Book Reviews

PRINCIPLES OF NEURAL DEVELOPMENT. 1985. By Dale Purves and Jeff W. Lichtman. Published by Sinauer Associates Inc. 433 pages.

At first glance, one might ask: What is the relevance of a book such as this for a journal whose readership is primarily clinical? Of course, one could always resort to the legitimate argument that clinical neurologists and neurosurgeons should keep abreast with fundamental knowledge in developmental neurobiology and the other basic neurosciences. But there are even more compelling reasons for recommending this book to the readers of the Canadian Journal of Neurological Sciences. "Principles of Neural Development" is entertaining as well as informative. It can be studied as a text-book or perused for the "boxed" vignettes that include brief biographies, topics of controversy — both old and new, and descriptions of some of the classic experiments of developmental neurobiology.

As a text-book for advanced biology students or as a thorough treatise to familiarize neurologists and neurosurgeons with the field, Purves and Lichtman have created a volume that is eminently readable, logically organized and appropriately illustrated. After an introductory review of embryogenesis, the reader is taken through the field of developmental neurobiology in a sequence of chapters that cover: neuronal differentiation, migration and axonal growth; developmental neuronal death; trophic interactions between neurons and targets; the formation, maintenance, and rearrangement of neuronal circuitry; the molecular basis of neural recognition; and, the development of behaviour. The theme of each chapter is outlined in a brief introduction and the conclusions are concisely summarized. Most chapters are profusely illustrated with black-and-white photographs and illustrations that amplify the text, often by illustrating the experimental basis for the more general principles.

In addition to its utility as a text-book, this volume can also be enjoyed by the more casual reader. Each chapter contains one or more relevant short essays (Boxes) that expand specific points ranging from metamorphosis to monoclonal antibodies or highlight controversies such as techniques for counting neurons and the putative trophic substance "sciatin". Then there are the biographies. It is extremely interesting to learn about the great names of developmental neurobiology from Harrison (who was overlooked by the Nobel selection committee because the usefulness of the technique he had developed — tissue culture — was considered to be too limited in value) to the several scientists who so enriched American neurobiology after escaping or surviving the horrors of the Third Reich.

Everyone interested in the nervous system can be grateful to the authors and publishers of "Principles of Neural Development" for presenting such a succinct, reasonably priced and up-to-date volume such as this.

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INTRACRANIAL ARTERIOVENOUS MALFORMATIONS. Edited by Charles B. Wilson and Bennett M. Stein. Published by Williams & Wilkins. 324 pages.

Twenty-one contributors have produced a succinct, up-to-date volume on all aspects of arteriovenous malformations. The neurosurgeon who operates on such lesions will be well advised to give this book careful study. This volume is profusely illustrated with high quality reproductions of CT scans and substracted angiograms.

The review of venous and cavernous malformations was particularly interesting to this reviewer as a guide to the management of these uncommon lesions. Steiner's report on the treatment of arteriovenous malformations by radiosurgery will be of great interest to all clinical neuroscientists. This modality is applicable to many lesions up to 30 mm in diameter. This apparently very safe treatment produced an 84.1% total obliteration of 63 cases after a latency of two years.

Wilson and Stein have not let their bias as master surgical technicians with considerable experience in the operative management of arteriovenous malformations influence their balanced treatment of the subject. Data on the natural history, such as is available, is clearly and objectively presented. All those who care for patients afflicted by these lesions will benefit from owning this excellent text.

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AUTONOMIC FAILURE — A TEXT BOOK OF CLINICAL DISORDERS OF THE AUTONOMIC NERVOUS SYSTEM. Edited by Sir Roger Bannister. Published by Oxford University Press. $128.25

This multi-authored book is a gold mine of information on the autonomic nervous system and its disorders. There are valuable overview chapters on the organization and control of autonomic function, on the testing of autonomic reflexes and on the classification of disorders of the autonomic nervous system. An early chapter deals with the relatively new techniques of recording sympathetic neurone activity, in peripheral nerves, due to autonomic reflexes, using microelectrodes in conscious patients. The correlation of recorded action potentials with vasomotor and sudomotor activity, skin resistance (galvanic skin reflex), blood pressure changes and many other autonomic functional activities is made. This technique will soon find many clinical applications. Techniques of cardiovascular monitoring in autonomic failure are well discussed as are the changes in circulatory performance in progressive autonomic failure.

The discussion of adrenergic receptors in autonomic failure is up to date and the pharmacological probing and investigating of postsynaptic adrenoreceptor changes and denervation supersensitivity are of particular value.

Studies of peripheral sympathetic neurone activity and function including basal catechol amine levels, blood pressure responses to noradrenalin, tyramine and angiotensin infusions, and plasma glucose and noradrenalin responses to insulin tolerance tests, all provide valuable baseline data with which we can compare results obtained on our patients, as well as indicating their use in differentiating between various types of autonomic failure. Similarly several induced hormone changes which can show up autonomic dysfunction are described.

The investigation of diabetic autonomic failure with relatively simple equipment is considered carefully. In one chapter