Animals and Alternatives in Toxicology

Animals and Alternatives in Toxicology

Present Status and Future Prospects

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Preface

Toxicologists and toxicology are facing an increasing dilemma, because they are being pulled in two opposite directions. On the one hand, there are growing demands for greater safety in the manufacture, distribution and use of many kinds of products, including food, drugs and pesticides, and for greater protection of the environment. On the other hand, there is growing doubt about the use of animals in toxicity testing, as currently practised, is both ethically and scientifically acceptable, and concern that should be reduced, refined and replaced as quickly as possible. To identify and promote positive ways of solving the conflict between these opposing pressures is one of the primary concerns of FRAME (The Fund for the Replacement of Animals in Medical Experiments).

About 12 years ago, FRAME set up a Toxicity Committee, with the aim of encouraging discussion among toxicologists about the possible use of alternatives to animal tests, and ways of promoting their development, as well as encouraging more communication among scientists and others, including legislators, regulators and animal welfare advocates.

The FRAME Toxicity Committee met frequently between 1979 and 1982, and its First Report was discussed at a meeting held at the Royal Society, in London, the Proceedings of which were later published by Academic Press (1). A new Committee was established and met regularly between 1988 and 1990, and this volume comprises the Proceedings of a Conference held at the Royal College of Physicians in London on 11 and 12 November 1990, to discuss the Second Report of the Committee, which contains 66 general conclusions and recommendations (2).

Discussions leading to the Committee's Second Report (which was sent to participants before the Conference and is included as an appendix in these Proceedings) were based on the following terms of reference:

1. To consider what had happened in toxicology and toxicity testing since the report of the original FRAME Toxicity Committee was published, to update the recommendations made, and to consider any additional opportu-

nities for the reduction and refinement of animal usage.

2. To consider the orderly development, validation, integration and exploitation of non-animal alternative methods in toxicology and toxicity testing, and to advise on requirements for the validation of new methods.

3. To consider the need for the rationalisation and harmonisation of regulatory guidelines and to consult with regulatory bodies about the potential for reduction, refinement and replacement in providing toxicological data for use in risk assessment, and to make recommendations as to the optimum way of achieving such improvements.

4. To consider means whereby up-to-date and reliable information on alternative methods in toxicology and toxicity testing could be conveyed effectively to scientists, regulators and others, and to recommend the most suitable alternative methods currently available for incorporation into existing protocols.

The FRAME Toxicity Committee is composed of 19 experts, including representatives of universities, polytechnics, research establishments, industries and human toxicology, and specialists in *in vitro* and computer technology. The Committee formed 12 working parties to discuss specific topics with the assistance and advice of 30 additional experts and specialists.

At the Conference, which broadly followed the successful format used in 1982, representatives of the various working parties presented their main conclusions and recommendations. The full reports of the working parties, together with the invited comments of 23 independent discussants and edited transcripts of the general discussions, make up these Proceedings, together with a summing-up by Professor André McLean.

The FRAME Trustees and the Editors of these Proceedings are very grateful to all those who have contributed to the success of this second FRAME Toxicity Committee Report and Conference, and, in particular to: the members of the Committee and its working parties, for giving up their time in already-overcrowded lives; the chairmen, discussants and participants, for making the Conference such a memorable occasion; the Commission of the European Communities, the Cancer Research Campaign, Ropak (Europe) and Alpha Laboratories, for financial support; the Royal College of Physicians for their hospitality; Vivienne Hunter, Carole Taylor and Mary Newman at the FRAME office, for their secretarial assistance; and the staff of The Macmillan Press.

We hope that this volume will help toxicologists to examine their current procedures in comparison with the possible alternative methods, and that it will serve to stimulate new approaches and ideas. It is the intention of FRAME to:

- a) encourage the wide dissemination of the Committee's findings;
- b) identify among the recommendations of the Committee priorities for implementation and/or further research;

c) provide toxicologists and related scientists with regular updates on progress in this field.

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1. Balls, M., Riddell, R.J. & Worden, A.N., eds (1983). *Animals and Alternatives in Toxicity Testing*, 550 pp. London & New York: Academic Press.
2. Anon. (1991). Animals and alternatives in toxicology: present status and future prospects (the Second Report of the FRAME Toxicity Committee). *ATLA* **19**, 116–138.