Book reviews

Environmental Health Criteria: No 36 **Fluorine and fluorides** (pp 136, Sw Fr 13.) (1984); 37 **Aquatic (marine and freshwater) biotoxins** (pp 95, Sw Fr 10.) (1984); 38 **Heptachlor** (pp 81, Sw Fr 10.) (1984); 39 **Paraquat and diquat** (pp 181, Sw Fr 16.) (1984); 40 **Endosulfan** (pp 62, Sw Fr 8.) (1984); 41 **Quintozone** (pp 38, Sw Fr 7.) (1984); 44 **Mirex** (pp 70, Sw Fr 9.) (1984); 45 **Camphechlor** (pp 66, Sw Fr 9.) (1984). IPCS International Programme on Chemical Safety. Geneva; World Health Organisation.

This series of booklets, several of which were reviewed recently, continues with eight further titles. The series is concerned with the environmental and toxicological data available on chemicals and other agents which give rise to concern from the environmental pollution standpoint. In many cases these pollutants are of concern to those interested in occupational health. Not only are their sources of release into the environment often the industrial or agricultural operations that give rise to occupational exposure, but those working in these conditions may be exposed to considerably higher concentrations than exist in the general environment. As in the case of the previous volumes reviewed these summarise and review the data available to a committee of experts, who between them achieve both a comprehensive statement of the known facts and a balanced presentation of controversial issues. Some recommendations for action in the form of control measures and also further research are also given, although whether these actions will actually be taken up by national governments and others with the responsibility for implementation is outside the direct control of the World Health Organisation.

The present group of titles include several of the chlorinated pesticides (heptachlor, camphechlor, mirex) whose use is severely restricted in developed countries because of environmental persistence. In some cases there is also a suggestion that a carcinogenic effect (or perhaps promotion of tumour formation) is seen in rodents, although the importance of this to man is uncertain. Despite the considerable restriction on use there is continuing concern over the environmental levels created by past use: also these compounds continue to be used in developing countries, in some cases in large quantities, because of their cost advantages for large scale applications and their ability to eliminate particularly resistant insect pests. Also reviewed in this series is endosulfan, a related material having similar structure and properties, but which being less persistent has tended to

replace the older insecticides such as DDT. A fifth compound, quintozone, is a fungicide, but being also a chlorinated aromatic compound has some similar toxic effects to the insecticides: fortunately, it appears to be only moderately persistent.

The volume on fluorine and fluorides covers an enormous range of topics, since both organic compounds of fluorine—for instance, anaesthetics—and inorganic compounds such as hydrogen fluorides, as well as the fluoride anion, are considered. Health effects range equally widely, and the occupational relevance covers a range all the way from brickmaking to dentistry. A large amount of information is packed into this volume, which is not so much larger than some of the others in the series. It could be argued that so eclectic an approach is undesirable, and that coverage would have been better restricted to individual compound classes or health effects, although presumably the terms of reference were dictated by the IPCS programme objectives. In any event the comprehensive list of references to scientific publications will be useful to anyone interested in fluorine and medicine or biology: this list covers an impressive 40 pages in this case.

Medical interest in the volume on marine and freshwater biotoxins will no doubt be considerable, since not only are such relatively exotic matters as the ill effects of over indulgence in puffer fish considered but also the origins of some toxins that have been found to be important in neurochemical studies. The relevance to occupational health in developed countries may be slight, but there is no denying the importance to community health in those parts of the world where fish (and especially shellfish) forms a large and inescapable element in the diet. Some of the more dramatic manifestations of biotoxins affecting wildlife may also be confused with, or influence, the results of chemical incidents.

A G SALMON

Toxic oil syndrome: mass food poisoning in Spain. (Pp 92, Sw Fr 12.) Copenhagen; World Health Organisation Regional Office for Europe, 1984.

A WHO working group on the toxic oil syndrome was convened in Madrid in March 1983, and one outcome was this review of the epidemiological, clinical, necropsy, and toxicology findings of a remarkable epidemic. The first cases appeared in Madrid at the beginning of May 1981 and the epidemic peaked by early June when 600 admissions to hospital a day were being recorded, mainly in provinces to the north west of Madrid. Ultimately, there were over 20 000 patients; 1200 were admitted to hospital and over 300

died. On 10 June the government announced that the cause of the epidemic was probably due to accidental chemical contamination of an illicitly manufactured rape seed oil that for years had been widely consumed in some quarters as a substitute for more expensive olive oil. After the announcement the epidemic waned rapidly. This decline gave further support to the rape seed oil theory that had been propounded first by clinicians and later supported by community surveys, though dietary information gathered in the latter was inevitably biased by the government's announcement.

Initially, clinicians believed that they were dealing with an atypical pneumonia and treated the patients with antibiotics, but the disorder was an interstitial oedema caused by acute endothelial injury. An important feature was a prolonged eosinophilia in most cases, a finding that could be used as a marker for less affected or even subclinical cases. Just when it appeared that the epidemic was over, a chronic phase began to emerge in many patients; this was characterised by progressive muscular wasting and symmetrical peripheral neuropathy, scleroderma like lesions, and the sicca syndrome. Necropsy findings showed a non-necrotising vasculitis in most organs. No such infectious or toxic syndrome has ever been recorded. The mystery remains unresolved as toxicological investigations on oil samples and animal tests have not shed much light on the chemicals that could have been responsible. A major drawback in the detective work has been the failure to replicate the syndrome in an animal model.

This publication is a useful synopsis of the multidisciplinary and international investigations that took place, especially as little new information has emerged since the working group met. Annexes by individual contributors present more detailed findings, including a government statement explaining that the Spanish Ministry of Health and Consumer Affairs had not been responsible for food safety until the epidemic began, though a large inspectorate now exists.

Nagging doubts about the precise cause of this catastrophe, however, will persist. The investigation was marred by poor coordination, both nationally and internationally, and political interference (only touched on in the text). The working group rightly concludes: "As long as the precise cause remains undiscovered, no assurance can be given that this type of disease will not occur again, perhaps in another country, for rape seed oil and similar edible oils are widely used as items of diet throughout the world and in their preparation and refining they undergo various physical and chemical treatments that may modify their constitution." Despite the international implications, there is little sign that some key lessons of this episode have been widely considered: for example, will the plea in the foreword for improved emergency response and strengthening of epidemiological and toxicological resources for dealing with such epidemics be heeded in other countries? Physicians and scientists with an interest in industrially related diseases should find much to ponder over in this small book.

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