

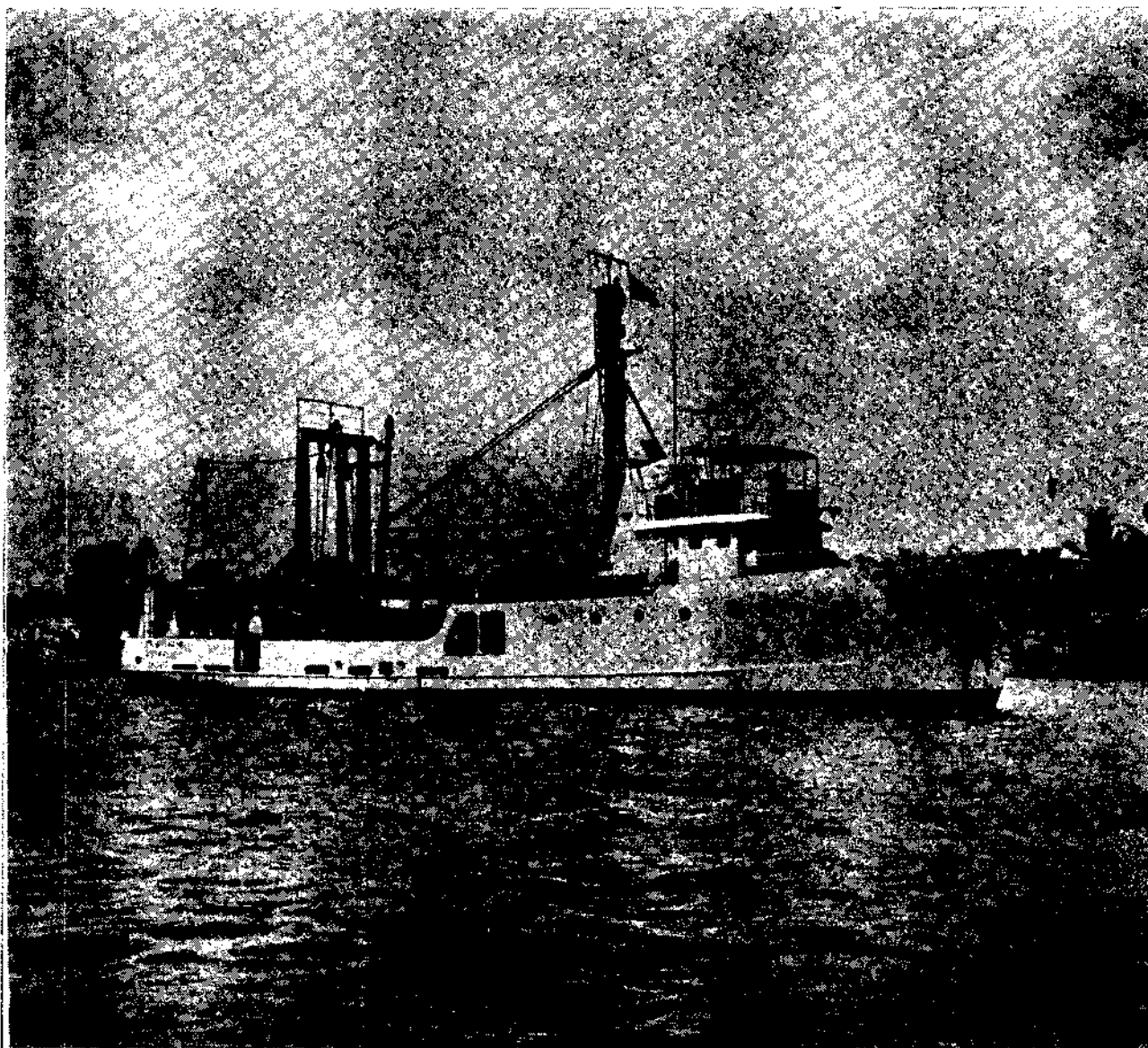


CMFRI newsletter

Number 18

October - December 1982

R. V. SKIPJACK



A MILESTONE IN MARINE FISHERIES RESEARCH

CMFRI's first research vessel R. V. Skipjack has arrived at Cochin, her home port, on 21 December, fulfilling the long-felt need to have the basic equipment to work on marine fishery resources. The vessel was taken over from Messers Garden Reach Shipbuilders and Engineers Ltd. Calcutta by Dr R. M. Acharya, Deputy Director - General, ICAR on 1 December. The acquisition of the new research vessel, by CMFRI, is a milestone in the history of marine fisheries research in India.

