

Book Reviews

Tuberculosis – Back to the Future. JOHN PORTER & KEITH McADAM. Pp. 304.
Chichester: John Wiley & Sons; 1994. £14.95. ISBN 0 471 94346 0.

Tuberculosis is the theme of the Proceedings from the Third Annual Health Forum held at the London School of Hygiene and Tropical Medicine in 1993, edited by John Porter and Keith McAdam. The Forum's intention to bring about a dialogue among a broad range of professionals from immunologists to economists apparently succeeded at the Conference, which had drawn together an audience from 53 different countries. The book of 285 pages, however, is overwhelmingly within the realm of global epidemiology or problems of public health control. It contains 11 main chapters, each with an attached discussion commentary, brief reports from 5 Workshops and 6 addresses from the opening or closing sessions.

The book title 'Tuberculosis – back to the future' reflects the message that there is an urgent need to avert the threat of a global crisis in the escalating spread of tuberculosis (TB). One can perceive inspiration, derived from this conference and a similar meeting held in November 1992 in Washington, from Barry Bloom's previous articles 'Back to a frightening future' and 'Tuberculosis: Commentary on a reemergent killer' (*Nature and Science*, both from August 1992). Reference to the fearsome past in the book's title exploits an emotional impact on a wide section of readers. Those who are too young to remember, will be familiar at least with the several consumptive romantic heroines pictured in the literature and opera. Whilst tuberculosis was an incurable disease in the past, it is now curable in the vast majority of cases. Consequently, the current problems have a sensitive political charge, not only in relation to the regional nature of insufficient health services, but also because of the assumed association of the disease with poverty. Thus, a recent editorial in *The Times* (February 1994), commendably calls for more health visitors to look after the homeless who are particularly vulnerable to TB. The reference to 'back to the future', however, does not apply that well to countries with endemic TB, because they have hardly ever gone much ahead even prior to the current concern over risk of a global epidemic.

The chapter on 'Control strategies and programme management' by Jaap Broekmans informs the reader in some detail about several important epidemiological aspects. It is noted that TB incidence had its steepest decline in industrialized countries already before the introduction of chemotherapy, but declined only very slowly in recent decades in developing countries, despite the existing chemotherapy-based control programme. These situations suggest that living standards may have a positive or negative influence which can override that of the existing means of intervention. Another key chapter, entitled 'Resource allocation priorities: value for money in tuberculosis control' by Christopher Murray, explains that donor agencies (e.g. World Bank) evaluate health intervention procedures on the basis of saved 'disability adjusted life years' (DALY). Although detection and treatment of smear-positive TB retains its grading as top priority, uncertainties about several aspects are highlighted as targets which require future operational research, essential in support of requests to donor agencies for more resources in support of TB control.

The history and the current global situation of TB is described with clarity and authority by Dixie Snider. His review has up-to-date statistical figures, revealing the staggering magnitude of TB prevalence and gloomy figures on mortality and low cure rates in high prevalence countries, which have 95% of all TB cases. The author highlights the need for more widespread and cost-effective application of existing means of intervention. As a way ahead, he endorses Karel Styblo's control programme which emphasizes common sense, rather than introducing any particularly new measures. It also makes the point that immigration from high prevalence countries is a major factor behind the increase of TB in advanced countries. The discussant, Peter Smith, reflects how the optimism from earlier decades changed to the realization that TB is now 'one of the truly greatly neglected diseases'. He attributed this change of attitude to increasing socio-economic deprivation, and associated decline in medical services during the

1980s as well as to disappointing results from a major trial on BCG vaccination and to the onset of the HIV epidemic.

The chapter on AIDS-related TB by Kevin de Cock, informs us that 80% of cases occur in Sub-Saharan Africa. He attributes the outbreaks of multidrug-resistant TB in New York and elsewhere to inadequate treatment and isolation of AIDS patients within enclosed environments such as prisons and hospitals. This explanation seems to be at present more plausible than the possibility that drug resistant variants emerge as a consequence of immunodeficiency. Broekmans in his chapter proposed, that by efficient case finding and cure rates of smear-positive cases, the risk of transmission in the population could be contained, although the treatment may be seen to some extent as palliative in the sense that clinical improvement is frequently a great deal less pronounced than in HIV-negative patients. However, the concern about the global impact of AIDS-related TB expressed here and in several other parts of the book is not fully reflected in Murray's article where, on the grounds of figures projected toward the end of this decade, it is 'conservatively' assumed that no extra increase in the annual risk of infection needs to be attributed to HIV-infected TB cases.

The overview on the detection of TB by Peter Godfrey-Faucett offers interesting reading with new insights. Epidemiological aspects are emphasized by the opinion that early detection of TB followed by chemotherapy is the best prevention of transmission. He quotes from a study in Kenya alarming 87% failure rates of primary medical teams in recording clinical symptoms of TB. In reference to new detection methods of potential value such as PCR and serology, he explains why the specificity needs to be higher than 98%, whereas lower (e.g. 75%) sensitivity may be operationally acceptable. He acknowledged, however, that many new diagnostic tests are developed, clinically assessed, published and then ignored. Indeed, the discussant Donald Enarson asserts that new methods 'are not yet at a point where we can expect them to play a useful role'. He defends the 'robust' performance of sputum-smear microscopy (little modified since introduction in 1885) on the basis of results from an extensive controlled case-contact study, but does not take much into account, that standards of performance are probably much lower under uncontrolled field conditions. The conservative adherence to the smear test perhaps rests on the dictum that case detection should be expanded only in programmes where 80% of cases complete therapy.

