CMFRI newsletter

No 21 July-September 1983

CMFRI SCIENTIST IN ANTARCTICA TEAM

Scientists getting trained in vertical climbing on the ice mountain in high altitude at 14000 feet on the Machoi glacier in the Himalayas

Dr K. J. Mathew, Scientist S-1 of the Central Marine Fisheries Research Institute has been selected to participate in the third Indian Expedition to the Antarctica which is scheduled to leave India from Goa on a four-month trip in the first week of December. Dr Mathew will be the first ICAR Scientist to participate in the Antarctic Expedition. His studies at CMFRI on euphausiids of the southeastern Arabian Sea have enabled him to be honoured with this unique opportunity. In the Antarctic waters he will be carrying out investigations on various distributional and biological aspects of krill (*Euphausia superba*) and related species.

The polar team will consist

Dr Mathew (sitting first from left) with the Deputy Leader of the Expedition (standing second from left), one of the lady members, Kumari Sudipta Sengupta and some other members of the team.

BREAKTHROUGH IN MUSSEL BREEDING

The green mussel *Perna viridis* and the brown mussel *Perna Indica* have been successfully bred in the laboratory. The experiments were conducted at Madras and Vizhinjam Research Centres respectively for green and brown mussels. The mussels were artificially spawned by thermal stimulation.

The larvae of *P. virdis* were fed micro - algae raised in the laboratory. The feeding levels were increased proportionate to the larval growth, essentially using mixed algal cultures of local species. The larvae metamorphosed and settled as spat at about 420 microns. A number of materials were used as spat collectors of which the nylon filaments attracted the most spatfall. In the case of *P. Indica*, the spat setting was observed at the 22nd day of fertilization. The size of spat was about 780 microns. The larvae were fed naked flagellates such as *Isochrysis galbana* and *Pavlova* sp. raised in the laboratory.

CMFRI had earlier developed techniques for open-sea mussel farming and demonstrated its potential at Madras, Vizhinjam, Calicut and Karwar. Mussel culture was one of the components of the technology transfer under the Lab-to-Land Programme. The major hurdle in commercial production was the inadequacy and undependability of mussel seed in nature. There is a traditional subsistence fishery for the green mussel in the Malabar coast and also for the brown mussel around Vizhinjam. Removal of seed from the natural beds on large scale for farming will affect the resource. The spat fall in nature itself has been erratic some years leading to failure of mussel fishery. Hence a project for artificial production of mussel seed was taken up by CMFRI. S/Shri K. Rengarajan, Scientist S-2 and P. Poovannan and K. Srinivasagam, Technical Assistants at Madras Research Centre were associated with the green mussel culture and S/Shri K. K. Appukuttan, Scientist, S-1 and T Prabhakaran Nair and T. Thomas, Technical Assistants at Vizhinjam Research Centre were carrying out experiments in brown

Mussel culture rafts in position at CMFRI'S Farm at Vizhinjam

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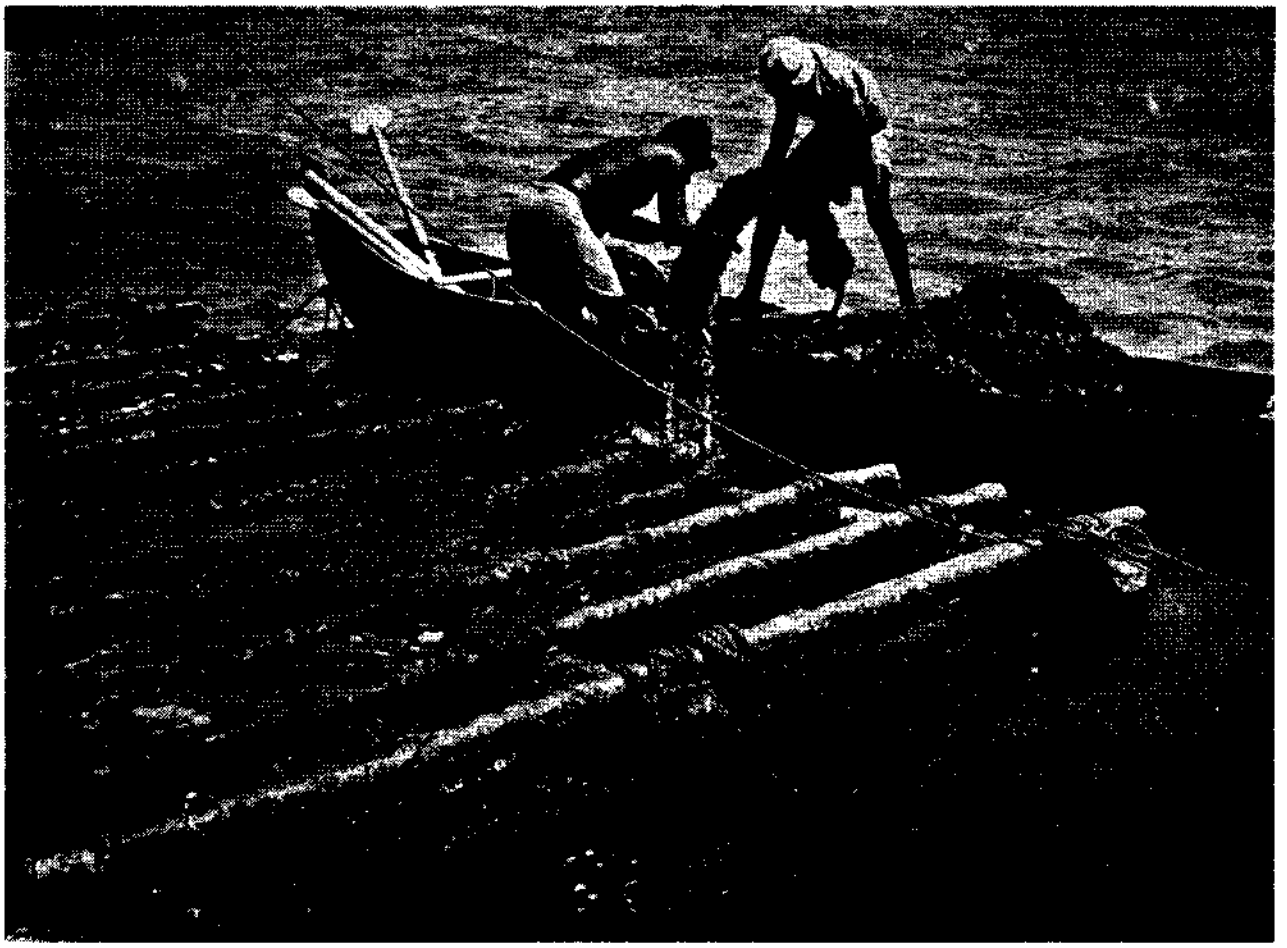
of 82 Indian nationals of which 15 will be scientists drawn from various government departments and universities. The team will include marine biologists, oceanographers, chemists, geologists, meteorologists, oil and natural gas experts and communication experts. Two lady members, one from the National Institute of Oceanography and the other from the Jadavpur University, Calcutta, are also included in the team.

