



CMFRI newsletter

Number 12

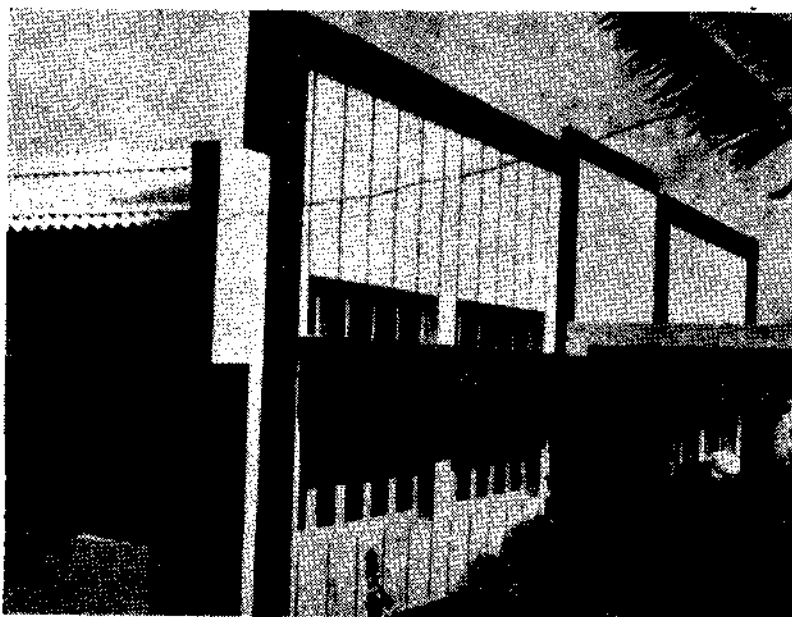
April-June 1981

SHELLFISH HATCHERY LABORATORY AT TUTICORIN

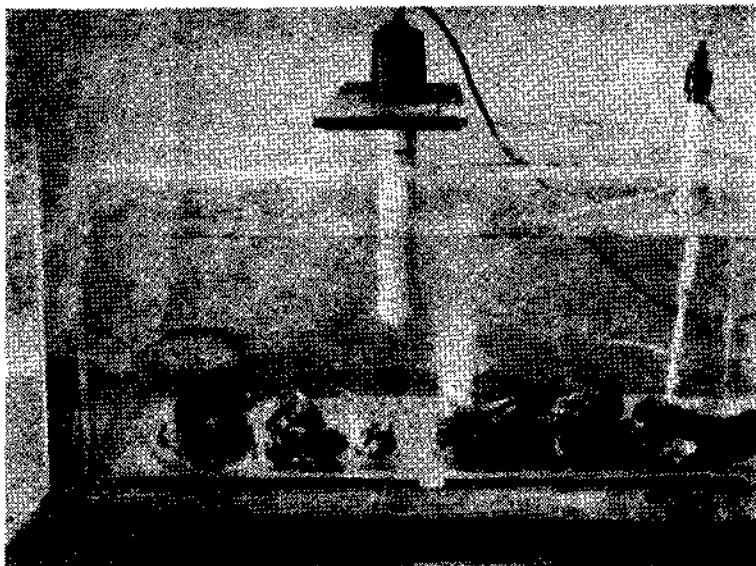
A temporary hatchery laboratory has been established at Tuticorin Research Centre of CMFRI. The laboratory built on Tuticorin Bay provides adequate facilities for hatchery production of molluscan shellfish seed.

Different methods of stimulating the edible oyster (*Crassostrea madrasensis*) to spawn under laboratory conditions are being tried. Successfully repeated trials at the laboratory have shown that oysters with ripe gonads if kept at a low temperature (22 to 24°C) for a few days and later raised beyond the ambient by 2 or 3°C induces oysters to spawn. The male oysters spawn first which stimulates females to spawn. Intense activity ensues making the water milky in appearance. The development of eggs proceeds fast reaching the veliger stage in a few hours.

Initially, some difficulty was experienced in rearing the larvae beyond the 'D' shape stage (40 to 50µ), on account of non availability of suitable and acceptable larval food.



