

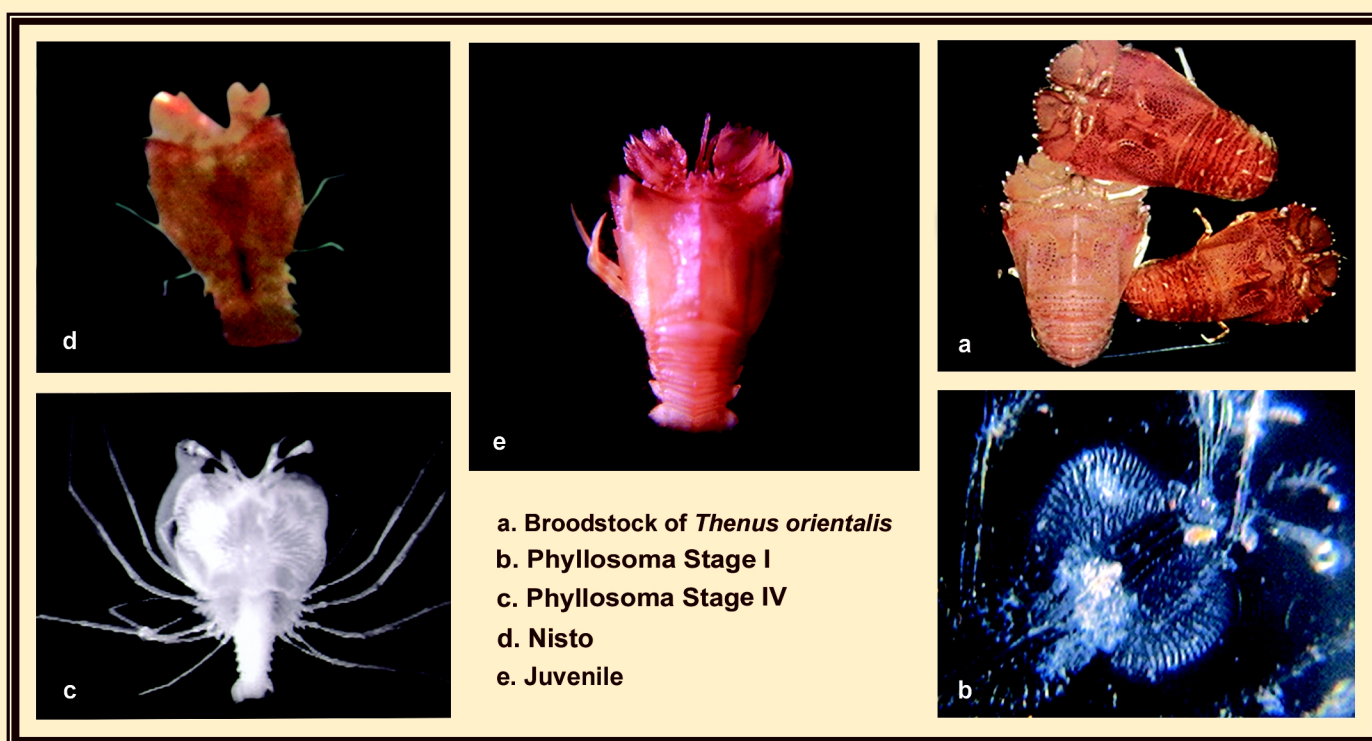
CMFRI

NEWSLETTER

No. 101

January - March 2004

SUCCESS IN HATCHERY PRODUCTION OF SAND LOBSTERS



The Phyllosoma larvae of the scyllarid lobsters *Thenus orientalis* and *Scyllarus rugosus* were reared to settlement at the Kovalam Field Lab of the Institute at Chennai. The sand lobster *T. orientalis* is a commercially valuable species exploited mostly from the Gujarat and Chennai coasts. 130 tonnes of *T. orientalis* were exported during 2002 fetching Rs.4.51 crores (MPEDA, 2002-03). *S. rugosus* a smaller species, has an ornamental value.

Healthy larvae of *T. orientalis* were hatched out from the laboratory held broodstock after incubation for 35 days. The planktonic phyllosoma larvae of *T. orientalis* attained the benthic nisto (postlarvae) stage 26 days after hatching, passing through four morphologically distinct stages. The intermoult period was on an average 6.3 days between the stages. The nisto, which was initially transparent, attained the characteristic brownish colour in a few hours. Survival from stage 1 phyllosoma to the nisto was 14%. The larvae were fed with live feed. The total length of the phyllosoma larvae increased from 3.34 mm in stage 1 to 15.16 mm in stage 4 prior to moulting to the nisto stage. The phyllosoma larvae of *S. rugosus* settled as nisto after

32 days, passing through 8 stages.

Captive breeding and complete larval rearing of *T. orientalis* and *S. rugosus* have been successfully achieved for the first time in India. Earlier, there were reports that Australia had successfully bred *T. orientalis*. The present success open up a new arena for commercial farming of sand lobsters for the export market. Preliminary trials have indicated that *T. orientalis* is a potential species for farming. Unlike the spiny lobster, *T. orientalis* has a shorter larval phase (26 days) and this is a great advantage in developing a commercially feasible hatchery technology. However, it may take some more time to translate the present success into a wholesome package of technology, including broodstock development, nursery protocols, grow out and formulated feed development. Apart from the hatchery and farming technology development, biological and physiological studies are also required so that faster growth to commercial size could be obtained in a shorter period to make farming commercially more attractive. The institute is gearing up to take up a pilot project on hatchery production and farming of *T. orientalis*.

