

the hallmark of microbial communities. Such intercellular signalling is mediated by *N*-acyl-L-homoserine lactones (AHL), furanosyl borate diester (AI-2), 3-hydroxy palmitic acid methyl ester and signalling peptides. These allow bacteria to speciate further with the evolution of new behaviours that exploit the benefits of multicellularity (chapter 15).

Although bacteria have existed for almost four billion years, pathogens originated relatively recently. Thus the mechanisms that lead to the origin of pathogenic lifestyle of bacteria, provide important clues to evolution of disease-causing microbes and pathogenicity per se. An elegant description of pathogenicity islands, type-three secretion systems, horizontal gene transfer, and evolution of highly pathogenic *Escherichia coli* O157:H7 is provided in chapter 16. This chapter also discusses how loss of DNA contributes towards pathogen evolution, as exemplified by genome decay and pseudogene formation in *Mycobacterium leprae*. The genomic decay in vertically transmitted bacteria has been described with respect to *Buchnera aphidicola*, which resides in specialized cells called mycetocytes in the aphid body cavity (chapter 17). *Buchnera* cells never encounter any environment apart from the aphid. A discussion of the genomic decay in other bacteria which form obligate associations (parasitic or symbiotic) with animal host as exemplified by *Vibrio harveyi* and chlamydiae (pathogenic and the recently discovered in association with free-living amoebae), would have been an interesting incorporation.

Entitled a bit curiously – ‘Mechanisms for detecting genomic diversity’, section IV explores the role of horizontal gene transfer in generating genomic diversity and genomic differentiation (chapter 19), prokaryotic genome evolution as inferred from comparative genomics involving genome-wide analyses (chapter 20), and molecular basis of defining a bacterial species, including a critical assessment of the use of rRNA (or rDNA) as the molecular chronometer (chapter 21). Interestingly, the last chapter (chapters 6, 11, 18 and 21) in each of the four sections, contributed by the editors themselves, is a well-rounded critique of each section. These chapters, with a judicious mix of philosophy, are indeed inspiring.

As usual, coming from ASM, this book is a compilation of state-of-the-art knowledge on the subject of bacterial evolution. Undoubtedly, it is a feast to the connoisseurs

of microbial evolution. A hallmark of the book is that each chapter brings into focus the areas that need to be explored further. These would serve to guide prospective researchers. Since the book avoids the heavy bibliography-laden-reviews style, it would be equally useful to students of general microbiology, microbial genetics and evolutionary biology, who are interested in gaining basic understanding and insights into bacterial evolution. The questions at the end of each chapter are sharp and thought-provoking. The highly pruned references and suggested reading will be extremely helpful to both experts and non-experts. This book is a must for those interested in microbial evolution.

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The Greying of India – Population Ageing in the Context of Asia. Rajagopal Dhar Chakraborti. Sage Publications India Pvt Ltd, B-42, Panchsheel Enclave, New Delhi 110 017. 2004. 467 pp. Price: Rs 880.

The Greying of India by Rajagopal Dhar Chakraborti is a suitable and appropriate title for the current-day demographic scenario of India in particular, and Asia in general. The transition from highest fertility of about six births during 1950s to around two per woman in 2005 and side by side, the transition in the average life expectancy from low to the highest in the continent is attracting scholars to ponder over the reasons for the same and the consequences of these changes. As an outcome of this demographic transition, the numbers of those living beyond the age of 60 are rising considerably. This alarming rise in the elderly population though not an unexpected trend; is one, the country is not prepared to face yet. Under such circumstances the current book not only attracts sociologists and social demographers but also poses a challenge to the policy makers. This book is Dhar's second of its kind after *Ageing of Asia* (2002).

The book brings out the rapid growth of the older population in Asia and the reasons for the same. Impact of ageing on economy, status of the aged and steps to be taken by the countries to make ageing graceful are also dealt with.

To quote, ‘Less developed countries have enormous potential for population growth at older ages as the large cohorts currently in the younger age groups reach adulthood later’. ‘Gerontological transition, explains that population momentum is a major cause behind the swelling of the number of tomorrow's aged in Asian countries.’

So far, ageing was not a serious problem in India or Asia because it was the family, that shouldered all the responsibilities of the elderly. However, of late, with low fertility rates and smaller family sizes, caring for the elders is becoming a real problem. Older people are regarded as economically unproductive. ‘They excel in experience, patience, and wisdom, the younger are noted for energy, enterprise, enthusiasm, the capacity to learn new things, to adapt themselves, to innovate.’ Thus changing age structure will come in the way of economic development. Population ageing will contribute towards more health expenditure and comes in the way of capital formation, as elders depend more on their saving rather than earning.

The author brings in the impact of ageing on politics; how older voters can influence the political agenda of the country, not only by voting but also by bringing about laws favourable to them. This may even result in inter-generational conflict. If the non-marketable services in the family are not available, private institutions and nursing homes for the aged will be needed.

One full chapter is dedicated to the status of the aged; specifically it refers to India for which data are available. Based on the data the author provides hints on what will be the status of elderly in future in the country. Rural elders outnumber urban elders; dependency of elders is more in rural areas where females, specially single and widowed, will be more compared to single male. More and more elderly are now living without their children and are still working for their livelihood. Prevalence of chronic diseases among the aged is high and much higher in urban areas. These issues are highlighted scientifically for the first time. There are reasons to believe that the incidence of low levels of well-being among the aged in Asia, particularly for India, is proved with the currently available data. However, the data do not support the idea

BOOK REVIEWS

that urbanization has led to decline in family support for the elderly.

Chakraborti lists out the challenges to be faced by the governments, and the steps to be taken to make ageing graceful. The developing countries of Asia should work hard to bring about the required changes in the environment where people of all ages, specially the elders of both sexes can live happily. Recognizing the importance of the aged and understanding the ageing process, we should formulate policies and strategies. 'If the people in a country are able to secure core values in their old age, they can be said to be "ageing gracefully"'. Graceful ageing is a process of optimizing opportunities for physical, social and

mental well-being throughout life, in order to ensure a healthy, independent, quality life in older age.' In length, the author discusses about the family, society and government support extended to the aged.

An exhaustive list of dos and dont's for graceful ageing is a real difficult task to do, but the author has made an attempt in this direction. These strategies range from individual to family, society and government. These issues will not refer to any specific country, because there are no data to prove these statements. However, it would have been a laudable exercise by the author if he were to limit his book only to India and not consider all the countries coming in the purview of Asia.

The language and writing style of the book are simple. Even a layman can understand the problems of the elderly, and the steps to be taken to make ageing graceful. It will be of help to policy makers to better understand the seriousness of the problem and plan strategies to combat the repercussions well in advance.

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