

Alternatives to Laboratory Animals Vol. 18. ATLA. ATLA, Nottingham, 1990, 368 pp., Single issue of journal.

Twenty-one years ago the 'Fund for the Replacement of Animals in Medical Experiments' (FRAME) was founded and the recently published 18th volume of its journal, *ATLA*, celebrates this 21st Anniversary.

From the start FRAME and *ATLA* endeavoured to bring a balanced and thoroughly scientific approach to bear on the argument between doctors and scientists who believe that advances in basic science, the development of new drugs, and the prevention of diseases, including cancers, depend on the continuing use of laboratory animals and people who have come to believe that animal experimentation in any form is morally wrong. Thus, while organizations such as the Animal Liberation Front were busy committing acts of violence against laboratories and against individual scientists, FRAME was addressing the fact that there are many circumstances in which the continued use of live animals will remain both necessary and morally justifiable at least until such time as reliable alternative methodologies become available. Blessed with this insight FRAME sought and obtained scientific and financial support from Industries who found themselves trapped between the demands of Regulatory Authorities for toxicity tests involving animals before humans are exposed to new drugs, foodstuffs and pesticides and a strong suspicion, if not a conviction, that some of the tests demanded are unnecessary, unrealistic and unacceptable in terms of the possible suffering of the animals involved.

Fundamental among the problems which FRAME has been trying to overcome is the flawed belief that weak toxic effects are most likely to be discovered by determining the effects of very high doses of test chemicals. The LD₅₀ test and its less objectionable successor the fixed dose procedure are based on this belief, and so is the requirement to test chemicals for carcinogenicity at the maximum tolerated dose (MTD) level, even when this level is 100, 1000, or more than 10000 times the human exposure dose. Common sense backed up by plausible theories, dictates that for many forms of toxicity, including carcinogenicity, there are threshold dose levels below which adverse effects do not occur. After all it does not work the other way: one glass of water is thirst quenching but 10000 glasses of water is death by loss of electrolytes or drowning! Similarly, one ripe Victoria plum is a gustatory delight but 1 kg of ripe Victoria plums is severe diarrhoea!

Perhaps the most important achievement of FRAME during its 21 years is that it has provided a forum for continuing debate on how to reduce the use of animals. Articles from those who object to the use of animals for establishing the safety of, e.g. ingredients of cosmetics, have appeared alongside articles stressing the need to validate the use of *in-vitro* procedures before they are used in place of animal tests. As this debate continues ATKA will remain a hybrid between science and conscience: a high class toxicological journal with an underlying continuing message. The contents of Volume 18 weigh up the present situation, criticise the stances taken by regulatory bodies, outline possible ways forward, warn against the adoption of unvalidated tests and promise no quick solutions.

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