A 157m long Finland vessel named 'FINN POLARIS' provided with all modern facilities has been already chartered for the expedition. The expedition will be led by Dr H. K. Gupta, Director, Centre for Earth Science Studies, Trivandrum. Lt. Col. S. S. Sharma of the Defence Research and Development Organisation, Pune will be the Deputy Leader.

In preparation to the expedition Dr Mathew had undergone training on the glaciers in Machoi, Ladakh, organized by the High Altitude Warfare School, during the second half of September. The training included acclimatisation to the high altitude, climbing mountains, erecting tents and various exercises on the pack of ice such as walking, climbing vertical gradiants, rope climbing, step-cutting, crossing crevices etc.

The main task of the expedition will be to erect a permanent building in the Antarctica so that the scientists could stay there throughout the year and make continuous observations. This time about 16 persons will be left on the ice continent to live there for 16 months. CMFRI wishes the expedition all success!



Harvest of mussels

mussel culture. The project has been making steady progress over the last two years which culminated in the success achieved in August 1983 for both the species. CMFRI would lay emphasis on scaling up the technology for large-scale production of mussel seed so that such technology could be passed on, at a later stage, to the states for taking up development programmes in commercial mussel farming.

With this development, the three economically important marine bivalves namely pearl oyster, edible oyster and mussel have been successfully bred under controlled conditions and these would form the basis for large-scale seed production in future commercial hatcheries.

Viable Prawn Seed Recovered from Hatchery Experiments

In two hatchery experiments conducted at Muthukadu in March, 1983, 2,95,000 eggs were released by two breeders of *P. indicus* (158 and 163mm in length) from which 2,53,000 nauplii emerged. The nauplii larvae were reared in the farm water having a salinity range of 28 to 40% for 11 days and 27,000 post larvae survived. These post larvae raised with controlled feeding for 45 days attained an average size 30mm and 16,800 viable seed were recovered which were handed over to the Tamil Nadu Fisheries Department for culture. S/Shri K. Devarajan and M. Kathirvel are the scientists associated with the work.

