

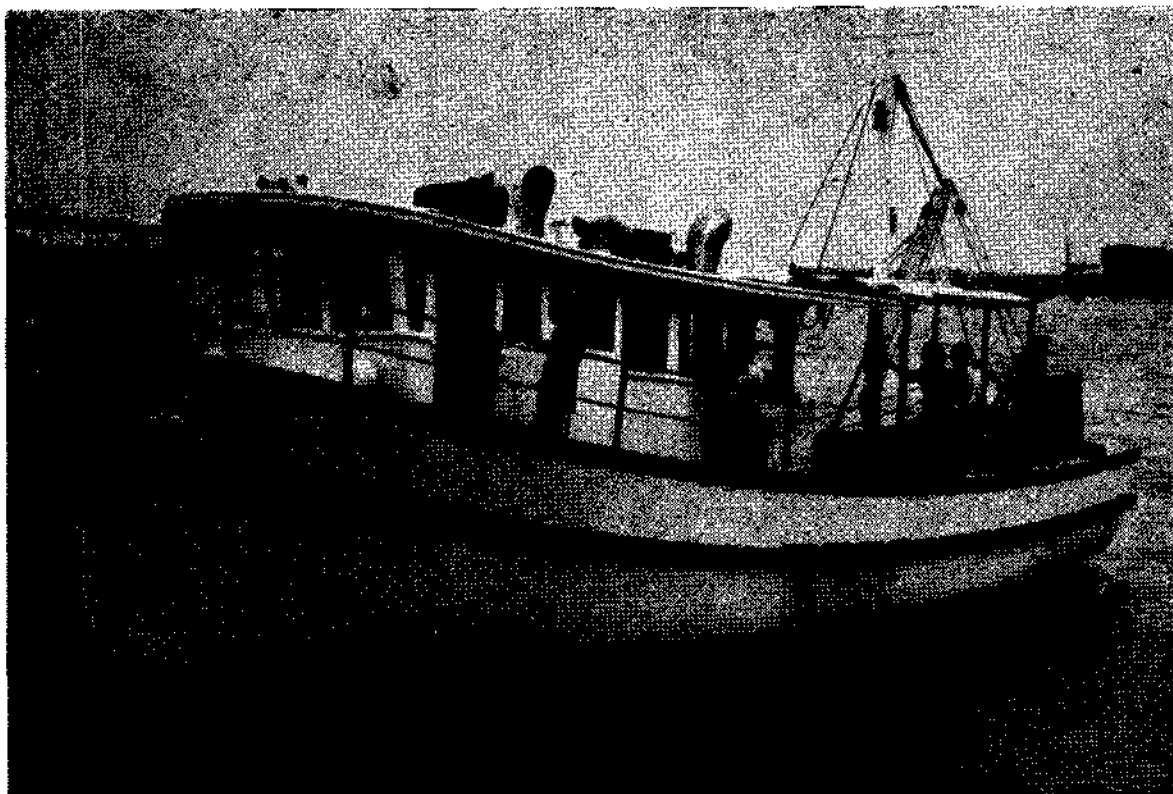


CMFRI newsletter

Number-11

January - March 1981

CADALMIN IX LAUNCHED



Cadalmin IX

Cadalmin IX, the fourth research vessel in the *Cadalmin* series acquired by CMFRI was launched on 20 March, 1981 at Cochin. The vessel was constructed for the Institute by the Central Institute of Fisheries Nautical Engineering and Training at Cochin.

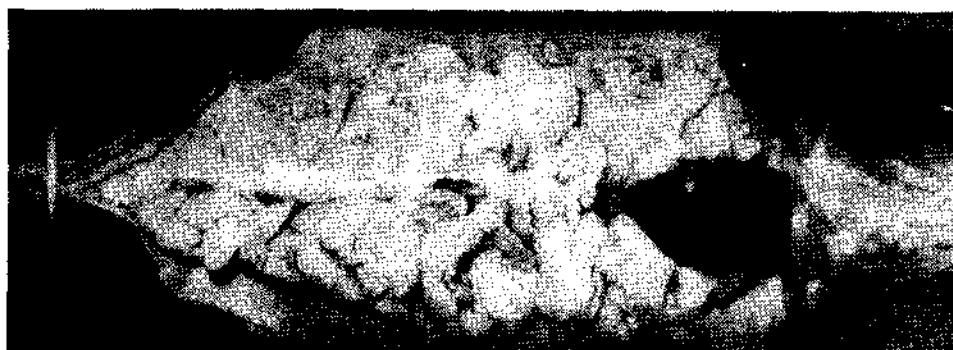
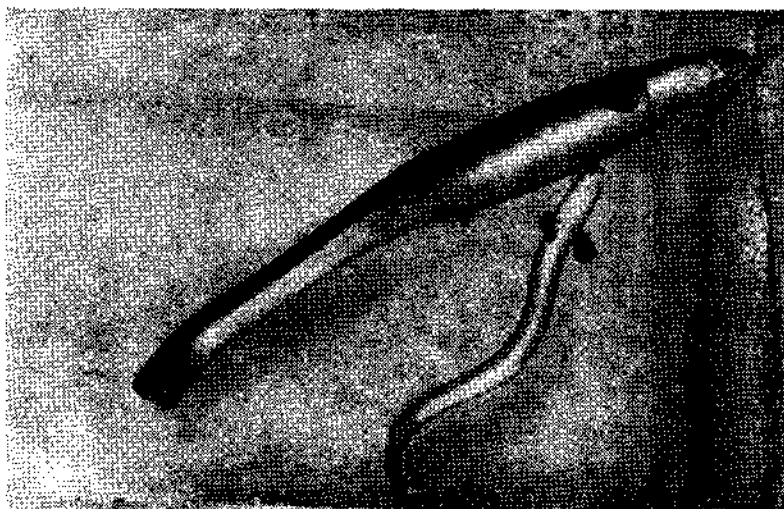
Cadalmin IX is a round-bottom wooden fishing boat modified as a research vessel with a gross tonnage of 20.5. It is fitted with a 100 hp Leyland ALM 400 Engine and a 4:1 reduction gear. The vessel is at present fitted with a mechanised winch of 300 m wrap

