



# CMFRI newsletter

Number 35

January - March 1987



## On a Visit to Some Islands in Lakshadweep

*The marine flora and fauna of Lakshadweep are rich and varied. But from the point of view of exploitation only limited information is available about the nature and abundance of many of the resources. A strong information base is at present required to build up programmes and policies for management of the resources without damaging the heritage.*

Dr P. S. B. R. James, Director, CMFRI, visited the Islands to make an on-the-spot study of the pole and line fishery for the skipjack tuna, live-bait fish collection, coral reef ecosystems in different islands and associated fauna and flora and other ancillary marine fisheries resources.

During the visit Dr James observed the extensive damage done to the coral reefs around Minicoy Island in the past which made the live-bait fishes to disappear from the region. To improve the condition, he suggested that small artificial reefs could be introduced for attracting the different species of live-bait fishes which were abundant in and outside the lagoon, as had been successfully tried in Hawaii. Appropriate research is urgently needed for maintaining the different species of live-bait fishes in different densities in laboratory conditions to study the behaviour of each species and their capability to survive in confinement so that the fishermen can be advised to change their methods of storing live-bait fishes for use when the same cannot be collected readily from the sea. On the other hand, the eco-system around Agatti and

Bangaram islands has not been much affected by human activity. In such islands, the environment has to be preserved to maintain the nature's balance with reference to the flora and fauna with optimum utilization of the resources.

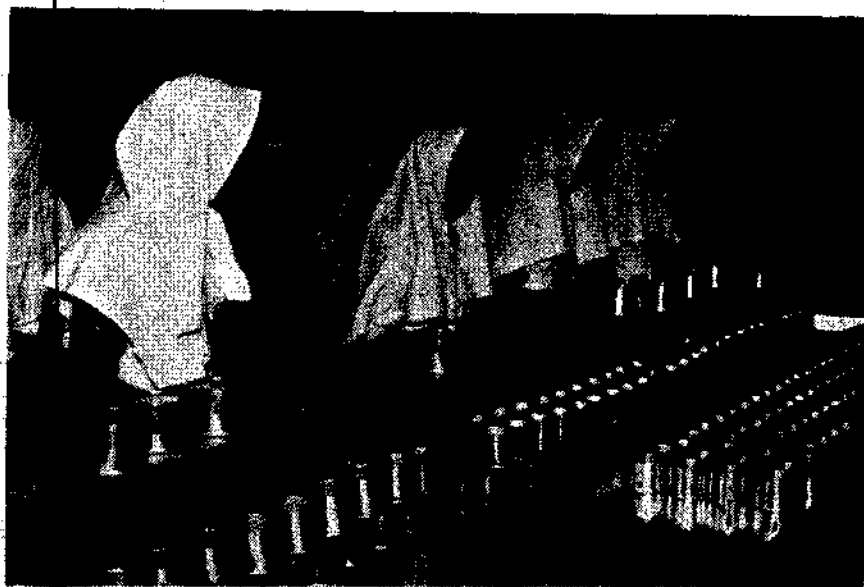
Dr James felt that though the ornamental fishes had been consumed, for years by the local people, not much decline in the stocks was noticed. Thus the scope for exploiting the wide variety of ornamental fishes on a commercial scale could not be set aside. Trials have to be conducted to trans-

port them by ship and by air in live condition for marketing. Feasibility studies on the above lines in respect of the common species, *Chromis caeruleus*, *Dascyllus aruanus* and *Archamia fucata* have already been initiated.

The flying fishes and belonids were observed in the surface waters during inter-island travel. Other fishes like the murænid eels were noticed around coral reefs. No distinct flocks of birds associated with tuna schools were noticed. Between Agatti and Bangaram islands, a group of porpoises were also noticed.



*'Skipjack' ready for preparation 'Masmin'*



Fish canning

The coral reefs around Agatti and Bangaram islands are rich and a boon to the live-bait fishery. The occurrence of the two sprats (*Spratelloides delicatulus* and *S. japonicus*) is of special mention, as the fishermen go specially in search of these. Bangaram Island, which has a very extensive lagoon, is a bed for a variety of molluscs, corals, ornamental fishes and edible fishes like lutjanids, breems and goat fishes and the same could easily be caught on the hook and line using sipunculids, abundantly available in the sandy stretches of the lagoon, as baits. Other variety of fishes could be netted during high tide.

