anecdotes, such as the time, during a seven hour operation for meningioma under local anesthetic, that Dr. McKenzie stopped to rest while he, the patient, and assistant (Frank), all had tea.

This was followed by a year's clinical clerkship in neurology at the National Hospital, Queen Square, under the illustrious trio of Gordon Holmes, George Riddoch and Charles Symonds, all subsequently knighted. While in London he also had an opportunity to observe the very different operating styles of the then leading British neurosurgeons Hugh Cairns (Cushingoid slow) and Sir Percy Sargent (lightning fast). From London Dr. Turnbull and his wife Jean traveled on to Breslau to visit the German neurosurgeon Professor Otfrid Foerster, and his chief assistant Dr. Ludwig Guttman. Nazi Germany of 1933 left some indelible memories, laden with foreboding, but we are provided some interesting glimpses into the everyday lives and work of these neurosurgical giants.

From Europe it was back home to Vancouver to introduce the specialty of neurosurgery to western Canada. It was an inauspicious start for a still fledgling surgical craft. After turning down a bone flap on his first patient with a suspected brain tumor, beneath a gallery unexpectedly crowded with interns, nurses, and staff doctors, he was unable to locate a tumor! It was Dr. Turnbull's estimation that the audience, by that point, would have regarded removal of a tumor as a near-miracle. He tells us, however, that "having seen one try hard and fail, they were satisfied and friendly." Dr Turnbull inherited his father's dedication to post-graduate training, and he traveled regularly to the Cushing Neurosurgical Meetings and to other clinics to pick up new techniques and ideas. In doing so he became personal friends with neurosurgical pioneers throughout North America and helped keep Canadian neurosurgery on the international "scene". Travel overseas as a neurosurgical consultant for the Canadian army during World War II provides us some vivid and chilling recollections. There he reacquainted himself with some eastern medical colleagues, including Lt. Cols. Harry Botterell and Rick Richardson at Basingstoke, Majors Bill Keith and Fred Kergin in Antwerp, and a host of American and British neurosurgeons all practicing neurosurgery with utter commitment under trying circumstances.

It is profitable for a neurosurgeon to read about the evolution of his specialty, and learn what our forefathers were up against just several decades ago. The improvements in management for various tumors, brain abscess, hydrocephalus, head injury, epilepsy, and one of Dr. Turnbull's particular interests, pain, over one "pioneer's" career are succinctly reviewed. Although Dr. Turnbull has told me that neurosurgery today reads like science fiction to him, I think our day-to-day practice is in fact less different than he thinks. For example, I found especially interesting his description of the introduction of discectomy to medicine in the 1930s. As often as the operation fails us, a regular examiner of patients with intractable and severe sciatica nevertheless wonders how mankind managed with this condition up until this century when the cause was finally recognized and a treatment devised. Dr. Turnbull was the first to perform lumbar discectomies in Vancouver. He had an orthopedic surgeon assist him on his first case, and while the bleeding was terrific (the patient was lying face down, flat on his unsupported abdomen), it did have the salutary effect of putting his assistant and other local orthopedic colleagues off the operation for a long time. Of course, in time spinal surgery eventually was irresistible to this group, and Dr. Turnbull subsequently went through a period 40 years ago that we are unfortunately reliving today: carrying out the decompression and then turning the case over to the orthopods to perform a fusion. He found that "this combination proved to be of doubtful value." No kidding.

Over the course of his career Dr. Turnbull played an active role in his provincial and our national medical associations, including presidency of both. He held high office in the Canadian Medical Association through the socialization of medicine across our land, turbulent times not dissimilar to our own. His comments on problems dealing and negotiating with government ring true today. Finally, and after retiring from surgical practice at age 65, Dr. Turnbull had a second career with the Workers' Compensation Board. He is not the first "retired" neurosurgeon who has left me with the feeling that a stint with the board would probably serve one better *prior* to embarking on a career in surgery.

