

**THE IMPORTANCE OF
LABORATORY ANIMAL GENETICS,
HEALTH AND THE ENVIRONMENT
IN BIOMEDICAL RESEARCH**

*Edited by E.C. Melby & M.W. Balk
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This book constitutes the proceedings of the Fifth Charles River International Symposium held in Heidelberg, Germany, during March 1983.

Most investigators, whose research presently depends on the use of laboratory animals, are aware of the tremendous progress in the field of laboratory animal science that has been made during the past two decades. The preface to the book refers to this and several of its contributors usefully give details of the advances made and of the new techniques that are now available, particularly in relation to the elimination of parasites and to the monitoring of animal colonies for bacterial, viral and genetic diseases.

Arguably, this self-congratulatory backward look is not fully matched by insights into the continuing grave deficiencies of laboratory rodents for predicting the responses of humans to xenobiotics. It is somewhat ironic that the pressure to clean-up animal colonies, so that outbreaks of infectious and parasitic diseases do not cause early deaths or interfere in other ways with the response of animals to exogenous factors under test, has indirectly led to the fostering of disease artefacts on a huge scale. Most of these artefacts stem from overfeeding, although the contributions of lack of exercise and deprivation of sexual fulfillment to the sum of artefacts have not been systematically researched. Indeed, the question of how to maintain laboratory rodents in good health until they are old has yet to be seriously tackled. Animal breeding establishments, such as Charles River who sponsored the conference on which this book is based, continue to feed breeding and post-weaning animals in a manner designed to maximise growth, despite the established fact that rapid early growth predisposes to increased "spontaneous" tumour risk later in life and, in the case of rats, to life-shortening progressive nephropathy. Nutritionists have continued to see their main objectives as being maximum growth in early life and the avoidance of deficiency disease, and have paid far less attention to the problems of obesity in rats and mice than the medical profession pays to the same problems in man. The only mention in the book of these issues is, briefly, by R. Heywood and D.P. Buist on page 29.

Notwithstanding its shortcomings, the book does contain much important and fascinating information. In this regard, I would draw special attention to the four chapters on "Genetic Monitoring: An Overview" by H.J. Hedrich; "Malformations of Genetic Origin" by R.J. Le Bail, J.J. Pasquet and J-Y. Detaille; "Some Aspects of Leukaemogenesis in the AKR Mouse" by Eva Klein; and "Significance of Genetically Controlled Biochemical Differences in Pharmacological Studies" by D.W. Nebert. Also, of special interest is a short chapter on monoclonal antibodies by K.M. Miner and others. The book is completed by a short but useful index of the topics discussed.

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