Although seaweeds are common in the atolls of the Lakshadweep, their quantitative abundance has not been studied in any of the islands visited. Among the sea grass in the lagoon *Thalassia hemprichii* was found to dominate. A few seaweeds which were collected included.

*Gracilaria crassa*  
*Hypnea musciformis*  
*Halimeda gracilis*  
 (Green alga)  
*Laurencia papillosa*  
 (Red alga)  
*Turbinaria turbinata*  
 (Brown alga)  
*Acanthophora spicifera*  
*Lithophyllum* sp.  
 (Calcareous alga)

Tunas form the mainstay of the economy of the islands. Large schools of skipjack tunas occur in the region during the season especially from September to May. One such school observed off Agatti Island, when pole and line fishing took place, occupied a circular area with a radius of 200 metres. The fishes were quite active splashing on the surface and remained in position for more than an hour during the fishing operation. However, the catch was not significant compared to the vastness and population of the school. This was due to the poor response of fish to get hooked. The length

of the specimens ranged from 58 to 62 cm and the males dominated over the females.

Observations simultaneously made in the surrounding waters indicated the abundance of small forage fish, possibly the sprats and apogonids. Examination of gut content of a few tunas caught at the same time, indicated that the caridean shrimp (*Leptochela robusta* Stimpson, belonging to the family Pasiphaeidae), on which the fish had fed heavily, constituted about 90% of the volume and a few small fishes shared the rest.

Since the fish had already fed actively, their response to the hooks was poor. The presence of skipjack, schools and forage fish, supply of live-bait fishes by fishermen, the condition of feeding at the time of fishing and the environmental parameters which might determine the biting response to the hooks need further detailed analysis. Results of such study could be related to intensity of fishing and good or poor catches of skipjack at a given time.

'Masmin' is the prestigious product of Lakshadweep. The fish, skipjack, is sliced and the meat is separated from bones. Bones are converted to 'riha akru' which is used for flavouring the curries. After boiling in salt water, the meat is smoked for few hours on metallic grills below which fire and smoke are produced, using waste from coconut trees. The smoked meat is then dried for a week until it turns black, very hard and odourless. This

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## NATIONAL SEMINAR ON SHELLFISH RESOURCES AND FARMING

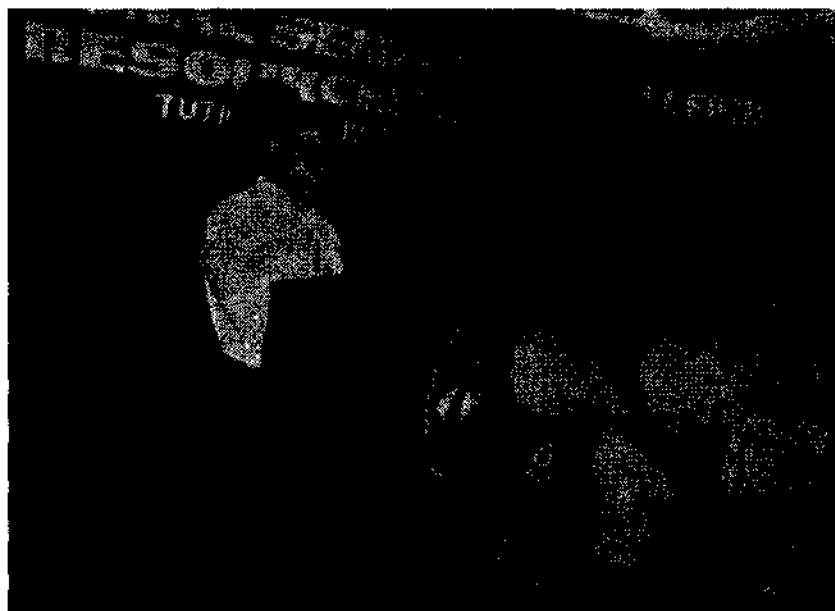
A National Seminar on Shellfish Resources and Farming was organised and conducted by CMFRI at its Tuticorin Research Centre during 19-21 January. The object of the seminar was to focus attention at the national level on the growing importance of shell-fishes like oyster, mussel and clams as highly nutritious, edible sea food and shelled animals like the pearl oyster and chunk in the establishment of cultured pearl industry and chunk bangle industry. It also aimed at highlighting the importance of other commercially valuable molluscs.