The vessel is equipped with modern acoustic, navigational and communication equipment such as deep water echo sounder with a range of 1.5 km and sonar having a scanning range of 2.5 km. She is fitted up for pelagic and bottom trawling and purse-seining. She would be rigged for squid jigging and tuna long lining. The wet laboratory in the vessel will facilitate on-the-spot analysis of the samples. The vessel can accommodate four scientists in addition to the crew and has an endurance of 15 days.

The vessel will be used for exploring new resources in the EEZ and for monitoring and assessing the resources presently exploited in the continental shelf. Deep sea resources of continental slope up to a depth of 1000 m will be explored. Fishery environment, particularly the zones of convergence and divergence of the water

masses and upwelling will be studied. It is hoped that this 32.6 m long 192 GRT vessel will help bridging the gaps in knowledge in the exploited resources in the continental shelf and slope and the potential resources in the EEZ which are beyond the access of the traditional fisheries.

The vessel, modified from a Norwegian design has been constructed entirely indigenously at a contracted rate of Rs 173 lakhs. This is the first fishery research vessel to be constructed fully in an Indian shipyard. Electronic and navigational equipment worth about 48 lakhs gifted by the Government of Norway under an aid programme and a stereo recorder given by the GRSE are gratefully acknowledged.

Open House

An Open house was held on board the vessel on 23 December to enable scientists and staff of other fisheries institutes to board the vessel and see the facilities.

Cruises

Regular cruises will be taken from early February, between Kanyakumari and Ratnagiri in the West Coast and later, during monsoon, in the East Coast. The cruises will be concentrating on pelagic and demersal resources, young fish survey, visual estimation of pelagic schools, chlorophyll mapping, estimation of plankton biomass, productivity and hydrographic parameters.

Skipjack would also participate in the development of remote sensing technology and measurement of sea truth data. Monitoring and study of migration of whales in the Indian waters will be an important aspect as India is a member of the International Whaling Commission.

Trophy for the trial cruise

The first trial cruise led by Dr S. V. Bapat, Joint Director, CMFRI brought ashore a giant sawfish *Pristis microdon* Latham. This was caught while trawling south off Cochin at 38 m depth. The specimen was 5.98 m long and weighed 960 Kg. The liver alone weighed 190 kg.

Progress in Blood Clam Culture Experiments

The blood clam *Anadara granosa* was successfully cultured in the Kakinada Bay without any pen enclosure. Seed clams of size 17-25 mm (average length 21.8 mm and average weight 5.68 g) stocked between 22-31 March, 1982 at the rate of 200 numbers per m² in a 0.5 ha subtidal farm have grown to an average length of 39.7mm (average weight 25.33g) when harvested during 20-30 September. A retrieval of 41.9% was obtained and the production was 10.51 t/0.5 ha/6 months.



The Plenary Session

Workshop on Acquisition and Dissemination of Data on Marine Living Resources of the Indian Seas

CMFRI has been collecting and processing data covering biological, ecological and environmental aspects of marine living resources and disseminating the results to various users within the country and abroad over the past three decades. In view of the data base already built up, the Planning Commission at its meeting held on 9 December, 1981 recommended the setting up of an information centre at CMFRI which will be a repository of all fishery data. The Planning Commission also suggested that CMFRI may hold a national workshop on the theme to review the present status of data acquisition, standardise data collection methods, evolve modalities for quick

dissemination of information and identify constraints involved in the above. Accordingly a National Workshop on Acquisition and Dissemination of Data on Marine Living Resources of the Indian Seas was held at CMFRI, Cochin from 21-23 October. Fiftytwo delegates representing Ministry of Agriculture, fisheries organisations, central research institutes, India Meteorology Department, NPOL, NIO, Naval Hydrographic Office, State departments dealing with marine fisheries statistics, agricultural universities, State fisheries corporations and private industries took part in the deliberations.

