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## Book Review

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S.B. Dunnett and S.-J. Richards (Editors), *Neural Transplantation: From Molecular Basis to Clinical Applications*, *Progress in Brain Research*, Vol. 82, Elsevier, Amsterdam, 1990, 768 pp., ISBN 0-444-81137-0, Dfl. 440.00, Series price: Dfl. 374.00.

This book is a compilation of selected papers presented at the 3rd International Symposium on Neural Transplantation held at Cambridge University between August 6 and 11, 1989. As stated in the Preface, the volume provides a sampling from both poster and platform sessions that had been selected to describe a range of approaches presenting novel technical developments and recent experimental and clinical results rather than reviews. Steve Dunnett and Sarah Jane Richards did an excellent job in the arrangement and selection of papers attempting to cover all realms of the field of neural grafting culminating with clinical trials. Several fine contributions were contained in the sections on Cell Lines and Primate Studies and the section on Mutant Strains presented intriguing new model systems. Particularly successful were the chapters that dealt in depth with extensive immunological responses following grafting across species of known genetic disparity. For the clinician-scientist there lies a great body of information concerning the experimental procedures in Parkinsonian patients including surgery, CSF composition, 'on' 'off' time, and complications amongst several other facets. In its entirety this book stands as an excellent reference for the status of neural transplantation.

To critically review this volume is to be, perhaps, critical of the field of neural transplantation. Making that distinction or separation was a difficult task for a reviewer who has been around in this field for a while and is a strong promoter. There is something of a perception problem in that the book seems too large. Eighty-three chapters give the impression that this particular neuroscience discipline is immense when, to this reviewer, it is not particularly so. Clearly, though, the field has to be the major determining factor in the subject composition of papers in the book. There is but one paper on neuroendocrinology and three each on visual system and spinal cord. Only thirty-five pages are devoted to growth or trophic factors which many investigators feel are the source of some restitution of function.

Presently, there exists considerably more data on these and other 'subdisciplines' of transplantation including engineered cell lines, in situ hybridization and microdialysis. 'Transplantation' generally appears as a lumped categorization at other meetings or in reference sources, but its beauty and fascination is that, experimentally, it lends itself to almost all disciplines; the mere juxtaposition of tissue into the brain can provide models to study innumerable aspects of cellular and molecular behavior that can be evaluated by the most timely techniques.

Much of the attention that neural grafting generates, of course, revolves around its potential to ameliorate certain neurological disorders. Following the reported success in Mexico in 1987, there began a spectacular and highly visible assault on the continuation and refinement of the surgical approaches – and, frankly, the reproduction of the results. It all seemed to have reached its zenith, in fact, culminated at Cambridge in 1989 and the book displays this prominently. Fully 20% of its content is devoted to the complete evaluation of a single disorder, Parkinson's disease. If the book were a novel it could be said that the plot had a thudding letdown at its end. The vast majority of investigations, including those preliminary studies with fetal cells, concluded the benefits to be merely modest (I believe that adjective was used in almost every chapter) and not at this time worth the risks involved. Some groups would continue but the unraveling of the results from Mexico in 1987 has clearly put adrenal medullary grafting for clinical improvement on the wane. Within the book, the eighteen chapters – all of which are well produced – seamlessly pass by and the reader must glean bits of information from each of the many groups. It would seem that a preliminary page introduction to this section could be used to explain the different surgical approaches and neurological tests and interpretations as groundwork for non-clinicians or other writers or information gatherers. This approach would be useful for the other sections as well.

On the horizon in neural transplantation research in addition to more promising fetal cell implants are several more avenues such as genetically engineered cells or cell lines encapsulated in biopolymers. Only an inkling of these procedures was around in 1989. One of the more thoughtful statements in the book was that of

the clinical investigators from Rush: 'We should not become so entangled in tissue transplantation so as to miss clues to other significant treatments.' By the same token, the investigation of basic cellular events utilizing the many technical sources available can provide as yet

unknown clues to the mysteries of nervous tissue growth, development, behavior and response to injury.

JEFFREY M. ROSENSTEIN  
DEPARTMENTS OF ANATOMY AND NEUROSURGERY  
THE GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE  
WASHINGTON, DC 20037, U.S.A.