A view of the hatchery laboratory



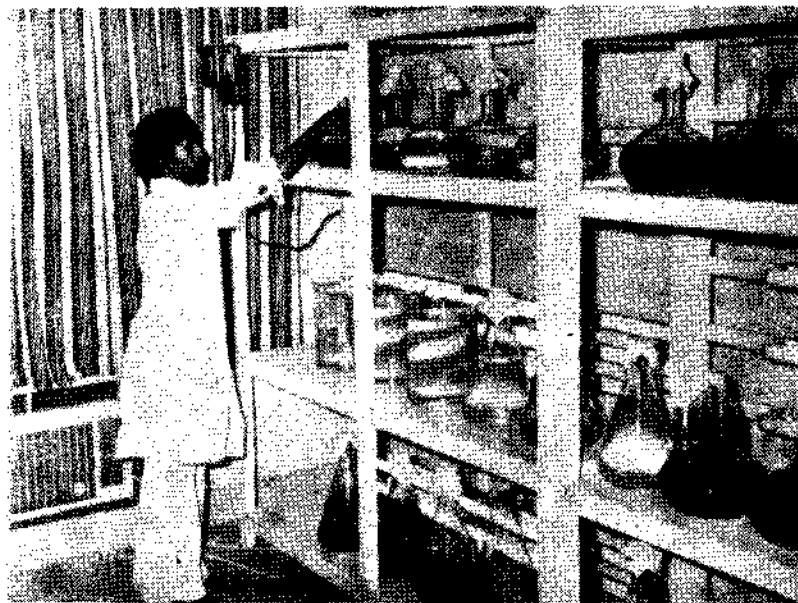
Thermal stimulation set up for oyster spawning under controlled condition

This has been overcome by the use of flagellate *Isochrysis* which is being cultured on a large scale at Tuticorin. Now the larvae are grown up to umbone stage measuring 240 to 280 μ , which has been identified as critical stage before the larvae settle down on the spat collectors. But mortality of larvae at this critical period due to attack by ciliates is holding up the progress.

Construction work of a permanent hatchery system for pearl oyster and edible oyster has commenced. When completed it will enable the scientists to take up mass culture of diatoms and achieve a breakthrough in the larval settlement of sessile molluscs. Mass culture of *Chaetoceros* sp and *Synechocystis* sp has been started with isolation of more diatoms.



Oyster and mussel rearing tanks inside the hatchery. Running sea-water and continuous aeration facilities are provided



Diatom culture stock for larval feeding



Excavation for permanent hatchery laboratory at Karappad

MUSSEL CULTURE AT KARWAR: A SUCCESS STORY

The green mussel *Perna viridis*, popularly known as 'Neeli Kallu' in Kanarese and 'Kulate' in Konkani and Marathi occurs in fair abundance on the rocky patches or other hard substrata in the inshore waters all along the coast. It supports a sustenance fishery of some consequence in Uthar Kannada from Majali in the North to Bhatkal in the South. The fishermen

eke out a living by taking to mussel fishing not only in the slack season when mackerel, oil sardine, prawn and other fisheries are at a low ebb but also during seasons of good fisheries. Full-grown mussel harvested from natural beds sell at Rs 10/- to 15/- per hundred in the local markets and medium-sized ones Rs 1/- to 3/- per hundred. To augment production

of mussel through coastal aquaculture, the Lab-to-Land Programme for transfer of mussel culture technology to the fishermen of Binage, a fishing hamlet situated 7 km south of Karwar town was initiated in November 1980.

The raft

The mussel culture rafts were placed in two areas, viz, (Continued on page 4)

Progress in Induced Breeding Experiments in Eel

Five more eels, three males and two females reached maturity through hormone injections, in April. Plenty of milt containing mobile spermatozooids were stripped from the males. The very impressive structure of the fully developed ovary of this species (*Anguilla bicolor bicolor*) was observed for the first time. The two lobes of the ovary looked like tight tuffles and were light orange. The left lobe was slightly longer than the right one. The surface of one side of the ovarian lobe facing the intestine was smooth whereas the other side facing the body wall was uneven with protuberance in which eggs were embedded.

