BOOK REVIEW

Veterinary Bacteriology. Indranil Samanta. (2013). pp. 384. Rs. 1280/-. New India Publishing Agency, 101, Vikas Surya Plaza, L.S.C. Market, CU Block, Pitampura, New Delhi – 110088.

There are several bacterial species of great significance to livestock, poultry, wildlife, aqua-life and pets having direct or indirect implications on the health and wellbeing of humans. Under the emerging concept of 'One health' these organisms have to be looked at in their totality, though for convenience of understanding and practical applications, classified information on them is quite valuable. There are specialized disciplines dealing with microbes concerning dairy and food products and those inhabiting the gut living in symbiotic association with the host animal. The discipline of veterinary bacteriology particularly concerns with bacteria and associated organisms having direct implications on the health of the animals by causing specific diseases at clinical and sub-clinical levels. Though microbes other than bacteria such as viruses and fungi and several parasitic species contribute to the disease domain of veterinary subjects and thus also have strong bearing on the health status of the animals, the present book under review exclusively deals with bacterial species of importance from the point of view of disease, health and protection.

The book is by and large a classified information source of bacterial species, written from the angle of students particularly at the graduate and post-graduate levels, in accordance with the prescribed syllabus by the Veterinary Council of India. In that context, the book is also intended to be utilized by the students taking up competitive examinations for scholarships and central/state services. The book has been mostly written by the Primary author, Dr. Samanta, though chapter dealing with *Pasteurella* and *Mannheimia* has been contributed by Dr. T.K. Gupta and write ups on *Mycoplasma, Rickettsia* and *Chlamydia/Chlamydophila* by Dr. S. Bandyopadhyay. The book contains 25 chapters first of which dealing with *Staphylococcus*, followed by other chapters successively dealing with *Streptococcus, Clostridium, Mycobacterium, Campylobacter, Brucella, Pasteurells, Mannheimia, Pseudomonas, Burkholderia, Moraxella, Haemophilus, Avibacterium, Taylorella, Listeria, Erysipelothrix, Actinobacillus, Actinomyces, Corynebacterium, Rhodococcus, Nocardia, Spirochetes, Gram negative anaerobes, Mycoplasma, Rickettsia, Chlamydia and Chlamydophila* species.

Each chapter begins with a brief history on the discovery of the bacterium and its nomenclature citing appropriate references. The properties of the Genus in terms morphology, cell chemistry, habitat and genomics have been provided. Isolation, growth and colony characteristics have been described. Antigenic characteristics and toxins or virulent factors produced have been explained and biochemical characteristics have been tabulated. Detailed information on pathogenesis, diseases produced, diagnosis and immunity traits have been well narrated. Various species of the particular genus causing different diseases in different animals have been comprehensively outlined.

Under *Staphylococci, S. Aureus* has been illustrated. Among *Streptococci*, complex diseases such as mastitis and specific diseases such as strangles have been aptly dealt with. Among the *Bacilli,* of course, Anthrax has been dealt with in detail though other species of *Bacilli* causing food poisoning also have been narrated. Differences between *B. anthracis* and *anthracoid* organisms have been tabulated. *Clostridia* have been described with classified information on pathogenic species. *Clostridium perfringens* which causes various enterotoxic diseases in different species of livestock including classical enterotoxaemia in sheep and goats has been dealt with in detail, *Clostridium chauvoei* which causes Black quarters in cattle and buffaloes, *Clostridium botulinum* causing

food poisoning or 'botulism' on consumption of contaminated feed and *Clostridium tetani* causing tetanus in various livestock find appropriate place in discussions. The details of toxins encountered through Clostridial infections are surely informative to the students and scholars. Pathogens belonging to the Genus *Mycobacterium* are of special significance to livestock and humans alike in view of their zoonotic nature. *M. bovis, M. avium, M. tuberculosis, M. paratuberculosis* and *M. leprae* have been vividly described along with diseases caused and diagnostic details.

Among the species belonging to the Family *Enterobacteriaceae*, the pathogenic species of the Genera *Escherichia, Salmonella, Klebsiella, Yersinia, Proteus, Providencia, Shigella, Enterobactor, Morganella* and *Edwardsiella* have been illustrated by dealing with specific pathogens such as *E. coli, Salmonella serovars, K. pnemoniae, P. vulgaris, Y. pestis, Y. pseudotuberculosis* and *Y. enterocolitica*. Genus *Campylobacter* of the Family *Campylobacteriaceae* has been discussed with illustrations on *C. jejuni. C. coli* and *C. venerealis*. Venereal Campylobacteriosis and Swine proliferative enteritis have been outlined briefly. Among the *Brucella* species, *B. abortus, B. melitensis and B. suis* have been delineated apart from brief mention of *B. ovis, B. canis* and *B. neotomate*. From the Family, *Pasrteurellaceae*, species belonging to the Genera *Actinobacillus, Haemophillus, Mannheimia, Pasteurella* and *Lonepinella* have been described with chief emphasis on *P. multocida*. Diseases caused by various species of *Pseudomonas, Burkholderia, Morexella, Haemophilus* and *Avibacterium* have also been outlined with descriptive details of the respective organisms and their pathogenic attributes. Species of *Taylorella, Listeria* and *Erysipelathrix* have also been discussed in separate chapters. *Actinobacillus pleuropneumoniae, A. Lignieresii* and *Actinomyces bovis* are other bacterial species dealt with details of virulence and pathogenicity. Other significant Genera included in the succeeding chapters are *Arcanobacterium, Corynebacterium, Rhodococcus, Nocardia* and *Dermatophilus*. *Spirochetes, Mycoplasma, Rickettsia, Chlamydia, Chlamydophila* and Gram negative anaerobes have been discussed in concluding chapters with due emphasis on specific diseases.

It is worth mentioning that this is a dedicated and systematic effort by the author to place on record essential elements of veterinary bacteriology, providing the gist of various bacteria in all their cultural and pathogenic dimensions. Each chapter has been appended with select Bibliography to enable the reader to reach out to further information on the topics. A brief subject index provides navigational aid to look for specific information in the book. Even though each chapter in this book forms a wholesome entity on the species of organisms under discussion, an introductory chapter on general features of bacterial organisms and more information on emerging concepts on immunology and biotechnology would have enriched the book further. In any case this does not in any way diminish the value of the book as a useful text book and a ready-reckoner for students and scholars alike. The best way to encourage such book writing efforts by active researchers and teachers would be to procure the books in a large way and make them available at various institutional libraries and prescribe them as reading reference material so that the students, scholars, teachers and general readers can individually procure these books for their study and ready reference.

This review would be incomplete without an appreciative mention on the quality and get up of the book which is handy, elegant and compact in a bound volume with an outer cover, for which the publishers deserve praise. The book has been priced well in accordance with the contents provided and quality of publication.

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