

Influenza vaccine campaign

Influenza in America, 1918-1976: History, Science and Politics. Edited by June Osborn. Pp. 135. (Neale Watson: New York, 1977.) \$7.95.

THE deceptively simple title of this book conceals the drama of America's 1976 swine influenza vaccine campaign, the account of which will interest many not directly concerned with the influenza problem. The story begins with a brief account of influenza in 1918 in the USA written by the historian Alfred Crosby, and ends with the two National Immunisation Conferences held to examine the implications of immunisation policy in its broadest sense, following the 'death' of the swine 'flu' campaign in December 1976. In the final act of the campaign, the surveillance following the mass vaccination had revealed the occurrence of neurological complications in one in 100,000 persons among the 40 million who received the vaccine. Thus, the prolonged debate in Congress and Senate described by Arthur Visel tear of Yale University, which followed the launch of the campaign by the President, stands fully justified. The insistence of those who manufactured the vaccine upon indemnification from liability for vaccine complications was the consequence of an inability of Insurance Companies to underwrite such a problematical risk and thus involved Congress as well as the Government. So it was in 1976 that an almost chance discovery in the laboratory led step-by-step to a problem of preventive medicine involving Government, health workers and millions of ordinary men and women in an effort to ward off a threat, which never materialised.

Professor June Osborn of the University of Wisconsin, who contributes jointly with Dr Donald Millar the preface to the account of campaign and solely the epilogue, is to be congratulated on providing such a clear account of the issues which involved the whole American nation and also Canada, and which, in spite of the author's euphemism of an overall gain, caused enormous public repercussions and reactions against far more than immunisation for influenza.

To recapitulate, the background to the decision early in 1976 began with the recovery of a virus (A/New Jersey/76) from soldiers with influenza in a military camp at Fort Dix. The virus bore antigens apparently the same as those of the swine influenza virus recovered by the late Richard Shope in 1931 and still a cause of endemic swine influenza in the Middle West. Because of the general acceptance of Shope's virus as the survivor of the 1918 human pandemic virus, the New Jersey discovery immediately led to the supposition that a new pan-

demic of 1918-type was threatened. In all that followed, the impression given in this monograph is that fear of this possibility dominated the virologists' advice and motivated the Presidential Conference that something must be done in this 'the Bicentennial year' to combat the threat to the US citizens. Alas, the strange lack of transmission of the disease due to the New Jersey virus outside the walls of the camp was not allowed to interfere with the decision to vaccinate, which, through shortage of time for manufacture, was allowed to proceed. Thus was the historical decision made and it seems clear in retrospect that the ghost of 1918 had forced the virologists' opinion against their better judgement.

Those interested in immunisation will find the account of the legislative debate given in an Appendix of great medico-legal interest. For British readers there is an analogy with the involvement of the House of Commons in the controversy over immunisation with whooping cough vaccine, though in the UK the issue in 1977 was one of compensation rather than of litigation. Yet, as was so wisely pointed out during the debates in Congress concerning liability, the solution by indemnity provided a hazardous prece-

dent, and the account now being presented by sufferers from the post-vaccinal Guillain-Barré syndrome, could be of astronomical proportions.

Does this book serve to point the way concerning future policy for immunisation against influenza? The answer seems to be no, for new pandemics will arise in which the harkback to 1918 influenza is absent. Indeed, the dilemma has already presented itself in the shape of the 'Russian' A1 virus, which originated in China and which is an apparent resurgence in 1977 of the virus familiar to influenza workers in the decade 1946-1957. One lesson is clear—the public has the right to be involved at an early stage in any decision concerning millions of its members and described picturesquely as go-no go. Health education, at least on immunisation matters, has, it seems, a long hard road to travel. It is only a perceived risk from disease and not a probability which seems likely to serve to restore public confidence in the judgement and advice of microbiologists.

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Solute movement in the soil-root system

Solute Movement in the Soil-Root System. By P. H. Nye and P. B. Tinker. Pp. 542. (Blackwell Scientific: Oxford, 1977.) £12.80.

THIS important book is the first to deal comprehensively with solute movement in the soil-root system. The subject matter has only come into prominence during the past 10 years, during which time researchers have begun to investigate the kinetics of solute flow in soil resulting from solute absorption by roots. Much research on soil-plant relationships has been of an empirical nature or has measured static systems, because of the lack of understanding of the dynamic processes operating in the complex root-soil system. This organisation of recent research on solute movement in the soil-root system and its clear presentation in this book should stimulate awareness as well as research activity in this area.

Though not a large book, it provides a good coverage of the subject. The authors have organised the subject matter into eight chapters. After presenting recent history and the approach they use in writing the book in the first chapter, they discuss water flow in the second. Water flow in the soil either by gravity or as a consequence of plant root absorption is one of the mechanisms of solute transport within the soil. They then discuss solute interchange between the solid,

liquid and gas phases in the soil. This interchange governs solute concentration in solution. They treat both organic and inorganic substances which is particularly important because of the increased use of organic pesticides and the significance of their movement in soil. The principles of movement of solutes in the soil by mass-flow and diffusion are elaborated in a chapter on local movements. The chapter on solute uptake by the plant root is confined mainly to significant properties of plant roots that influence the kinetics of solute influx into the plant root.

At this point in the book the authors are in position to combine the transport processes in the soil with the absorption properties of the root and they call on much of their own research in doing so. In addition to discussing the theory and measurement of solute concentrations profiles around plant roots, the authors include a discussion on the physical, chemical, and biological effects of roots on the rhizosphere soil. Moving from the simpler system to the more complex community of plants, they organise the information using models for simulating solute uptake and growth of the plant.

I recommend the book as a reference for teachers and for research workers in soils, plant nutrition and biology, and also as a text for courses on soil-plant relationships. The long list of references at the end of the book is particularly useful.

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