Realising the importance of data on marine living resources in general and fishery resources in particular in the seas around India for research, planning and management, the Workshop made number of recommendations. The National Marine

Living Resources Data Centre (NMLRDC) at CMFRI will be responsible for acquisition, processing and dissemination of information on marine living resources. The State fisheries departments will strengthen their data collection mechanism to achieve a coverage of 5%. NMLRDC will be responsible for supply of proformae for collection and maintenance of data, consultancy and training. The estimate brought out by NMLRDC after consulting the State departments will be accepted as the national estimate. The Fisheries Department of the Union Ministry of Agriculture will be responsible for collecting data from the larger fishing vassels operated by the Government, public and private sectors and those operating under bilateral and unilateral agreements and furnish the details to NMLRDC. NMLRDC will also collect and analyse data on coastal aquaculture, its social and econo-

mic impact. Information on stranding and incidental catches of endangered species will also be made available.

Gujarat Cyclone - 2 crores loss estimated

The cyclonic storm that hit the coastal districts of Junagadh, Amreli and Bhavnagar on 8 November dealt a severe blow to the marine fishing industry of the region resulting in the loss of life to 550 fishermen and damages to their dwellings and equipment causing a heavy loss of fish production. Out of the 18 villages hit by the cyclone, Jaffarabad, Rajpura, Madhwad and Mul-Dwaraka suffered severe damages. A total of 61 fishing boats were lost and 604 boats, 1771 units of dol and gill nets were damaged. Fish material worth about Rs 11,162,000 were lost, 3905 houses were damaged and 2 lakh were heads of livestock killed. The wind which blew with a velocity of 150 km per hour caused a loss of Rs. 2.32 crores. Scientists of CMFRI had visited the affected areas to take stock of the situation.

Workshop on Marine Invertebrate Reproduction

A Workshop on Marine Invertebrate Reproduction was organised by CAS in Mariculture in collaboration with the Department of Zoology of the University of Madras during 25 October - 10 November at Madras. Dr M. Santappa, Vice Chancellor of the Madras University inaugurated the Workshop and appreciated the collaboration between the University and CMFRI.

Various aspects of marine invertebrate reproduction such

as morphology, reproductive physiology, ecology and endocrinology with particular emphasis on methodologies employed in various investigations were discussed. Twenty-six participants including scientists of CMFRI, research scholars of CAS and teaching staff from colleges in Tamil Nadu attended the Workshop. CMFRI special publication No. 8, Manual of Research Methods in Marine Invertebrate Reproduction edited by Dr T. Subramanian was released on the occasion.

The valedictory meeting of the Workshop was held on 10 November which was presided by Dr. K. Ramalingam, Professor and Head of the Department of Zoology, University of Madras. Dr P. J. Sanjeeva Raj, Professor and Head of the Department of Zoology, Madras Christian College delivered the valedictory address and gave away the certificates to the participants.

Sardine and Mackerel Workers' Meetings

Meetings of workers on oil sardine at CMFRI was convened at the Pelagic Fisheries Laboratory during 25-27 October. Shri K. V. Narayana Rao, Scientist S-3 chaired the meetings.

Meetings of the mackerel workers were held at Pelagic Fisheries Laboratory from 6-9 December with Dr E. G. Silas, Director in the chair.

The methods of sampling and analysis of data to facilitate proper monitoring of the resources and quick dissemination of information were discussed.