From the Director's Desk.....

We all agree that we need data for fisheries management. But we disagree on the type and nature of data required for meaningful management decisions. On the one hand we have estimates of landings, resource-wise and location-wise during various months and seasons of the year, fishing efforts and fishing intensities and trends in capture. Our scientists have been generating data on several resource attributes like fishing mortalities, total mortalities, growth rates, mean lengths, fecundities, recruitment patterns, yields per recruits, MSYs and a host of similar parameters for all major fisheries of our seas. Another set of data pertain to the supply-demand, pricing and market fluctuations as well as the economics of fishing operations. All these are enough for making appropriate management decisions? I think we need more.

Dr. Michael Sissenwine is of the view that scientific information for management must possess the four 'R's. These are Relevant, Right, Respected and Responsive. It is agreed that there is no single mechanism or institution, which could ensure the above four 'R's. But then if we are mandated to monitor the exploited marine fishery resources, how best will we be able to achieve this task. The task of understanding the

dynamics of large marine ecosystems to offer effective and relevant scientific advice to develop management interventions is a difficult, complex, expensive and lengthy process. We all know that such an understanding will be worthwhile as it will provide long term profits in billions of rupees. In an analysis of the North Sea fisheries, William Fox states that since many fisheries have over capacities, the potential economic benefits from the present fisheries are greater than the difference between potential yield and present yield. He believes that good research and broad, long term monitoring programme on ocean ecology and social science are essential to achieve a proper management regime.

Then, what is good research in marine fisheries? Giving estimates of landings alone year after year is good research? Describing values of umpteen parameters such as F , M , K , t_0 , L_c , L_m , L_a etc. year after year for various individual species in a mixed stock which is subject to multigear multilocal fishery is good research? I believe that we need to differentiate between capture fisheries analysis and capture fisheries research. Perhaps the time is right for us to realize that what we do is capture fisheries

monitoring and analysis and what we should be doing is capture fisheries research. Areas of research must include, among others, the impacts of fishing on ecosystem, fishing and degradation or loss of habitat structure, threat of fishing to highly fecund fishes, over fishing and tropicalization of fishing stocks, trophic cascades in benthic marine ecosystems, scientific analysis of the collapse of some of our marine fisheries, incorporating ecosystem objectives for fisheries management, demographic analysis of major marine capture fisheries, regime shifts in ecosystem management, social consequences of facing limits to marine fisheries, strategic and policy approaches for a participatory fisheries management regime, predictive fishery models, methods for an impact of reducing overcapacity as well as changing over from open access to regulated regime in marine capture fisheries and technical, social and economic impact of policy regulations. It is time that we reorient and prioritize our research to meet the emerging fisheries scenario if ensuring the sustainability is our prime objective.


Mohan Joseph Modayil

NEWS FROM THE RESEARCH FRONT

Mussel seeder developed

One of the major tasks in mussel farming is the process of seeding whereby the seed mussel is wrapped around the core material. Conventionally in India, this is done by manual stitching. The Molluscan Fisheries Division of the Institute at Cochin has developed a semi-automated mussel seeder (prototype-3) for seeding.

The mussel seeder unit has provision for seeding two ropes simultaneously thereby reducing time and labour. The seeder has the added advantage that it can be dismantled and easily transported to the farm site. After successful field trials at Kollam, the seeder was introduced to mussel farmers at Korapuzha and Vallikunnu in North Kerala. The cost of a single unit of mussel seeder made of Mahogany wood is Rs. 2,500/-. The seeder can be used as a common facility by the mussel farmers.

Refinements made in mussel farming technology made earlier such as uti-

lization of flexible plastic strips as core material instead of nylon ropes and the use of pre-stitched cotton tubing alongwith the new mussel seeder will reduce the recurring expenditure and the physical strain during mussel seeding especially for women farmers.

Technique for live transport of ornamental fish standardized

Packing and short duration transporting technique has been standardized and verified under field condition for marine ornamental damselfish of the family Pomacentridae. Safe transport upto 24 hours could be achieved under sedation coupled with temperature manipulation. Transporting cost was reduced by using bigger box of 0.04 m³ size which could hold 2 bags of 7.5 l capacity containing 6 fish each.

Facilities developed for larval rearing

A larval culture system incorporating cartridge filters and UV sterilizer for rearing the larvae has been established in

the Marine hatchery at CMFRI, Cochin. This facility with a flow rate of 10,000 l/hr is intended to provide microfiltered and sterilized seawater for finfish and shellfish larval rearing experiments.

Pilot expedition to Southern Indian Ocean

Two scientists from the Institute were deputed for a pilot expedition of 50 days duration on board the Oceanographic Research Vessel *Sagar Kanya* to the Southern Indian Ocean for conducting studies on marine mammals. A total of 21 whales and dolphins were sighted in the area between 22° & 53° S latitudes and 45° & 57° E longitudes. On board identification of cetaceans is done based on the appearance of body parts as well as spouts from the blow-holes in the case of whales. Sei whale (*Balaenoptera borealis*) minke whale (*B. acutorostrata*) and blue whale (*B. musculus*) were the species identified during the cruise.

