
Book reviews

Behavioral Toxicology. Early Detection of Occupational Hazards. Edited by C. Kintaras, B. L. Johnson, and I. de Groot. (Pp. 507; 152 figures; no price stated). H. E. W. Publications No (NIOSH) 74-126. US Department of Health, Education and Welfare. Public Health Service Center for Disease Control, National Institute for Occupational Safety and Health. 1974.

The fact that recommended threshold limit values (TLVs) for many industrial solvents and other toxic chemicals are much lower in the USSR than in the USA has aroused interest for many years. The Soviet scientists only regard as acceptable a concentration of a substance that fails to elicit a conditioned reflex in experimental animals, or occasionally the tests have been carried out on man.

Outside the USSR experimental psychologists do not regard the conditioned reflex a response that faithfully reflects a behavioural effect. There are other experimental means for eliciting behavioural responses in laboratory animals and man. This book contains papers, demonstrations, and a variety of other contributions to a five-day meeting held in 1973 for the exchange of current information and test methods in behavioural toxicology. The aim was to see how the results could be applied to establish standards to 'protect and maintain the functional capacity of the working people in the USA.'

Twenty papers and ten demonstrations deal with behaviour studies on man while seven papers describe neurophysiological rather than performance studies and two of these were on experimental animals. A very long paper on accidents to construction workers appears to be quite irrelevant. It is perhaps not surprising that one of the speakers in the final session is quoted as follows, 'I do not know how many of you are as confused by the definition of behavioural toxicology as I am now and have been all week' (p. 459). His confidence in the quality of the more conventional toxicology may well have been shaken by a 'keynote' address which included the statement 'that only when anaemia is associated with lead poisoning do we have convincing evidence of a biochemical effect'.

Unfortunately there were no contributors from the USSR or Czechoslovakia where the use of behavioural studies mainly on animals has played such an important part in providing the basis for setting threshold limit values.

The papers relate to the effects of carbon monoxide, carbon disulphide, trichloroethylene, mercury, lead and organophosphorus insecticides, as well as alcohol, and marihuana. On the organophosphorus insecticides one paper (p. 165) gives a close critical analysis of studies on the effects of exposure and concludes that there are none. However the preceding paper (p. 154), with a highly qualified suggestion of a possible effect, displays a total failure to assess the published literature (for example, reference 12, p. 163). It is a pity that none of those who have made significant contributions to the effect of anticholinesterases on animal behaviour were invited.

A careful analysis of human performance may well have a contribution to make to our knowledge of the effects of toxic substances on people. However, one can only conclude from the programme of this workshop that the study of the effects of toxic substances on animal behaviour for the same purpose is a subject with a great future behind it.

J. M. BARNES

Breathing. Physiology, Environment and Lung Disease. By Arend Bouhuys. (Pp. 511 + xii; £12.50). New York: Grune and Stratton. 1974.

This book gives an account of lung physiology and the environmental lung diseases with special reference to airways obstruction, including its mechanisms and the conditions in which it is an important feature. The emphasis reflects Professor Bouhuys's notable contributions to these subjects, including the application of the flow-volume curve to a study of the prevalence and nature of byssinosis, and the functional lesion in asthma. The chapters are based on lectures given to specialist audiences. They contain much wisdom, and are lively, attractively illustrated, and supported by references which in the main have been selected with great discernment. However the quality is uneven and the approach does not lend itself to systematic coverage. Thus in the section on physiology the definitions and explanations of terms sometimes lag behind their use, and relatively more attention is given to lung mechanics than to the regulatory, gas exchange, and exercise aspects of breathing. In the section on environment and lung disease there are excellent detailed accounts of the epidemiological approach, the effects of smoking and atmospheric pollution, byssinosis, and the physiology of asthma. Again, the coverage is selective so that, for example, in relation