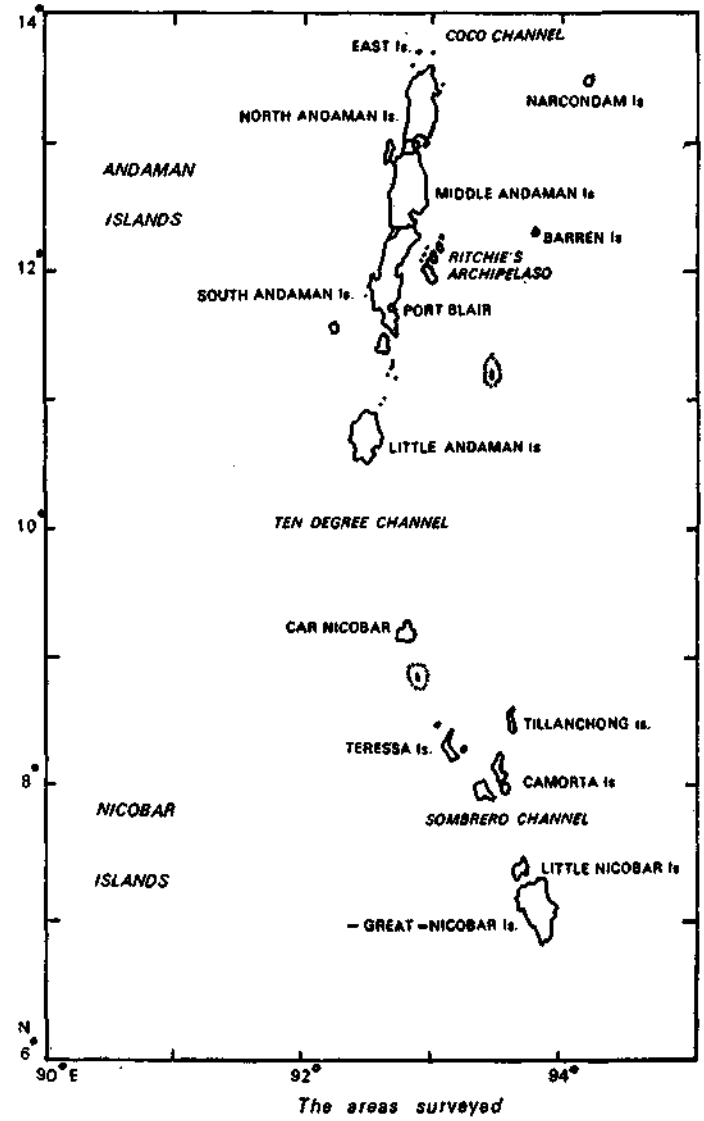
New Ground for *Chanos* Located

A new ground for collection of *chanos* seed was located at Calicut and 4127 seed ranging from 15–25 mm were collected and utilised for culture experiments in the polythene film-lined ponds at the Calicut Research Centre.

PUBLICATION

Mariculture Potential of Andaman and Nicobar Islands

The Andaman and Nicobar Islands which enjoy the status of an archipelago with over 550 islands, islets and rocky outcrops in the Bay of Bengal have vast resources of oceanic fishes such as tunas, tuna-like fishes and billfishes, elasmobranchs and squids. However, the Islands' contribution towards total fish production of the country has been only about 0.1%. The Islands are also gifted with numerous bays, creeks and inlets on the landward side and vast expanses productive oceanic waters of Bay of Bengal on the west and Andaman sea on the east which present possibilities for major development in fisheries. To identify and indicate species resources suitable for mariculture, locate suitable environs and assess the infrastructure facilities available for mariculture, CMFRI conducted a rapid survey at selected centres of the Islands in January-April, 1978. The survey was carried out by two teams with Dr K. Alagarswami and Shri K. Nagappan Nayar, Senior Scientists as leaders. The findings of the survey have been published as CMFRI Bulletin No. 34, Mariculture Potential of Andaman and Nicobar Islands -An Indicative Survey. The Bulletin presents general considerations for development of mariculture in the Islands which could be of help in planning development programmes.



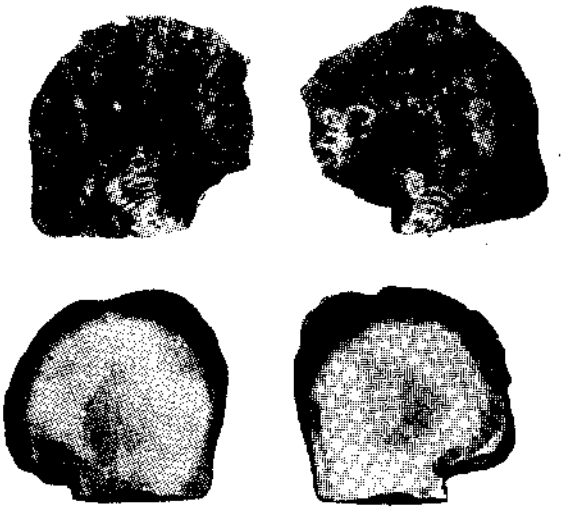
The areas surveyed

Topographical features, hydrology of inshore waters, productivity and zooplankton of the coastal waters, coral reefs and their environs, mangrove resources, finfish, shell fish, mollusc, marine reptile, echinoderm and seaweed resources of the areas surveyed have been described in the Bulletin.

The Islands are mostly grouped and are moderately indented, providing ideal situation for raft, cage and pen culture of fishes and also development of prawn and fish farms. The mangroves of the

Islands are one of the well-preserved ecosystems in the world and are extensive. These ecosystems are highly productive and have rich resources of penaeid prawns, crabs and finfishes and are suitable for adopting the 'tambak' type of farming practised in Indoneasia. More than 20 species of penaeid prawns have been recorded of which banana prawn is the most important one. Of the three species of portunid crabs identified, *Scylla serrata* forms a good candidate species for culture. Six species of spiny lobster have been identified, including *P. longipes* which is a commercial species in Australia, which would be suitable for rearing in the Islands. The black-lip pearl oyster of the Islands is a resource of considerable importance. The Islands present ideal ecological conditions for pearl oyster farming. Economically important species of oyster, mussel, *Turbo* and *Trochus*, abalone, giant clam, grey mullet and milkfish have also been identified. There is vast scope for culture of bait fish, perches, seaweed, sea cucumbers and sea urchins in the lagoons, bays and extensive tidal reef flats of the Islands.

