may not be the case for all of us. The roles of neuronal dendrites and glial cells are little discussed. It is very strong in cellular electrophysiology and in neuromodulatory mechanisms.

Overall I consider this to be an outstanding, easily readable, and quite up-to-date overview of fundamental neurobiology. This book is quite useful for the clinician who wishes to have a digestible presentation of basic neuroscience as a prelude to understanding neurological disease.

Peter L. Carlen
Toronto, Ontario

NEUROPROTECTION IN CNS DISEASES. 1997. Edited by P.R. Bar and M. Flint Beal. Published by Marcel Dekker Publishers. 585 pages. $C241.00

Neuroprotection has come of age. The 585 pages of this volume attest to this. The first part deals with the basic components of the nervous system, including neurons, glia and the brain blood barrier, key substances and in vitro and in vivo models of neuroprotection. The second part deals with acute neurological diseases and the third with chronic neurological diseases.

In addition to the specific information in each chapter, several themes emerge: 1) Most substances essential for life also have potential for damage. Calcium ions, neurotransmitters and cytokines fuel normal function, but released from tight control, harm the very environment from whence they come. 2) Glia are much more than "glue" for the nervous system. They guide the development of neurons, maintain their function and help their repair Additionally, glia and neurons may communicate, neurons responding to intracellular calcium waves travelling through astroglia. 3) A large gap remains between the laboratory and the bedside. In stroke, over 100 compounds reduce ischemic damage experimentally, but none has yet been proven effective in randomized clinical trials; but the time is nearing.

In a book of 29 chapters one can expect uneven quality, and one finds it. However, a common feature is succinctness and emphasis on basic principles. Thus, one finds gems such as Detsai et al.'s chapter (16) on glia, Marshall and Kieburtz chapter (19) on the design and interpretation of clinical trials in neuroprotection and Vanderworp et al.'s chapter (20) on the medical treatment of acute ischemic stroke.

Overall the book is too bulky, specialized and expensive to recommend to the practising neurologist, but it can be recommended for the neurological library as a good introduction and inventory of a fast-moving field.

Vladimir Hachinski,
London, Ontario

NEUROINFLAMMATION. 1998. Edited by Paul L. Wood. Published by Humana Press. 375 pages. $C188.50

Most dogmas are wrong. Until recently, the brain was considered an "immunologically privileged" organ. This book shows that it is not, and that neuroinflammation may mediate the damage in a host of neurological disorders, from multiple sclerosis to Alzheimer's disease. The volume includes five parts: 1) Microglia 2) Acute phase proteins 3) Cytokines 4) Free radicals 5) Miscellaneous mediators, including adhesion cell molecules, nitric oxide and cyclo-oxygenase.

We learn that microglia are critical in the defence and clean-up of the brain, but if chronically activated, may lead to neurodegeneration. Interestingly, microglia can be activated remotely in areas devoid of neurodegeneration, also, microglial activation preceeds neuronal loss in Down's syndrome.

Contrary to received wisdom, all components of both the classical and alternative complement pathways are found in the brain and cerebral spinal fluid. Sustained complement activation may be key process in myasthenia gravis, multiple sclerosis and Alzheimer's disease. Nitric oxide is the Dr. Jekyll and Mr. Hyde of the brain, essential physiological modulator in health and deadly neurotoxin in disease.

The utility of this volume lies in bringing together research dispersed in a myriad of specialized journals and focusing it on neurodegeneration. While some details may escape a neurologist's comprehension, the main message is clear enough: neuroinflammation is important in brain injury and neurodegeneration and we must think more about common mechanisms and less about distinct diseases.

Vladimir Hachinski,
London, Ontario

NEONATAL CEREBRAL ULTRASOUND. 1997. By Janet M. Rennie. Published by Cambridge University Press. 248 pages. $C117.00

This book has 12 chapters covering the physical principles of sonography and doppler ultrasound; the choice, maintenance and use of equipment; the normal and pathological appearance of the brain; and appearance of both the term and the immature brain. Additionally there is an attempt to correlate ultrasound features and prognosis. A glossary and an index are also included.

The first chapter contains adequate information and is easy to read. With the current rapid development of sonography, some of the information on equipment in Chapter 2 is bound to be somewhat out-dated in a few years, but the basic principles, particularly those dealing with quality control and artifacts, will continue to be of value for a longer period of time. I was surprised however, to see in the photos under the headline "Safe use of ultrasound equipment", that the examiner holds the transducer to the fontanelle of the infant without a supporting finger on the adjacent bone. A sudden movement of the infant's head or of the transducer may result in unnecessary pressure on the fontanelle.

In Chapter 3 "Normal appearance", unfortunately only the conventional planes acquired through the anterior fontanelle are described. Other acoustic windows, such as the posterior fontanelle for additional coronal views, the sphenoidal fontanelle and the squamosal suture for axial views of the mesencephalon and third ventricle, and the mastoid fontanelle for coronal and axial views of the posterior fossa contents are needed to evaluate the complex anatomy and the pathology of the brain. These added views are obviously easier in the very young infant due to the size of the fontanelles and state of the sutures.

