

Zoonotic Diseases. Sukdeb Nandi. New India Publishing Agency, 101, Vikas Surya Plaza, CV Block, LSC Market, Pitam Pura, New Delhi 110 034. 2014. x + 268 pp. Price: Rs 895.

As defined in the preface, zoonotic diseases (or zoonoses) are human infectious diseases caused by pathogens transmitted from vertebrate animals. Many emerging and re-emerging infectious diseases globally are zoonotic. Every case of a zoonotic disease is signal of the presence of the pathogen in the environment, crucial information for interventions to prevent further cases. So, for physicians, epidemiologists and officials of Health Ministry at Centre, State and Districts, a book covering all locally relevant zoonoses is invaluable for study and reference. Medical textbooks usually do not have a separate section on zoonoses. A good book on zoonotic diseases is a great idea.

The book under review falls far short of expectations. The first ten chapters are on viral diseases and the next eleven supposedly on bacterial diseases. And what is the first bacterial disease in the eleventh chapter in the book? – Crimean-Congo Haemorrhagic Fever, a virus disease. That is illustrative of the lack of attention paid to details and to accuracy of information, by both the author and the publisher. The first 11 chapters are on viruses and 10 on bacterial disease.

By design all other zoonoses (protozoans like toxoplasmosis and metazoan like cysticercosis) are excluded. That seems an arbitrary decision and unfair to the student of zoonotic diseases. There is no section listing all or at least the major zoonoses relevant to India.

Unfortunately even the choice of viral and bacterial diseases is rather haphaz-

ard – with errors of omission and commission. Many true bacterial zoonoses are left out, such as currently widely prevalent scrub typhus and Rickettsial spotted fevers. Plague continues to be a recurring problem in some parts of India, but it is not included in the book.

Among the described diseases there are two kinds of misfits. A few anthroponoses (human-to-human transmitted diseases) are included – without giving any justifications. In India, dengue and chikungunya are exclusively anthroponotic diseases transmitted via biological vectors (human–vector–human) and without any vertebrate reservoir. The error seems to be the assumption that vector-borne infections are also zoonotic – but that cannot be, as vectors are invertebrates. Zoonosis by definition is vertebrate-to-human transmitted.

Originally both dengue and chikungunya might have emerged by their viruses jumping host species from animals to humans, but currently they are not zoonoses. Many of today’s anthroponotic virus diseases had their origins from animals – even measles had emerged several centuries ago from rinderpest virus or a common ancestor. However, we do not call measles zoonosis. More recently, human immunodeficiency virus had jumped species from non-human primates – but today AIDS is not zoonosis but anthroponosis.

Japanese encephalitis (chapter 6) is certainly zoonotic; by the same token, West Nile virus disease (not included in the book) ought to be considered zoonosis as we know that birds are the main carriers of infection, whether or not some human-to-human transmission also occurs. Limited human-to-human secondary transmission does not disqualify a disease being defined zoonotic – for example, Crimean-Congo Haemorrhagic Fever (CCHF) and Nipah virus disease are likely to result from nosocomial transmission unless primary cases are clinically suspected and infection control practice introduced. When the first outbreaks occurred in Gujarat (CCHF) and West Bengal (Nipah), nosocomial spread caused death of several healthcare personnel. These experiences are of particular value for students of zoonoses, but unfortunately the book gives no description of these in-country experiences.

One has to be careful while describing human influenza in a book on zoonoses. Avian influenza (chapter 2) is indeed a

zoonotic disease when it affects humans. On the other hand, Swine influenza (chapter 3) does not carry much potential for zoonotic human disease. When swine influenza is described there is confusion – the disease swine influenza is not the subject of discussion, but the human pandemic influenza of 2009 that had some genetic contributions from swine, bird and human influenza viruses. The name swine influenza was rather non-scientific and was soon abandoned, but its perpetuation in a book published in 2014 is unnecessary. There was hardly any evidence of the virus getting directly transmitted from pigs to humans. Birds and pigs are hosts to influenza virus infection and their viruses can jump species and become human influenza. All human influenza A viruses have indeed evolved in this manner.

The influenza pandemic that began in 2009 is due to H1N1 that was at first called swine influenza, essentially because of finding gene material from swine influenza in addition to that of human and avian influenza viruses. It caused the pandemic precisely because it became anthroponotic. For a book published in 2014, in the post-pandemic period, the question: ‘Is swineflu having pandemic potential?’ is anachronistic, being appropriate only for early 2009 and not since then. In 2009, five years before the book was published, it became pandemic.

The chapter on tuberculosis (TB, chapter 13) is sure to mislead the readers to think that all human TB is of bovine origin. In India, the contrary is nearer to truth; almost all human TB is caused by the anthroponotic human tubercle bacilli, *Mycobacterium tuberculosis* and not bovine tubercle bacilli *Mycobacterium bovis*. In India, our cultural habit is to boil cow milk before consumption – that protects us from infection, even if the source was contaminated. However, there are villages especially in some Northern States, where people drink fresh milk and maybe prone to zoonotic TB. Thus it is quite likely that some human TB is caused by the bovine TB bacilli, but the chapter is unhelpful in exploring or explaining this issue. When should zoonotic TB caused by *M. bovis* be suspected and how should it be tested? What are the real drug sensitivities of human TB due to bovine bacilli? The chapter is silent on these crucial considerations.