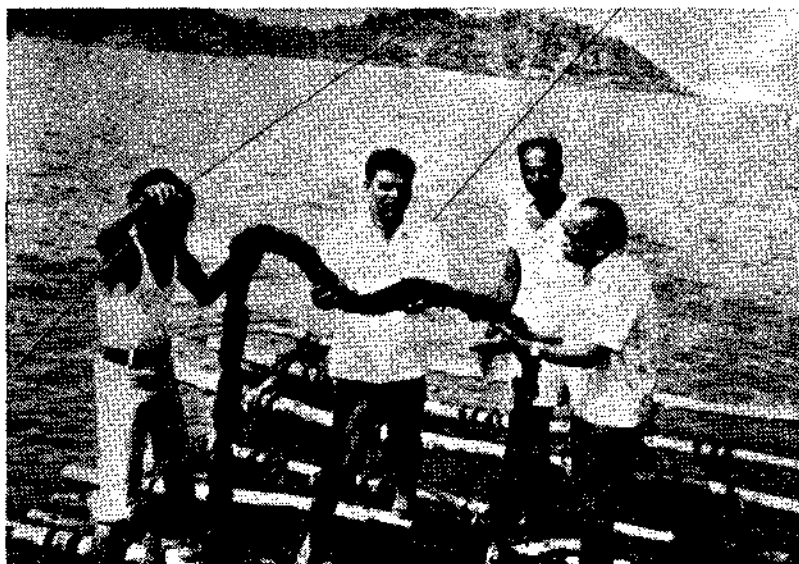
One more set of experiments has been started from 1 June and the eels are responding favourably to the hormone injections.

It is an accepted fact that eels die after the spawning. But from the data collected and experience gained in the induced breeding experiments in Indian eels there are reasons to suggest that at least in males some eels may live long enough for a second spawning.

To intensify the induced breeding work, a separate laboratory with running sea water and fresh water facilities has been set up at the Mandapam Regional Centre of CMFRI where eel culture activities are concentrated.

Fishermen Census for Kutch Coast

The All India Census of Marine Fishermen and Available Infrastructure Facilities could not be conducted in Kutch Coast of Gujarat in June-July, 1980 due to heavy rains and floods there. The Census for this area was completed during May-June this year. The team consisting of Shri S. K. Dharmaraja, Scientist S-2 and Shri Varughese Jacob T-II-3 from CMFRI, Cochin, Dr H. Mohamed Kasim, Scientist S-1 and Shri K. H. Dhokia from Veraval Research Centre, Shri. K. B. Waghmare, T-2 from Jamnagar Field Centre and Shri B. P. Gohil, Shri M. K. Purohit, Shri C. M. Patel and Shri Thackur from Department of Fisheries, Gujarat covered 51 fishing villages from Lakhpat in the north to Surajbari in south of the District.



"Not a bad yield at 60 days"—Shri P. M. Tandel (second from left), Managing Director, M/s Binage Ice and Cold Storage (Pvt.) Ltd. Binage, Karwar and Member, Management Committee of CMFRI on the raft with CMFRI staff

Binage Bay and Karwar Bay during December, 1980 February, 1981. Four rafts, two each at Binage and Karwar, fabricated out of casuarina and bamboo poles (lashed together with coir and nylon ropes) and varying in size from 5x 5m to 7 x 7 m were used for suspending the seeded ropes. Sealed empty oil barrels, each of 200 litres capacity, were used as floats for the rafts which were moored by means of 100 kg iron anchors and 20 m iron chains at 6 to 7m depth about 2 km from the shore.

The seed

The seed for the programme was collected from the intertidal and submerged rocks near Karwar Research Centre of CMFRI and also from Chendia. Four kg of cleaned seed of size

10 to 20 mm go into the seeding of 4 m length of coir ropes of 20 mm diameter and the seed mussels are secured around the rope using knitted cotton cloth of 25 cm width.

The harvest

Though the cultured mussel had not grown to marketable size, it was decided to harvest the crop and retrieve the rafts from the sea for future use because of the turbulent sea conditions during the south-west monsoon. The mussels were harvested in June. In all, 3751 kg of mussels were harvested from 120 ropes recovered from the four rafts. A good part of the harvest was distributed free among the 10 lab-to-land participants and the rest sold.

Shri P. M. Tandel, Managing Director, M/S Binage Ice & Cold Storage (Private) Ltd, Binage, Karwar and Member, CMFRI Management Committee was of great help in motivating the fishermen. The programme was implemented under the leadership of Dr M. V. Pai, then Officer-in-charge of Karwar Research Centre of CMFRI and Dr P. S. Kuriakose looked after the transfer of technology assisted by Shri C. V. Mathew and other staff of the Research Centre.