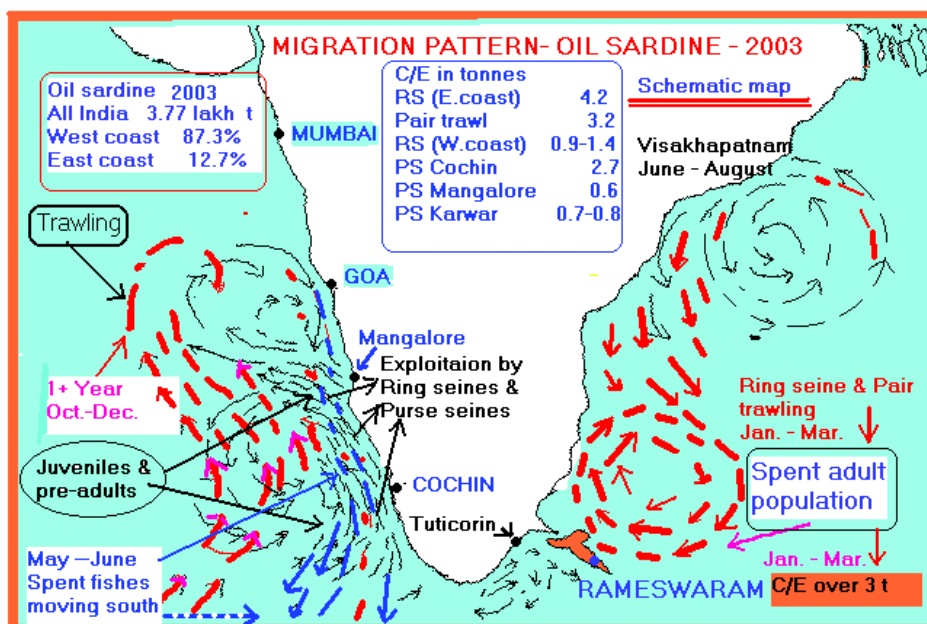
Negative impact of bottom trawling

Results of the DOD funded project

on the effect of bottom trawling on the benthic fauna off Mangalore coast indicate clearly the impact of trawling. The study revealed that bottom trawling adversely affected the total suspended solids and species diversity of benthic organisms off Mangalore coast.

Migration pattern of oil sardine mapped

The migration pattern of oil sardine along both the coasts of India was mapped based on availability of size groups during different seasons and their exploitation by a variety of gears operated from various centres. As in the previous year, the recruitment was massive and large shoals of oil sardine swarmed the west coast centres from south to north in a gradual process. The juveniles and pre-adults in huge quantities were exploited by the ring seines from Alleppey in the south to Mangalore in the north. Shoals were dense in the south compared to northern centres beyond Calicut. The adult stock mostly remained in the 30-40 m depth zone with occasional incursions into the inshore areas. The young sardines were found to follow an anticlock-wise circulatory path of centres from Alleppey to Mangalore. Off Mangalore, a portion of



the stock was found to move north following a clock-wise circular path.

Large shoals swarmed the southeast coast during January-March. The exploitation by the pair trawls and ring seines is in no way a threat to the stock as the

catch consisted of only the spent fishes.

Exploitation of oil sardine was at near MSY level along both the coasts. However, the lesser sardine stocks were underexploited to the tune of less than 50% of MSY level.

TRANSFER OF TECHNOLOGY

Training for practicing farmers

Krishni Vigyan Kendra of CMFRI at Narakkal imparted training to 406 persons by conducting 21 training courses. The number of training courses and beneficiaries are as follows: Fisheries: 4-70; Agriculture: 7-155; Home Science: 9-169; Animal Husbandry: 1-12. Eight of the training programmes i.e. those in milky mushroom (1), Vanilla (1) and Jasmine (2) cultivations and for those in the preparation of shrimp pickle (2), mixed fruit jam (1) and cleaning powder (1) were conducted in collaboration with Udaya Bhavan (NGO), Ernakulam; Spices Board, Kochi; Ernakulam Social Service Society and Edavanakad & Kuzhipilly gramma panchayats.

Trainings imparted

- A 21 day training programme on **Multivariate Statistical Methods for Fisheries Research** is underway at the Institute Headquarters from 18th March. The methods provide useful tools for analyses of complex data sets wherein many variables

can be integrated. 12 participants from various research organizations are undergoing the training programme.

- Training cum demonstration of **Mussel Farming** was organized for 60 participants belonging to women Self Help Groups in Mundalli estuary of Bhatkal in Karnataka State on 22nd February.
- CMFRI-ADAK training on **Mussel Culture** was conducted for 135 farmers (27 groups) on 27th January at Elathur, Kozhikode in Kerala.
- HRD training** programme for 20 Scientists and Technical Officers of the Institute was conducted at CMFRI, Cochin from 11th to 13th February.

News from ATIC

The Agricultural Technology Information Centre functioning at the Institute Headquarters campus has generated an amount of Rs. 22,847 through sale of products and services rendered. The centre also screened short films for 152 times including those on BOBP series,

Responsible Fisheries and Post Harvest Handling of Fish during the reporting period.