Dr P. S. B. R. James, Director, CMFRI, welcomed the eminent scientists and distinguished audience. The seminar was inaugurated by Sri A. Arumugam, I.A.S., District Collector, Chidambaranar district. Dr R. M. Acharya, Deputy Director General (Animal Sciences), ICAR, presided over the inaugural function. He made special mention about the contribution of the Institute in respect of developing culture techniques for cultivable marine organisms and also stressed that efforts should be made to evolve and perfect low cost culture technology for producing proteinous marine food in large quantities in the near future.

Dr P. V. Dehadrai, Assistant Director General (Fisheries), ICAR, released two special

bulletins (Bulletin 38 — Oyster Culture Status and Prospects and Bull. 39 — Pearl Culture) brought out by the Institute on the occasion.

Dr S. Jones, Former Director, CMFRI, Shri K. V. Rao, Retd. Senior Scientist, CMFRI, Dr R. Raghu Prasad, Retd. Assistant Director General, ICAR, Shri M. R. Nair Director,



*Dr PSBR James, Director, CMFRI welcoming the gathering*

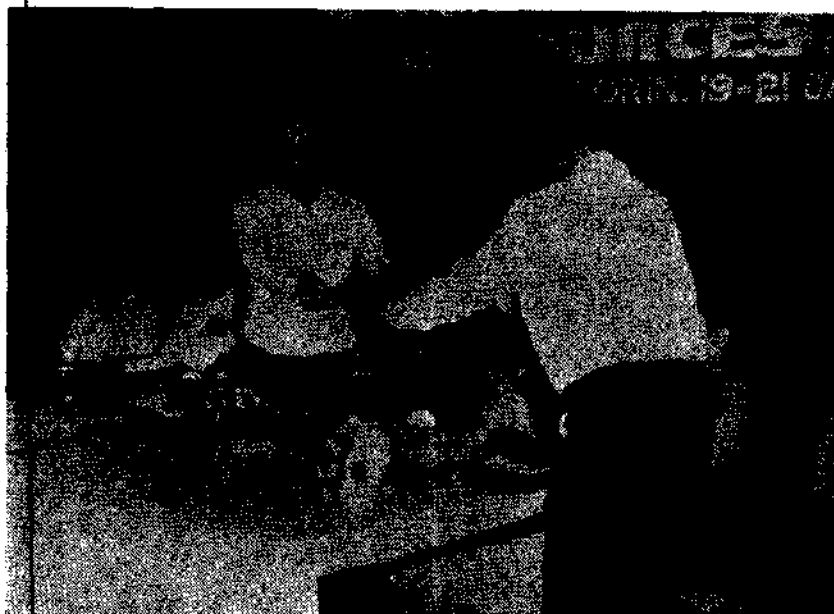


*Dr R. M. Acharya, Deputy Director General delivering the presidential address*

CIFT, Dr G. Jagadeesan, Dean, Fisheries College, Tuticorin and Dr M. Ramalingam, Deputy Director, MPEDA chaired various sessions of the Seminar.

Hundred and one scientific papers were presented by scientists belonging to different organisations such as CIFT, CIFE, CIFRI, IFP, Tamil Nadu Fish-

eries Department, Gujarat Fisheries Dept., fisheries colleges of Mangalore and Tuticorin, Marathwada University, Department of Marine Sciences, Cochin and Tamil Nadu Pearls Ltd, Tuticorin. A total of 160 participants took part in the proceedings on all the three days.



