in mammals. The review gives a clear concept of these pathways, side by side, explaining the mechanism of detection, tagging and destruction of defective polymers (protein and mRNA). A relatively new field of research, bacterial small RNAs (sRNAs), has been reviewed by Bobrovskyy and Vanderpool. They explain the basic characteristics and functions of sRNAs in the regulation of metabolism in bacteria. Another review on RNA editing in plants by Takenaka *et al*., focuses on the RNA editing process in terrestrial plants, where this is an essential step of RNA maturation in mitochondria and plastids.

The genetics, function, structure and mechanism of RNAase III, a global regulator of gene expression in *Escherichia coli*, important for the maturation of ribosomal and other RNAs, has been described in detail by Court *et al.* They have examined how RNAase III, the endonuclease, is autoregulated in response to growth and other factors and how it controls the expression of genes. The authors conclude discussing the different modes of dsRNA processing and give details on the factors that uncouple RNA-binding and processing activities. This article is an informative source for newbies.

Ageing, known to be regulated by various mechanisms, has shed light on the role of bacteria. A report put together by Kim from the findings in *Caenorhabditis elegans* has underlined the role of microbial environment in ageing and longevity. The basic criteria, which have been suggested to play a role in the ageing of *C. elegans* are: (1) bacteria available as food source regulate ageing and longevity; (2) these bacteria infect the host and thus induce stress responses, thereby resulting in toxicity-mediated ageing and cell death and (3) regulation of neuronal activity that results in activation of endocrine signalling pathways that in turn playing a role in longevity of the organism.

This volume of *ARG* summarizes significant developments which occurred in the field of genetics over the past few years and is an informative source for geneticists working in all sub-fields. Every aspect of genetics, be it classical or molecular genetics, be it genetic interaction or reproduction, be it gene regulation or mutation has been reviewed and discussed in this volume, making it an ideal guide for researchers. Elaborate discussions of the underlying mechanisms, methods, conclusions, summaries, open questions and future challenges in each chapter will help geneticists incite thought-processes that would foster innovative research in this scientific field. This volume provides comprehensive reviews with topics ranging from gene functions to their significance, underlying mutations of proteins to their expressed disease states providing insights into unknown mechanisms and new methodologies, which will be helpful for practical applications such as drug design, as well as for persisting research in the field.

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PERSONAL NEWS

Parthasarathy Ganguly (1942–2014)

Parthasarathy Ganguly, a distinguished solid state chemist who worked at the Indian Institute of Technology (IIT), Kanpur; Indian Institute of Science, Bangalore, and later at National Chemical Laboratory, Pune passed away on the night of 6 May 2014 following a massive heart attack. He was an unconventional chemist. The moment he met someone whose work he followed, Ganguly would straightaway start discussing his ideas on that work. Invariably, newer ideas emerged. He was a unique person, always thinking and sometimes floating new ideas.

Ganguly, born on 20 January 1942 at Hooghly, West Bengal, had his early education in Chennai, where he obtained his M Sc and Ph D degrees from Loyola College. He worked with Father Lourdus Yeddanapalli at Loyola College in 1971 in the area of heterogeneous catalysis. After his Ph D, Ganguly moved to the Chemistry Department at IIT Kanpur and joined C. N. R. Rao as a Research Associate. When Rao moved to IISc in November 1976 to start the Materials Research Centre (MRC) and the Solid State and Structural Chemistry Unit (SSCU), Ganguly came with him to Bangalore and started setting up research facilities to study solids. A year later, he became a faculty member and continued working in SSCU until 1990, when he left for NCL to head the Physical Chemistry and Materials Chemistry Division. He also served as Chairman of SSCU before leaving for NCL. Ganguly retired from NCL in 2002 and continued as a CSIR Emeritus Scientist for five more years. After retirement, he settled in Pune.