Exhibitions

The Institute participated and organized stalls in the following events:

- A **Matsyamela** organized by Department of Aquaculture, MES, Azmabi College, Kodungalloor from 7 to 10 January and **bagged the prize for the best stall.**
- Seaweed Symposium at Cochin from 22 to 24 January.
- Kattappana Fest held during the period from 25 January to 2 February and **secured the first prize for the best stall.**
- Ocean Life Food & Medicine Expo 2004 at Chennai during 26-28 February and **bagged the prize for the second best stall.**
- Exhibition in connection with Councilor's Meet at NAAS Complex, Pusa, New Delhi during 10-12 March.

INTERACTION AND EVALUATION

Research Advisory Committee Meeting

The RAC Meeting to review the

progress of the in-house research projects for 2003-'04 was held under the Chairmanship of Prof. (Dr.) T.J. Pandian at

CMFRI, Cochin on 3rd March. Members Dr. K.R. Prasad, Dr. S.D. Tripathi, Dr. V.C. George, Shri C.K. Soman,

Dr. A.D. Diwan, Prof. (Dr.) Mohan Joseph Modayil, Heads of Divisions and Member Secretary Dr. R. Paul Raj attended the meeting.

SRC Meeting

The eleventh reconstituted Staff Research Council Meeting of the Institute was held at Headquarters from 8th to 11th March. Project leaders, Scientists-in-charge and Heads of Divisions attended the meeting and presented the progress of research work and the achievements related to the targets.

Seminars

The **National Science Day** was celebrated by the Krishi Vigyan Kendra of the Institute with the aim of 'Encouraging scientific awareness in the community' on 28th February. Special lectures were arranged on shrimp farming, vermi-technology, value addition in shrimp & fish and medicinal plants at the KVK Campus,

Narakkal. 45 participants attended the programme. During the lively interactive session, the participants comprising of farmers, rural youth, members of women self help groups and village extension workers cleared their doubts on the topics presented.

Dr. (Ms.) K.S. Sobhana presented a seminar at the Institute Headquarters on her deputation to SEAFDEC, Iloilo, Philippines during 6-21 November '03 for participating in the 'Advanced training on shrimp and marine fish virology'.

Seaweeds - 2004 held

A National Symposium and Exposition on Seaweeds was jointly organized by Seaweed Research & Utilization Association, Mandapam Camp and Central Marine Fisheries Research Institute from 22nd to 24th January at Cochin. 12 Scientists and 5 Technical staff members from the Institute participated in the 3

day symposium wherein 42 research papers were presented on various aspects and issues of the marine algae by researchers, entrepreneurs, teachers and students from several states of India.

The symposium identified priority areas for future R&D activities on seaweed resources, culture and utilization in the country. The problems faced by the Indian seaweed industries were identified and solutions proposed. The export of dried seaweeds and finished/value added seaweed products, policy regarding seaweed research and legal issues involved in seaweed cultivation and utilization were also discussed.

The exposition/open house on seaweeds and their products and on the activities of CMFRI, CIFT, MPEDA, CIBA, NBFGR and Krishnamurthy Institute of Algology at the symposium venue attracted the public as well as students from local schools and colleges.

ACADEMIC NEWS

Ph. D Awards

Scholar	Guide	Title of Thesis
Sandip Kumar Mandal	Dr. P.V. Sreenivasan, Principal Scientist	Physiological studies on the marine pearl oyster <i>Pinctada fucata</i> (Gould) (Pteridae : Bivalvia).
S. Venkatesan	Dr. M. Rajagopalan, Head, FEMD	Ecological and physiological studies on the green sea turtle <i>Chelonia mydas</i> .
Bindu Verghese	Dr. E.V. Radhakrishnan, Head, CFD	Some immunobiological aspects of the spiny lobster <i>Panulirus homarus</i> (Linnaeus, 1758).
Puthra Pravin	Dr. K. Ravindran, Former Director, CIFT, Cochin	Studies on shrimp harvesting techniques in aquaculture.

Five students of 2002-'04 (21st Batch) have joined the M.F.Sc. programme at the Institute for the 2nd semester course programme after undergoing their first semester at CIFE (DU) in March 2003.

Achievers

Quiz competition winners

Mr. Joice Abraham and Ms. Neetha

Susan David, Ph. D. scholars, secured the Third Prize in the Inter-Collegiate Quiz Competition on the topic 'Golden Jubilee Celebration of the Discovery of DNA Double Helix' held by Kerala University on 15th March.

OFFICIAL LANGUAGE IMPLEMENTATION

National Hindi Seminar held

A National Official Language Seminar, on **Recent Advances in Mariculture** was organized at CMFRI, Cochin on 30th January with the objective to disseminate the latest developments in the marine fisheries sector in Hindi. 25 presentations were made by scientists and subject experts in the field of coastal aquaculture and livelihood security, biotechnology

applications in aquaculture and recent advances in mariculture development.

Recommendations for action included opening a collaborative programme with the Coconut Development Board (GOI), Cochin for enhancing coastal aquaculture, providing technical support to MPEDA for conducting seminar in Hindi to transfer the technologies developed in marine fisheries.

