

the USA (the three leading producers) were 60% of expected due to severe weather. Model projections and data are moving in tandem — providing mounting “fingerprints” of human influence (together amounting to an unsustainable ecological “footprint” (accordingly we are now using the resources of 1.2 earths; [http://www.ecouncil.ac.cr/rio/focus/report/english/footprint/.](http://www.ecouncil.ac.cr/rio/focus/report/english/footprint/))

The threat to coral reefs from warming is addressed in this work, but separately from the section on food. Loss of reef nurseries, plus algal biotoxins, the 150 hypoxic, non-productive “dead” zones around the world and chemicals — such as mercury emanating from coal-fired power plants and off-shore oil rigs — endanger an essential source of protein for the residents of many nations and an important, healthy source of pleasure and protein for people the world over.

Adaptation to climate change receives extensive coverage. Early warning systems for heatwaves are now in place in some urban centres, thanks to the sustained efforts of some of the authors, along with other researchers, WHO, WMO, and UNEP. Infrastructure will also need reconstruction and — most poignantly — so much is needed to reduce the vulnerabilities of poor nations. Several years ago Jeffrey Sachs proposed that wealthy nations pay reparations for the damages incurred. Such international funds might best be used today as incentives to jump-start the clean energy transition — the first and necessary step towards reprogramming and refinancing sustainable development — a process that can truly buttress public health and reduce vulnerabilities to environmental change.

Developing clean energy technologies could be the best “no-regrets” strategy for our health, or adaptation and for mitigation (i.e. primary prevention). Distributed energy generation, with solar, wind, tidal, wave, geothermal and fuel cells feeding into the power grid (where it exists) — and energy-efficient “green” buildings, improved public transport, hybrid vehicles, along with roof gardens, bicycle and walking paths — will decrease the vulnerability of the grid to storm interruptions and overload during heatwaves. Where grids do not exist, such measures can provide

energy for purifying and pumping water, irrigation, cooking, running computers, radios, lighting and small enterprises (i.e. interventions that directly improve public health).

This attractive, well-written, well-organized and authoritative book on the ongoing and projected impacts of climate change cannot fail to convince even the most cautious public health authorities to adopt the precautionary principle. The informative glossary and extensive index help make this comprehensive volume useful as an introductory text and a reference for those already initiated. Its call to include stakeholders in assessments is pertinent, for public-private partnerships will be needed on micro- and macro- scales to create the infrastructure and craft the scaffolding that builds the global economy and benefits the environment.

Climate change threatens to destabilize the relationships among microbes and other species established over the last 10 000 years (the Holocene epoch), and climate instability and emerging infectious diseases are together stalking wildlife, livestock and crops, and forest and coral reef habitats. This important book highlights the need to place public health at the forefront in reframing the development agenda. ■

#### Paul R. Epstein<sup>1</sup>

1. McMichael AJ, Haines A, Sroog R, Kovats S. *Climate change and health*. Geneva; World Health Organization; 1996.
2. Levitus S, Antonov JJ, Boyer TP, Stephens C. Warming of the world ocean. *Science* 287: 2225-9.
3. Hoerling M, Kumar A. The perfect ocean for drought. *Science* 2003; 299: 691-4.

### Toman's tuberculosis: case detection, treatment, and monitoring

Editor: T. Frieden

Publisher: World Health Organization, Geneva; 2004

ISBN: 92 4 154603 4 (softcover); 350 pages; price Swiss francs 80.00/ US\$ 72.00 (in developing countries: Swiss francs 40.00)

In the late 1950s and early 1960s develop- ing countries, in particular India, pro-

duced a considerable amount of quality technical and health systems research on tuberculosis. This period, the first golden age of TB research in developing countries, provided the foundation for the national TB control programme. The new policies were gradually shaped in a series of WHO and International Union against Tuberculosis (IUAT) documents to reach the most refined expression in the ninth report of the WHO Expert Committee on TB, published in 1974. Scientists, mainly from developed countries, raised a number of objections, critical remarks and doubts on the evidence supporting the TB control policies. In order to clarify the issues and dispel misunderstandings, WHO and the IUAT commissioned a book to function as a commentary on the scientific knowledge and practical experience underlying the ninth report's policies on TB control for developing countries.

Dr Kurt Toman, a Czech phthisiologist, was selected for this job. Besides being a WHO short-term consultant in TB control for developing countries, he was the Director of the WHO/UNDP International Training Course on Epidemiology and Control of Tuberculosis, held in Prague over three months every year in the 1960s. Seated in a corner of the rostrum, he attended with exemplary discipline all the lectures, which were delivered by a prestigious international faculty, and took note of every question raised by the students with the corresponding authoritative reply. These notes were his main source in writing the book (*Toman's tuberculosis*) and moved him to shape its format as selected Questions and Answers about the technical bases for the policies on case finding and treatment of pulmonary TB. The first English edition was issued by WHO in 1979 and was then translated into French, Spanish, Arabic and Portuguese. *Toman's tuberculosis* soon became the most useful reference publication on the technical basis of the case management strategy for TB control in developing countries.