Harvesting — a canoe-load of mussel being taken ashore



A rope of about 75kg of freshly harvested mussel



Adopted fishermen with a part of their harvest



*Kumari Sobha Nambisan, IAS,
Project Director, District Rural
Development Society, Karwar
evinces keen interest
in the harvest*

Success in tracing the larval history of the prawn *Metapenaeus moyebi* at Karwar

Metapenaeus moyebi (Kishinouye) is one of the common species of penaeid prawns occurring in the inshore and estuarine waters of Kanara coast especially during the monsoon period. At Karwar Research Centre, gravid females of this species were collected from the shore seines during May, 1981 and these have spawned successfully under laboratory conditions. The eggs hatched out during night in the laboratory tanks were reared through post-larval stages and the complete larval history of the species studied. A knowledge of the early lifehistory is a prerequisite for developing suitable hatchery techniques for the culture of the species and in this connection the study is highly relevant. The investigations were undertaken by Shri G. Nandakumar and Shri K. Y. Telang, Scientists at the Research Centre.

Incidental catch of whale off Vizhinjam

A Baleen whale (*Balaenoptera sp*) was caught on 24 April by a drift net operated 7 km off Vizhinjam at 18-19 fathoms. The whale was 6.25 m long. It was reported by the fishermen that when the whale was being towed to the shore several sharks attacked it and tore portions of muscles from the trunk region.

The lower jaw and portions of the baleen plates are displayed at the museum of the Research Centre. (Observed Shri by J. J. Joel and Shri Mathew Joseph).

MEETINGS

WORLD ENVIRONMENT DAY

June 5, 1981 was celebrated as the World Environment day to commemorate the opening day of the UN Conference on Human Environment held at Stockholm in 1972. The Institute and its subordinate establishments conducted seminars and colloquia to highlight the importance of the protection of environment. At Vizhinjam Research Centre of CMFRI a colloquium on 'Man and his environment, how he could improve his environment and reduce pollution for his well being' was held.

Scientists of the Institute, members of the public, social workers and local officials participated in the colloquium. The colloquium emphasised the need for educating the public on the hazards of environmental pollution through various media and that the subject should be included in the curricula at all levels. The colloquium also felt that scarcity of drinking water and unhygienic conditions prevailing in the coastal area should be remedied by the Government and local bodies.



Protect your 'environment from pollution', campaign at Vizhinjam

Officials of CMFRI attended the following meetings

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

Meeting called by the Member, Planning Commission for discussion on Brackish-water Coastal Engineering at Delhi, 13 May.

Meeting of the Scientific Panel for Fisheries at ICAR, 14 and 15 May.

Meeting convened by Member (Agriculture), Planning Commission, regarding Inland and Coastal Aquaculture and the Role of ICAR Institutes on Fisheries Development Project proposed for UNDP Assistance at Delhi, 25 May.

Twentyfirst Tamil Nadu Fisheries Research Council Meeting at Kodaikkanal, 28 May.

Nineth Meeting of the Project Working Committee of UNDP/ICAR assisted Projects at New Delhi, 2 June.

Workshop on Crustacean Biochemistry and Physiology of CAS in Mariculture at Madras and presided over the valedictory function, Tamil Nadu State Fisheries Research Council Meeting at Madras, 15 and 16 June.

National Seminar on Crustacean Biochemistry and Physiology

The Centre of Advanced Studies in Mariculture, CMFRI, and the University of Madras jointly held a workshop on Crustacean Biochemistry and

Physiology for 13 days from 8 June at Madras. Twentyfive delegates participated. The workshop was essentially directed to discuss and appraise

the research methodology involved in the investigations on the biochemistry and physiology of crustaceans exemplified by *Scylla serrata*.



Participants in the Seminar

VISITORS

Hon'ble Union Minister for Agriculture and Rural reconstruction and the President of Indian Council of Agricultural Research Shri Rao Birendra Singh visited CMFRI on 17 May, 1981. Dr. O. P. Gautam, Director - General

ICAR had accompanied the Hon'ble Minister. The objectives of the Institute and highlights of research achievements, education and extension activities were explained to him. The Hon'ble Minister addressed the CMFRI staff and had discussions with the senior scientists.

Dr T. C. Jain, Assistant Director-General (NARP), ICAR visited the KVK of CMFRI.

Dr P. G. Padlar, Senior Aquaculturist, and Dr J. Kovari, Aquaculture Engineer, ADCP, Fisheries Department, Rome visited CMFRI, 20 May.