Workshop organized

A Hindi Workshop was conducted for

the staff of Calicut Research Centre on 27th March.

TOLIC Awards

CMFRI bagged the Town Official Language Implementation Committee Award (Second Position) for the excellent implementation activities for the period 2002-'03. The Hindi special publication *Matsyagandha* got Third prize among the publication released by the Central Government Offices in Cochin.

INSTITUTE PUBLICATION

Samudra Krishi Ki Nai Pragtiyam

CMFRI Special Publication No. 80

Mohan Joseph Modayil and
Sheela P.J. (Eds.)

The technical publication in Hindi includes 24 articles on Recent Advances in Mariculture, Biotechnology Applications in Aquaculture and Coastal Aquaculture and Livelihood Issues by subject experts from six organizations.



The information generated on Applied Marine Biotechnology disseminated in Hindi will help researchers and students to get acquainted with these topics for its effective implementation.

The publication is in Demy 1/4 size, 108 pages, perfect binding with laminated cover. Print in black and white on imported art paper. Issued free of cost on request.

IN-HOUSE EVENTS

The flag hoisting ceremony for the **Republic Day** was held on 26th January. **Martyrs' Day** was observed on 30th January by observing two minutes silence to pay respect to those who laid down their lives during the struggle for freedom of the country.

Condolence meeting held

A condolence meeting was held on 8th January in connection with the demise of Dr. S.V. Bapat, former Joint Director of CMFRI.

Foundation Day commemorated

The 57th birthday of the Institute was celebrated at Headquarters and Regional/Research Centres on 3rd February. The Institute Headquarters/Centres were kept open to the public on the day. A cross section of the society mainly students availed the opportunity to visit the Institute and get familiarised with our R&D activities. During the week long programme, competitions were held for staff and their family members on a variety of items including literary, fine arts, sports and games.

Shri. C.M. Dineshmani, worshipful Mayor, Corporation of Cochin, the chief guest of the public meeting held at Headquarters, gave away 150 prizes to the

winners of the various competitions. The souvenir of the Recreation Club, the third issue in the Tharangam series, an expression of artistic and literary talents of the staff and their family members, was released on the occasion. The enthralling cultural programmes presented by the CMFRI family members made the event memorable.

Womens' Day Observed

In connection with the International Womens' Day, the Women's Cell organised a talk on **Positive Thinking** by Ms. Leela Menon, the eminent journalist and social worker, for the women employees and students of the Institute at Headquarters on 20th March. Dr. Paul Raj, Head of PNP Division presided over the function and in his talk stressed the need for a positive attitude in facing the challenges of life. Prof. (Dr.) Mohan Joseph Modayil, Director, CMFRI also addressed the gathering and expressed immense satisfaction over the cordiality and co-operation that exist among the staff members of the Institute.

Ms. Leela Menon, the Chief Guest of the day gave an inspiring talk on womens' empowerment and urged women to be conscious of their own abilities. In her thought provoking speech,

she focused with facts and figures on the atrocities towards women and narrated how women are subjected to sufferings from the womb to tomb. She urged women to act up to their convictions and to make sure that their voice is raised in protest at every instance of injustice done to any one of them. She lamented the fact that quite often, it is the women who take the lead in torturing other women. Advising the staff and students on the immense benefit of positive thinking, she pointed out the need for women to give more importance to education and empowerment as they are not 'work horses' but a 'social capital'. She reminded that indeed this invaluable 'social capital' would be a total waste if they do not work.

Ms. Menon also found time to hold a lively interactive session with the audience wherein the problems faced by working women were discussed in detail.

CHANGE OF ADDRESS

Due to the closure of Tatapuram Post Office, the new address of the Institute Headquarters is : CMFRI, Post Box No. 1603, Ernakulam North P.O., Cochin -682 018

PERSONALIA

Visit Abroad

Dr. E.V. Radhakrishnan, Principal Scientist & Head of Crustacean Fisheries Division attended the 7th International Conference and Workshop on Lobster Biology and Management held at Hobart, Tasmania, Australia during 8-13 February.

Guests

Headquarters

Dr. I.V. Subba Rao, Member, High Power Committee to evaluate the research work in the ICAR Institutes.

943 people including 754 students visited the Institute during the period under report.

Tuticorin Research Centre

Shri. M.S.N. Sastry, Chief General Manager, HWP, Tuticorin.

776 students and 28 faculty members visited this Research Centre.

Mumbai Research Centre

Shri. M.A. Upare, General Manager, NABARD, Mumbai.

Programme Participation

Prof. (Dr.) Mohan Joseph Modayil, Director Meeting convened by DDG (Fy.) alongwith the representatives from NBFGR, CIBA, CIFA and CIFRI at Delhi (12 January)

National Seminar on 'Advances in Coastal Agriculture and Value Addition from National Perspective' and presented a keynote address at CPCRI, Kasaragod (21 January)

Chaired the Third meeting of IX LJSC of CMFRI at Mandapam Regional centre of CMFRI, Mandapam Camp (24 January).

Discussion on infrastructure requirements under the project 'Seed production in Agricultural Crops and Fisheries' at NBPGR, New Delhi (24-25 February).

International Conference and Exposition on Marine Living Resources of India for Food & Medicine at Chennai (27-29 February).