Bulletin on Fishery Resources of the EEZ of the North West Coast

In view of the extensive shelf and slope areas available for exploitation of the NW Coast, the need was felt to survey and study the demersal as well as pelagic fishery resources of areas not covered so far by exploratory and commercial trawling operations. M. T. Murena, B-23 type freezer trawler belonging to Sea Fisheries Institute, Gdynia was, therefore, commissioned by the Government of India under the contract with the Government of Poland to conduct a year-long survey with six cruises covering the area from 15° to 24° N lat. and from 55 to 360m depth that could make a quick appraisal of the fisheries potential of the region beyond 50 m depth. The results of the survey (CMFRI's report) has been published as CMFRI Bulletin 33, Fishery Resources of the Exclusive Economic Zone of the North West Coast of India. The authors Dr S. V. Bapat, Shri Mukundan and Dr B. Krishnamoorthy were leaders of different cruises. Dr R. S. Lal Mohan, Shri K. Rengarajan, Shri C. Muthiah and Dr M. V. Pai were also in the team. Two hundred and twenty-eight species of fish, 24 species of crustacean and 7 species of cephalopods were identified. Fishery data, species composition, distribution and abundance of major groups and species, their biology, resource potential, economics of fishing in deep-sea grounds, hydrography and zooplankton of the region have been described in the Bulletin.

Wildlife Exhibition

The Madras Research Centre participated in the First All India Wildlife Exhibition and Display organised by the Tamil Nadu Forest Department at Guindy National Park at Madras. Three, fifteen and thirty-months-old, laboratory-reared Olive Ridely and adult green turtles were exhibited along with illustrations on work in marine turtle conservation done by CMFRI. The Governor of Tamil Nadu, State Ministers and forest officials visited the exhibition and evinced interest in the role played by CMFRI in the conservation of endangered species. Over a lakh of people have been estimated to have visited the exhibition.



Vizhinjam and Tuticorin Research Centres participated in an exhibition organised by Bharat Karshak Samaj in connection with National Convention held at Trivandrum from 26 - 27 December.



KVK provided guidance in arranging exhibitions at Shri Gujarathi Vidyalaya, Mattanchery and Canossa Convent U. P. School, Vypeen as a part of the Sub-District Level Science Exhibition.

Symposium on Harvest and Post-harvest Technology of Fish

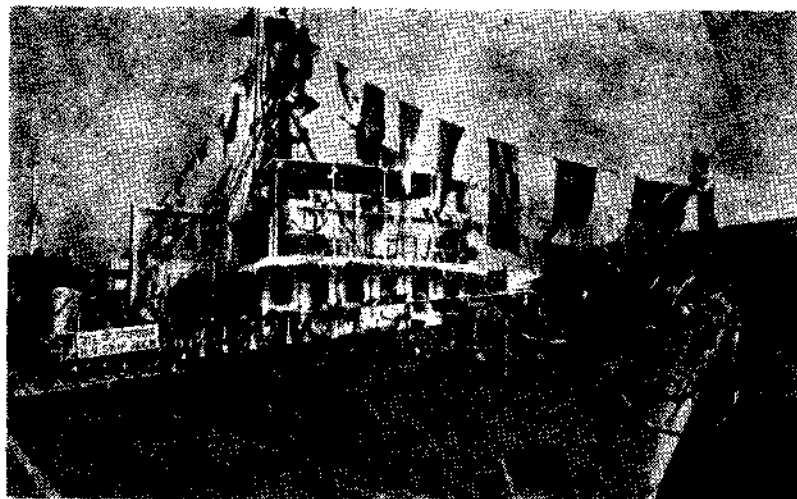
The Central Institute of Fisheries Technology held a symposium on Harvest and Post Harvest Technology of Fish from 24-27 November at Cochin. The Symposium was attended by delegates from the country as well as abroad. The

Symposium was inaugurated by Shri R. V. Swaminathan, Union Minister of State for Agriculture. The deliberations were conducted in ten sessions and the session on Resources was chaired by Dr E. G. Silas, Director, CMFRI. Scientists of CMFRI actively participated in the Symposium and presented papers.