A mangrove in Spiteful Bay



Black - lip pearl oyster. This species is known for the production of fine steel-black pearls under culture.

Sawai Bay - Car Nicobar Island

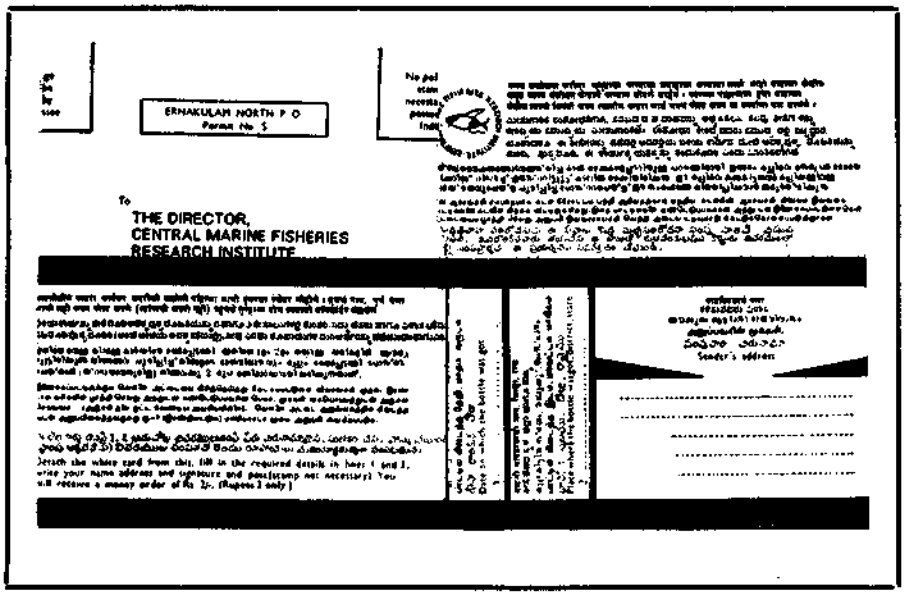
Andaman and Nicobar Islands are one of the most important nesting grounds for the endangered species like sea turtles (olive ridley, green turtle, hawksbill and leatherback) and the programme of conservation of these could be initiated. The saltwater

Drift Bottles Released to Study the Coastal Currents

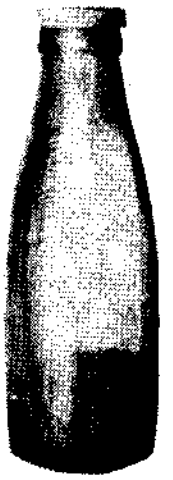
Ninehundred drift bottles were released in the sea off Tuticorin during September, as part of a programme to study the coastal currents along the east and west coasts of India. The study was undertaken in connection with the prawn tagging programme of CMFRI to understand the role of coastal currents in the migration of prawns. Recent tagging experiments had shown that the naran-chemmeen (*Penaeus indicus*) of Kerala coast migrated to the Kanyakumari and Thirunelveli coasts

It is proposed to release the drift bottles from Puri, Kakinada, Madras, Pondicherry, Mandapam and Tuticorin in the east coast and from Karwar, Calicut, Cochin, Quilon and Vizhinjam in the west coast and also from Kanyakumari.

It is 76 years since the previous drift bottle experiments were conducted to study the coastal currents of India. The experiments were confined to the Gulf of Mannar and were performed by J. Hornell in 1907 and T. Southwell and J. C. Kerkham between 1908 and 1910.


ERNAKULAM NORTH P O

To
THE DIRECTOR,
CENTRAL MARINE FISHERIES
RESEARCH INSTITUTE



The Drift bottle used was a 500 ml milk bottle with a leak-proof plastic lid. A reply card, to be posted without affixing postage stamp, with multilingual instructions requesting the finder to write down the place and date of its discovery and the address of the finder and promissing a reward of Rs. 2/-on its receipt by CMFRI, was placed inside each bottle. Some dry sand was also placed inside each bottle to keep it just below the surface of the sea.

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crocodile, which is the world's largest living reptile growing over 8 m is found in Andamans and programme of farming the species can be taken up with a view to increasing the population.

The hatchery technologies developed by CMFRI can be adopted for seed production since the water is free from pollution except in a very few areas. The protected bays and mangrove-lined creeks provide the right environment for sea-ranching programme for the improvement of natural resources.

Suggestions for extensive surveys for site selection, infrastructure and manpower development and fixing of priorities for the development of mariculture in the Islands are also given in the Bulletin. The Bulletin consists of 24 papers prepared by the members of the teams, edited by Dr K. Alagarswami, Senior Scientist.

Hypersaline Coastal Lagoon can be made Cultivable

The Barmouth

Hypersalinity and low water level make the mud flats and coastal lagoons unfavourable for fish culture throughout the year. The Pillaimadom coastal lagoon which extends about 5.2 km along the Palk Bay near Mandapam is one such water body where water dries up resulting in hypersalinity making it unsuitable for fish culture during July-October. The pen culture experiments to grow chanos in the lagoon met with failure in 1981-82 due to hypersalinity (120 ppt) and high temperature resulting in total mortality of the fish stocked. The fish were also taken away by birds like crane and eagle when the water level went down.

