ondary development of single or multiple regenerating structures appear to be related to breaks in the polarized communications which normally result in morphogenetic equilibrium. The nature of the polarized control is still very poorly known, but Rose presents evidence linking this control, at least in part, with the bioelectric fields which are normally present in living organisms.

In several places in the book the "totipotent reserve cell" concept in regeneration is examined and dismissed as an unnecessary genetic crutch for regeneration theory since essentially all cells are assumed to possess a complete genetic blueprint. The author cites numerous examples of cell transformations which, in his view, obviate the need for postulating reserve cells, but he supports a greater extent of cell transformation (for example epidermal dedifferentiation in limb regeneration) than some people in the field are willing to accept.

Several times Rose mentions that at the forefront of knowledge there are always differences of opinions. The test of a good hypothesis is not only that it ultimately proves to be correct but that it presents the problem in such a manner that means toward its solution are clearly evident. In this respect, I think Rose has succeeded in presenting his ideas admirably. They should prove to be a stimulus for a significant amount of fundamental experimental work in the years to come.

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Studying Development

Methods in Mammalian Embryology. JOSEPH C. DANIEL, JR., Ed. Freeman, San Francisco, 1971. xviii, 532 pp., illus. $22.50.

No new data are presented; there is no effort to summarize, point to new frontiers, or define a commonality of research goals. And yet, this book could not be more engrossing for the scientist with embryological tendencies. We've all marveled at R. J. Blandau's intimate and beautiful films of ovulation and egg transport in the mammal. The report of how this photography is achieved is equally intriguing. The evolution of techniques by B. Mintz and colleagues permitting the combination of embryos into mosaic mice is nothing short of inspirational, as are several other success stories contained in these pages. Of course, all of this methodology has been available previously in the literature and from the investigators themselves, but usually in fragmented, abbreviated form. Further, many clear photographs and diagrams are included which will greatly assist anyone adopting these methods.

Technically, the growing of babies in test tubes of *Brave New World* is both farther away than sensationalists would have us believe and closer than we are prepared for as scientists and human beings. Fertilization in vitro and the transplantation of eggs and even blastocysts between uteri followed by essentially normal maturation are all feasible. The progress of D. A. T. New and associates in the culture of embryos in vitro comprises an exceedingly effective chapter in the book. It should be noted, however, that the excellent chapters on these subjects all deal with rodent or rabbit material. It is unfortunate that no author chose to review progress (and failures) in these areas for human or even subhuman primate eggs and embryos. Only 3 of 34 chapters deal primarily with animals other than rodents and the rabbit. N. L. First covers thoroughly the collecting and storing of sperm from many mammals, including the prudent admonition to attempt direct collection of sperm only from "badly crippled bulls." P. J. Dziuk describes methods for obtaining eggs and embryos from sheep and pigs. The only attention given to primates is a lucid chronicle by E. M. Ramsey of the struggle to understand the circulation of the placenta. But for rodents and the rabbit, the coverage of experimental techniques is exceedingly thorough, running the gamut from ovulation to organ culture.

Inevitably, there are some repetitions, omissions, and inclusions which are not entirely appropriate. Methods for inducing superovulation in the mouse are clearly described in the chapter by A. H. Gates and then given again (with slightly different recommendations for hormone dosages) by several other authors. No mention is made of the exact means for eliciting superovulation in the rat, whose eggs in abundance are a prelude for several other techniques contained in the volume. Occasionally, methods creep in that are in common use. Cases in point are the descriptions for autoradiography, routine histochemistry, and liquid scintillation counting, which are covered more thoroughly in other current books. Fortunately, these are only minor flaws in a nicely rounded assemblage of major techniques in current use for studying mammalian development.

As happens with multiple authorship, the descriptions of techniques vary greatly in detail and extent of presupposed background on the part of the reader. R. E. Rumery and colleagues in discussing the culture of embryonic ovaries and oviducts leave nothing to chance, even describing how to grasp a mouse in order to search for a vaginal plug. Other chapters are more remote, summarizing the kinds of techniques available for a particular type of study and providing useful references.

The trend toward symposia and many-authored books has resulted in a plethora of expensive volumes emerging in a given field every year. Unfortunately, each book may contain only a chapter or two of prime interest. For most of us, dealing with a bewildering array of laboratory problems and needing to provide consultant services to students and colleagues as a sort of embryologist-in-residence, this compilation will be a useful sourcebook for years to come.

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Books Received

Aboriginal Man and Environments on the Plateau of Northwest America. Arnoud H. Stryd and Rachel A. Smith, Eds. The Students' Press, University of Calgary, Calgary, Alberta, 1971. 262 pp., illus. Paper, $4.

Acoustic Surface Wave and Acousto-Optic Devices. Thomas Kallard, Ed. Optosonic, New York, 1971. viii, 222 pp., illus. Paper, $15.

Advances in Cancer Research. Vol. 14. George Klein, Sidney Weinhouse, and Alexander Haddow, Eds. Academic Press, New York, 1971. xiv, 418 pp., illus. $22.50.

Advances in Comparative Physiology and Biochemistry. Vol. 4. O. Lowenstein, Ed. Academic Press, New York, 1971. xiv, 410 pp., illus. $22.

Advances in Cryogenic Engineering. Vol. 16. A conference, Boulder, Colo., June 1970. K. D. Timmerhaus, Ed. Plenum, New York, 1971. xii, 510 pp., illus. $30.

Advances in Human Genetics. Vol. 2. Harry Harris and Kurt Hirschhorn, Eds. Plenum, New York, 1971. xiv, 318 pp., illus. $25.

Aircraft Wake Turbulence and Its Detection. A symposium, Seattle, Wash., September 1970. John H. Olsen, Arnold Goldburg, and Milton Rogers, Eds. Plenum

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