Seminar on Prawn culture

Under the auspices of Vytilla NES Block, Maradu and Kumbalam Panchayats and also with the co-operation of educational institutions, social and cultural organisation of the locality, a one-day village-level seminar on Fisheries Develop-

(Continued on 12)



Bedecked Skipjack at GRSE docks



A section of the viewers at the taking over ceremony



Dr Acharya on board



Signing of the protocol by Dr E. G. Deputy Director-General, ICAR and C. Standing behind are Dr S. V. Shri M. K. Sengupta



GRSE Chairman presenting

Open House



*Director, CMFRI, Dr R. M. Acharya, and
Dr. S. K. Sarker, chairman, GRSE,
Joint Director, CMFRI and
Manager, GRSE.*



Visitors looking into the fish hold



Visitors with the Director on board the vessel



Memento to Dr Sarker



Skipper and some members of the crew

Mobile Lab

Pollution Studies in the Malabar Coast

The breakthrough in fin and shellfish culture adopting low-cost technology achieved by CMFRI has drawn the attention of the enterprising fish farmers towards mariculture. Enumerable queries are coming from the interested farmers about the feasibility of starting culture practices in the estuarine and brackishwater of their areas. This has necessitated the collection and dissemination of first hand information on the topography, hydrography, geochemistry, granulometry, primary and secondary production, resident fish fauna, benthic biomass and its distribution. The sources of aquatic pollution of the potential brackish and estuarine culture sites in the maritime states should also be scientifically studied.

The Mobile Lab facility available with CMFRI has rendered this possible and the Fishery Environment Management Division has been conducting regular surveys under its project on Environmental monitoring of culture ecosystems. The salient features of the survey conducted at the Vembanad Lake and Tuticorin coast have already been reported. Three more surveys were carried out in the Ponnani, Beypore and Moorat estuaries in the Malabar coast during November. These estuaries support good fishery of clams, prawns and mullets throughout the year as they are fed by the Bharathapuzha, Chaliyar and Kuttiyadi rivers respectively which are perennial in nature. The Ponnani and Beypore estuaries are

under threat of aquatic pollution due to the discharge of effluents from the factories located on their banks. Though the effluent discharge point of Vanjinad Leather Tannery Ltd at Kuttipuram is located above the bridge, no discharge was observed on the sampling day. The water quality as measured from the discharge point to the bar-mouth showed no significant deviation from the normal values.

The Beypore estuary was receiving effluents from the Gwalior Rayons Pulp and Paper Mill at Chungappally but the discharge was quite negligible due to curtailed production. Oxygen depletion was observed only in the surface water near the discharge point. The physicochemical, geochemical, and biological characteristics observed were within the optimum levels for sustenance of fish life.

The Murat estuary was free from the hazards of aquatic pollution. Rich clam beds comprising *Villorita* sp. were noticed at the head of the estuary near Payyoli bund. That this estuary is suitable for aquaculture operations is evident from the results obtained.

First Batch of MSc at C A S Passes out

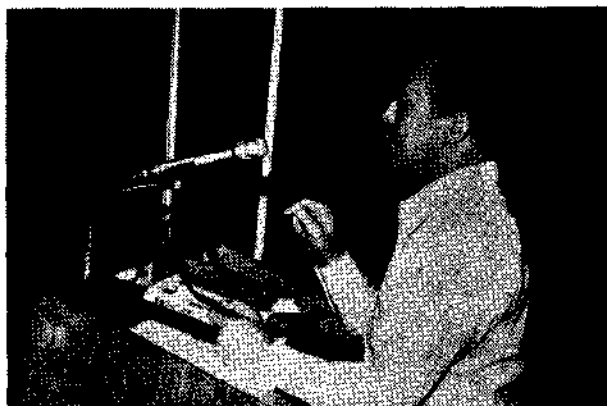
The first batch of MSc, students in Mariculture who attended the course at CMFRI, during the academic session 1980-82 have been declared passed in First Class by the University of Cochin. For the first time in the country personnel trained at the Masters level in different disciplines in mariculture have become available for taking up research and development work in mariculture. It is a good beginning in improving technical competency in the field of mariculture in the country.

Consultant in Invertebrate Tissue Culture

Dr. Akira Machii, an expert in invertebrate tissue culture, of National Research Institute of Aquaculture, Japan has arrived at CMFRI on expert consultancy programme at the CAS on 22 December. Dr Machii will be at CMFRI for four weeks and will

train a group of scientists in invertebrate tissue culture. Dr Machii will also give seminars and lead group discussions. Marine invertebrate culture is an emerging field and has lot of application in mariculture.