and will shortly be replaced by a hydraulic winch. There is accommodation for two scientists and a small laboratory for carrying out routine analysis. The vessel is fitted with a SIMRAD-EL Echo Sounder

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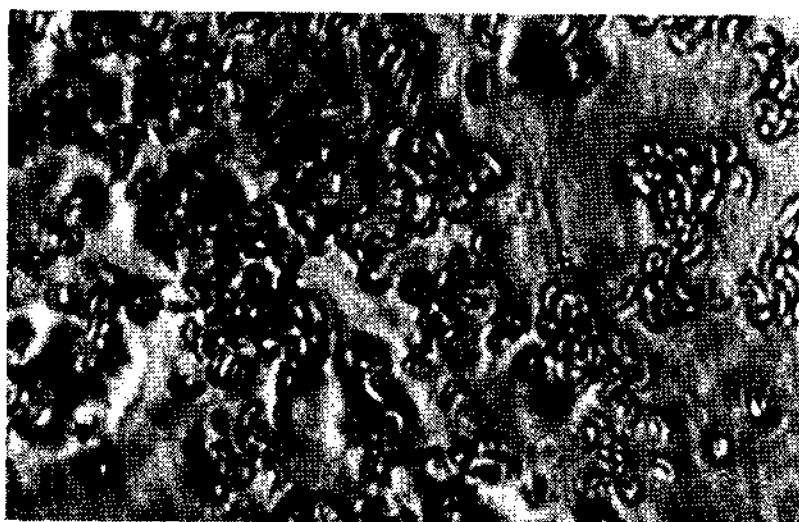
INDUCED MATURATION OF

Hormone-injected eels



Fully developed ovary

A cluster of spermatazoa



EEL - A BREAKTHROUGH

A major breakthrough has been achieved in the induced maturation of Indian short-finned eel, *Anguilla bicolor bicolor* in the Central Marine Fisheries Research Institute laboratory at Mandapam Camp. Through hormone injection a male eel was induced to maturity in February 1981. Four intra-muscular injections of gonadotrophin LH at dosage of 500 IU each were given. The eel reached mature condition 144 days after the first hormone injection. For the first time, structure of matured testis and spermatazoa of the eel have been photographed. Each spermatozoid has a 'comma' shaped body and a

long tail and measured as follows: head length 4 m.d., width 1 m.d. and maximum tail length 32 m. d. (1 m. d. = 0.00114 mm).

Similarly a female eel of the same species was induced to maturity through hormone injection and eggs were stripped in March 1981. Sixteen intra-muscular injections of carp pituitary extracts and chorionic gonadotrophin (HCG - profasi) at a dosage of 15 mg and 1000 IU respectively per injection were given. The eel reached 'strip-ripe' condition 98 days after the first injection. The gonadosomatic index was

33.5. The total weight and eye index of the eel increased by 2.9% and 24.1% respectively. The number of stripped eggs was estimated to be 0.35 million. This is the first incident that the eggs of the species have been produced in the laboratory. They were spherical, relatively uniform in size and measured 1.00 mm in diameter. Great variations were noticed in the number of oil globules in the eggs. Artificial fertilisation of the eggs was attempted but was not successful.

The progress achieved promises great potential for induced breeding of eels.

P. INDICUS DOMESTICATED

Narakkal Prawn culture Laboratory of CMFRI has successfully harvested a crop of prawn (*Penaeus indicus*) completely brought out as F2 generation. The species has been completely domesticated during the period of two generations in the precincts of farm ponds. The spawners have never lived in the sea during their life time.

Commercial Prawns Abundance in off Season

During November 1980-January 1981 about 100 tonnes of export-quality prawns were estimated to have been landed at Pondicherry region. About 150 tonnes of Anchovies and 40 tonnes of *Xanopus sp* formed the the bycatch.