A bar mouth was made in this region in August 1983 which improved the hydrological conditions of the lagoon considerably. The salinity went down to 55 ppt and the dissolved oxygen content increased to 5.2 ml/lit. The water level increased from 20 cm to 50 cm. The bottom flora and fauna also improved.

The bar mouth was made near the seaward side where the fish pens were erected. The sea formed a small bay in this region and enough sea water could reach the pens. The width of the bar mouth at the seaward side was about 20 m and the length was about 80 m. The sides of the channel were lined with black polythene sheet of 200μ and sand bags were kept on them to prevent soil erosion. Tin sheets of 2m x 1m were kept supported by palmyra poles to protect the bar mouth from erosion due to strong southwest wind. The sea water entered the lagoon through the bar mouth for four days after and before the full moon and new moon maintaining the water level suitable for fish culture. A good harvest is expected according to Dr R. S. Lal Mohan, scientist, from the fish pen stocked with milkfish.

KVK

A ten-day course on scientific farming of prawn and fish and a refresher course on loan facilities to small and marginal farmers through IRDP was conducted. In all 17 farm-women and 43 farm-men were given training during the month.

Under social forestry programme, saplings of avenue trees were planted at the KVK campus and sides of roads leading to it.

To give an integrated approach to the farming system topics like poultry, duckery and livestock management, horticulture, health and nutrition were included in the training curriculam.

Training of FAO Fellow

Mr I. Hassan, FAO Fellow, Ministry of Fish Wealth, Peoples Democratic Republic of Yemen, Adan underwent a Training in Population Dynamics in the Fishery Resources Assessment Division of CMFRI from 19-24 September.

"Physiologist is a Link Between Fundamental Research and the Farmer....."

Dr CECCALDI

Dr Hubert Jean Ceccaldi, Director, Physiology and Biochemistry Laboratory, Station Marine D' Endoume, Marseille' France visited the CAS in Mariculture as a consultant in crustacean physiology, from 10 June to 8 July. Dr Ceccaldi is a leading figure in the field of marine sciences in France and has vast experience in research on biology, physiology and biochemistry of larvae, juveniles and adults of crustacea in relation to aquaculture. Dr Ceccaldi has developed linkages with many countries for collaborative research and India has interest in strengthening research in underwater survey and oceanography. Dr Ceccaldi is also the President of the Journal Oceanographica Acta fostering marine research.

During his consultancy at CMFRI Dr Ceccaldi held number of group discussions, seminars and workshop covering various aspects of crustacean physiology. A handbook on Approaches to Physiological Aspects in Relation to Moult Cycle was also prepared. Dr Ceccaldi paid visit to the Narakkal Prawn Culture Laboratory, the Krishi Vigyan Kendra and the Lab-to-Land programme village. Dr V. S. Kakati, Scientist S-1 at CMFRI was the counterpart to the consultant.

Dr Ceccaldi was interviewed for the Newsletter by Dr Kakati and flowing are the excerpts.

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On Indo-French Collaboration for Oceanographic Research

Well, I don't know precisely about the plans or programmes envisaged under the collaboration. As far as aquaculture or marine biology is concerned, France is mainly interested in studying or developing systems suitable to the tropical areas, since some of tropical areas in the world belong to or depend on France. Besides, we have cooperative studies with certain countries in Africa and Latin America. There are several organisations in our country coordinating and streamlining the research and development in fisheries with special emphasis on aquaculture. This kind of collaboration with the tropical areas will definitely be beneficial to each other.

Line of work taken up for research in physiology and the future course of action

There is always something to develop in physiological research. Physiology is rather a complex discipline.

The various aspects of physiology, nutrition etc. are more or less directly linked with biochemistry. As for physiology in aquaculture, especially in marine fishes or prawns, we are doing a lot more to understand or know the physiological changes that take place when environmental factors such as light, salinity, pH and dissolved oxygen vary. Every one of these factors have some special effect on the physiological function acting very often at the biochemical level. The transformation of these biochemical processes affect the physiology of the animals and consequently its reproduction, growth and other characters. For example, in nutrition better efficiency of food eaten, affects these characters. For every species

chosen for aquaculture, we have to study its capability to adapt itself to the varying environment. The present line of work in our country encompasses what I have said above. In future we would like to study more and more about the physiology in aquaculture, since there is always something new in physiology to be developed.

Role of physiologist in a mariculture team.

At the outset, a physiologist should understand the programmes the team has undertaken. The farmer has sound empirical knowledge of the aquaculture system he has and the changes that take place in it. The physiologist should be able to translate this empirical data into scientific terms. Thus the physiologist becomes a link between the fundamental research and the farmer.