At IIT Kanpur, Ganguly worked with C. N. R. Rao on perovskite oxides having general formula ABO_3 and oxides having K_2NiF_4-related structures. Because of his deep involvement in solid state chemistry at Kanpur, Ganguly moved with Rao to IISc. Ganguly was the first faculty member of SSCU recruited by Rao. He was primarily responsible for setting up research facilities to study solids at SSCU, such as high temperature furnaces, Gouy balance and Faraday balance magnetometers to study magnetic properties, electrical conductivity measurements (both high and low temperature), thermopower measurements,

preparative solid chemistry laboratory for carrying out co-precipitation, and precursor and high temperature ceramic methods to synthesize solids. He was largely responsible for preparation of a number of cation-substituted perovskites in the series $LnMO_3$ (Ln = rare earth metal and M = transition metal), sodium tungsten bronzes, La_2MO_4 (M = Fe, Co, Ni, Cu) with Rao and his students. Ganguly was known to work himself at the bench, taking readings from the instruments and plotting the data himself. He was deft in designing new equipment, and skilled in glass blowing, vacuum ceiling quartz tubes and similar experimental techniques.

Ganguly developed a photoacoustic spectrometer in SSCU. He later developed a novel technique to enhance photoacoustic signals from the solid surface with volatile liquids on the surface. He showed that this technique can be used to study surface acidity of oxides, adsorption of molecules on solids, and phase transitions in solid.

The thrust of solid state chemistry then was: (a) synthesis of novel oxides of desired structures for desired properties using old or new synthetic methods; (b) compositionally controlled metal-to-insulator transition, and (c) structure–electrical and magnetic properties correlation. Ganguly along with Rao did extensive research and together they published a voluminous amount of work in these areas.

Nevill Mott's proposition of minimum metallic conductivity is one concept that significantly influenced Ganguly. He spent considerable time in compiling the metallic conductivity of both metals and metal oxides to see if there is a material at the boundary of metal-to-insulator transition which can become a superconductor. If the material is also magnetic, what happens to the magnetic property at the boundary? He was fond of compiling data from the literature, correlate with some data he had generated and force seminars at SSCU. I recollect one such seminar in the MRC Lecture Hall in 1985. The faculty of SSCU, and many others from the Physics and Materials Departments were present. The hall was full. Ganguly tried to show all kinds of correlations of electrical and magnetic properties of oxides, specially based on La_2CuO_4. The magnetic moment of Cu^{2+} ion in this compound was half of what it should be for spin-only value. There was enough confusion and heated arguments rejecting the ideas of Ganguly. At one point Ganguly raised his trembling voice and told the audience that it is these types of material that are likely to show superconductivity. Indeed, in 1986, Ba ion substituted La_2CuO_4 base (for example $La_{2-x}Ba_xCuO_4$; $x = 0.15$) was shown to be superconducting by Bednorz and Muller, which led to the era of high T_c superconductivity in cuprates. Ganguly was an unconventional chemist capable of 'out of the-box' thinking, bringing new ideas into age-old problems.

After moving to NCL in 1990, besides pursuing research in oxide chemistry, Ganguly started working on Langmuir–Bodgett films, specifically their X-ray structure. He also worked on the sizes of atoms and ions in molecules and solids, specifically on atomic radii, crystal radii, orbital radii and published a series of papers in *JACS* and other journals. Over a dozen students did their Ph D with Ganguly and many have benefitted by discussing chemistry with him. He has authored over 150 research papers. He was a Fellow of the Indian Academy of Sciences, Bangalore.

Ganguly travelled widely – he was a visiting scientist at Universities in Oxford and Cambridge, Bordeaux University in France, Purdue University in USA, the IBM Labs at Yorktown Heights, USA, and the International Centre for Theoretical Physics, Italy. He also visited Japan frequently.

Ganguly had a multidimensional personality – chemistry was only one, but a major part of his life. He was a scholar of English literature – he kept in his living room compiled volumes of Shakespeare's plays, Rabindra Sangeet and Tagore's novels and stories. He was a sculptor, and wine brewer. He was also a good sportsman in his younger days. It was a pleasure to be with him, converse science and enjoy the intellectual company provided. Many of us have enjoyed his association and friendship.

He is survived by his wife Lalitha, a daughter and a son. He will surely be missed by his family, friends, students and colleagues.

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