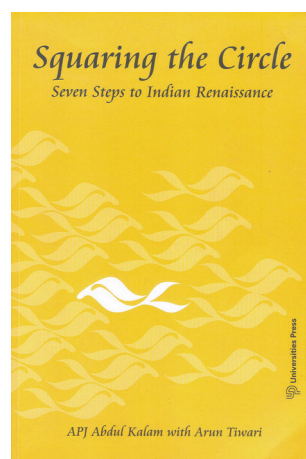
Colibacillosis (chapter 15) is described as a disease of calves, piglets, lambs and foals; thus it is animal disease. The importance of *Escherichia coli* in human disease is not described and when humans are at risk from vertebrate *E. coli* infection, is also not described. Similarly, Glanders (chapter 16) is essentially a disease of horses; its human counterpart, if any, is not described. Paratyphoid A and B are anthroponoses; but the chapter 19 with the title 'Paratyphoid' describes zoonotic salmonellosis caused by agents transmitted from animals.

Every chapter presents a large amount of information, but not organized systematically. The evidence for statements is not referenced. Each chapter ends with a list publications arranged alphabetically and not linked to anything in the text. Thus, they are not helpful in checking on any particular information given in the text. The chapter on 'Hantavirus Infections' (chapter 9) gives nearly 90 citations, but none relevant to the problem in India. Marburg and Ebola virus diseases (chapter 10) are justified in the book even though they are not relevant for India, at least until now.

All these deficiencies detract from the value of this book. If a new edition is made, attention must be paid to accuracy and completeness. Unlinked literature citations must be trimmed to relevant references to support information in the text.

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Squaring the Circle – Seven Steps to Indian Renaissance. A. P. J. Abdul Kalam in dialogue with Arun Tiwari. Universities Press (India) Pvt Ltd., 3-6-747/1/A and 3-6-754/1, Himayatnagar, Hyderabad 500 029, India. 2013. 277 pp. Price: Rs 295.

The book under review is one of several other books that deal with the same or a similar set of problems; the most famous of which has been *India 2020 – A Vision for the New Millenium* coauthored by Kalam and Rajan.

Like the earlier books, this book also uses what is termed as a system approach to look at the relationship between human societies with the natural world. Where it differs from other books of the same genre is in the key link in the chain of connections between the human and natural worlds. In this book this link is provided by an omniscient and omnipresent God. This conceptual framework is then used for outlining various prescriptive approaches that will solve current Indian and global problems. It goes on to suggest that such an approach will lead to a new renaissance that will transform and change not only India but also the world.

To deal with this complex system – made somewhat simpler through the introduction of an omniscient God – the book is written in the form a dialogue between the teacher (Kalam) and the student (Tiwari).

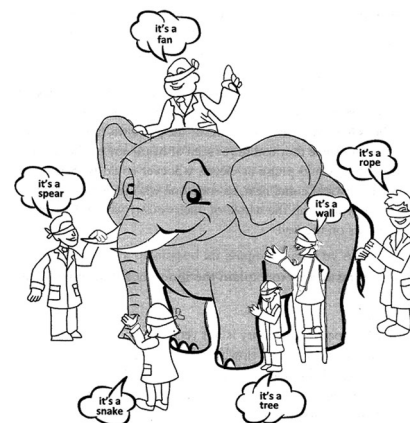
The basic premise is that everything in the world is interconnected. This includes each of us as individuals as well as the material world that are filled with both natural and man-made things. Though this is so people often act as though they did not understand this basic

law – what the authors call the divine law – of cause and effect. If we really understood this causality, given the presence of an omniscient God, we would all of us behave in more moral and ethical ways. This would in turn logically lead to a better world order and system. The first step in the renaissance that the authors advocate would therefore involve an understanding of the interconnectedness and the unity of the world around us and the role of God that facilitates such an understanding.

The book then goes on to discuss the current Indian political system and its close connections with social inequality and the lop-sided development of the Indian economy. The second step in the renaissance is to understand the root causes of the problems of the Indian state. This understanding can then be linked to a process of reconciliation between the various warring factions of the Indian nation state.

Though this is easy to suggest, in practice this involves a transformation in each one of us as well as in the various kinds of groups that constitute any society. The breaking down of our preconceived biases and our narrow world views at individual, organizational and national levels would be a major barrier for bringing about such a change. The authors see the youth of India as those best equipped for bringing about this transformation.

Given these conditions, the authors suggest a revamping of the education system as a necessary third step in the process of transformation. India needs to produce creative well balanced individuals who can contribute usefully to society as outputs from its education system.



Six blindfolded people identifying an elephant.