Image Modeling of the Human Eye. U. Rajendra Acharya, Y. K. Eddie Ng and Jasjit S. Suri (eds). Artech House, Inc., 685 Canton Street, Norwood, MA 02062, USA. 2008. 359 pp. Price: US$ 149.

Gone are the days when patients visited specialists and were treated in super specialty hospitals. Do not be surprised if your doctor refers you to a sophisticated computer centre which treats eye disorders or a robotic manipulator which fixes your arm. We have already started seeing the benefits of computer-aided diagnostic and prognostic tools in various disciplines of medicine and surgery. Even more interesting is the fact that most disciplines have 'converged' and there is no single line of demarcation as it was earlier. Innovative technologists have been using their engineering skills to reduce human pain and suffering in the field of medicine and this book is just one of those resource books which takes image modelling of the human eye to a higher level.

Three pioneers in the field of bioinformatics and biomedical imaging have come together to create an image modeling of the human eye and explain how it could help identify the different stages of retinopathy, maculopathy, glaucoma, etc. All of them are surprisingly engineers with a background in electrical or mechanical engineering from Cambridge, Singapore and Washington. The book has been divided into 17 chapters and is the first of its kind to explore a new generation of computational methods that combine image processing, simulation and statistical discrimination tools to improve early detection of cataract, diabetic retinopathy, glaucoma, iridocyclitis, corneal haze, maculopathy and many other visual impairments and conditions.

Since the book is a perfect example of interdisciplinary subjects, the first chapter is focused on the human eye, i.e. its different parts and pathology. Once the reader is clear about the intricacies of the human eye, the authors move on to imaging optics and imaging systems. The principles, applications, advantages and limitations of the imaging systems are covered in detail with pictures, diagrams and sketches for five different imaging systems, viz. tomography, confocal laser scanning microscopy, MRI, optical coherence tomography and ultrasound imaging. The real content of the book comes alive in the fourth chapter (after about a 100 pages), where the authors combine complex algorithms and artificial neural network-based classifier to demonstrate anterior segment eye abnormalities automatically.

This comprehensive resource book presents the latest advances in computer-based detection and identification of various eye conditions, including issues involving automatic retinal image registration, computer-based optic disc localization and contour detection using eclipse fitting and wavelet transform. Different ocular pathologies have been discussed in different chapters and each chapter is well organized into introduction, methods, results, discussion and conclusions. Nearly 250 illustrations have been included in this resource book but all of them are mainly in black and white. Colour images/photographs would have added more lustre to the overall quality of this well-written volume.

This book explains various infrared and bioheat analysis methods, including 2D and 3D ocular surface temperature profiles produced by FEM/BEM (finite element method/boundry element method) simulation of the eye structure. Corneal surface temperatures with contact lens wear, boundary element modelling of heat transfer in the eye and the role of aqueous humor hydrodynamics in human eye heat transfer have all been well explained by the authors.

The last two chapters present the results of a clinical study that utilized dynamic ocular thermography and a statistical study on changes in the ocular surface temperature with age using IR thermography.

The editors of the book have chosen accomplished contributors and collaborated with technologists, surgeons, doctors, clinicians and computer scientists to produce this unique volume. It is also heartening to note that a lot of work mentioned in the book was carried out in India and several Indians have created benchmarks in the field of image modelling. This book has created a unique niche for itself and will be referred time and time again by computer scientists, technologists, students, clinicians and anyone who chooses to gain knowledge about image modelling and use the same for the betterment of mankind.

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Social History of Science in Colonial India (Themes in Indian History; Oxford in India Readings). S. Irfan Habib and Dhruv Raina (eds). Oxford University Press, New Delhi 110 001. 2007. 385 pp. Price: Rs 695.

Even after six decades of independence, effects of colonialism remain in India today. English language dominates as the medium of communication, with *c.* 100 million using it with facility[1]. Societal plurality, multiple languages and an allegiance to traditions characterized XVIII–XIX century India, contributing to a hard-to-imagine social structure. These characteristics interacted with each other in complex ways, eventually widening the gap between indigenous and introduced knowledge systems, including the sciences. Moreover, nationalism was emerging strongly which, looking back, has added another dimension to India's social complexity. Nationalistic science gained in significance invigorated by the thoughts and actions of nationalist–scientists such as Prafulla Chandra Ray. Mahātma Gandhi, who influenced Ray's thinking on nationalistic science, was critical of the materialistic philosophy of Western science. However, philosophers of Indian history reiterate that Indian science of the colonial time grew entwined with the complex social context[2,3] – a configuration that contests George Basalla's view[4] of the influence of Western science on the growth of colonial science.

This volume chronicles and validates the rise of Indian science in the social context of XVIII–XIX century India. It includes 12 chapters (all of them being previously published articles as either book chapters or journal papers between 1979 and 2000) on diverse, but interrelated dimensions of the social history of science in colonial India, written by eminent historians of colonial science with most of them from India (S. I. Habib, D. Kumar, K. N. Panikkar, D. Raina, S. N. Sen and S. Visvanathan) and others from Australia (R. MacLeod), Canada (Z. Baber), France (K. Raj), UK (I. Inkster) and USA (S. Dasgupta, M. H. Edney, G. Prakash and R. Dionne). The preface clarifies the context of the volume; the remark that this volume will refrain from referring to any aspect of social history of either medicine or environmental science in colonial India dampened my enthusiasm, because my personal interest in the history of Indian science remains in precisely those disciplines.