

Foreword

One of the very troublesome and growing problems in environmental management is how best to assess the consequences of releasing chemicals into natural and modified ecosystems. The number and production of chemical compounds increase. The technological capacity to identify and measure their presence enlarges. As knowledge of organism and ecosystem processes is deepened, the complexity of tracing out their effects multiplies.

In these circumstances the wise choice of methods for examining the effects of chemicals in the environment has become a matter of urgency. Upon the method selected and its proper application may rest a series of decisions as to industrial production, government regulation, and consumer choice. Recognizing the need for careful appraisal of the grounds for making those decisions about tests, SCOPE began exploring in 1978 the ways in which the experience and judgment of the scientific community could be marshalled to the task.

Under the creative leadership of Norton Nelson, and building on the thinking embodied in the *Principles of Ecotoxicology* (SCOPE 12) edited by Gordon C. Butler, a plan was developed for a Scientific Group on Methodologies for the Safety Evaluation of Chemicals. This was established jointly with the World Health Organization. Subsequently the United Nations Environment Programme and the International Labour Organization associated themselves with the effort, within the framework of the International Programme on Chemical Safety (IPCS), sponsored by those three United Nations Organizations.

In the typical mode of SCOPE activities, the work was interdisciplinary and international, and it sought to provide objective scientific advice for the benefit of governments and international organizations. It drew heavily upon the research and judgment of scientists in more than a dozen countries. Financial support came from their home institutions as well as from a variety of organizations.

This volume is the first in a projected series, and exemplifies the approach to be taken in examining various facets of evaluating chemicals in the environment. It is a cooperative exploration of an enlarging problem and is helpful in outlining what we don't know as well as what we do know. It thereby strengthens the base for sound environmental management.

GILBERT F. WHITE

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The International Programme on Chemical Safety (IPCS), a joint project of the United Nations Environment Programme (UNEP), the International Labour Organisation (ILO), and the World Health Organization (WHO), aims at protecting human health and the environment from the adverse effects of the ever-increasing number of chemicals on the market and in the environment, to which the population at large may be exposed and which also reach other biota.

The IPCS is therefore anxious to evaluate the degree of risk presented by such chemicals but, as the usefulness of any evaluation greatly depends on the quality and reliability of the experimental techniques used for determining toxic effects, the IPCS is encouraging their development and validation with a view to recommending those that produce internationally comparable results. Consequently, the IPCS actively supported the review of methods for assessing the effects of chemicals on reproductive function, carried out by the Scientific Group on Methodologies for the Safety Evaluation of Chemicals (SGOMSEC).

It is hoped that the report of this scientific group and the individual papers included in the present publication will prove to be useful additions to the methodology available in the complex field of toxicology. The publication, of course, represents the personal views of the scientists involved, but all participating in the IPCS will doubtless consult their work with great interest.

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