Dr V. D. Singh, Dy Commissioner, Fisheries, New Delhi and Mr. Patrick Simmon French Trade Commission Office Bombay were at CMFRI 20 May.

Shri P. Rajan Nair, Director, ICP, Bangkok visited CMFRI.

Dr S. Ramamurthy attended the meeting convened by State Level Committee for Coordination of Work on Marine Fisheries. 14th Meeting at Bombay, 24 April.

Dr K. Radhakrishna, Shri P. Mojumdar and Shri K. R. M. Nair attended the symposium and celebrations in connection with Nineth World Environment Day at Andhra University, 5 June.

An interview with Shri P. Karunakaran Nair, Senior Training Assistant, KVK on 'Salient points on scientific prawn culture' was broadcast over the All India Radio, Trichur, 5 April.

'Prawn varieties for Pokkali Fields', talk by Shri K. V. George, Senior Training Assistant, KVK was broadcast over All India Radio, Trichur, 9 April.

A talk on 'Role of Krishi Vigyan Kendra, Narakkal' by Dr V. Balakrishnan, Officer-in-charge, KVK was broadcast over All India Radio, Trichur, 15 April.

Fourth Meeting of the Local Management Committee of Krishi Vigyan Kendra was held on 10 June.

Dr. P. K. Martin Thompson, Senior Training Assistant, KVK

participated in Summer institute on Farming System Integrating Livestock, Agriculture and Fish culture conducted by CIFRI, Barrackpore, 6 July—4 August.

An article entitled 'Chemeen' in Malayalam by Shri. A. K. Unnithan and Shri P. Radhakrishnan, Senior Training Assistants, KVK was published in Keralakarshakan, 1 July.

Expert Panel in OSTA

The Standing Committee of the Ocean Science Technology Agency (OSTA) of Department of Science and Technology, Government of India has constituted an Expert Panel for Living Resources Programme of the Indian Ocean Region with Dr E. G. Silas as Convener. The Panel had its first meeting during 6-7 April at CMFRI, Cochin. One of the major objectives of the Panel's work will be formulation of plans and setting of priorities for fishery and oceanographic research surveys and accelerated development of marine living resources within sustainable yield. The Panel discussed its own terms of reference. The plan for preparing a status report on the living resources of Indian Ocean and their exploitation was also discussed in the Meeting.

Dr B. A. Huser, FAO/ UNDP consultant at the Tamil Nadu Agricultural University, visited CMFRI and gave a talk on Microbiology of anaerobic fermentation, 6 June.

CAS in Mariculture

Dr M. H. Ravindranath, Department of Zoology, University of Madras gave special lectures on blood chemistry of green lagoon crab, *Scylla serrata*, 11 April.

Dr K. Gopalakrishnan, Aquaculture specialist, Department of Natural Sciences, Hawaii gave lectures on Agriculture in Hawaii, Agriculture Technology Programme and Ecology Development and Pond Management.

Dr C. Somerville, an Expert in Fish Pathology, University of Stirling, UK was at CMFRI from 3 to 8 April. Dr Somerville delivered special lectures on life-cycle of fish parasites, fish diseases in relation to fish farm management and research activities in fish

pathology in the University of Stirling.

Expert Consultant at CMFRI

Dr Ching - Ming Kuo, Senior Scientist (Aquaculture) and an expert in reproductive physiology of finfishes, International Centre for Living Aquatic Resources Management, Manila, Philippines, was at CMFRI from 12 to 29 April. Demonstrations of induced breeding technique and two seminars were held besides



Dr Ching-Ming Kuo

group discussions, review of M. Sc. and Ph. D. (Mariculture) syllabi research programmes, equipments required and training facilities in the field of reproductive physiology.

STAFF NEWS

Assessment

Following Scientists have been promoted by the Council with effect from 1 July, 1978.

S to S-1

Shri K. N. Rajan
Shri R. Thiagarajan
Shri S. Krishna Pillai
Shri M. Rajagopalan
Shri M. E Rajapandian
Shri P. E. Sampson Manickam
Shri S. Dharmaraj
Smt. V. Chandrika

S-1 to S-2

Dr P. Vijayaraghavan
Shri C. Mukundan
Shri K. N. Krishnakartha
Shri G. G. Annigeri
Dr M. M. Thomas
Dr C. S. Gopinadha Pillai
Shri K. Dorairaj

The following persons have been granted advance increment with effect from 1 July, 1978.