Dr Machii



VISITORS

FAO Anchoviella Study Team with the following members visited Mangalore Research Centre to investigate the possibilities of diversifying Indian anchoviella into products suitable for export to other South East Asian Countries where the species is in great demand.

Mrs Sei-Poh Chen, Fishery Industry Officer (Processing) FAO, Dr G. Jegatheesan, Fisheries College, Tuticorin.

Mr Galicano L. Siton, Lorenzana Food Col. Manila, Phillipines.

Mrs Lourdes M. Arafles, Department of Fish Processing Technology, College of Fisheries, Quezon City Phillipines.

Mrs Sharifah Nor Hidayath, Head, Training and Extension Branch, MARDI, Serdang Selangor, Malaysia.

Mr Haji Hassan Abdulla, Fish Sauce Industry, Terengganu, Malaysia.

Mr Marceliano B. Neito, College of Fisheries, Quezon City, Phillipines

The following ten Junior Research Fellows have joined the third batch of M. Sc. (Mariculture).

1. Shri C. M. Muralidharan
2. Shri Parag B. Karia
3. Shri S. Alaguravi
4. Shri G. Gopakumar
5. Shri R. Sankara Pillai
6. Kumari Prathibha Puthran
7. Kumari Annie Mathew
8. Kumari P. T. Sarada
9. Kumari V. Kripa
10. Kumari K. Rani



Union Minister of Agriculture Shri Rao Birendra Singh meeting with the staff of CMFRI and CIFT when he visited Veraval on 25 October

Dr K. J. Jauncey, Institute of Aquaculture, University of Stirling a specialist in fish nutrition gave a talk on Techniques of fish nutrition and their application to crustacea and other invertebrates on 18 November.

UNESCO/FAO/UNDP Technical Advisory Mission comprising Dr A. W. El-Moursi, Agricultural Education Officer, F. A. O Mr. T. R. Worku, Programme Specialist, UNESCO, Mr. D. R Malhotra, Senior Programme Officer and Shri V. Kumar, Project Administrative Officer, UNDP visited CMFRI and reviewed the progress and the general activities of CAS, 15-19 October.

Participants of the Training Programme on Marine Resources Management and Conservation in Indian Ocean Basin and Adjacent Seas Organised by National Institute of Oceanography, Goa and co-sponsored by Ministry of External Affairs and Department of Ocean Development. Government of

India, SIDA, UNEP, FAO, Common Wealth Secreteriate and other agencies visited CMFRI on 25 November. Dr E. G. Silas, Director CMFRI gave a special lecture on tuna and bill fish resources of Indian Ocean region, 25 November

Dr. R. M. Acharya, Deputy Director - General (Animal Sciences), ICAR visited Kakinada Research Centre, 7 September.

The following dignitaries also visited CMFRI during the period

Dr P.S.B.R. James, Assistant Director-General (Fisheries), ICAR

Dr S. N. Dwivedi, Director, CIFE, Bombay.

Dr H. R. Kalia, Vice Chancellor, Himachal Pradesh Krishi Vishwa Vidyalaya.

Shri S. C. Hota, Director of Fisheries, Orissa

Dr N. K. Jaiswal, Director (Transfer of Technology), National Institute of Rural Development, Hyderabad.

Dr A. N. Bose, Professor, Aquaculture Engineering, Indian Institute of Technology, Kharagpur.

Dr M. Ramaseshaiah, Lecturer, Department of Marine Living Resources, Andhra University.

Professor P. N. Ganapathi, Emeritus Scientist, Andhra University and Chairman, CMFRI Achievement Audit Committee.

Mrs Trutee, 37, Ellawarra Road, Hemington Melbourne Australia.

Dr P. M. Rao, Principal Somayya College. Bombay.

Thirty students trainees of the CIFNET, Madras along with two staff members visited KVK, Narakkal.