This story is finely written by a man who uses language carefully. Given that Dr. Turnbull is a great fan of James Joyce, I don't think he will mind me describing this wonderful book as being, in addition to a neurosurgical life recounted, "a portrait of a neurosurgeon as an old man". If it is any consolation to those of us working too hard in the business today, my experience with every retired neurosurgeon I have ever met is that a life-long study of the central nervous system seems to have a remarkable preservative effect on one's own. And while we can never hope to have a life as long, rich and rewarding as the author's, we can take comfort also in seeing, through his memoirs, what we have a chance to some day become: wise, charitable, humble, and content. And by the way, you might as well take comfort in that – none of those retired neurosurgeons I've met were particularly rich!

J. Max Findlay
Edmonton, Alberta

CONGENITAL MALFORMATIONS OF THE BRAIN. PATHOLOGICAL, EMBRYOLOGICAL, CLINICAL, RADIOLOGICAL AND GENETIC ASPECTS. 1995. By Margaret G. Norman, Barbara C. McGillivray, Dagmar K. Kalousek, Alan Hill and Kenneth J. Poskitt. Additional contributions by Laurence E. Becker, D. Douglas Cochrane and Maximillian Muenke. Published by Oxford University Press Canada. 452 pages. $C135.95.

What a magnificent gift Dr. Margaret Norman and her colleagues at the University of British Columbia have offered us in this scholarly monograph on cerebral dysgenesis! This book integrates various clinical, genetic, imaging and neuropathological aspects of cerebral malformations and summarizes the long experience of the authors as well as provides a review of the extensive literature on this complex topic. This is truly a "modern" embryological approach because not only are traditional gross and microscopic aspects of the various malformations of the brain described, but the recent molecular biological and genetic programming data relative to CNS development also are incorporated in attempting to understand the pathogenesis of malformations and the role of encoding and transcription. A table addended at the end as an appendix summarizes data on chromosomal and genetic localization of defects associated with specific known dysgeneses such as the lissencephaly of Miller-Dieker syndrome. Integration of new imaging data for clinical diagnosis of living patients and classical neuroembryology and neuropathology as descriptive morphology is well done.

The book is organized into 21 rather traditional chapter headings, beginning with normal ontogenesis and progressing to chap-

ters on neural tube defects, holoprosencephaly, neuroblast migratory disorders, and "crossing the midline". Other chapters are based upon anatomical localization, such as "Abnormalitites of the spinal cord, brainstem and cerebellum" and "Abnormalities of the skull, meninges, choroid plexus and blood vessels", and one based upon a clinical presentation, "Hydrocephalus". The final chapters deal with destructive or encephaloclastic conditions such as hypoxic/ischemic encephalopathy in the fetus and their role in inducing developmental defects.

This monograph is so comprehensive and thorough that one has to look hard to find items to criticize. I was disappointed to find little discussion of the role of the fetal ependyma in brain development, such as in guiding axonal growth cones and participating in the arrest of neuronogenesis in the neuroepithelium and, in fact, "ependyma" is not even listed in the index. The chapter on hydrocephalus is brief and does not address the new genetic information on X-linked recessive aqueductal stenosis and certain other specific disorders leading to developmental obstructions of CSF pathways. Granuloprival cerebellar hypoplasia as a distinct entity and the embryological basis and experimental teratology of this condition in animals are not discussed.

Extensive references are listed at the ends of each of the chapters. Illustrations are well chosen and well demonstrate the findings described in the text. Most of the figures are of gross and microscopic pathology, but there are also some CT and MR images, a few pictures of fetuses or infants, diagrams of chromosomal karyotypes and genetic pedigrees. Several tabular summaries appear, such as "Ectomesodermal syndromes" and "Syndromes associated with agenesis of the corpus callosum".

In conclusion, I would strongly recommend this book for the personal library of all pediatric neuropathologists, pediatric neurologists, and neuroradiologists. It is an authoritative reference and well enough written to be read as a textbook. I am hopeful that it will become a "classic" and be republished as new and updated editions every few years.