MEETING OF INTERNATIONAL WHALING COMMISSION

The Government of India sent an official delegation, consisting of Shri Samar Singh as Commissioner and Dr E. G Silas, Director, CMRFI, as Alternate Commissioner, to the 35th Annual Meeting of the International Whaling Commission (IWC) held at Brighton, U. K from 18 to 23 July 1983. The Annual Meeting was attended by 40 Member-Governments and 68 Inter-Governmental organisations. India became a Member of IWC in 1981.

At the opening session of the Meeting, India's Commissioner read the message of the Prime Minister voicing her concern for the conservation and protection of all cetaceans and the need for cessation of commercial whaling activity by 1986 and expressing her appreciation of the global awareness that has come in by more non-whaling countries joining the IWC.

The Indian delegation actively participated in the deliberations and responded appropriately to the discussions on subjects on which the country had a direct or indirect interest. The delegation indicated that the Indian Ocean Sanctuary area offered a unique opportunity to conduct base-line studies on non-consumptive utilization of cetacean resources which would include benign research, protected areas, ecosystem approach, recreational/tourist potential, captive and display aspects and educational values. The proposal of India and Seychelles to constitute a working group to examine the recommendations of the Boston Conference on Non-Consumptive Utilization of Cetacean Resources (June 1983) which were relevant to IWC was approved by the Technical Committee and subsequently by the Plenary. On this issue, while appreciating the Netherland's proposal to send an expedition to carry out benign research in the Indian Ocean Sanctuary area, the Indian delegation suggested that such expeditions should give sufficient importance to local (Indian Ocean Countries) participation.

The Scientific Committee on Small Cetaceans encourages member nations, particularly India and the Peoples Republic of China, to collect incidental catch statistics and make them available to the Committee. The Indian delegation informed the Plenary that the present monitoring system in the country to record incidental catch of small cetaceans in fishing operations was being strengthened so that information could be collected and eventually made available to the IWC Scientific Committee.

At the discussion on humane killing of whales at the Technical Committee meeting and at the Plenary, the Indian delegation urged the countries engaged in whaling to work towards further reduction of killing time (present Japanese achievement being reduction from 3 minutes 58 seconds to 3 minutes 1 second) to what would be acceptable to man himself or to stop it entirely. This plea had an overwhelming appeal.

The most significant feature of the 35th Annual Meeting of IWC was the impact made and response received by the conservationists in the proceedings and decisions of the meeting. It is now clear that but for the objections lodged by Japan, USSR and Chile, implementation of the moratorium on whaling from the 1985-86 season would become a reality.

The CMFRI has indicated points for consideration of the Government of India, as a follow-up to the 35th Annual Meeting of International Whaling Commission, in the report of Director.

Services to the fish farmers in France

Not very much. Transfer of technology depends on the development of aquaculture research. Since in France we are now mainly engaged in fundamental research, the aquaculture of finfishes and prawns are not well developed. In France at present, only profitable aquaculture systems that exist are mussel and oyster cultures. Little bit of research is also done in salmon culture and of course, trout culture is there for many years. In each of these systems some scientific support is given by some research and scientific organisations, in nutrition, pathology and physiology. During the developing stage of research there is a link with the farmers. After this stage too, the link should continue for the benefit of researchers and users. In our country mussel and oyster culture systems are well developed. There is an organised system in the form of syndicates and cooperatives which publish regular bulletins for the benefit of farmers.

PRESIDENT OF ICAR VISITS MARICULTURE FARM

The Hon'ble Minister of Agriculture and Co-operation Shri Rao Birendra Singh who is also the President of ICAR visited CMFRI's mariculture farm at Muttukad and Field Laboratory at Kovalam on 22 August.

Director, CMFRI explains the activities at the mariculture farm.

Hon'ble Minister examines mature mussels.

Shri Rangarajan explains the details of mussel spat.

"Glad to have the opportunity of visiting this small and recently set up research station with the Director who explained the various aspects of original research being conducted here by our young scientists. Wish them all success".
—Rao Birendra Singh

A three - member group from France, consisting of Mr P. Lavarde, Ingenieur in the Ministry of Agriculture, National Institute for Rural Development, Water Sciences and Forestry, Mr J. M. Piloquet, Ingenieur (Civil) in private sector and Ms F. Guianard, Inginieur in Plant Breeding Department of the Ministry of Agriculture visited CMFRI during 16–17 August. Explaining the objectives of their visit Mr Lavarde said,

> "India is an original country among the third world nations because of its own system of development. It is one of the most potential powers in inland and marine fisheries. Our purpose is to establish scientific co-operation with India." The group also visited Madras, Mandapam and Tuticorin Research Centres.

Dr K. C. S. Acharya, Additional Secretary to the Department of Agriculture and Co-operation and Shri S. P. Jakkanwal, Joint Secretary, Fisheries, Government of India visited mariculture farm at Muttukad and Field Laboratory at Kovalam on 24 August.

The following also visited CMFRI during the period.

Dr R.M. Acharya, Deputy Director-General (Animal Science), ICAR, New Delhi.

Tuticorin

Mr U. Myint Thein, Captain and Mr U. Kyi Htwe, Instructor, Peoples Pearl Fisheries Corporation, Rangoon, Burma.

Dr A. L. Mendiratta, Programme officer, UNDP cell.

Mangalore

Shri C. Ramakrishna, Deputy Director, MPEDA, Cochin.