In Pondicherry region, during the off season, mechanised boats mainly concentrate on export quality commercial prawns. (Reported by Shri L. Chidambaram, Junior Technical Assistant, Pondicherry Field Centre of CMFRI).

(Continued from page 1)

imported from Norway and rudder indicator designed and developed at Central Marine Fisheries Research Institute. A 43 KVA single phase generator to produce 230 V 50 cycles is also provided to enable fishing during night.

She has an endurance of three days and can cruise up to the shelf edge and conduct trawling up to 75 m depth.

This vessel is mainly intended for the training programmes of Krishi Vigyan Kendra, Narakkal.

Remote Sensing for Fisheries Resources off Cochin

The collaborative experiment by the National Remote Sensing Agency and Central Marine Fisheries Research Institute for mapping productive areas in the seas off Cochin by remote sensing of the colour of the sea water and making simultaneous measurements in the sea and from the air was carried out in December, 1980.

The experiment consisted of chlorophyll measurements by Ocean Colour Radiometer from an aircraft. Off Cochin about

seven water masses have been identified from the pattern of distribution of chlorophyll. The field observations consisted of both optical and biochemical measurements on board the research vessel and at the same time from the air. The overall integrated results from these studies are expected to give the horizontal distribution of chlorophyll concentration in the sea. Chlorophyll evaluation by remote sensing technique is adopted for the first time in Indian seas.

Under the Joint Experiment Programme of Space Application Centre, CMFRI (ICAR) and Exploratory Fishery Project (Government of India) studies on the movement and behaviour of pelagic fish shoals in relation to parameters such as ocean colour, chlorophyll concentration, productivity, humidity, temperature, salinity and oxygen content, to correlate the spectral signatures of selected environmental parameters and the fish shoals were also carried out off Karwar in January.

'Mariculture' Bags National and International Awards

The film 'Mariculture' has been selected as the best instructional film for the President's Award '*Rajat Kamal*'. This film has also been adjudged as the best short film and has been awarded 'Silver Crayfish' at the IX International Naval and Sea Films Week held at Cartagena in Spain.

'Mariculture' is the first film produced on Sea Farming in India. The film highlights breeding, culture and harvest of prawns; surgery techniques and production of cultured pearls; collection of baby oysters and rearing them in trays to marketable size; harvest of mussels in the open-sea farm; culture of seaweeds;

and rearing of young eels. It also shows the process of transfer of technology from the laboratory to the farms of fishermen and farmers. The entire film is shot at the different centres of CMFRI covering their major mariculture activities.

The film on Mariculture was produced by the Films Division, Ministry of Information and Broadcasting, Government of India. Shri Omprakash Sharma produced the film which was directed by Shri C. J. Paulose. Dr. E. G. Silas, Director, Central Marine Fisheries Research Institute was the Technical Adviser.

Film on Prawn Farming

Films Division, Government of India has shot different scenes depicting the activities of the Narakkal Prawn Culture Laboratory and the Krishi Vigyan Kendra of CMFRI at Narakkal for the documentary film 'Prawn Farming.'

CMFRI'S	
EXPENDITURE FOR 1980-'81	
PLAN	Rs 68,61,071.75
NON-PLAN	
	Rs 1,02,65,008.93
Total	1,71,26,080.68

'Thangoose Net' A Gill Net With Plastic Webbing

The recent introduction of a gill net with plastic webbing, locally called *thangoose* net (*Vovva Valai*) has been reported by Shri K. S. Krishnan, Technical Assistant at Nagapatnam Field Centre of CMFRI. This net is being operated, of late, from Arcattuthurai to Chandrapuri in the Tanjore District, Tamil Nadu. The net is fabri-

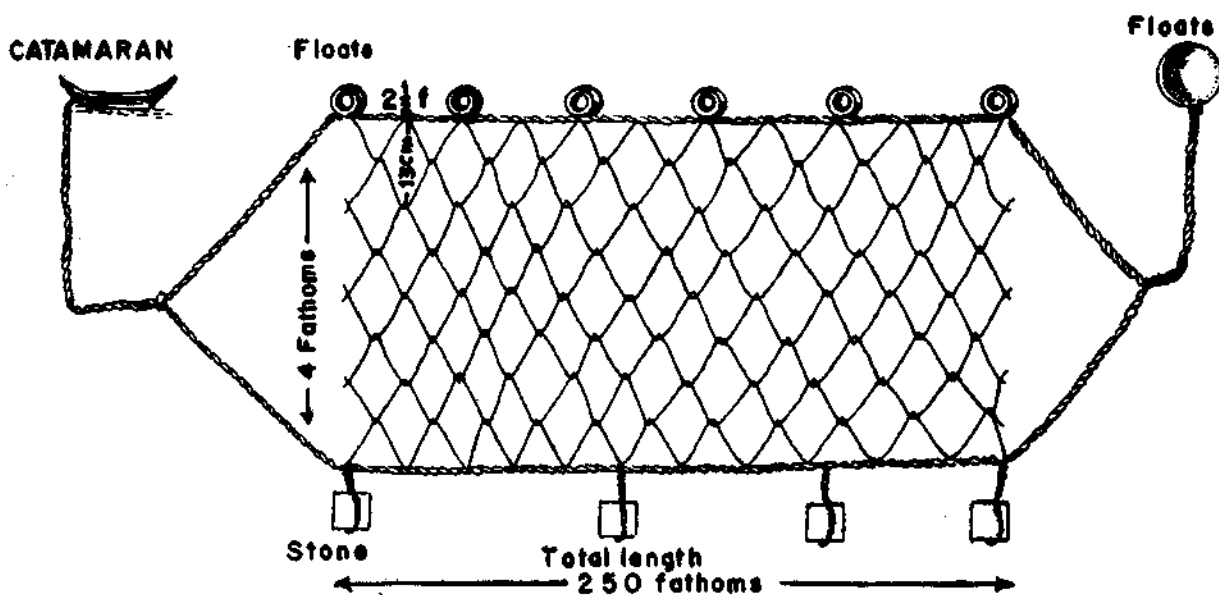
cated with plastic threads ranging from 35-60 counts and mesh size ranging from 11-13 cm. One kg of plastic thread is required for making one piece and 15 such pieces make one full net of 4 fathoms height and 250 fathoms length. One kg of plastic thread costs about Rs 150/- The net toge-

