

Book Reviews

IN VITRO EMBRYOTOXICITY AND TERATOGENICITY TESTS, F. Homburger and A.N. Goldberg (eds), S. Karger, Basel, 1985, 152 pp., \$67.75

Development and discussion of *in vitro* teratogenicity screens is an active area within teratology. This interest is apparent from the large number of articles and reviews that have appeared in the recent literature. It derives in part from recognition of the inadequacy of conventional protocols and in part from pressures to evaluate an ever-increasing number of compounds to which pregnant women may be exposed. Awareness of these problems comes at a time when toxicologists are being pressed to develop test procedures that reduce animal *in vivo* studies. It appears that these concerns supplied motivation for a conference held in Zurich in 1984, resulting in this volume. The editors realize that current limitations of resources and technology may make solutions to these problems mutually exclusive. How, for example, do we eliminate procedures employing animals while at the same time making tests more relevant or predictive? In his introductory chapter, Goldberg notes this dilemma, but failure of the editors to attempt its resolution or select one or another goal results in an unfocused, often desultory volume.

Many chapters are brief, poorly detailed technical treatises. As such, they would be of little value to the practicing teratologist. Others are poorly referenced as well and

therefore would not aid the nonspecialist. Spotty coverage of these "new" methodologies diminishes the book's value to the nonspecialist. Despite its title, several chapters fail to consider teratology or embryotoxicity testing at all, as for example, one describing a carcinogenicity screen employing fetal respiratory epithelium. Another chapter concerns itself only with the structure and function of the epididymis, noting only in the final paragraph that toxic substances might alter structure and, hence, function.

Other problems are evident. In one chapter, the author appears to confuse the structure and function of the human placenta with those of myomorph rodents, suggesting rather than hypothesizing that the visceral yolk sac is the major transfer site in organogenesis-stage human embryos. Several chapters present protocols with limited usefulness, restricted to narrow classes of substances. Because of the brevity of most chapters, there is little attention devoted to honest evaluation of methodologies, including their usefulness relative to conventional techniques in teratology. Similarly, there is little philosophic discussion and, with few and perfunctory exceptions, no attempt to relate each contribution to other areas of science.

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ISSUES AND REVIEWS IN TERATOLOGY, Volume 3. H. Kalter (ed), Plenum Press, New York, 1985, 299 ± XIV pp., \$49.50.

In this third volume of the series, Harold Kalter has again shown his deft editorial judgment in selecting an interesting and varied set of subjects and in recruiting the authors. The topics (and authors) are as follows: The role of the obstetrician in the prevention and treatment of birth defects (S. Fabro and

A.R. Scialli); The nature and causes of spontaneous abortions with normal karyotypes (D.I. Rushton); Temporal trends in twinning (J. Mark Elwood); Cytogenetic and clinical significance of fragile sites on human chromosomes (E. Passarge and A. Schmidt); Informative morphogenetic variants: minor congenital anomalies revisited (L. Pinsky); The mouse trisomies: experimental systems for the study of aneuploidy (C.J. Epstein); Embryonic induction and teratology of the

developing skin and oral mucosa (E.J. Kollar); Fine structure of hereditary defects of the central nervous system (D.B. Wilson); and The role of mammalian embryo culture in developmental biology and teratology (T.W. Sadler). None of the chapters covers its subject in much depth: to expect otherwise would be naive. For those familiar with the details of the subject of a given chapter, it would be easy to find fault with the author(s)'s selection of material covered. However, as succinct reviews of the topic for those unfamiliar with the subject, each chapter serves admirably to inform and interest.

Eight of the chapters are reviews, and one speaks to the term *issues* in the title of the series. Of the reviews, the chapter by Rushton on spontaneous abortion in humans is quite outstanding. Rushton takes the reader through a complex and poorly understood subject with clarity and balance. Two of his emphasized points are particularly well taken: the presence of a chromosomal or a structural malformation does not always clarify the etiology of the abortion, and the overemphasis on chromosomal abnormalities has been responsible for supplanting interest in the many other factors associated with early pregnancy wastage.

In his chapter on minor congenital anomalies, Pinsky has made a strong case for the term *informative morphogenetic variants*—although it could be argued that *informative* may often be wishful thinking, and that *morphologic* would serve as well or better than *morphogenetic*. These quibbles aside, Pinsky has produced a very thoughtful discussion of these alterations in form and their usefulness in diagnosis and prognosis. The issue of how to interpret these IMVs should be kept alive by inviting an "animal teratologist" to discuss the variants, particularly skeletal variants, found so often in teratological testing of drugs and chemicals. Epstein's chapter on mouse trisomies is particularly interesting in light of Pinsky's arguments, as it sheds some light on the bases of phenotypic variation.

The book has at least something for everyone and a great deal for those who would like to stay informed on a variety of areas of investigation in the broad field of teratology. Each of the chapters is quite readable, and none requires prior knowledge of specialized jargon.

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IMPLANTATION OF THE HUMAN EMBRYO, R.G. Edwards, J.M. Purdy and P.C. Steptoe (eds), Academic Press, London, 1985; 459 pp., \$59.50.

This book is based on the proceedings of the second Bourn Hall human in vitro fertilization meeting. A short introductory section by some of the current practitioners of human in vitro fertilization discusses the endocrine parameters (folliculogenesis and luteinization) or normal and stimulated cycles. The meat of the book is contained in the sections on the uterus and embryo-uterine interactions. There are excellent reviews of comparative placentation, decidualization, and experimental models of embryonic growth and development. Of necessity, much of the experimental work is based on rodent and other animal systems, but an effort is made to relate the animal data to human

implantation. Mathematical modeling of implantation is also discussed.

Recognized and putative luteolysins and antiluteolysins are reviewed in some detail. The final section of the book is a comprehensive discussion of clinical aspects of normal and abnormal human implantation and the luteal phase, and includes uterine ultrasound, hysteroscopy, twinning, and the aging uterus.

The book is well organized and concise. The contributions by the various authors are in general complementary to each other. The references are recent and comprehensive. Many of the original contributions are followed by a critique and clinical correlation by other conference participants. The book is an excellent reference work for clinicians and basic scientists involved in human in vitro fertilization. It is likely to be of interest to the scientist who is involved in embryology