

technology that has facilitated the cloning of toxin genes and their expression in plants. With lots of information pouring in, the reader may find the review on this aspect timely and the authors have done enough justice to Bt research by writing a quality article. The endotoxin chemistry, the primary structure of toxin related mode of action throws insight into complexity of the situation which may help in understanding the mechanism of selectivity and toxicity. The recent phenomenon of resistance to Bt is covered limitedly. This could be further elucidated by studying the active sites of toxin and their role in toxicity. Perhaps, studies leading to characterization of insect receptors would be worthwhile. The eusocial insects are fascinating for their division of labour and it is amazing that there is flexibility mingled with plasticity in this aspect of their biology. There is an unique blending of centralized and decentralized processes of social integration, of which the behavioural processes exhibit tremendous flexibility, being regulated by the hormonal and genetic factors. Thus social organization is the net result of the plasticity in the division of labour and behavioural flexibility of individual workers. These realities have been reviewed well in this volume.

Finally, I decide to conclude this review by making few general observations; I observed that most of the reviews are by the scientists hailing from universities and other institutions of learning in the United States of America and United Kingdom/Europe. Also the literature reviewed has mostly originated from these sources only. While observing this and keeping in mind the reviews appeared in the earlier volumes, I feel reasonable in putting forth a suggestion that the editorial committee may bring out reviews on topics specific to other geographical regions. Otherwise, the review has been excellently outlined, planned, designed and well presented. Of rare and unusual occurrence is a typographical error on page 400 where the year of reference No. 195 is cited as 1995.

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**Annual Review of Public Health 1992.** Vol. 13, G. S. Omenn, J. E. Fielding, L. B. Lave, eds. Annual Reviews Inc, Palo Alto, USA. 1992. 552 pp. Price: USA \$49; elsewhere \$54.

Public health medicine has come of age in the West, growing from the status of one of the less glamorous specialties of medicine to that of a profession which draws from the best of a whole gamut of disciplines, including clinical medicine, epidemiology, biostatistics, social sciences and management for its practice. This is amply evident from reading the *Annual Review of Public Health*, vol. 13. The book provides a comprehensive and exhaustive review of topics that are at the 'cutting edge' of public health practice in 1992.

The book is divided into five sections: Epidemiology and biostatistics, Environmental and occupational health, Public health practice, Behavioural aspects of health, and Health services, and a symposium on selected clinical syndromes associated with ageing. There are 24 articles in all. The selection of the topic for the symposium reflects the concern for the problems of the greatest dimension to the public health planners of the twenty first century.

The three articles on physical activity and health underscore the importance of this key variable in current thinking on health. S. N. Blair *et al.* review current knowledge about physical activity in all its dimensions. The emphasis seems to have shifted from threshold theories, advocating a minimum intensity and duration of physical activity, to the viewpoint that any physical activity is good, but the final word is far from having been said. It is revealing to learn that even in a nation with a high sporting tradition such as the United States, only 8% of men and 7% of women reach the recommended activity levels. 'Inactivity in the US must be a public health problem of comparable magnitude to smoking, obesity, high blood pressure and high blood cholesterol', observe the authors. One can only guess at the situation prevalent in India! Two more articles on physical activity (E. H. Wagner *et al.* and D. M. Buchner *et al.*) discuss the problem with special reference to elderly adults.

'HIV Infection and AIDS in Children' (T. C. Quinn *et al.*) focuses on a

comparatively lesser known aspect of this widely publicised scourge: the epidemiology of AIDS in children. Especially notable are the inequities introduced in health status by AIDS; which has emerged as a major cause of death in 1-4 year olds among hispanics and blacks in the US. With heterosexual transmission having been established as a major mode of spread, the importance of monogamous relationships has been highlighted, but only to be dismissed as a futile(!) approach.

'Selected Methodological Issues in Evaluating Community Based Health Promotion and Disease Prevention Programmes' (T. D. Koepsell *et al.*) is a comprehensive review of high relevance on the methodological issues of policy and programme evaluation. The importance of specifying the theoretical model, including the mechanisms through which a programme is expected to act, is stressed. The sections on randomization of communities, and longitudinal versus repeat cross sectional surveys are very illuminating.