Although most chapters of the first edition retained their technical validity, there were three important technical features that made *Toman's tuberculosis* out of date by the 1990s: 12-month treatment regimens had been replaced by short-course chemotherapy in which

<sup>1</sup> Associate Director, Center for Health and the Global Environment, Harvard Medical School, Landmark Center, 401 Park Dr., Boston, MA 02215, USA (email: paul\_epstein@hms.harvard.edu).

rifampicin and pyrazinamide are no longer reserve but first-line drugs; the emphasis on bacteriological diagnosis was reduced in settings with high prevalence of HIV infection; and the emergence of multidrug resistance presented new challenges for its prevention and treatment. DOTS strategy introduced two key innovations over the policies in the ninth report: directly observed treatment is no longer an option but almost a *sine qua non* for treating sputum smear-positive pulmonary TB; and a strict information system should be in place to facilitate monitoring each case under treatment as well as the cohort analysis of treatment outcomes.

Dr Tom Frieden took the initiative to update Toman's book. He has had an almost unique experience in TB control, first as Director of the TB Bureau of New York City in the early 1990s, and later as a WHO Regional Consultant with South-east Asian governments in implementing the DOTS strategy. In producing the second edition of this classic book, he secured the collaboration of 29 contributors from WHO, IUATDL, Centers for Disease Control and Prevention (Atlanta, GA, USA), Tuberculosis Research Centre (Chennai, India), Malawi TB Control Programme, and academic institutions in Belgium, Canada, and the USA.

The second edition has retained 24 chapters of the first edition practically unchanged, keeping Toman's name as author, or have been slightly modified. Some of these chapters are masterpieces of didactic explanations on complex subjects such as those on the sensitivity and reliability of sputum smear microscopy for the diagnosis of TB. Nineteen of the sixty-three chapters in the second edition (twenty-five more than the first edition) are based on Toman's original text but have been updated with relevant information published after 1980. The new edition is divided into three sections (case detection, treatment and monitoring) and greatly expands the scope of the first edition.

The ten chapters on case detection outline the technical basis for the policies currently used to identify and diagnose pulmonary TB, which have remained practically unchanged for 25 years. Brief but useful information is provided on tuberculin tests and the new immunodiagnostic and molecular

biology tests that have not yet been adopted for mass application.

The section on treatment presents the most relevant updated technical information on treatment of new and previously treated pulmonary tuberculosis. New chapters in the second edition deal with extrapulmonary TB, patients with HIV infection, pregnant women, patients with liver or renal conditions, and treatment of latent TB infection.

Section three of the second edition (Monitoring) covers a variety of subjects. Retained and updated are Toman's original chapters on how to supervise and monitor progress of treatment, prevent default, and follow-up cases after cure. Most of the chapters in this section, however, do not deal strictly with monitoring but with management (planning, evaluation and surveillance), epidemiology and research methodology. The title of this section is inappropriate if monitoring is taken to mean the daily activity carried out to verify that the work plans are being implemented as planned. If the objective was to present the evidence base for approaches to diagnosis, treatment and monitoring, the chapters related to nosocomial transmission of TB and other epidemiological topics do not fall within this scope. On the other hand, if the intention was to present an overall picture of the case management strategy extended to prevention and control, as the Introduction states, very important elements are missing, for instance, training and logistics.

The second edition keeps the questions and answers format of the first edition, with all its originality but also with its main weakness, i.e. frequent repetitions despite the many cross-references. Although the editor was careful to avoid contradictions and even different emphases among the 29 contributors, he failed to avoid repetitions. When questions are closely linked, it is hard to provide a complete answer without repeating concepts and facts mentioned in related chapters. Even some chapters overlap considerably, the most evident examples being the reviews on drug toxicity or adverse reactions in chapters 23 and 31 and those on treatment default in chapters 37 and 61. It would have been more straightforward to consolidate many closely related questions into a single composite one. In addition,

the questions and answers format is not necessarily user-friendly; it does not make it easy to find a subject that is not explicitly spelled out in the question. Surprisingly, the book does not include a subject index.

These drawbacks do not, however, detract from the book's quality. Many tables are included and these together with a few graphs help to clarify the issues involved. A number of chapters describe how current knowledge about TB was acquired; the historical perspective is presented in the text and in the citations to the original references, which illustrate how current knowledge about TB was discovered. More importantly, the book reminds us not to believe that TB control can be accelerated merely by increasing financial resources. Programme managers have to learn how to grapple with the many technical details of implementing the case management strategy.

The book is not a substitute for the handy manuals and guides produced by WHO and IUAT. Although it was not intended to be an exhaustive resource, it is a reference book recommended for any professional interested in TB. Certainly, the second edition has restored and renewed the pristine technical value of the first edition. ■

Antonio Pio<sup>1</sup>

### Tobacco: science, policy and public health

Editors: Peter Boyle, Nigel Gray, Jack Henningfield, John Seffrin, Witold Zatonski  
 Publisher: Oxford University Press, Oxford, England; 2004  
 ISBN: 0-19-852687-3; 830 pages (hardback); price: £69.50

### Tobacco smoke and involuntary smoking (IARC Monographs, Volume 83)

Publisher: International Agency for Research on Cancer, Lyon, France; 2004  
 ISBN: 92-832-1283-5; 1470 pages (softcover); price Swiss francs 55.00/US\$ 49.50 (Swiss francs 38.50 in developing countries)

Fifty years after Sir Richard Doll first reported results from the British doctors'

<sup>1</sup> Consultant in Public Health and Respiratory Diseases, Mar del Plata, Argentina (email: pioa@cybertech.com.ar).