

orthodox chemical insecticides, so each must be judged on its identified merits and test results.

For the increasing problem of schistosomiasis, mollusc control is the best tool available in practice, and effective molluscicides slowly released into water then remaining active for a few days seem the best approach. Niclosamide and Frescon seem to present insignificant risks in practice, but organotin compounds are looked upon with some doubts. Safety in drinking water supplies is the main usage requirement for new aquatic molluscicides.

Increasing resistance of rats and mice to the anti-coagulant rodenticides is now a fact of life, but the committee warns against using acute rodent poisons carelessly. Red squill, norbormide, and zinc phosphide are thought to need 'ordinary care' (regrettably not defined). Acute rodenticides requiring maximal precautions (in handling, placing, disposal, and preventing access) include sodium fluoroacetate, fluoroacetamide, and strychnine. The committee regarded arsenic trioxide, white phosphorus, ANTU, and Gophacide (an organophosphate chemical) as too hazardous in use, and advise against them.

The agricultural pesticide safety programme of WHO is geared to that of FAO and ILO, and in later years joint meetings are envisaged. The committee deduced that about 500 000 cases of accidental pesticide poisoning occur globally in a year, with an estimated 1% mortality. However, the real facts are scanty and ill-reported so WHO inevitably appeals for better national data in years to come. A new information function was afoot, in the provision of WHO/FAO technical and toxicological data sheets on new chemicals, as a guide for developing countries' regulatory officials and doctors. As yet, these data sheets have not emerged but have a considerable potential for good—and not just in developing countries. The committee has now become involved in the controversial 10-year-old problem of how to achieve a sound and usable system for classifying pesticides according to risk of poisoning accidents, and recommends a system which regards liquids as more hazardous than solids; supplements rat  $LD_{50}$ s by other cogent toxicity data; uses three risk categories (by a logarithmic progression of  $LD_{50}$ s) which can also be applied to other chemicals; and ends with the much echoed hope that agreement on a tentative classification will be reached and internationally applied. Eighteen months later we are still not in that happy position, unfortunately.

On medical arrangements for pesticide intoxication emphasis is placed on official supervision and control of imports and distribution, the supply of information on toxicity and hazards of products, field methods for quick diagnosis when possible, and on analytical services for confirmatory tests.

It also emphasizes the needs for instruction in safe use, education of the rural population, specialist tuition courses for users, and the value of specialized consultants to guide new national efforts; all very good advice, and no doubt progressively being assimilated into regional plans.

It was felt that international or other transport of pesticides or treated grain must inevitably cause further occasional outbreaks of mass intoxication. The recommendation was made that WHO should be able then to assemble an emergency squad of specially knowledgeable scientists to help immediately on the spot, first for the

diagnosis, control, and treatment of the emergency, then on the scientific aspects of the outbreak. Again, this is wise counsel, and the need will undoubtedly arise again somewhere, sometime soon. The current lack of doctors and scientists competently trained in pesticide toxicology was also pointed out, and increased training and tuition is urged to ease the problem.

The committee then discussed protection against chemical contamination risks in the tropics, emphasizing dermal absorption hazards, the need for an improved airpermeable but particle-resistant fabric, and pointed out the value of almost any type of clothing in protecting against dermal exposure.

Diagnosis of cholinesterase depression by blood tests presents some difficulties and potential errors with available techniques, especially from carbamate insecticides. Further research and development on methods was advocated to WHO. Organochlorine levels in blood and tissues present even greater difficulties unless undertaken in a highly sophisticated laboratory, and the committee could only urge inter-laboratory harmonization of techniques.

On therapy of pesticide poisoning, the annex adds little new to our present limited knowledge, and concentrates on organophosphate and carbamate poisoning treatment, wherein the advice is practical and sound.

This is a rather short booklet, and a rather long review: but the WHO Expert Committee does a very valuable job when it meets, and at least this reader and reviewer thus expresses his many years' gratitude to them.

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## Notice

### Institution of Electronic and Radio Engineers

A Conference on Environmental Sensors and Applications is being organized by the Institution of Electronic and Radio Engineers with the association of the Institution of Electrical Engineers, the Institute of Physics, and the Institute of Electrical and Electronics Engineers. It will be held at the Royal Society, London on 18 and 19 November 1974.

Further details may be obtained from the Information Officer, Institution of Electronic and Radio Engineers, 8-9 Bedford Square, London WC1B 3RG.

## Errata

In the paper by Cramér, Goyer, Jagenburg, and Wilson entitled 'Renal ultrastructure, renal function, and parameters of lead toxicity in workers with different periods of lead exposure' on p. 113 of the April issue— $\delta$ -penicillamine should read D-penicillamine throughout. In Table 2 the heading of the third column should read 'Renal clearance (ml/min/1.73m<sup>2</sup>).