*Dr P. V. Dehadrai, Assistant Director General, releasing institute's publications*



*Explaining to the distinguished guests the hatchery operations*

Taking into consideration the vast potential of molluscan resources in the country, the need for rational exploitation and areas which need research thrust in the near future, 26 recommendations were submitted to ICAR to be considered for effective implementation.

During the seminar, an 'Open house' was also arranged exhibiting the salient features and achievements of the Institute in molluscan fisheries investigations in the country.

The seminar helped the experts in the field to come closer to review the status of molluscan fisheries resources in the country and to chalk out future strategies for the development not only of capture fisheries but also to identify priority areas for culture. It also invited the attention of various organisations like MPEDA, NABARD and BOBP who are interested in promoting marine food production and export.



## TRAINING PROGRAMME IN SCUBA DIVING

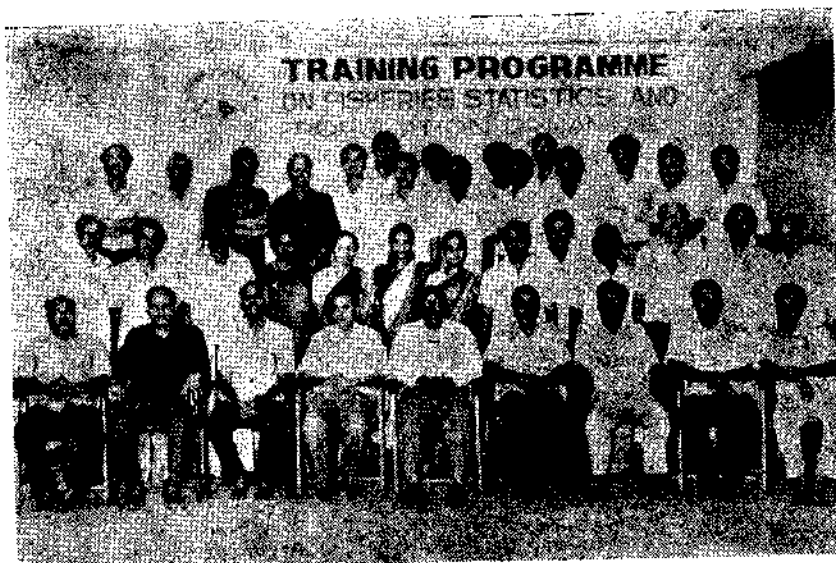
Under the Institute's Training scheme a programme in SCUBA diving was conducted at Tutl from 20 December to 13 March to train two personnel from Mandapam Algal Research Station, Mandapam Camp.

The course was conducted under the leadership of Shri S. Mahadevan with a team of scientists and technical assistants. The training involved theoretical and practical classes on physics of diving, physiology of human diving in to deeper waters, principles of diving, use of diving equipment and other accessories, first-aid principles of diving and animal behaviour.

Practical classes included swimming, snorkelling, skin diving, SCUBA diving, filling of aqua-lung cylinders with compressed air, operation principles of aqua-lung and compressors, maintenance of diving equipment etc. Accident relief operation during diving, exchange of underwater signals, underwater rescue operations and collection of data on animal life were also demonstrated.

## KVK Programmes

The Krishi Vigyan Kendra conducted seven training courses for farm men and women on prawn/fish culture, fruit preservation, livestock management, prawn seed collection, coconut cultivation, poultry farming and post harvest technology. Three training courses each of 10 days duration in fish processing technology were also organised in which personnel from fisheries department of Maharashtra, Gujarat and Goa participated.



*The trainees with Director and the training faculty*

## Training programme in Fish Population Dynamics

A training programme in Fisheries Statistics and Population Dynamics was conducted by Fisheries Resources Assessment Division, CMFRI from 27 Jan-7 March at Cochin.

Sixteen personnels, including 9 Scientists from CMFRI, from various fisheries institutions have undergone the training.

Shri M.R. Nair gave away the certificates to the participants on the valedictory function.