Ms Faazaz Bte Abd Latiff, Fisheries Officer, University of Science, Penang, Malaysia was at Mandapam Regional Centre for one week training in Seaweed culture and its utilization, under BOBP/FAO programme, from 22 November.

STAFF NEWS

Deputation

Shri K. M. S. Ameer Hamza, Scientist S-1 was deputed for a period of 2 months to undergo Fellowship training under UNDP/FAO Programme in the field of Pen and Cage Culture

CMFRI Joint Council

The following are the representatives elected from staff side to serve in the CMFRI Joint Council for a period of 3 years.

Scientific Group

Shri P. Karuppaswamy

Technical Group

Shri K. K. Balasubramanian

Shri Joseph Andrews

Shri M. Abdul Nizar

Shri K. C. Yohannan

Administrative Group

Shri T. N. Padmanabha Kurup

Shri M. Ganapathy

Supporting Staff

Shri M. B. Hussain

Shri C. M. Rajappan

Shri P. A. Vasu

Shri T. N. Padmanabha Kurup has been elected to serve as

Secretary (staff side), Joint Council and Shri K. K. Balasubramanian has been elected to represent Joint Council as a Member in Central Joint Staff Council.

Official side (nominated)

Dr. E. G. Silas, Chairman
Director

Dr S. V. Bapat Member
Joint Director

Shri S. Mahadevan Member
Scientist S-2

Shri M. Kumaran Member
Scientist S-2

Shri M. P. Lakshmanan Secretary
Superintendent

Shri M. P. Chandra- Member
sekharan
Assistant Accounts
Officer

Grievance Cell

The Grievance Cell of CMFRI has been reconstituted with the following members:

Dr M. J. George, Chairman
Scientist S-3 (Nominated)

Shri C. P. Thomas
Senior Administrative Member
Officer (Nominated)

Shri M. P. Chandrasekharan Member
Asst. Accounts (Nominated)
Officer

Shri A. P. Balakrishna Pillai
Superintendent Member
Secretary (Nominated)

Shri P. Karuppaswamy Members
Scientist S elected from
Joint Council

Shri C. M. Raajappan
Lab-Attendant

at SEAFDEC, Philippines from 2 October.

Dr E. G. Silas, Director to serve as

Member in the Committee constituted by ICAR to review the existing procedure for processing and approval of Cess Fund Schemes to cut

down the delay in the approval and implementation of schemes.

Member in the Reconstituted Academic council of Kerala Agricultural University.

Chairman of the Board of Studies in Mariculture, University of Cochin, for four years from 5 October, 1982

The following officials are nominated as members in the reconstituted Faculty of Marine Sciences, University of Cochin

Dr E. G. Silas, (Nominated by the Syndicate).

Dr M. J. George Scientist, S-3.

Sri P. R. S. Tampi Scientist S-3 (Nominated by the Board of studies in Industrial Fisheries).

Engagements

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

ICAR Directors' Conference at New Delhi, 7 & 8 October

CAS Advisory Committee Meeting at New Delhi, 1 November.

Indo-Pacific Fisheries Council and Indian Ocean Fisheries Commission Meeting of the FAO (IPFC/IOFC) at Bali, Indonesia as member of Indian delegation. 10 to 18 November.

Meeting in connection with the taking over of RV Skipjack at Calcutta, 1 December.

Plenary session and valedictory meeting of Training Programme by FAO / National Institute of Oceanography at Bombay, 9 December

Dr L. Krishnan, Scientist S-1 at Narakkal and Mr V. D. Deshmukh, Scientist S-1, at Bombay Research Centre of CMFRI attended the Class 'C' training programme on Marine Resources Management and Conservation in the Indian Ocean Basin and Adjacent Seas' organised by the International Ocean Institute-Malta at Goa from October, 10-December to 1982. This international training attended by representatives from the various countries bordering Indian Ocean covered mainly a variety of activities

related to the ocean, fisheries, offshore oil drilling, deep sea swimming, pollution and Pollution monitoring, coastal zone management, coastal tourism, navigation, international convention etc. with special reference to Indian Ocean.

