,
SSG. I,
SSG. I,

Cochin
Cochin
Cochin
Cochin

Removal

Shri M. Ravindran Nair,

Bosun,

Veraval.

STATEMENT RELATING TO OWNERSHIP AND OTHER PARTICULARS ABOUT THE
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I, K. C. Purushothaman, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/-

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Signature of publisher

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