ther with catamaran costs about Rs 6000/-.

The mode of operation of the *thangoose* net is like any other gill net. Floats are attached to the head with sinkers at the bottom.

The *thangoose* net is mainly used for catching pomfrets, catfish, seerfish and also perches.

A ROUGH SKETCH OF THANGOOSE NET



Whale Sharks Land Near Mangalore

Three whale sharks *Rhincodon typus* ranging in length from 4.88-6.71 m were caught off Kaup on 20 January, 1981. Two more whale sharks measuring 7.90 m and 2.50 m each were landed at Malpe on 31

January. Off Kaup a chain of submerged rocks exists.

A female whale shark (*Rhincodon typus*) measuring 3.81 m in length was landed at Karwar on 21 January, 1981. The specimen, first of its kind in Uttara Kannada District was captured by a purse seiner, Hemavathi at 18 m depth off Anjudev Island.

Stranding of a whale measuring 11.5 m was reported from Periathalai coast on 18 February. On receipt of the information a team of scientists visited the spot and identified the same as Baleen whale, *Balaenoptera* sp.

Matsyamela and Harvest Festival

Central Marine Fisheries Research Institute organised a *Matsyamela* and Harvest Festival in the farmers fields at Valappu, in the Harijan colony adopted by the Institute under the Lab-to-Land Programme on 8 March, 1981. A rich harvest of prawns and fishes was taken.

A meeting was organised in this connection presided by Dr S. V. Bapat, Joint Director, Central Marine Fisheries Research Institute. Shri V. Bahuleyan, President of the AMSF, the local fishermen association welcomed the gathering. Dr C. C. Panduranga Rao Director, CIFT, Dr. K. Alagar-swami, Dr V Balakrishnan, and Shri K. H. Mohamed Senior Scientists, CMFRI and Shri C. K. Kesavan, Block Development Officer, Vypeen Block spoke on the occasion.

The prawn culture operations at Valappu this year commenced in November, 1980 and within a duration of four months the farmers obtained 354.2 kg of prawns and 219.4 kg of fish fetching a sum of Rs. 10,111.40. The total expenditure for the season was Rs 4,280 including culture operations, maintenance and watch & ward. Of this Rs. 2200 was contributed as inputs by CMFRI under the Lab-to-Land programme. Harijan farmers at Valappu are being assisted in developing prawn culture in their marshy fallow lands since 1979.

The farmers expect another harvest of prawns and fishes from the same pond without much additional expenditure before the onset of the monsoon.



Farmers with the harvest

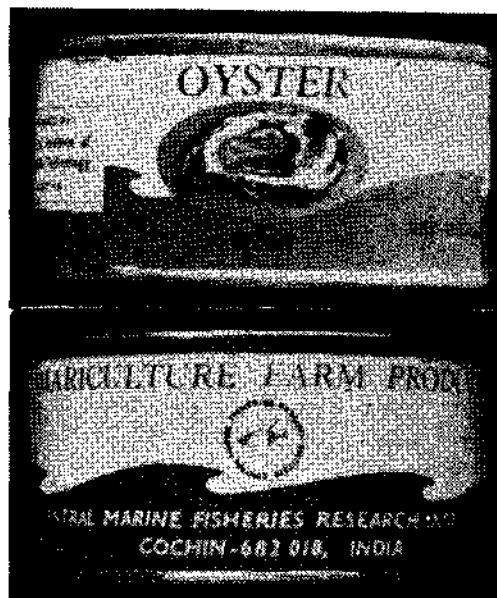
National Seafood Trade Fair

CMFRI took an active part in the Fourth Indian Seafood Trade Fair organised by the Marine Products Export Development Authority, Cochin at the Taj Coromandal Hotel at Madras from 6-8 February 1981.

