Not unexpectedly, a great deal of space is devoted to discussing the Medical Research Council/National Physical Laboratory survey of hearing and noise in industry carried out under the leadership of Professor Burns and Dr. Robinson. The significance of the survey is stressed, and rightly so, as it is the basis for much of the available data on the permanent effects of noise on hearing. The appendices have been extended to great benefit and form a most useful section of the book.

In conclusion, any criticisms are minor; the book as a whole is just as praiseworthy as the first edition was five years ago. It will be widely recommended and as widely read as its forerunner. We look forward to the third edition being as readable.

J. G. WALKER AND W. I. ACTON

Environmental Health Aspects of Lead. Proceedings of International Symposium, Amsterdam, October 1972. Commission of the European Communities Directorate General for Dissemination of Knowledge, Centre for Information and Documentation, Luxembourg. (Pp. 1 168; illustrated; B. fr. 1 500.) London: H.M.S.O.

An important conference was held in Amsterdam in the autumn of 1972. It was jointly organized by the Commission of European Communities (CEC) and by the United States Environmental Protection Agency (EPA) and dealt with the health problems posed by lead in the present-day environment. This book, produced by the CEC, presents the proceedings of the symposium in a well-produced volume of over 1 100 pages. All papers are published in their original language and all have a summary in English, French, and German. There is an English translation of the addresses given at the opening session and also of the Round Table Conference.

The occasion presented an unique opportunity to share and discuss the most up to date scientific information and ideas regarding lead as an environmental pollutant. The effects of high exposure are well known but the possible effects on health of mild lead absorption resulting from very low lead exposures still remain a closed book. In particular, the possible impact of this type of exposure on young children is causing anxiety in some quarters and calls for further research. Man is exposed to lead through the food he eats, the water he drinks, and the air he breathes. Children, especially those with pica, may also be exposed in addition by the ingestion of lead-contaminated paint, dust, and dirt. Fallout of lead from the air is believed by some to be a significant contributor to the lead present in the dirt and dust found in urban homes, streets, and parks. Not only may children be more susceptible to the effects of lead but they may also be subjected to disproportionately high doses in the urban communities subjected to atmospheric contamination.

The papers were grouped under one of seven heads and the discussions are briefly reported. The seven sections were as follows:

1. Environmental lead and the transfer pathways to man
2. Animal metabolism and toxicology
3. Human uptake and metabolism
4. Cytotoxicology and biochemical changes in man
5. Subclinical effects in relation to the health aspects

6. Epidemiology

7. Monitoring and analytical techniques.

The following are a few quotations from papers given:

'The major course of lead in man is the food chain. Plants and ultimately man receive most of their lead from that naturally present in the soil.'

'It has been shown that lead in higher concentrations than that in which the population is continuously exposed causes an increase in blood lead and bone concentration in man and animals. On the other hand there is no evidence that harmful effects of lead occur in other than concentrations widely in excess of those to which the public is continuously exposed.'

'Mere gravitational assessment of airborne urban lead is inadequate. Medical research demands knowledge of its chemical and physical nature which determines its ultimate fate.'

'The interpretation of the data from "the Seven City Study" is still under discussion.'

'ALA-D is too sensitive a test and can be omitted in workers and in populations living in contaminated areas.'

'Decrease of ALA-D activity as an isolated phenomenon (i.e. no increase of ALA in urine) is not relevant in regard to health.'

'The levels of ALA in urine reflect the actual lead exposure.'

'The development of new and sensitive laboratory methods has continually pressed the threshold downwards and lately it has been suggested that for the inhibition of ALA-D there seems to exist no threshold at all.'

At the end of the discussion on laboratory techniques an important paper was read reporting European inter-comparison programmes. It was concluded that 'None of the techniques at present used by the laboratories seemed to be accurate and precise enough to detect the small differences in blood level that might result from different environmental exposures to lead.'

'The usual methods for the determinations of ALA in the urine are not precise and accurate enough to establish unequivocally the existence of small differences in the ALA content of urine.'

'The standard deviation of the inter-laboratory measurements of ALA-D are lower than for the other two methods. But standardization of the method is required to be able to use absolute enzymatic values instead of activity ratios. This is probably a good alternative method for detecting the effects of lead.'

This particular summary appears to give disappointing results and throws some doubt on much of the data which were given during the symposium. It is clear that much more work must be done in the various laboratories in order to produce really reliable methods of quantitative analysis and these methods must be continuously interchecked between different laboratories. But these measurements mean little unless related to health changes. It is in this field that further careful work is necessary. When facts emerge their importance must be assessed in an atmosphere free from prejudice and emotion. It will then be possible to lay down safety margins in relation to public health. The CEC should set up a system of documentary exchange to facilitate this work.

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