
Book Review

Shafir E: *Frontiers in Diabetes Research: Lessons From Animal Diabetes*. Vol. 3. London, Smith-Gordon, 1991

This is volume three of a series recording the proceedings of the International Workshop on Lessons from Animal Diabetes. Volume 1 appeared in 1984 and volume two in 1988. The 1990 workshops were held 19–23 March in Jerusalem, Israel, and 17–19 October in Tokyo. These workshops were coinitiated by Eleazar Shafir and Albert Renold in 1983 to recognize the increasing diversity of animal models used for diabetes research. Early animal models of diabetes were limited to alloxan diabetes. Although chemically induced diabetes has an important role in experimental diabetes, numerous additional environmentally and genetically manipulated models have become available. These newer models allow inquiry into aspects of diabetes heretofore inaccessible to investigators. This is particularly true for the immunologic models (BB rats and NOD mice). Transgenic models hold much promise for the future but have often raised surprising new questions rather than providing ready answers to old problems.

Frontiers in Diabetes Research: Lessons From Animal Models consists of >100 original articles arranged in 13 chapters. The first section addresses issues related to insulin-dependent (type I) diabetes: autoimmune models, immunomodulation and transplantation, and environmental factors. Other chapters focus on non-insulin-dependent (type II) diabetes: diabetic complications, diabetes and reproduction, therapeutic measures and pharmacological trials, islet amyloid pancreatic polypeptide, insulin secretion and action, diabetic-hypertensive animal models, diabetes and hyperlipidemia, and transgenic animal models. Each chapter is followed by a discussion, prefaced by a perspective by the moderator, and includes a panel of experts with contributions from the participating audience.

This book is a broad compendium of research in experimental diabetes, making it a valuable resource to diabetologists. It is especially useful in that it concisely

covers numerous topics of current inquiry. There is a tremendous amount of useful information. In particular, the extensive and carefully edited discussions at the end of each chapter were provocative and very informative. Although a strength of the book is its breadth, the diversity of topics and the variable extent to which they are covered makes the focus of the meetings and their expected outcomes somewhat unclear. Because issues of suitability of a particular animal model for experimental diabetes have been often raised, these meetings provide a unique opportunity for evaluating the relevance of the different animal models. The immune models of diabetes were critically evaluated in the proceedings, but elsewhere it is more difficult to ascertain the suitability of the animal models. An additional chapter providing a critique of various animal models would be a welcome addition. Also, an appendix enumerating the animal models along with summary information on these models could be included. Indexing this appendix to the book (or better, the series) would increase its value as a reference.

Despite rapid advances in biomedical technology and its application to the study of diabetes, animal models continue to be of importance. This is stated most clearly in the Albert Renold Memorial Lecture (chap. 14) presented by George F. Cahill, Jr. "Diabetes is again center stage as was insulin, the protein and critical factor in diabetes therapy in the 1920s, its amino-acid sequence and crystal structure in the 1950s, and its immunoassay in the early 1960s. Today it is the paradigm for much immunology and molecular biology and in a rather surprising turn of events, animal models continue to occupy center stage."

Perhaps the best review of a book is in its use. I was delayed in writing my review of *Frontiers in Diabetes Research: Lessons From Animal Diabetes* because I often had to retrieve it from my colleagues, which is a sign that it will eventually disappear from my laboratory, in which case I will look forward to volume 4 under the excellent editorship of Eleazar Shafir.

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