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A colour atlas of Bacillus species

This book presents a concise account of the methods used to identify members of the genus Bacillus. The techniques and basic principles are described. High quality photographs illustrate both the tests used and the organisms as they appear under the microscope and as colonies on agar media.

The authors' approach is based on their experience in medical and public health laboratories. The book's introduction briefly reviews the various systematic studies of the genus and the limits to the taxonomic knowledge. The biochemical and bacteriological tests used are tabulated and described in detail with photographic illustration of the positive and negative results. The book is well organised and presents with all necessary detail the descriptions of culture media, biochemical tests, serotyping and toxigenic and pathogenic manifestations of the organisms. An extensive bibliography with titles of papers is included.

The authors' taxonomic interests seem to have radiated outwards from Bacillus cereus, important as a cause of food poisoning, to the other members of the genus. An informative appendix tabulates the uses of many different strains of Bacillus in biotechnology.

The book is a model of the 'atlas' type and will certainly be a prime reference source for any bacteriologist concerned with the identification and classification of Bacillus species.

S.J. Pirt

Antibiotic choice: the importance of colonisation resistance

During a little more than a decade, considerable insight has been gained into the important defensive role of the body's commensal microflora, notably in the oropharynx, intestine and skin. Professor van der Waaij and his colleagues in the Netherlands have concentrated on the natural antimicrobial defences of the gut, in both clinical and experimental animal studies. From their own and other findings they have developed the general concept of "colonisation resistance", which is the theme of this short monograph. Encompassed by this term is the sum total of the local protective factors at any particular body site which, when adequate, can prevent colonisation and superinfection by potentially pathogenic microorganisms.

In addition to microbial interactions, host factors including clearance mechanisms and local secretions contribute to a varying extent to colonisation resistance (CR). However, the pre-eminent part played by the normal flora in the gut is clinically all too evident from the adverse local effects of antimicrobial therapy—which range from mild "antibiotic diarrhoea" to pseudomembranous colitis. The effects of different antibiotics on the CR have been studied quantitatively in experimental animals, mainly mice. Commensal anaerobes appear to be the major defence, with, perhaps surprisingly, the minority gram-positive component chiefly implicated.

Caution is obviously required in extrapolating these and other findings directly to man. Inter-species differences are often striking in this field; it is, for example, unlikely that penicillin would have been introduced into clinical practice if guinea pigs had been the original experimental animal. Parenteral penicillin drastically reduces that animal's gut CR, leading to rapid overgrowth and systemic invasion by aerobic gram-positive bacilli.

Other related themes dealt with by Professor van der Waaij include the possible role of cross-reacting antigens from gut bacteria in the pathogenesis of auto-immune disease and graft rejection, as well as the part played by absorbed bacterial endotoxins in precipitating graft-versus-host disease in transplant recipients. On the positive side, a chapter contributed by
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Dr Richard Walker summarises the evidence for a stimulatory effect on haematopoiesis by the products of intestinal bacteria, and it also deals with normal mechanisms for clearing endotoxin after its absorption from the gut.

Even the most dedicated of readers will unfortunately find this book daunting. The series editor has failed to eliminate numerous repetitions and linguistic problems, while the publishers have grossly overpriced the 79 actual text pages of reduced camera-ready typescript. This is a great pity because the subject has important implications for antimicrobial prophylaxis and therapy, as well as for microbial ecology.

SYDNEY SELWYN

Notes on antimicrobial therapy


This small, attractively produced book is designed to serve as a concise guide to antimicrobial treatment for medical students and junior hospital doctors. It largely achieves its aims, and sensibly includes useful short sections on antifungals, antiprotozoals, antivirals and antihelmintics. Errors and criticisms are few, and except for the repeated misspelling of polymyxin are confined to the beta-lactam antibiotics. On the historical side, cephalosporin C was first reported in 1955, not 1948—the year of Brotzu’s announcement of his initial studies of the Cephalosporium acremonium mould, whose original activities were due to its production of penicillin N. Also, phenoxymethyl penicillin (penicillin V) was not derived from the penicillin nucleus, but is a natural fermentation product when phenoxyacetic acid is used as precursor.

On the more applied side, Dr Symonds’ frequent recommendations for the use of mezlocillin in a wide range of infections and of azlocillin in pseudomonas infections should have been accompanied by a note that piperacillin is a convenient single alternative to both drugs. The statement that mecillinam is indicated in “enteric fever and other invasive salmonella infections” would probably not be widely accepted, since the results of such treatment have been equivocal at best. Finally, the erroneous statement is made that “cefazolin” (cephazolin is the correct spelling in the UK) is preferred to cephalexin—and, by inference, cephradine—for the treatment of gram-negative infections “because of enhanced beta-lactamase stability”. In fact, cephalosporin is the most susceptible of all the currently used cephalosporins to hydrolysis by beta-lactamases; and this defect together with its unusually high degree of protein binding considerably reduce the drug’s in-vivo activity. In general, however, this inexpensive little book can be recommended as a sound introduction to antimicrobial therapy.

SYDNEY SELWYN

Microbial skin disease: its epidemiology


In this small book Professor Noble has summarised a considerable body of information on the acquisition of skin infections. After an initial chapter on the microbiology of normal skin, endogenous infections are reviewed. These include such minor disorders as erythrasma, associated with the fluorescent diphtheroid, Corynebacterium minutissimum, and the more complex but analogous disease, acne vulgaris, as well as the true skin infections such as furunculosis, lupus vulgaris and a range of fungal and viral diseases.

It is interesting to note that in subcutaneous abscesses of the head, neck and trunk, propionibacteria are implicated about twice as often as Staphylococcus aureus, while the reverse is the case in the axilla. The only gram-negative skin commensals, Acinetobacter species—the former Mima and Herellea group—are confusingly discussed. Wound and other skin sepsis due to this group is said to occur most frequently in summer, as a result of the promotion of bacterial growth by sweating, yet the accompanying graph shows consistent peaks of infection in winter.

The section dealing with the important group of exogenous infections is apportioned idiosyncratically. Cutaneous diphtheria is given about the same space allocation as streptococ-