Seaweeds - 2004 : National Symposium and Exposition' at Ashir Bhavan, Ernakulam (22-24 January).

National Scientific Seminar in Hindi on 'Recent Advances in Mariculture' at CMFRI, Kochi (30 January).

Chaired RAC of CMFRI held at CMFRI Headquarters, Kochi (3rd March).

Chaired SRC meeting of the Institute held at Kochi (8 - 11 March).

Board of studies meeting, Faculty of Fisheries at Fisheries College, Panangad (16 March).

Dr. N.G.K. Pillai, Principal Scientist & Head, Pelagic Fisheries Division

Meeting of the Committee constituted under the Chairmanship of Dr. J.B. Chowdhary, Former Vice Chancellor of G.B. Pant University of Agriculture and Technology, Pantnagar to evaluate the worth of the research work carried out by the Institute of DARE/ICAR on the recommendations of the Parliamentary Standing Committee on Agriculture at CTCRI, Trivandrum (18 March)

Dr. M. Rajagopalan, Principal Scientist & Head, Fishery Environment Management Division

International Workshop on Marine Pollution and Ecotoxicology at Goa organized by National Institute of Oceanography, Goa in collaboration with International Water Association, UK (25-26 February)

Ocean Life, Food and Medicine Expo 2004, International Conference and Exposition on Marine Living Resources of India for Food and Medicine organized by Aquaculture Foundation of India at Chennai (27-29 February)

Dr. R. Paul Raj, Principal Scientist & Head, Physiology Nutrition and Pathology Division

Participated and chaired two sessions in the Ocean Life Food & Medicine Expo 2004 at Chennai (27-29 February)

Dr. R. Sathiadhas, Principal Scientist & Head, Socio-Economic Evaluation and Technology Transfer Division

Intermedia Publicity Co-ordination Committee (IMPCC) meeting at Hotel Abad Plaza (8 January).

National Workshop on 'Strategies and options for increasing and sustaining fisheries and aquaculture production to benefit poor households' in Asia at NCAP, New Delhi (29-30 January)

National Seminar on 'Alternate Extension Strategies' at KVK, Mitrani, Thiruvananthapuram and presented a paper, Adaptability and proliferation of Techno-intervention under Institution Village Linkage Programme in a Coastal Village (21 - 22 February)

Attended and presented a paper on 'Economic loss and gains of marine fishing along Kerala coast' at the International Conference & Exposition on Marine Living Resources of India for Food and Medicine at Chennai (27-29 February)

Dr. E.V. Radhakrishnan, Principal Scientist & Head, Crustacean Fisheries Division

Ocean Life Food and Medicine Expo 2004 at Chennai and presented a paper on 'Breeding and hatchery technology development of spiny lobsters and crabs' (27-29 February)

Dr. S. Sivakami, Principal Scientist & Head, Demersal Fisheries Division

All-India Scientific Seminar in Hindi on 'Recent Advances in Mariculture' at CMFRI and presented a paper on 'Cage culture of marine fishes' (30 January)

Dr. E. Vivekanandan, Principal Scientist

International Conference & Exposition of Marine Living Resources of India at Chennai and presented a paper 'Marine Fisheries Management in India' (27-29 February)

Dr. L. Krishnan, Principal scientist

Conducted HRD training for 20 scientists & Technical Officers for 3 days at CMFRI, Cochin (11-13 February)

International Conference & Exposition of Marine Living Resources of India at Chennai and presented a paper 'Marine Finfish Seed Production' (27-29 February)

Smt. Grace Mathew, Principal Scientist

International Conference & Exposition of Marine Living Resources of India at Chennai and presented a paper 'Grouper broodstock development' (27-29 February)

Dr. V. Kripa, Senior Scientist

National workshop on Marine Diversity and Biotechnology organized by Marathwada University, Aurangabad and presented the paper 'Bivalve Farming - a means of coastal ecosystem development and rural employment generation' (20-21 January)

First State level meeting of the women's wing 'Shakthi' of the Swadeshi Science Movement for the empowerment of women at Cochin (14-15 February)

International conference & exposition on marine living resources of India for food and medicine at Chennai and presented the paper 'Status of edible oyster, mussel and clam farming in India' (27-29 February)

Dr. P. Jayasankar, Senior Scientist and **Shri. Anoop A. Krishnan**, SRF of the DOD funded 'Marine Mammals' Project participated in the Pilot Expedition to Southern Ocean onboard ORV *Sagar Kanya* as members of Centre for Marine Living Resources and Ecology (CMLRE) (20 January- 12 March)

Dr. K.S. Sobhana, Scientist (SS)

Training on 'Human Resource Development in Veterinary Biotechnology' at IVRI, Izatnagar (3 February - 29 March)

Ms. Sheela Immanuel, **Dr. (Ms.) S. Ashaletha**, Scientists(SS), **Dr. (Ms.) Sindhu Sadanandan** and **Shri. Jayan** SRF's

National Seminar on 'Alternate Extension Strategies' at KVK, Mitrani, Thiruvananthapuram (21 - 22 February)

Dr. A.C.C. Victor, Principal Scientist & Scientist-in-charge, Tuticorin Research Centre