Mr Piloquet, Mr Lavarde and Ms Guianard

Shri Ganapathi Bhat, Assistant Director of Fisheries, Karwar.

Shri V. K. Shetty, Assistant Director of Fisheries, Mangalore.

Shri K. Premachandran, Assistant Director, MPEDA, Cochin.

Shri V. I. George, Senior Research Officer, MPEDA, Mangalore.

Shri A. K. Kesavan, Scientist S-2, CIFT, Cochin.

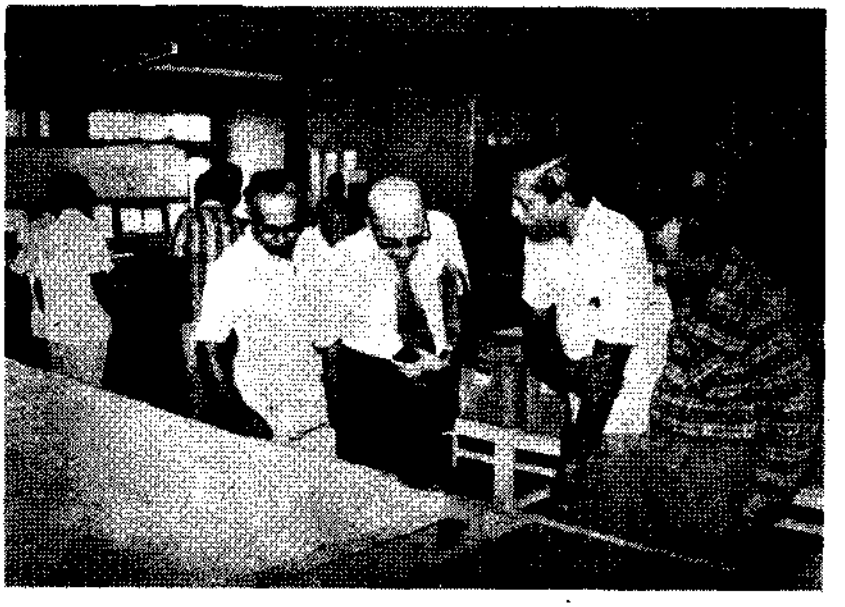
Shri A. N. Yellappa, Conservator of Fisheries, Kodogo, Madikere.

Shri M. H. Swaminatha, Deputy Conservator of Fisheries, Mangalore.

Shri V. Nagi Reddy, C/o District Fisheries Officer, Mangalore.

Dr C. A. Reddy, Department of Microbiology, Michigan State University, USA.

Shri K. G. Kamath, Assistant General Manager, Canara Bank, Madras.



Shri B. Sivaraman, I C S (Retd), Chairman, National Marine Park of Gulf of Mannar visited Tuticorin Research Centre and the Field Laboratory at Karapad, Tuticorin on 11 July

Engagements

Dr E. G. Silas, Director, CMFRI has been nominated as a member in the Marine Products Export Development Authority.

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

National Marine Park Meeting on 11 July at Tuticorin and on 1 and 17 August and 17 September at Madras.

Thirtyfifth Annual Meeting of the International Whaling Commission at Brighton, U. K. 15-23 July.

Indian Ocean Fisheries Commission Meeting at Madras 22-24 August.

Inter-Ministerial Meeting on Indian Ocean Alliance for Conservation called by the Joint Secretary (UN) at External Affairs Ministry at New Delhi, 22 September.

Dr A. V. S. Murty, Scientist S-3 was sponsored by the Indian National Science Academy for the International Union of Geodesy Geophyisics XVIII General Assembly, Interdisciplinary Symposium at Hamburg, West Germany, 15-27 August.

Dr K. Alagaraja attended the VI Agricultural Statisticians' Conference and presented a paper at the University of Agricultural Sciences, Bangalore, 20-30 July.

Shri P. Karunakaran Nair, Senior Training Assistant at KVK attended the following.

One month training programme on diversification of agriculture with special reference to small and marginal farmers at the National Daily Research Institute, Karmal.

The Rural Programme Advisory Committee of The All India Radio, Trichur, 29 August.

Dr R. Paul Raj, Scientist S-2 attended the workshop on Asian Finfish Nutrition Organised by IRDC at Singapore, 22-26 August.

Shri M. H. Dulkhed, Scientist S-2 attended the meeting on Project on Development, Demonstration and Diffusion of Intensive Prawn Culture Technology Working Group Meeting organised by the Karnataka State Council for Science and Technology at Karwar.

Smt Krishna Srinath, Scientist S-1 attended the Summer Institute on Extension Research Methodology and Agricultural Development organised by ICAR and the Department of Agricultural Extension, University of Agricultural Sciences, Bangalore at Hebbal, Bangalore, 28 June-19 July.

Dr P. V. Rao to attend Genetic Congress

ICAR has decided to sponsor Dr P. V. Rao, Scientist S-3 to the 15th International Congress of Genetics to be held in Delhi from 12-21 December, 1983.