The chapter by Douglas Young on 'Future research needs' reads as a discourse aimed mainly at the motivation of the general audience (e.g. 'research must stir the imagination as well as the social conscience'). Nevertheless, his brief assessments of a wide range of recent experimental avenues and a similar review of research in the discussion by Barry Bloom, clearly indicate their selection of recommended research priorities. Both contributions emphasize the importance of scientific endeavours in relation to resource allocation. Other sections of the book refer to research similarly in terms of future needs or 'demands'. Under the title 'Immunities in and to tuberculosis', Paul Fine laments that 'we are in deep immunological trouble' and 'bogged down in jungles of complex data'. Fellow immunologists may blush for failing to deliver the expected 'flowcharts' of less bewildering complexity, but he is pointing in the right direction when requesting that high priority be given to research on immunological correlates for resistance and risk of disease. However, I dispute his unreserved opinion, that previous BCG vaccination trials reporting either good or poor protection reflect real biological variations between the diverse tested populations, rather than differences in the design and evaluation of various trials. The latter opinion, expressed originally by Clemens in 1983 perhaps does deserve continued attention when considering the variable standards of trials (e.g. quote that 'detailed results are yet to be published' even 14 years after completion of the South Indian trial). In the meantime, there is consensus of opinion conveyed by Dixie Snider, that BCG vaccination without any geographical qualifications, reduces the risk of miliary and meningeal forms of TB, but does not prevent infection. Styblo and Meyer's data from 1976, that BCG vaccination does not reduce the number of infectious cases and transmission are of particular interest.

Chemotherapy has been covered in four chapters (80 pages), dealing with management, drug supply, preventive therapy and multidrug resistance. The reader will learn that the potential high efficacy of antituberculous drugs is being substantially reduced by poor drug supply and unsatisfactory supervision of therapy in many TB control programmes. It is suggested that initial euphoria over successes of chemotherapy caused the deterioration of public health attention and infrastructure. The chapter by Philip Hopewell elaborates in detail as to 'who should be treated and how'. It describes the means of supervision, and delivery of various

regimens. As a matter of principle, the responsibilities are attributed to the programme provider on social grounds. Various strategies to enforce compliance involve direct supervision at the outset of therapy and special advice is given on the management of those patients who have failed therapy or who are HIV infected. The management of drug supply, based on forecasting, financing, procurement and distribution is presented to be in need of improved planning, collaboration, dissemination of information and monitoring of supplies. Preventive therapy, which has been used successfully in the United States is described in detail by Rick O'Brien. However, this approach cannot be applied in countries with low TB incidence where BCG is used, because the infected persons cannot be identified by tuberculin skin testing and it was never considered as a viable option for TB endemic countries. In reference to current consideration for HIV infected persons, the discussant Alwyn Mwinga spelled out several convincing reasons why preventive therapy is 'neither feasible nor desirable' in countries experiencing the most serious impact of AIDS associated TB.

Although only 5% of all TB cases occur in industrialized countries, one cannot avoid the feeling that it was the increasing incidence in advanced countries (by 18% in the USA between 1985 and 1991) and the HIV-related outbreak of multidrug resistant TB in New York, which precipitated the current outcry of concern about the global situation. This book contains justification for seeking a 3-6 fold increase of support for TB control programmes from the World Bank. The pharmaceutical industry is complimented on the development of first generation of drugs and attracted to play 'a key role in translating research efforts into new tools for disease control'. In view of the expensive nature of evaluation of new drugs for TB and given the uncertain profits from TB therapeutics, drug companies should be commended. (Glaxo announced that it will provide £10 million at the conference.)

My conclusions from this book are that the escalated spread of TB in relatively small sections of the population in advanced countries has led to much greater awareness of the ever existing plight of people in developing countries. It has been suggested that existing health interventions may succeed after all, if given greater political support than that which has existed over the past 40 years. The remedy is to be achieved with extra finance from existing governmental budgets and from international bodies, such as the World Bank and by improving the efficiency at which the available finance is used by implementing Styblo's control strategy. Nevertheless, I suppose that scientists working in the tuberculosis field should feel optimistic that an extra slice of finance for research may lead to radically improved means for combating the disease. In view of the specialist nature of exploratory research in TB, it may have been prudent for the editors to leave that aspect to other research orientated publications. Finally, I can recommend that the book should be read as widely as the editor Keith McAdam has intended, which includes biomedical scientists, paramedical and social workers, traditional healers, shopkeepers, pharmacists, teachers, pastors and the press. This book will make the reader think; it certainly stimulated me. This is much to its merit, irrespective of one's selective personal conclusions.

JURAJ IVANYI

*Tuberculosis & Related Infections Unit,
Royal Postgraduate Medical School,
London W12 0NN*

Human Virology. L. COLLIER. Oxford University Press; 1993. £18.50.

I have been waiting for this book! It has filled a big gap in the market. *Human Virology* is pitched at the right level for medical and dental students. However, microbiology students might require additional reference books in order to study some areas in more depth.

The book is divided into four parts: 'General Principles' covers structure, classification, replication, propagation in the laboratory, pathogenesis, immunity and epidemiology and is useful for preclinical students. 'Specific Infections' covers all the viruses encountered in temperate climates, together with exotic infections, arbovirus infections and unconventional aspects such as prions. 'Specific Syndromes' includes chapters on virus diseases of the CNS, intrauterine and perinatal infections and virus infections in immunocompromised patients. 'Practical Aspects' includes laboratory diagnosis, control of virus diseases and antiviral chemotherapy. The last three parts would be required by clinical students.