In the exhibition organised in connection with the Fair, CMFRI had displayed visuals explaining the culture of edible oyster (*Crassostrea madras-*

sensis). Farm-bred oysters were canned in different media like brine, oil and tomato sauce and were distributed to prospective industrialists from India and abroad. The canned products were developed with the help of Central Institute of Fisheries Technology under the Institute's Lab-to-Land Post Harvest Technology Programme.

The Door Darshan and Films Division had given a wide coverage of the Fair.



Canned oyster

MEETINGS

CMFRI Staff Research Council Meeting

The XXV meeting of the Staff Research Council of CMFRI was held on 19 and 20 March 1981. Dr E. G. Silas, Director, CMFRI presided over the meeting. Shri P. R. S. Tampi, Assistant Director-General (Fisheries), ICAR was present at the meeting. This meeting critically reviewed the progress made in the various research projects during 1980 and discussed the projects proposals for the year 1981-82.

Dr M. S. Prabhu - New SRC Secretary

Dr M. S. Prabhu, Scientist S-3 has been nominated new-Member-Secretary of the Institute's Staff Research Council. Dr A. V. S. Murty, Scientist S-3 has been the Member Secretary of the Council so far.

Meeting of the Officers-In - Charge and Research Project Leaders

The annual meeting of the Officers-in-charge and Research Project Leaders was held at CMFRI headquarters at Cochin from 11-13 February, 1981 to review the progress in the research projects and formulate proposals for the year 1981-82 and for discussing relevant matters regarding the implementation of plan of work under various projects.

Meeting of the Management committee of CMFRI

Eleventh Meeting of the Management Committee of CMFRI was held on 20 March, 1981 with the following re-constituted members.

Chairman :

Dr E. G. Silas, Director,
CMFRI, Cochin

Members :

Shri P. R. S. Tampi,
Assistant Director General
(Fisheries), ICAR.

Dr S. V. Bapat, Joint
Director, CMFRI,
Cochin-18

Dr A. V. S. Murty,
Scientist 3, CMFRI,
Cochin-18

Miss B. Lalitha,
Accounts Officer, IHR,
Bangalore.

Shri S. Mahadevan,
Scientist S-2, Tuticorin
Research Centre of
CMFRI, Tuticorin

Shri N. Neelakanta Pillai
Scientist S-1,
CMFRI, Cochin-18

Dr P. C. Sivaraman Nair,
Director of Research,
Kerala Agricultural Uni-
versity, P. O. Mannuthy.

Shri P. M. Tandal,
Chairman, North Kanara
District Co-operative Fish
Marketing Union Ltd.
Karwar

Member-Secretary

Shri S. Rajagopalan,
Senior Administrative
Officer, CMFRI,
Cochin-18

The Committee has decided that the proposal for establishment of a Central School at Mandapam Camp may be taken up again with the Council and actively pursued.

The Government of Tamil Nadu had agreed to provide the land and buildings for the setting up the Central School on monthly rental basis.

Meeting of the Institute Joint Council

The Second Meeting of the Institute Joint Council was held at Cochin on 18 March, 1981.

The following members attended the meeting

Dr E. G. Silas Chairman
Dr S. V. Bapat Member
Shri N. S. Radhakrishnan
Member

Shri M. P. Chandrasekaran
Member

Shri S. Rajagopalan
(Secretary, Official Side)

Shri P. E. Sampson
Manickam, Member

Shri S. Kalimuthu Member

Shri B. Narayana Rao
Member

Shri Varughese Jacob Member

Shri A. Sethubaskaran
Member

Shri K. Muthuramalingam
Member

Shri G. Soundararajulu,
Member

Shri N. K. Mohanan
Member

Shri V. M. Mariappan
(Secretary, Staff Side)

Convention on Endangered Species

The Third meeting of the Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora was held at New Delhi from 25 February to 8 March, 1981. Dr E. G. Silas, Director, CMFRI attended the meeting as a member of the Indian Delegation concerning the living resources of the seas as well as the marine ecosystem.

The conference discussed very important issues concerning operations and control of trade of specimens included under Appendix II. A major area of discussion was the placement of some species of whales in Appendix I which

gives full protection to species listed therein and also provides for prevention of international commercial trade of specimens listed in Appendix I.

The conference voted overwhelmingly in favour of transfer of the sperm whale (*Physeter catodon*), sei whale (*Balaenoptera borealis*) and Fin whales (*Balaenoptera physalis*) from Appendix II to Appendix I. Heavy pressure exists on the stocks of the above three species and the International Whaling Commission has prescribed in some places 'zero' quotas on account of dwindling stocks.

Another resolution passed in the meeting was to transfer the black coral (*Antipatharia*) from Appendix II to Appendix I.

Although India is not at present exploiting the black coral which is a deep sea species, further exploratory work might indicate some potential for this species.

India Joins International Whaling Commission

India has joined the International Whaling Commission. The CMFRI has been monitoring and recording data on the stranding of whales along the Indian coasts and also in Indian Ocean region. With the involvement in the Whaling Commission it has become the Institute's responsibility to collect and maintain data on the whale sightings and strandings in the Exclusive Economic Zone.