Committee to Cordinate Fisheries Development

Under its Research-cum-Development Forum the ICAR has constituted a committee to co-ordinate research and development in the field of fisheries. The committee will help ICAR to identify the priority areas for fisheries research, to review the status of various technologies developed for increasing fish production, harvesting and processing to suggest plan of action for transfer of technology and to develop appropriate linkages between research and development programmes. Deputy Director General (Animal Science) will be the Chairman and the Assistant Director General (Animal Science) will be the Member-Secretary. Dr E. G. Silas, Director, CMFRI will be one of the members. The Committee will propose organisation of seminars on current subjects of national importance. The term of the committee wil be for three years.

Training Abroad

Smt Geetha Bharathan, Scientist S-1 has been deputed for Fellowship Training under FAO/UNDP in seaweed culture and genetics at the Fisheries Research Station, Kagoshima, Japan for six months from 1 September.

Dr V. S. Kakati, Scientist S-1 has been deputed for fellowship training under FAO/UNDP in crustacean physiology at Station Marine De' Endoume, France for three and a half months from 12 September.

Promotions

The following Scientists have been promoted with effect from 1 July 1980 based on the Five Yearly Assessment.

S-1 to S-2

Shri P. Sam Bennet
Shri S. Reuben

S to S-I

Shri V. S. Rengaswamy
Shri I. David Raj
Shri S. Srinivasarengan

Shri G. K. Kudalkar, Assistant as Superintendent at Cochin, 16 August.

Shri J. M. Vaz, Senior Clerk as Assistant on *ad-hoc* basis, 9 September.

Smt P. V. Mary, Senior Clerk on *ad-hoc* basis as Senior Clerk on regular basis at Cochin, 30 July.

Shri V. P. Unnikrishnan, Junior Clerk as Senior Clerk at Cochin, 7 July.

Shri K. C. Hezhakiel as S. S. Grade I (Messenger) at Cochin, 4 July.

Shri D. Prakasan as S. S. Grade I (Messenger) at Cochin, 26 September.

Shri R. Sreenivasan, S. S. Grade I (Messenger) as Junior Clerk at KVK, Narakkal, 4 July.

Shri M Samuthiram S. S. Grade I (Watchman) as Junior Clerk at Cochin, 5 September.

Transfers

Shri K. M. Karuppiah, Assistant from Cochin to Madras.

Shri V. Sivasamy, Junior Technical Assistant (T-2) from Mangalore to Nagapattinam.

Shri V. P. Unnikrishnan, Senior Clerk from KVK, Narakkal to Cochin.

Shri C. D. Dais, Motor Driver (T-2) from Bombay to Cochin.

Shri K. Janardhanan, S. S. Grade III (Fieldman) from Narakkal to Calicut

Reliefs

Shri C. P. Thomas, Senior Administrative Officer on transfer to Central Plantation Crops Research Institute, Kasargod, 6 August.

Dr N. Jayabalan, Technical Assistant (T-1-3) on taking up the post of Assistant Professor in the College of Fisheries Mangalore, under the University of Agricultural Sciences, Bangalore, 5 July.

Shri P. D Solanki, Field Assistant (T-1), on resignation, 23 May.

Shri Y. V. Venkatachalamoorthy, Field Assistant (T-1), on resignation, 15 June.

Shri M Raghavan, S. S. Grade I (Messenger), on resignation, 21 July.

Weddings

Shri V. V. Lakshminarayanan, Senior Clerk at Cochin married Kumari Sarada at Tripunithura, 8 September.

Shri S. Antony George Ratnam, Senior Clerk at Tuticorin married Kumari A. Tiburtius at Tuticorin, 10 September.

Retirement

Shri K. H. Mohamed, Scientist S-3 on Superannuation, 30 September.

Shri K. H. Mohamed

Recreation

The Staff Recreation Club of the Calicut Research Centre celebrated the Club Day on 6 August with sports and music. The sports events included badminton, carroms, cards, chess, musical chair and tug of war. A meeting and dinner were arranged and documentaries on Antarctica Expedition, SLV 3 and Asiad I and II were screened. Smt Radha Girijavallabhan's light music enchanted the audience. Dr N. Radhakrishnan, former Scientist of CMFRI and Smt Rema Radhakrishnan were the chief guests on the occasion

Picture on the next page: (left) Musical chair, (right) Smt Radhakrishnan gives away the prize to a winner.

Dancing of the Light

The coconut trees,
Seen through the window
Of my humble upstairs,
Dance in a lovely way
In the early morning night;
The leaves are happily dancing,
'Girgling, 'jirgling' music is
produced
When cool northern winds
Blow through the leaves of the
trees;

The dark clouds move fast
Towards south in hurry;
The light is dancing
Through lines of lightnings;
Cool winds come through the
window
To make a mind pleasant.

A. AGASTHESA PILLAI
Madras Research Centre

The Author, in his sleep heard a loud noise. He got up and looked at his watch. It was 2 am of 22 September. Then he looked through the window. The cool wind was blowing like music, fast through the trees and buildings. The lightening resembled dancing of light. And within five minutes he wrote this poem.

Edited and Published by Krishna Srinath, Scientist S-1 for the Director, Central Marine Fisheries Research Intitute, Cochin-682 018. Printed at Anaswara Printing & Publishing Co., Cochin-682 018