Participated and presented a paper on 'Abalone culture' in International Conference and Exposi-

tion on Marine Living Resources of India for Food and Medicine at Chennai (27-29 February)

Shri. D.C.V. Easterson, Principal Scientist and **Shri. A. Bastian Fernando**, Technical Officer

The II Advisory Committee meet of the District Fishery Advisory Council held at District Collectorate Office, Tuticorin (5 March)

The following staff of the Tuticorin Research Centre participated in the first scientific seminar organized by TOLIC at Heavy Water Plant, Tuticorin (10th March) and presented articles in Hindi as given below:

Dr. E.M. Abdussamad, Scientist(SS) - 'Fish biodiversity, its importance and conservation'

Ms. C.P. Suja, Technical Officer (T-6) - 'Newer Techniques in pearl production'

Shri. K. Diwakar, Technical Officer (T-5) - 'Sea cucumber'

Shri. M. Manickaraja, Technical Officer (T-4) - 'Lobster Fishery Resources in India'

Shri. T.S. Balasubramanian, Technical Officer (T-6)

Training on 'Technology Transfer on cage culture of lobsters to the beneficiaries-self-help group' at Tharuvakulam organized by NIOT and State Fisheries Department, Tuticorin (27 December).

Shri. K. Diwakar, Technical Officer (T-5)

Training programme for the stakeholders conducted by Eco Development Officer, Gulf of Mannar Biosphere Reserve Trust (GOMBRT), Ramanathapuram at Van island, Tuticorin (6 February)

Dr. V.D. Deshmukh, Principal Scientist, **Dr. V.V. Singh**, Senior Scientist, **Ms. Paramita Banerjee** & **Dr. Miriam Paul**, Scientists

Inaugural function and invited lectures at the UGC sponsored National Seminar on 'Aquaculture prospects & problems' organized by Institute of Science, Mumbai and Maharashtra Aquaculture Farmers Association at Institute of Science, Mumbai (27 March)

Dr. V.V. Singh, Senior Scientist

International Workshop on Marine Pollution and Ecotoxicology and presented a paper on 'Environmental Impact Assessment along the Mumbai coast' at NIO, Goa (25 February).

Dr. P.K. Martin Thompson, Scientist-in-charge, KVK, Narakkal

Workshop on 'Kisan Vani' organized by Prasar Bharati, New Delhi at Coconut Development Board, Cochin (6 February)

Dr. P.K. Martin Thompson and

Shri. P.M. Aboobacker, Technical Officer

National Scientific Seminar in Hindi on Recent Advances in Mariculture and presented a paper entitled 'Ecofriendly and sustainable shrimp farming in brackishwater farms' (30 January)

Shri. B. Suresh Kumar, Technical Officer (Agriculture)

Training course on 'Recycling the farm resources-call of the new millennium' organized by Trainers Training Centre, Avinashilingam Deemed University, Coimbatore (28-30 January)

Shri. P.M. Aboobacker, Technical Officer, KVK

National Watershed Development Programme for Rainfed Area X Plan District Nodal Agency meeting convened by the Principal Agricultural Officer, Ernakulam at Civil Station, Kakkannad, Kochi (20 February)

Transfers

Name	S/Shri	Designation	From	To
K.L. Meena		Sr. Administrative Officer	CIRB, Hissar, Haryana	CMFRI, Kochi
K.N. Murali		Stenographer Gr.III	CMFRI, Kochi	KVK, Narakkal
P. Harshakumar		Motor Driver (T-2)	CMFRI, Kochi	KVK, Narakkal
P.J. Sebastian		Motor Driver (T-4)	KVK, Narakkal	CMFRI, Kochi