Scientists of CMFRI attended the Following Meetings

Dr E. G. Silas, Director attended the following meetings.

Director's conference at Delhi on 12 and 13 January, 1981.

The meeting of the Central Co-ordination Committee of Fisheries Survey of India at New Delhi.

Twentyfourth Meeting of the Marine Authority (MPEDA) and also the Technical sessions of the IV Indian Seafood Trade Fair at Madras.

Ninetyfifth Executive Committee Meeting of the Kerala Agricultural University at Trichur, 12 February, 1981.

Convention on International Trade in Endangered species of the Wild Fauna and Flora (CITES)

Dr A. V. S. Murty and Dr P. V. Ramachandran Nair, Scientists S-3 and Shri V. Kunjukrishna Pillai and Shri

K. J. Mathew Scientists S-1, attended the Seminar on 'Environmental Studies in India, organised by the Centre of Earth Sciences Studies at Trivandrum, 26-28 March, 1981.

Dr M. S. Prabhu, Scientist S-3 participated in the Seminar on 'Ocean Features, Next Twentyfive Years' at the National Institute of Oceanography, Panaji, Goa, 3-5 March, 1981

Dr V. Balakrishnan, Scientist-S3 participated in *Krishimela* organised by the Kerala Agricultural University under the Lab to Land programme at Vyttila Centre.

A discussion Programme led by Shri P. Karunakaran Nair, Training Assistant Krishi Vigyan Kendra on the Feasibility of the Culture of Tiger Prawns was broadcast over the Trichur Station of All India Radio, 31, January, 1981.

Dr E. G. Silas, Director to Serve as

Member Technical Advisory Committee on New and Renewable Energy Source, Department of Science & Technology.

Coopted member, Task Force on Marine Products, constituted by the Ministry of Commerce, Government of India.

Nominated as Convenor of Expert Panel for living Resources Programme of the Indian Ocean Region constituted by Department of Science and Technology, Government of India.

Advisory Member on all matters related to the development of fishing industry and the welfare of persons engaged in the industry in the state.

Member, Sub-Group on Coastal Area Planning of the Task Force constituted by the Planning Commission.

VISITORS

FAO Experts at Tuticorin

A team of experts from FAO including Dr H. Rebenal, Senior Pisciculturist, South China Fisheries Development Programme, Manila and Dr M. Karim, Fisheries Adviser, Small-Scale Fisheries Promotion in South Asia, FAO, Rome visited Tuticorin Research Centre of CMFRI and its various aquaculture farms at Karappad site.

Mr. Abdulla Mohamed Al-Hammadi of Fisheries and Animal Husbandary Department Ministry of Fishwealth, Peoples Democratic Republic of Yeman (PDRY), Aden underwent a training course in fish and shrimp culture for a period of 4 weeks from 27 December 1980 to 19 January 1981. under the Indo-PDRY Cultural Exchange Programme for the year 1976-78 sponsored by the Department of Agricultural Research and Education, New Delhi.

Dr Ramanadhan, Director, Department of Environment visited CMFRI on 30 March, 1981 and gave a talk on 'Role of Technology in Protection of Environment.'

1981-International Year for the Disabled

1981 has been declared as the International year for the Disabled. The objective is to cheer up the disabled persons. Institutions concerned with the rehabilitation of the handicapped persons have organised different programmes. A group of children disabled by polio from the Home for Handicapped children, Trivandrum under the care of Dr Jones, visited the shell fish laboratory at the Tuticorin Research Centre of CMFRI on 14 March 1981. They were accompanied by Dr. Jaya Singh of Sri Lanka and other members of the Staff of the Home. The children watched the shell fish, live animals and other exhibits with great interest.



Handicapped children at shell fish laboratory

SPORTS

The Second ICAR Interzone Athletic Meet was held from 4 to 6 March, 1981 at the Maharaja's College ground, Cochin. Shri V. Atchutha Rao of our Palasa Field Centre as usual bagged the first places for 400 & 200 m race and Shri M. K. Gopalakrishnan of Pelagic Fisheries Laboratory, the third place for hammer throw.

The following athletes represented CMFRI at the Meet.

Shri V. Atchutha Rao.	100, 200 & 400 m race relay
Shri T. S. Velayudhan	800 m race
Shri Poovannan	} Relay
Shri Ashoka Kumaran	
Shri T. Mohamed Iqbal	
Shri L. K. Suvarna	5000 m cycling

Sri. A Reghunathan represented the Director as member of the Central Management Committee, assisted the Interzone Athletic Meet at Cochin

as Manager of the Meet and Jury of Appeal for the Interzone tournaments held at Karnal in March.

Emeritus Scientists Join CMFRI

Dr C. V. Kurian

Doctor Chaliyath Varghese Kurian joined CMFRI as an Emeritus Scientist in 1980, after retiring from the post of Professor of Marine Biology and Oceanography in the Faculty of Marine Sciences of University of Cochin. He was Professor and Head of the Department from 1965 and also the Dean of the Faculty and a member of Syndicate during the period 1971-78. Prof. Kurian, as incharge of this Department, has strived hard to build it up as a strong centre of post-graduate teaching and research in marine biology, oceanography and related disciplines.