Scientist S-1

Dr T. Appa Rao - Three
Shri S. Reuben - Two
Dr R. S. Lal Mohan - Two
Shri J. C. Gnanamuthu - One

Scientist S

Shri T. S. Velayudhan - Two

Deputations

Shri V. S. Krishnamoorthy Chennubhotla, Scientist S-2 participated in a training course on 'Gracilaria Algae and other Species' organised by South China Fisheries Development Programme under the UNDP/FAO of the Marine Science Centre, University of Philippines, Quezon City.

Smt. Geetha Bharathan, Scientist S-1 participated in 'Summer Institute on Genetics' at the Panjab Agricultural University for one month from 12 June.

Appointments

Shri Johnson K. Kuriakose as Engine Driver (T-II-3), 1 June,

Shri K. Raju, S. S. Grade III (LA) as cook (Boat) (T-1), 11 June,

Smt. K. K. Kalyani, as S. S. Grade I (Safaiwala), 21 April,

Shri M. Ravindran, as S. S. Grade I (Messenger), 24 April,

Shri Venkatesh Guruvaiah as S. S. Grade I (Safaiwala), 9 June,

Transfers

Shri M. Kumaran, Scientist S-2 from Cochin to Calicut.

Shri N. S. Radhakrishnan, Scientists S-1 from Mangalore to Madras.

Shri D. Kandasami, Scientist S-1 from Mandapam Camp to Tuticorin.

Shri K. Muthiah, Junior Technical Assistant (T-2) from Mandapam Camp to Madras.

Shri P. Palani, Field Assistant (T-4) from Mandapam Camp to Pattukottai.

Shri V. Kalimuthu, S. S. Grade III (LA) from Madras to Mandapam Camp.

Shri G. Durairaj, S.S. Grade III (LA) from Mandapam Camp to Madras.

Shri E. J. Dassan, S. S. Grade III (LA) from Mandapam Camp to Cochin.

Shri A. Alagarisamy, S. S. Grade III (LA) from Mandapam to Cochin.

Smt. S. Daisy, S. S. Grade I (Safaiwala) from Mandapam to Cochin.

Shri A. Subramanian, S. S. Grade III (Field man) from Cochin to Mandapam Camp.

AWARD OF DEGREE

Shri V. S. Kakati, Scientist S-1 has been awarded Ph.D in Zoology by Karnataka University for his studies on 'Crabs of Karwar'.

WEDDINGS

Kumari K. Lakshmi (T-2) at Cochin married Shri Vaithinathan at Ernakulam, 26 April.

Shri Mohan S. Puthran, Oilnian, Mangalore married Kumari Sukhalatha, 7 May.

Shri P. D. Solanki, Field Assistant (T-1) at Veraval married Kumari P. Versha, 20, May.

Shri S. Hanumantharaya, Field Assistant (T-1) Karwar married Sow Shanthakumari at Bangalore, 21 May.

Shri B. Thangaraj Lascar at Tuticorin married Silvi Ramani at Ilanji, Thenkasi, 12 June.

Shri H. Ramachandra, Field Assistant at Karwar Married Kumari Vadavathi, 26 June.

Shri M. S. Sumithrudu, Field Assistant (T-1) at Bombay married Kumari B. Suseela at Nandikotur (Tal) Kurnool.

Kumari Santha, Junior Clerk at Cochin married Shri Prabhakaran at Pazhayannur, 8 June.

NEWLY BORN BABIES

Shri K. Maragathavadivelu, Senior Clerk at Mandapam is blessed with a daughter, 1, April.

Shri N. Natarajan, Junior clerk at Mandapam is blessed with a daughter 13 April.

Smt. Rani Mary Jacob, Scientist S-1 is blessed with a daughter, 17 April.

Shri Buvaaneswara Varma T-1 at Kakinada is blessed with a daughter, 15 April.

Dr. A. G. Ponniah, Scientist S-1 at Cochin is blessed with a daughter, 14 May.

Shri Chellithalayya, T-1 is blessed with a son 3, June.

Shri S. Suryanarayan Murty Junior Clerk, Kakinada is blessed with a son, 21 June.

OBITUARY

Smt. B. Prasannakumari, Scientist-S expired on 5 April.

Shri V. K. Ramachandran, S. S. Grade III (LA) expired on 5 May.