Dr M. M. Thomas, Officer-in-Charge and Shri. P. Karunakaran Nair Senior Training Assistant of KVK attended the Rural Programme Committee Meeting of the All India Radio held at CIFT, Cochin, 23 November.

Shri N. Surendranatha Kurup and Sri. K. Y. Telang, Scientists S-1 at Mangalore attended the Tenth Orientation Course on Agricultural Research Management at Hyderabad from 3 November-2 December.

Shri V. Kunjukrishna Pillai attended the following meetings

Seminar on Fisheries Education and Research Organised by Kerala Agricultural University Fisheries Faculty Members Association at Panangad, 13 November.

Seminar on Status and impact of heavy metal pollution in India at the Centre for Environmental Studies, College of Engineering, Anna University, Madras, 1-3 December.

Dr. P. V. Ramachandran Nair, Scientist S-3 has been nominated by the Director as the Officer-in-charge of the R. V. Skipjack.

Appointments

Shri C. P. Thomas as Senior Administrative Officer at Cochin. 30 December

Shri P. J. Josey Jacob as Chief Engineer (T-6) at Cochin. 1 October.

Shri Ganesh R. Nadig as Junior Clerk at Karwar, 26 November.

Smt S. Leelavathi, as Junior Stenographer at Tuticorin, 31 December.

Smt P. Thankateelal as Junior Clerk at Madras, 30 December.

Smt Latha Govindrao Thote as Punch Card Operator (T-1) at Cochin, 5 October.

Shri V. P. Benziger as Deckhand (T-1) at Mandapam Camp, 23 November.

Shri P. Hillary as Deckhand (T-1) at Mandapam Camp, 23 November.

Shri N. Rajavelu as S. S. Grade I (Watchman) at Mandapam Camp, 8 October.

Shri K. Kunjuraman as S. S. Grade I (Watchman) at Cochin, 21 October

Shri S. Murugan as S. S. Grade I (Safaiwala) at Mandapam Camp, 15 October.

Shri P. Villan as S. S. Grade I (Safaiwala) at Tuticorin, 3 November.

Shri K. John James as S. S. Grade I (Gardener) at Tuticorin, 3 November.

Shri M. Kadarkarai as S. S. Grade I (Safaiwala) at Tuticorin, 10 November.

Shri P. Gopalan Nair, S. S. Grade III as S. S. Grade IV at Calicut, 9 October.

Transfers

Shri V. Reghu, S. S. Grade I (Watchman) from NPCL to Cochin.

Shri S. Antony, S. S. Grade I (Messenger) from Calicut to Vizhinjam.

Shri K. C. Pradeepkumar, S. S. Grade I (Messenger) from Vizhinjam to Calicut.

Relief

Shri A. Chakrapani, Assistant Administrative Officer at Cochin on superannuation, 31 October.



Shri M. Vythialingam, S. S. Grade III at Mandapam Camp on superannuation, 31 October.

Degree Awarded



Shri P. Nammalwar, Scientist S-1 at Mandapam Regional Centre has been awarded Ph. D degree by the University of Madras for his studies on Some aspects of ecophysiology and biological concerns of the estuarine mullet *Liza macrolepis* Smith with reference to heavy metal pollution.

Weddings

Shri K. Chacko, Projector Operator at Cochin married Kumari Brigith at Pala, 22 August.

Shri H. K. Dhokia, Field Assistant at Veraval married Kumari Prafula at Veraval, 9 December.

Kumari Ranjana S. Rane, Junior Clerk at Bombay married Shri Asok K. Sawant at Bombay, 24 December.

(Continued from page 5)

ment was held on 6 October at the Fisheries College, Panangad in Ernakulam district. The programme was organised by the NES Block as a part of the Social Development Week from 2-8 October. The staff of KVK and Economics and Extension Division of CMFRI had participated. The staff of KVK gave lectures and held discussions on various aspects of prawn culture.

A one-day refresher course on eradication of predators using ammonia was held by KVK on 19 October at Narakkal as a part of the Prime Minister's 20 Point Programme.