Prof. C. V. Kurian

Prof. Kurian has been an original investigator as well as a teacher and research guide for scores of students, some of whom occupy prominent positions in academic and scientific institutions in India and abroad. He made significant contributions to the study of Benthos and the fisheries of the backwaters of Kerala and the south west coast of India. The books on 'Prawns and Prawn Fisheries of India' and 'Indian Ascidians' by C. V. Kurian and V. O. Sebastian are recent scholarly contributions to our knowledge on these subjects.

(Contd. on next page)

Dr Raghu Prasad

Dr R. Raghu Prasad who retired recently as Assistant Director-General (Fisheries), ICAR will be joining CMFRI shortly as an Emeritus Scientist to work on 'phyllosoma larvae' which has significant importance in lobster fisheries and lobster culture. CMFRI had arranged a meeting on 12 March, 1981 to welcome Dr Prasad back to the Institute.



Dr Raghu Prasad

Prior to joining the ICAR headquarters at New Delhi, Dr Prasad served in senior positions in CMFRI. He was the Head of the Division of Marine Biology and Oceanography from 1949 onwards and then served as Deputy Director of the Institute from 1962 to 1968 with overall charge of the Fishery Survey, Fishery Biology and Oceanography Divisions.

Dr Prasad has over 35 years of research experience in biological oceanography and fisheries.

The investigations carried out by him include studies on fish, plankton, crabs, primary production and phyllosoma larvae.

In addition to his long association with CMFRI and

ICAR, Dr Prasad has also served as Chief Scientist in charge of the Indian Ocean Biological Centre (CSIR) during 1964-68, as Consultant of the Indian Institute of Foreign Trade, and as Member in numerous official committees, panels, advisory bodies and learned societies. Dr Prasad is a Fellow of the Indian Academy of Science, Fellow of the Zoological Survey of India and Fellow of the National Academy of Science, India.

In his early years, Dr Prasad had a brilliant academic career at the Travancore University, Madras University and at the Stanford University in U. S. A.

It is worth mentioning that Dr Prasad is the grand son of the renowned artist Raja Ravi Varma and his father, Raja Rama Varma was the Founder of the Famous Art School at Mavelikkara, Kerala.

Appointments

Kumari M. Rameshwari, daughter of late Shri P. Muthu, Assistant, as Junior Clerk on compassionate grounds at Mandapam Camp, 2, January, 1981.

Shri Sanyakant M. Tandel as S. S. I. (Watchman) at Bombay, 21 January, 1981.

Shri D. Bosco Fernando, S. S. Grade III (F/M) as Deckhand (T-1) at Mandapam Camp, 24 January, 1981.

Shri M. Mohideen Abdul Kader, Deckhand (T-1) as Driver (Boat) (T-1) at Mandapam Camp, 27 January, 1981.

Shri S. Enasteen as Deckhand (T-1) at Mandapam Camp, 28 January, 1981.

Shri R. Arokiasamy as Deckhand (T-1) at Mandapam Camp, 28 January, 1981.

Prof. C V. Kurian (Contd.)

Prof. Kurian is associated with several academic Institutions and learned bodies. He is a National Correspondent for India of International Association of Biological Oceanography since 1970. He has served as the Vice President of the Marine Biological Association of India and has been member of the Indian Council of Agricultural Research Fisheries Panel. He is a member of the Advisory Committee of the University Grants Commission for the U.G.C. Centre for Marine Biology. He has also been a member of the Indian National Committee on Problems of the Environment. As Chairman/member of various academic bodies of the Cochin, Kerala, Annamalai and Andhra Universities he has made valuable

STAFF NEWS

Shri M. S. Surve as Field Assistant (T-1) at Bombay, 29 January, 1981.

Shri K. X. Thomas Paul as Bosun (T-II-3) at Mandapam Camp, 29 January, 1981.

Shri B. Vijayakumar as Senior Clerk on *ad-hoc* basis as Senior Clerk on regular basis, 29 January, 1981.

Shri D. Anandan, as Deckhand (T-1) at Mandapam Camp, 30 January, 1981.

Shri Maruthi Shankar Naik as Field Assistant (T-1) at Karwar, 30 January, 1981.

Shri S. K. Shinda as Motor Driver (T-1) at Bombay, 5 February, 1981.

Kumari Ranjana A Rane as Junior Clerk at Bombay, 10 February, 1981.

contributions to the promotion of the study of marine sciences in India.

Widely travelled. Prof. Kurian took the degree of Doctor of Science from the University of Belgrade, Yugoslavia. He has been a delegate to many international meetings on oceanography and marine biology and has visited most of the centres of learning in oceanography and marine biology in the U. K, West Germany, France, Norway, Denmark, Italy, U. S. S. R, Brazil, Malaysia and Japan.

An authority on Cumacea, Prof. Kurian is engaged currently in a study of the collections of Cumacea from the Indian Ocean and other samples placed at his disposal by the Smithsonian Institute, U. S. A.