*Training in the preparation of fish wafers at KVK*

## Largest 'Dara' landed

On 29 January, a mechanised 'dol netter' operating in 28 metre depth of Murba-Satpati coast, caught a large sized 'dara', *Polyneimius indicus*, measuring 170 cm and weighing about 51 kg. It was auctioned for Rs. 855. The maximum size of this fish recorded was 142 cm (F.A.O. 1984). The present record appears to be the largest. This was reported by Shri J. P. Karbhai, and Shri J. R. Dias.

## Heavy landings of *Sardinella longiceps*

Bumper landings of *Sardinella longiceps* were noticed in the Saurashtra coast in January. At Navabunder, Miami, Dwaraka, Okha and Porbandar, the landings ranged from 500-100 kg per boat. This was unusual occurrence in this region.

## Rare Sun fish '*Mola mola*' caught

A sun fish was caught by gillnet at a distance of about 30 to 40 km south east off Porbandar at a depth of 47 fathoms. The length and width were 104 cm and 75 cm respectively. It weighed about 50 kg.

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product, 'masmin', is sent by boats to mainland for marketing. From a tuna of 4-5 kg, at least 1 kg of 'masmin' could be obtained which may fetch Rs. 28 to Rs. 30 per kg.

The waste from a fish of 4-5 kg during processing for 'masmin' amounts to  $\frac{1}{2}$  kg. The continuous accumulation of wastes from tonnes of fish caught daily causes disposal problem. In Minicoy, it is done hygienically by lifting the wastes to far off places from human habitation and activity and dumped into the coastal waters. In Agatti Island, the wastes are buried in shallow pits all along the beach where tunas are landed. This unhygienic exercise would encourage the development of maggots and flies which are very commonly found even in the residential areas. Such wastes could profitably be converted into fish ensilage or manure for the coconut plantations which are abundant in the islands where no other fertilizers are available. On an experimental basis part of the waste can be tried to attract the fishes to the artificial reefs to be set up in the lagoon at Minicoy shortly.

Under the prevailing conditions, the pole and line fishing is economical and very successful. The entire natural resources of skipjack occurring in the area is fit for attempting any organised fishery by purse-seining which can harvest larger quantities of skipjack. The lack of boats, expertise and trained labour are the major constraints. Purse-seining in a limited scale may be initiated and the effect of the same on the stock and possible interac-



A close-up view of part of the catch, caught in Thoothoor

#### Bumper Catch of *Caranx ignobilis* along West Coast

During October-November unusual heavy landings of *Caranx ignobilis* were reported by Shri G. M. Kulkarni from Panaji (Goa) and Shri Jacob Jerold Joel and Shri I. P. Ebenezer from Thoothoor, a fishing village in Kanyakumari District of Tamil Nadu.

While the landings in Panaji were 30 tonnes by purse-seine, 18 tonnes were caught in Thoothoor by shore-seine.

tion with the pole and line fishing can be monitored. A few specimens of young yellowfin tunas are occasionally caught by the pole and line fishing. But they appeared to be scarce when compared to skipjack. Therefore, immediate possibilities of operating long line for yellowfin in the region do not appear to be beneficial.

The landings which took place on 21 and 30 of October in Panaji, had not helped the fishermen financially. Due to the paucity of ice, non-availability of labourers and transport facilities, 60% of the catch got spoiled and was dumped into the Mandovi river. Even the rock-bottom price of Re 1/- per fish (average weight 3 kg) did not attract the public.

In Thoothoor, it was a different story. About 18 tonnes of *C. ignobilis* (3872 numbers) were sold at Rs. 36/- per fish (average weight 4.7 kg). A fabulous revenue of Rs. 1,39,392/- indeed. All the fishes were profusely salted after removing the guts, gills and other unwanted parts and sent to Alleppey, Kerala for marketing.

#### VISITORS

##### Cochin

Dr Wayana V. Burt, Prof. Emeritus, Oregon State University, Corvallis, USA, 16 February.