Harvey B. Sarnat
Seattle, Washington

ETIOLOGY OF PARKINSON'S DISEASE. 1ST EDITION. 1995. Edited by Jonas H. Ellenberg, William C. Koller, J. Langston. Published by Marcel Dekker, Inc. 600 pages. $C254.00

The editors are to be congratulated for producing this outstanding monograph. The goal of this book is to review in one single volume all pertinent information and available literature on the etiology of Parkinsonism. As such it is an ambitious book (560 pages), with 2413 references in the bibliography and many more found at the end of each chapter. The chapters are a collection of 14 reviews by experts, presenting the most up-to-date information available on the basic sciences of the etiology of Parkinson's disease. As a consequence, there are differences in writing style, and some of the reviews include the author's personal bias of his/her particular area of research. Throughout the book there are many tables, figures and diagrams enhancing the quality of each chapter. The print and quality of the paper is very good.

The book is divided into five sections covering clinical aspects of Parkinsonism, followed by the epidemiology of Parkinson's disease, hereditary factors, and concluding with an in-depth discussion of the putative exogenous agents that have been linked as possible causes of Parkinsonism. I particularly like the chapter written by Drs. Pahwa and Koller introducing the reader to a discussion of Parkinson's disease and the differential diagnosis of other akinetic-rigid syndromes. It is a very well written chapter reflecting the clinical expertise and breath of knowledge of the authors. It provides the reader with a "clinician's view" of the spectrum of Parkinsonism offering helpful clinical hints on how to differentiate these disorders. However, I was surprised to find an error on Table 2, page 12 where progressive supranuclear palsy (PSP) is included into the category of the multiple system atrophies with Parkinsonian features. Currently, most movement disorders experts will agree that the multiple system atrophies (MSA) include three main conditions: sporadic olivopontocerebellar atrophies, striatonigral degeneration and Shy-Drager syndrome. These three disorders have a common neuropathological marker, namely oligodendroglial neuronal inclusion bodies, and it is believed that these three conditions are part of the spectrum of MSA. PSP so far has not been found to have these pathological markers and most authorities would rather consider PSP apart from the multiple system atrophies. The term multiple system degeneration has been proposed as an all inclusive term for all these conditions including PSP, MSA and other neurodegenerative diseases.

Drs. Zack and Langston provide an interesting discussion on the evidence to support the contention that, after excluding all causes of Parkinsonism, idiopathic Parkinson's disease may include a heterogenous group of disorders. The authors warn that those involved in Parkinson's disease research should be aware of this possibility. The reader may find Dr. Fornos' chapter on the pathology of Parkinson's disease and its relevance to unravelling the pathogenesis of this condition very useful.

The section I found most important is the one containing the last three chapters. These chapters summarize the role of exogenous agents in the pathogenesis of Parkinson's disease together with a collection of 2413 references relating to the etology of Parkinson's disease. It is a gem of information that should be kept at hand for future reference. Unfortunately, as with any publication of this sort, the references can only be kept up-to-date to the moment of publication.

The book is intended for the neuroscientist and neurologist with an interest in Parkinson's disease and as such it is indeed a welcome addition to the Movement Disorders literature. This book is too specialized for a general audience and I believe neither the neurology nor neurosurgical resident would like the book much.

Néstor Gálvez-Jiménez
Toronto, Ontario

LACUNAR AND OTHER SUBCORTICAL INFARCTIONS. 1995. Edited by G.A. Donnan, B. Norrving, J.M. Bamford, J. Bogousslavsky. Published by Oxford University Press. 281 pages. $C125.00

Although their pathology was recognized by Pierre Marie, it was Dr. Walter Alvarez who recognized first the clinical importance of "little strokes", under which heading he included both TIAs and the lacunar stroke syndromes which are the subject of this book. After Miller Fishers initial pathophysiological *rapprochements* allowed definition of the commoner three or four syndromes, many others contributed small series