Shri Thomas Teles as Bosun (T-II-3) at Mandapam Camp, 13 February, 1981.

Shri Susanthan as Bosun (T-II-3) at Mandapam Camp, 16 February, 1981.

Smt. A. B. Lalitha, wife of late Shri A. Narayana Gokhale, Senior Clerk, as Junior Clerk on compassionate grounds at Madras, 26 February, 1981.

Shri N. B. Gopalakrishna Menon as Bosun (T-II-3) at KVK Narakkal, 5 March, 1981.

Transfers

Dr C. S. Gopinadha Pillai, Scientist S-1 from Cochin to Minicoy.

Shri P. Livingston, Scientist S-1 from Minicoy to Mandapam Camp.

Dr R. S. Lal Mohan, Scientist S-1 from Calicut to Mandapam Camp.

Shri P. Karuppaswamy, Scientist S - from Calicut to Cochin.

Shri G. Radhakrishna, Scientist - S from Cochin to Waltair.

Shri K. M. S. Ameer Hamsa, Scientist S-1 from Mandapam Camp to Tuticorin.

Shri R. Soundararajan, Scientist S-1 from Mandapam Camp to Madras.

Shri G. S. Daniel Selvaraj, Scientist S-1 from Cochin to Kakinada.

Shri D. Sadananda Rao, Scientist S-2 from Cochin to Madras.

Shri Madan Mohan, Scientist S-1 from Vizhinjam to Minicoy.

Shri M. Kathirvel, Scientist S-1 from Cochin to Madras.

Shri S. Lazarus, Scientist S-1 from Vizhinjam to Calicut.

Dr P. Devadoss, Scientist S-1 from Calicut to Mangalore.

Shri K. Y. Telang, Scientist S-1 from Karwar to Mangalore.

Dr M. V. Pai, Scientist S-2 from Karwar to Cochin.

Shri M. H. Dhulkhed, Scientist S-2 from Mangalore to Karwar.

Dr P. S. Kuriakose, Scientist S-2 from Calicut to Karwar.

Dr N. Ramachandran, Scientist S-1 from Madras to Karwar.

Shri N. Jayabalan, Junior Technical Assistant (T-2) from Madras to Cochin.

Shri K. P. Velu, Motor Driver (T-2) from Mangalore to Cochin.

Shri D. Sundararajan, Junior Technical Assistant (T-2) from Cuddalore to Tuticorin.

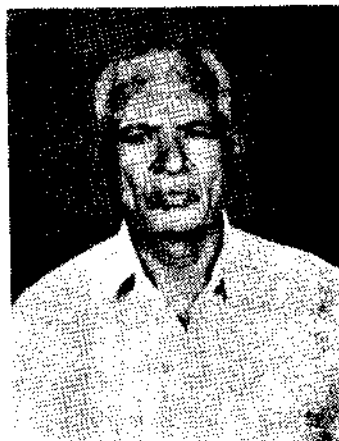
Shri M. Manivasagam, Field Assistant (T-1) from Tuticorin to Cuddalore.

Shri P. K. Sakkarai, Assistant from Cochin to Mandapam Camp.

Relief

Shri Jacob E. Eapen, Field Assistant (T-1) on resignation, 10 May, 1980.

Shri C. K. Vyasam, S. S. Grade I (Peon) on resignation, 19 January 1981.



Shri. E. Karuppan



Shri. K. Gurusamy

Shri Barsingh Suresh Jayasing, Field Assistant (T-1) on resignation, 21 February, 1981.

Dr N. Radhakrishnan, Scientist S-2 on voluntary retirement, 1 March, 1981.

Shri E. Karuppan, Fieldman on superannuation, 31 March, 1981.

Shri K. Gurusamy, Laboratory Attendant on superannuation, 31 March, 1981.

WEDDINGS

Smt. V. Parukutty, Junior Clerk at Calicut Research Centre wedded Shri K. M. Krishnan Kutty at Guruvayoor Temple, 25 January.

Shri A. Lakshminarayana, Scientist S-1 of Prawn Culture Laboratory wedded Kumari Girija Narain at Trichur, 9 February.

Shri S. C. Chakraborty, Scientist S-1 of Bombay Research Centre of CMFRI, Bombay wedded Kumari Smritikona at Bishmapuri, West Bengal, 12 March.

Newly Born Babies

Shri P. Radhakrishnan, Training Assistant, (T-4) is blessed with a Female Child, 3 January.

Ferozkhan P., Cadalmin II is blessed with a Female child, 11 January.

Shri V. I. Viswanathan, S.S. Gr. I, Watchman, is blessed with female child, 1 March.

Shri G. Gopakumar, Scientist S-1 is blessed with Female child, 1 March.

Shri D. Vincent, Senior Research Fellow, is blessed with male child, 8 March.

Shri R. Soman, Field Assistant, Mandapam is blessed with male child, 16 March.

Sri R. Sathiadhas, Scientist S-1 is blessed with male child, 27 March.