## Vernaval

### Mandapam Camp

## Bombay

## Madras

## Kekinada

## Engagements

Governing Body Meeting for  
presenting the work and

## Appointments

**Promotions (w.e.f. 1-1-1984)**

**\$2 - \$3**

**Shri V. N. Bande**

**\$1 - \$2**

**Shri N. Surendranatha Kurup**

**Dr V. S. Kakati**

**Shri G. P. Kumaraswamy  
Achari**

**Shri P. Livingston**

**Shri P. V. Sreenivasan**

**Shri S. Shanmugham**

**Shri K. Balan**

**Smt. Geetha Bharathan**

**Shri A. Regunathan**

## Transfers

Dr K. Satyanarayana Rao, Scientist S-3 from Tuticorin to Madras.

Dr K. A. Narasimham, Scientist S-3 from Kakinada to Tuticorin.

Shri S. G. Raje, Scientist S-1  
from Veraval to Bombay.

Shri K. Ramadoss, Scientist  
S-2 from Mandapam Camp to  
Tuticorin.

Shri N. Surendranatha Kurup,  
Scientist S-2 from Calicut to  
Cochin.

**Shri G. Gopakumar, Scientist  
S-2 from Minicoy to Vizhinjam.**

Shri R. Thiagarajan, Scientist  
S-2 from Mandapam Camp to  
Madras.

Shri Alexander Kurian, Scientist S-2 from Bombay to Ministry.

Dr N. Gopalakrishna Pillai,  
Scientist S-2 from Vizhinjam  
to Cochin.

Shri P. Ananda Rao, Senior Technical Assistant (T-4) from Machilipatnam to Narasapur.

Shri K. Remasomayajulu,  
Technical Assistant (T-I-3) from  
Gopelpur to Visakhapatnam.

Shri C. Manimaran, Junior Technical Assistant (T-2) from Tuticorin to Madras.

Shri K. V. S. Seshagiri Rao,  
Senior Technical Assistant (T-4)  
from Narasapur to Machilipat-  
nam.

Shri C. H. Elliahathayya, Junior Technical Assistant (T-2) from Kakinada to Gopalspur.



Shri K. Dhanaraju, Technical Assistant (T-I-3) from Gopalpur to Kakinada.

Shri K. K. Soman, Motor Driver (T-1) from Cochin to Calicut.

Shri A. Rajan, Motor Driver on ad-hoc basis from Calicut to Mangalore.

Shri M. Enose, Field Assistant (T-1) from Cochin to Tuticorin.

Shri M. Abdul Salam Sahib, Senior Clerk from Cochin to Vizhinjam.

Shri S. Muthumari, Junior Clerk from Vizhinjam to Mandapam Camp.

Shri M. Selvadhas, Assistant from Calicut to Cochin.

Shri B. Devadas Puthran, Assistant from Cochin to Calicut.

#### Reliefs

Shri Kamalkumar Datta to join at C.S.S.R.I., Karnal, 20 March.

Dr Prabhakar, Scientist S-1 to join at Soyabean Research Centre, Indore, 19 Feb.

#### Retirements



*Sri P. T. Meenakshisundaram*

Shri P. T. Meenakshisundaram, Scientist S-3, CMFRI, retired from the services of ICAR on 28 February on superannuation.

Shri P. T. Meenakshisundaram who joined CMFRI in 1947 was engaged in fishery survey work. Initially he was associated with Ground Fish Investigations, and worked on the problems facing the fishery of the Indian Herring, *Illisha filigra* and submitted a thesis based on this study to the University of Bombay and obtained the M.Sc. degree. Till retirement, he was engaged in the studies on the fishery and biology of ribbon fishes and published papers on the subject. He rendered yeoman services to the marine sciences by associating himself with the Marine Biological Association of India as its Editor from 1965.

Dr K. J. Eapen, Scientist S-3 on retirement on the age of superannuation, 28 February.

Shri K. J. Malsekar, S. S. Grade IV (Lab. Attendant), 21 December.

#### Club Day Celebration

The annual day of the Staff Recreation Club, Calicut Research Centre of CMFRI, Calicut, was celebrated on 29 January. A drama "Arram Ward" was also staged as a part of the cultural programme.

A Staff Recreation Club has been started in Veraval Research Centre.

#### Survey Tour

Survey tours on Fishery Potential Resources of Lakshadweep Islands were conducted during Jan.-March. Three teams from the Institute, visited various islands of Lakshadweep Islands. The details of the participants are:

I TEAM: Jan. - Feb.