PROMOTIONS

Name S/Shri	Designation	Promoted Post	Centre	w.e.f.
Smt. A.K. Omana	Personal Assistant	Private Secretary	CMFRI, Kochi	23-02-04
Smt. P.K. Anitha	Steno Gr. III	Personal Assistant	CMFRI, Kochi	25-02-04
V. Rajendran	Technical Officer (T-7)	Technical Officer (T-8)	Chennai R.C.	01-07-99
P. Radhakrishnan	Technical Officer (T-6)	Technical Officer (T-7-8)	CMFRI, Kochi	01-07-01
Smt. Femeena Hassan	Technical Officer (T-6)	Technical Officer (T-7-8)	CMFRI, Kochi	01-04-02
C.K. Krishnan	Technical Officer (T-5)	Technical Officer (T-6)	Calicut R.C.	01-01-02
Dr. K. Muniyandi	Technical Officer (T-5)	Technical Officer (T-6)	Mandapam Regl. C.	01-01-03
Dr. R. Thangavelu	Technical Officer (T-5)	Technical Officer (T-6)	Chennai R.C.	01-01-03
Smt. C.P. Suja	Technical Officer (T-5)	Technical Officer (T-6)	Tuticorin R.C.	01-01-03
D. Pugazhendi	Sr. Technical Asst. (T-4)	Technical Officer (T-5)	Chennai R.C.	02-11-02
K.B. Waghmare	Sr. Technical Asst. (T-4)	Technical Officer (T-5)	Mumbai R.C.	02-12-02
Smt. K. Ramani	Sr. Technical Asst. (T-4)	Technical Officer (T-5)	CMFRI, Kochi	12-10-02
V.A. Kunhikoya	Sr. Technical Asst. (T-4)	Technical Officer (T-5)	Minicoy R.C.	26-06-02
Mathew Joseph	Sr. Technical Asst. (T-4)	Technical Officer (T-5)	CMFRI, Kochi	14-10-02
Smt. S. Girijakumari	Sr. Library Asst.(T-4)	Technical Officer(Librarian) T-5	CMFRI, Kochi	18-05-02
Sailada Satya Rao	Technical Asst. (T-3)	Sr. Technical Asst. (T-4)	Visakhapatnam Regl. C.	1-1-2000
Smt. P.M. Geetha	Museum Asst. (T-3)	Museum Asst. (T-4)	CMFRI, Kochi	01-07-02
N. Ramamurthy	Museum Asst. (T-3)	Museum Asst. (T-4)	Mandapam Regl. C.	01-07-02
V.A. Leslie	Technical Asst. (T-3)	Sr. Technical Asst. (T-4)	Chennai R.C.	01-10-02
M.P. Paulton	Technical Asst. (T-3)	Sr. Technical Asst. (T-4)	CMFRI, Kochi	01-10-02
M. Shanmughavel	Refrigerator Mechanic(T-II-3)	Refrigerator Mechanic(T-4)	Mandapam Regl. C.	1-1-2000
Smt. Suvarna Mahesh	Sr. Library Asst.(T-3)	Sr. Library Asst.(T-4)	CMFRI, Kochi	22-02-03
S.D. Kamble	Jr.Technical Asst.(T-2)	Technical Asst. (T-3)	Mumbai R.C.	01-01-02
Prabhakar Sankar Salvi	SS.Gr. II	Field Asst.(T-1)	Mumbai R.C.	09-03-04
M. Ravindran	SS.Gr. III	Field Asst.(T-1)	Chennai R.C.	09-03-04
L. Appa Rao	SS.Gr. III	Field Asst.(T-1)	Visakhapatnam Regl. C.	09-03-04
T. Nagalingam	SS.Gr. III	Field Asst.(T-1)	Visakhapatnam Regl. C.	09-03-04
P. Kandan	SS.Gr. II	Field Asst.(T-1)	Tuticorin R.C.	09-03-04
K.E. Joseph Victor	SS.Gr. III(Fieldman)	SS.Gr. IV (Fieldman)	Calicut R.C.	06-03-04
M. Thangavelu	SS.Gr. III(LA)	SS.Gr. IV (LA)	Mandapam Regl. C.	31-01-04
N. Pookoya	SS.Gr. III (W/M)	SS.Gr. IV (W/M)	Minicoy R.C.	03-02-04
V. Viswanathan	SS.Gr. III (W/M)	SS.Gr. IV (W/M)	Vizhinjam R.C.	31-01-04
Menino Souza	SS.Gr. III (Lascar)	SS.Gr. IV (Lascar)	Karwar R.C.	09-03-04
B. Prabhakaran	SS.Gr. II(Messenger)	SS.Gr. III(Messenger)	Vizhinjam R.C.	31-01-04
J. Hameed Sultan	SS.Gr. II (Pump Driver)	SS.Gr. III (Pump Driver)	Mandapam Regl. C.	31-01-04
M. Kuberaganesan	SS.Gr. II (Fieldman)	SS.Gr. III (Fieldman)	Mandapam Regl. C.	06-03-04
K. Thangavel	SS.Gr. II (Fieldman)	SS.Gr. III (Fieldman)	Mandapam Regl. C.	06-03-04
Somayya S. Gonda	SS.Gr. II (W/M)	SS.Gr. III (Watchman)	Karwar R.C.	06-03-04
M. Kalimuthu	SS.Gr. I (LA)	SS.Gr. II(LA)	Karwar R.C.	06-03-04
P. Satheesh Kumar	SS.Gr. I (Messenger)	SS.Gr. II (Messenger)	CMFRI, Kochi	08-03-04
Smt. Savithri	SS.Gr. I (Fieldman)	SS.Gr. II (Fieldman)	CMFRI, Kochi	17-03-04
T.P. Aboobacker	SS.Gr. I (Messenger)	SS. Gr. II (Messenger)	CMFRI, Kochi	23-03-04

Retirements

Name S/Shri	Designation	Centre	w.e.f.
K.M. Surendran	Private Secretary	CMFRI, Kochi	31-01-04
A.P. Balakrishnan	Assistant	CMFRI, Kochi	31-01-04
S. Mani	Fieldman (SS. Gr. IV)	Mandapam Regl. C.	29-02-04
Palaniappan	Safaiwala (SS. Gr. II)	Calicut R. C.	29-02-04
C. Balamamundinathan	Asst. Administrative Officer	CMFRI, Kochi	31-03-04
Voluntary Retirement			
K.K. Raman	Watchman	CMFRI, Kochi	01-02-04
Compulsory Retirement			
R. Anil Kumar	Jr. Technical Asst. (T-2)	Tuticorin R.C.	10-02-04

OBITUARY

Shri M.Shriram, Technical Officer (T-5), Mumbai Research Centre expired on 19-2-2004
Shri R.V.S. Subramanyam, L.D.C., Veraval Regional Centre expired on 9-3-2004.

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