Health Effects of Low Level Ionizing Radiation' (A. E. Upton, R. E. Shore, and N. H. Harley) is a well-researched article presenting the state of current knowledge, or rather, the current lack of knowledge, about radiation hazards at the low exposure range. The lack of real information leaves the field open for much polemics, most of it about hypothetical possibilities. This is a developmental dilemma for most of the third world, who have to balance investments in energy against possible future health hazards. The article 'Biological Interactions and Potential Health Effects of Extremely Low Frequency Magnetic Fields from Power Lines and Other Common Sources' (T. S. Tenforde) perhaps illustrates the point made by Skrabanek about the 'poverty of epidemiology' (Skrabanek, P., *Perspectives in Biology and Medicine*, 1992, 35, 182-185); even if increment in risk to certain carcinomas are induced by ELF magnetic fields, is it of much clinical significance among all the other competing risks?

Social marketing has come to stay as an accepted strategy to 'sell' public health messages to the underdeveloped populations. But public health practice, with its ethic of public good, is in essential conflict with the philosophy of marketing, with its roots in profit



maximization and free enterprise. In the article 'Social Marketing: Its Place in Public Health', J. C. Ling *et al.* present the pros and cons, and conclude that social marketing is a tool, to be used for good or evil. In spite of the 'neutral' conclusion it appears to me that the basic conflict remains unresolved. It is interesting that in the examples quoted for 'successful' social marketing of contraception, success is not evaluated in terms of ultimate reduction in birth rate.

'Unnecessary Surgery' (L. C. Leape) reviews this controversial topic. The final conclusion is that unnecessary surgery is a reality, whose extent it is difficult to measure, and which arises not out of malicious intent, but rather out of particular circumstances and imperfections of medical practice—such as inadequate knowledge, incomplete dissemination of information, and rapid technological change which leaves little time for evaluation of current practice and a lot of scope for disagreements between practitioners. This is a rather charitable view on physicians, especially as the article inadequately discusses the role of incentives.

The symposium on selected clinical syndromes associated with ageing is perhaps the most illuminating section in the book. Populations in many parts of the world, especially Europe, North America and parts of Asia, are ageing as a result of the fall in death rates and birth rates. The burden of caring for the aged is going to be the major challenge for the health systems of the future in these regions. There are seven articles in this section, including the introductory one. The first two discuss the problems

of acute confusional states induced by several drugs in the elderly, and cognitive impairment including Alzheimer's disease. It is important to distinguish between the two, especially as the first is reversible while the other is not. Polypharmacy, or administration of multiple drugs, is emerging as an important problem in the elderly as they tend to have multiple ailments, and some of the possible interactions between recently introduced drugs are not even known. The article by R. B. Stewart and W. E. Hale stresses this lack of information. 'Cognitive Impairment in Dementia and Alzheimer's Disease' (E. B. Larson, W. A. Kukull, and R. L. Katzman) gives an exhaustive account of the present state of knowledge about this affliction, discussing the range of prevalence estimates, etiological theories, (some risk factors discussed: old age, family history, head trauma, possible aluminium toxicity, and some viruses), pathology and pathophysiology. The section relating the morphological findings to possible pathophysiological mechanisms provides interesting reading. Of the other articles in this section, two are on physical activity and its effect on the elderly, and two on fall and non fall injuries respectively.

There is some scope for revision of the categorization, as topics similar to each other seem to have been discussed in different sections. For example, two articles on immunization, 'Global Immunization' (R. Kim-Farley and the EPI team), and 'Polio Eradication from the Western Hemisphere' (C. A. de Quadro *et al.*) are in the section on public health practice while a third one, 'Causes of

Low Preschool Immunisation Coverage in the United States' (F. T. Cutts, W. A. Orenstein and R. H. Bernier) is in the section on health services. But the articles in the section on public health practice, especially the ones on immunization, were a disappointment. While documenting the dimensions of the problem and the official approaches, alternate viewpoints have been ignored. The cost of 'global immunization' in terms of the neglect of other primary health care programmes is a major criticism against this drive. Also the assumption that universal immunization is to be unambiguously welcomed has been questioned recently in a controversial article by King (King, M. H., *Lancet*, 1990, 336, 664–667). In the absence of references to these and other viewpoints, these articles read like reports.

The book has been well brought out, with an extensive bibliography for each review. The mode of citation is one which is unfamiliar to most readers of biomedical journals: references are listed in the alphabetical order at the end and numbered, and this number appears along with the text in parentheses at the point of citation.

The *Annual Review of Public Health* (Vol. 13) is, on the whole, an invaluable aid to update and obligatory reading for anyone interested in public health practice in the 1990s.

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