**Leader:** Dr C. S. Gopinatha Pillai, Scientist S-3.

**Members:** Dr V. Srirama-chandramurthy, Scientist S-2; Dr D. B. James, Scientist S-2; Shri K. Ramdoss, Scientist S-2; Shri G. Sudhakara Rao Scientist S-2; Shri I. David Raj, Scientist S-1; Shri P. Kaladharan, Scientist S-1.

II Team: Feb. - March

**Leader:** Shri M. Kumaran, Scientist S-3.



*Welcoming the New Year Day — Dr. P.S.B.R. James cutting cake on the eve of the New Year Day of 1987 at Cochin under the auspices of CMFRI Headquarters Staff Club.*

**Members :** Shri K. K. Appukuttan, Scientist S-2; Dr C. Su-seelan, Scientist S-2; Shri A. Chellam, Scientist S-2; Shri S.V. Alavandi, Scientist S-1; Shri Syed Koya, Scientist S-1; Shri S. Kalimuthu, Senior Technical Assistant.

**III Team :** March - April

**Leader :** Dr R. S. Lalmohan, Scientist S-2.

**Members :** Dr P. A. Thomas, Scientist S-2; Shri K. G. Girijavallabhan, Scientist S-2; Shri M. Kathirvel, Scientist S-2; Dr N. Kaliaperumal, Scientist S-2; Dr A.C.C. Victor, Scientist S-2; Shri M. M. Meiyappan, Scientist S-1.

#### Deputation

Dr A. D. Diwan, Scientist S-2 underwent a training in 'Bio-assay Procedure in Toxicity Studies of Steroids' at the University of Washington, USA.

#### Seminars

Dr. P. Bensam and Shri S. Krishna Pillai, Scientists S-2, Mandapam Camp, participated in the All India Symposium on Aquatic Organisms and presented papers.

#### Canteen

A staff canteen has been started at the Headquarters on the New Year Day of 1987.

#### Ph.D. Awarded

Shri A. Noble, Scientist S-3, has been awarded the Degree of Doctor of Philosophy for his studies entitled 'Some Insights into the Resources of the Indian Mackerel *Rastrelliger kanagurta* (Cuvier)' by Cochin University of Science and Technology. Shri Noble worked under the guidance of Dr E. G. Silas, Officer on Special

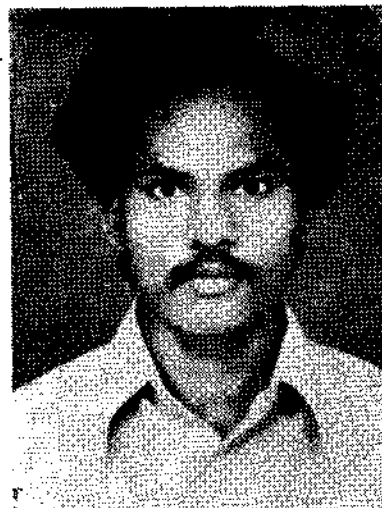


*Sri A. Noble*

Duty, Central Institute of Brackish Water Aquaculture, Madras.

#### Study on Corals

Shri Benazir Ahamed, Assistant Professor of Zoology, University of Chittagong, Bangladesh, visited CMFRI. Basically a parasitologist, he has developed profound interest on the corals and was here on a UNESCO fellowship to work with Dr C. S. Gopinatha Pillai, Senior Scientist, CMFRI, on ICAR's recommendations.



*Sri V. Achuta Rao*

Shri Achuta Rao won first place in 400 metres and second places in 100 and 200 metres running race in the Sixth ICAR Inter Zonal Meet held at Bangalore during 12-13 February.

#### Marriage

Shri J. D. Sarang, Field Assistant at Bombay, married Kum. Madhuri, 25 February.

#### Obituary

Shri S. B. Tambe, Assistant expired on 14-1-1987 at Bombay.



*Dr PSBR James, Director, CMFRI, buying the first tea served from the CMFRI Canteen at Cochin which was inaugurated on 1 January 1987*