

## M. R. Das

M. R. Das passed away on 1 April 2003 in Thiruvananthapuram. At the time of his death he was holding a Senior Scientist's position at the Indian National Science Academy, and was about to start his study on the genetic diversity of the tribal populations of Kerala. He was also an Emeritus Scientist at the Rajiv Gandhi Centre for Biotechnology in Thiruvananthapuram, a well-renowned research institution, which he founded by his untiring efforts of over seven years and he was its Director from November 1994 to December 2001. The President of India inaugurated the Centre in November 2002, thus, fulfilling a long cherished dream of Das. He also held the position of Chairman of the Science and Technology Programme of the Government of Kerala from 1997 to 2002.

Das was born on 2 July 1937 in Tiruvella town of Alleppy District in Kerala. After obtaining a Master's degree in Physical Chemistry from the University of Kerala in 1958, he was selected in the same year to join the Bhabha Atomic Research Centre Training School as one its first alumnus. He, however chose not to accept the research associateship at BARC, and joined the Tata Institute of Fundamental Research in the Chemical Physics Group as a Ph D student. In the early stages of his research career, Das was interested in the applications of electron spin resonance to bio-molecules, a demanding task in those days. After completion of his thesis work in 1962, Balu Venkatraman, the well-known spectroscopist – who was his thesis supervisor – encouraged him to go to Columbia University as a postdoc in the laboratory of George Frankel for the study of quinines and vitamins by novel ESR methods.

Das returned to TIFR in 1965, and got married to Radha, also an alumnus of the BARC Training School, whom he had first met at a seminar he gave at the Chemistry Department in the University of Kerala in 1962 where Radha was an M Sc student at that time. Soon after his marriage he was awarded a Ph D in 1966. By then, he was fired-up about molecular biology (or the New Biology as it was then called), and to pursue this new interest he shifted from the chemical physics group to the molecular biology group at TIFR, which had been newly formed by Obaid Siddiqi. In this group, Das deve-

loped an interest in the replication and biology of oncogenic viruses, and in 1968 he got a distinguished fellowship to work, once again at Columbia University, in the lab of Sol Spiegelman, where he did the most famous work of his career on the identification and isolation of the enzyme reverse transcriptase from murine leukaemia viruses. These results were published as a series of three papers in the August, September and October issues of *Nature* in 1970. Similar work, published a few days before Das's papers, from the labs of David Baltimore and Howard Temin, was awarded two Nobel Prizes in 1973.



Das returned to TIFR in 1971 and began an ambitious project on the isolation of viruses from human milk that were potentially related to breast cancers – his collaborators of those days, Dorab Dastur (of J.J. Hospital, Mumbai) and Satyawati Sirsat (of the erstwhile Cancer Research Institute at the Tata Memorial Centre) fondly remember their association with Das and describe those times as 'heady'. Their findings were published in *Nature* and the *Journal of National Cancer Institute*; however, these leads could not be followed up and the viral aetiology of human breast cancers could not be proven. On the basis of his accomplishments in tumour virology in 1977, Das was offered the directorship of the Michigan Cancer Foundation in Detroit (a lab famous for providing the MCF-7 cancer cell line) where he worked for two years.

In 1979, while he was still in Detroit, Das got the opportunity that significantly changed the course of his scientific life. He was invited by Pushpa Bhargava, who

was visiting Detroit in search of committed individuals, to set-up the molecular biology group at the then upcoming Centre for Cellular and Molecular Biology (CCMB) in Hyderabad. Das accepted this offer, and worked at CCMB until 1994. In CCMB his contributions were in diverse fields, one of the most important of them was the characterization of a tumour-specific transplantation antigen from a rat tumour cell line, by his Ph D student Pramod Srivastava, who subsequently (in his own labs in the US) showed that these proteins are a class of stress/chaperone proteins which are immunologically very significant and can be used for immunotherapy of cancers. Das with his other colleagues and students worked on aspects of nucleic acid enzymology, oncogenes, and tumour cell heterogeneity. Towards the end of his stay in CCMB, Das developed a programme on the diagnosis of hepatitis C viruses. He also took on some of the most demanding and critical administrative responsibilities first as Deputy Director and then as Director Grade Scientist in the making of CCMB; this was warmly and eloquently recalled by many members of CCMB on the day he died.

Das lived a scientifically full life, which began from Thiruvananthapuram and also ended in Thiruvananthapuram. He had his share of both successes and failures in this course but as a person he took them in his stride – a quality he had developed through his interests in the fine arts. He was an avid collector and reader of books and also had a good knowledge about the world's painters and their works; he was very fond of wearing elegant tweed jackets of which he has left a large collection in his closet. Das was very fond of his two daughters, both of whom are now well accomplished and settled in their professions and families, and this fondness reflected in his care for his students, some of whom have done very well in their scientific careers. All in all, Das will be remembered as a keen scientist, a warm human being who was consumed by his passions for scientific and artistic excellence.

GOPAL PANDE

*Centre for Cellular and Molecular Biology,  
Hyderabad 500 007, India  
e-mail: gpande@ccmb.res.in*