chapters varies, as is to be expected. Some articles were clearly submitted as oral presentations and would have benefited from more severe editing. The opening section is devoted to the molecular biology of *P. aeruginosa* and the first paper examines the use of pulsed field gel electrophoresis for taxonomic and epidemiological studies, summarising the results of various published studies. This is well complemented by an article on different typing methods and their application to strain identification in patients with cystic fibrosis. Older readers will probably be amused by the short paper on the contamination of sanitary installations and hands of hospital personnel by *P. aeruginosa*, and its contribution to cross-infection of patients. This is arguably not newsworthy and is certainly outside the scope of molecular biology. The molecular theme is restored by two very short papers on chromosome organisation and outer membrane porins but the reader seeking an overview of this topic will unfortunately be disappointed.

The chapter on the role of phospholipase C in pathogenesis is excellent and informative, and is an appropriate introduction to the section on virulence factors. Unfortunately, the papers on *P. aeruginosa* cytotoxin seem almost esoteric and will interest few readers. The balance is restored by an authoritative account of *P. aeruginosa* exopolysaccharide (alginate) examining its role as both an offensive and defensive virulence factor and discussing, briefly, its importance in treatment. The role of pseudomonas proteases in burn infections is reviewed including an evaluation of the current hypothesis that, in addition to any direct destructive effect on host proteins, these proteases may also increase the net circulating proteolytic load in the host above that caused by the burn alone.

A disproportionately large section of the book is devoted to immunotherapy, both with vaccines—alginate, flagella, lipopolysaccharide (LPS), toxin A—and antibodies—hyperimmune globulins and monoclonal antibodies to LPS. In one of the latter studies, oral ciprofloxacin was combined with a cocktail of five human monoclonal antibodies to LPS for the treatment of mice with *P. aeruginosa* infections, reducing mortality from 57.6% to 25.4% overall. Another study demonstrated the effectiveness of the cytokine TNF- α against infection with *P. aeruginosa* in leukopenic mice.

The book ends with four papers on chemotherapy of pseudomonas infection, two of which are noteworthy. The article on β -lactamases is concise, and emphasises the role of class I/class C enzyme in universal β -lactam resistance in the species. The clinical perspective of quinolone resistance in *P. aeruginosa* is discussed from the drug company point of view but, nevertheless, it provides the reader with a reasonable insight into the problem.

The price of £94.80 is unlikely to seduce many buyers and, if I was asked by my library committee to give an opinion as to its purchase, I would have to recommend that the money could be better spent elsewhere.

T. L. PITT

Adverse Effects of Pertussis and Rubella Vaccines

Edited by C. P. HOWSON, C. J. HOWE and H. V. FINEBERG. 1991. ISBN 0-309-04499-5. National Academy Press, Washington. Pp. 367. \$48.

Following the introduction of legislation in the USA to provide for federal compensation of persons potentially injured by vaccines, the Institute of Medicine was commissioned to undertake a study, and subsequently the Institute established a committee to review the adverse consequences of pertussis and rubella vaccines. The brief of the Committee was to examine the medical and scientific literature for evidence implicating pertussis vaccine in anaphylaxis, haemolytic anaemia, hypsarrhythmia,

Guillain-Barré syndrome, erythema multiforme, infantile spasms, Reye's syndrome, prolonged inconsolable crying, thrombocytopenia, sudden infant death syndrome (SIDS), aseptic meningitis, juvenile diabetes, autism, learning disability, shock and "shock-like" syndromes, hyperactivity and permanent neurological damage. A similar review was to be conducted on the relationship between rubella vaccines (including MMR vaccine) and radiculoneuritis, chronic arthritis and thrombocytic purpura. In addition, a workshop and a public meeting were to be held to address these problems and the findings of the Committee were to be included in a report. This volume comprises the report of the Committee and is presented in seven chapters and six appendices.

The first chapter presents an executive summary of the report. Chapter two provides a history of pertussis and rubella vaccines and their reported association with adverse effects. Chapter three describes the methodology used to assess the evidence. Chapters four, five and six present the detailed evidence relating to pertussis vaccines and reported adverse effects. Chapter seven presents the evidence relating to rubella vaccine and adverse events. This is followed by a summary of identified research requirements to fill the gaps in the knowledge of causal relationships. The appendices describe the strategies used to obtain information for the study, a chronology of pertussis and rubella vaccines, the animal models used in studying pertussis and its vaccines, the details of the statistical methodology used to assess the evidence, the possible involvement of aluminium in the adverse effects of pertussis vaccination, and brief biographies of committee members.

Briefly, the Committee concluded that there was no evidence to indicate a causal relationship between pertussis (DTP) vaccine and autism; that there was insufficient evidence to implicate DTP vaccine in aseptic meningitis, chronic neuropathy, erythema multiforme, Guillain-Barré syndrome, haemolytic anaemia, juvenile diabetes, learning disability, attention deficits, peripheral mononeuropathy or thrombocytopenia; that the evidence does not indicate a causal relationship between infantile spasms, hypsarrhythmia, Reye's syndrome or SIDS and DPT vaccination; that the evidence was consistent with a causal relationship between acute encephalopathy (including encephalitis and encephalomyelitis), shock and "shock-like states" and DTP vaccination; and that the evidence indicated a causal relationship between DTP vaccination and anaphylaxis and protracted, inconsolable crying. It was concluded that there was insufficient evidence to indicate a causal relationship between rubella vaccination and thrombocytopenic purpura, radiculoneuritis and other neuropathies but that evidence was consistent with a relationship with chronic arthritis. There was definite evidence linking rubella vaccine with acute arthritis.

This is a very useful volume for anyone desiring information on adverse reactions to pertussis and rubella vaccines. The editors and the Institute of Medicine have performed a valuable service in producing it. It is unlikely to find many individual purchasers but it is an obligatory addition to any medical library.

M. J. CORBEL

Modern Techniques for Rapid Microbiological Analysis

W. H. NELSON. 1991. ISBN 3-527-28022-7 VCH Publishers, Weinheim. Pp. 263. £45.

This book comprises eight chapters, written by experts, on rapid instrument-based techniques that mostly yield "pattern" or chemical data on composition of microbial cells including infra-red spectrometry, Raman UV resonance spectrometry, polarised light scattering, fluorescence-based