Chapter 4 gives a good overview of the immature brain, which is important to the sonographer, and emphasizes the fact that gestational age is of paramount importance to the interpretation of the ultrasonogram. For example, a smooth cortex may indicate lissencephaly in the full term infant, but may reflect a normal developmental stage in the very premature infant.

Chapter 6 gives a thorough introduction to the complex issue of

transcranial doppler. Complex, as the author points out, because of difficulties in validating various animal models. chapter 6, 7 and 11 correlates the sonographs of vascular and ischemic-hypoxic lesions in immature and more mature brains with pathological specimens in an instructive way.

Chapter 8 discusses ventricular size and the monitoring of hydrocephalus. This list of different etiologies at different ages is helpful. Various measurements, as described, are likely to be most useful in connection with monitoring hydrocephalus, but not for the primary diagnosis. I realize that a discussion of the recent theories about the causes of hydrocephalus is not within the scope of this book, however it might be mentioned that the classical concept of how CSF circulates is undergoing a challenge. Recent publications by D. Greitz et al. and might be of interest to the readers.

The short chapter 9 gives some aspects on infections diseases.

Chapter 10 describes brain malformations; some correlation with CT images has been performed. Again I would like additional sonographic planes and also correlation with MRI, which gives excellent information in these cases, and which may also be performed antenatally.

Chapter 12 summarizes the difficulties in using ultrasonographic diagnosis for prognosis of the clinical outcome. It is excellent that this topic is discussed, however, it should be pointed out that there are hardly any good studies with correlation between different neuro-imaging modalities. For example, it is not adequate to have performed ultrasonography one day and CT several days later as 24 hours is a very long time in the life of a newborn. Several events, as well as evolution of ischemic change may have occurred during the interval. I think we need a study consisting of serial multimodality [US, CT and MRI] studies performed within hours of each other to be correlated with each other in multiple patients and with their clinical outcome before we can be confident of our interpretations and prognoses based on a single examination performed in a single modality at a given time.

This book contains a lot of useful clinical information in context of brain sonography. The information regarding brain anatomy and imaging is of slightly inferior quality. This is, I think, a natural reflection of the author's main occupation as a neonatologist and not a neuroimager.

The unfortunate state of affairs at many institutions is that neuroradiologists do not perform neurosonography, and that neonatologists or general paediatric radiologists perform neurosonography, but never any other kind of neuroimaging. This is bad for both groups and for the patients. There is no doubt in my mind, that a combined effort between neonatologists and neuroradiologsts would be better for the patients.

It is time to regard ultrasonography as one of many neuroimaging modalities and not an isolated method, and to combine the wealth of neuroanatomical and neuropathological knowledge of neuroradiologists with the vast clinical knowledge of the neonatologists to tailor the most appropriate imaging modality to the patients condition, and to control the quality, sensitivity and reliability of different imaging methods.

M. Mosskin,
Stockholm, Sweden

Notes and Announcements

Epilepsy Canada/Parke-Davis Canada Research Fellowship

The Epilepsy Canada/Parke-Davis Canada Research Fellowship is offered to develop expertise in clinical or basic epilepsy research and to enhance the quality of care for epilepsy patients in Canada. The award is $35,000 annually. Epilepsy Canada will present the award at the annual meeting of the Canadian Congress of Neurological Sciences.

Research must be carried out at a Canadian facility, with project emphasis on the study of epilepsy itself and not on epilepsy as part of the study of another field. The Fellowship is primarily a training program and is not intended for individuals holding faculty appointments. Applicants must have an M.D. or a Ph.D. Those with an M.D. must have completed residency training.

Application forms will be available September, 1998. The deadline for submission is December 1, 1998. For further information, please contact Rebecca Rupp, National Director of Programs, Epilepsy Canada, 1470 Peel St., Suite 745, Montreal, QC H3A 1T1

Tel: (514) 845-7855, Toll free: (800) 860-5499, Fax: (514) 845-7866 e-mail: epilepsy@epilepsy.ca Website: http://www.epilepsy.ca

Bourse De Recherche Épilepsie Canada/Parke-Davis Canada

La bourse de recherche d'Épilepsie Canada/Parke-Davis Canada est offerte en vue d'encourager la recherche fondamentale ou clinique sur l'épilepsie et d'améliorer la qualité des soins aux personnes atteintes d'épilepsie au Canada. Le montant de la bourse, accordée annuellement, est de 35 000$. Elle sera présentée à l'assemblée anuelle du Congrès Canadien des Sciences Neurologiques.

La recherche doit être effectuée dans une institution canadienne; le projet doit porter sur l'étude de l'épilepsie proprement dite et non sur l'épilepsie en tant que partie d'une étude sur un autre sujet. Il s'agit d'une bourse de perfectionnement et ne s'adresse pas aux chercheurs détenant déjà un poste dans une université. Les candidats doivent détenir le titre de M.D. ou de Ph.D. Ceux qui ont un M.D. doivent avoir terminé leur entraînement en spécialité.

Les formulaires de demande seront disponibles à compter de septembre 1998. Les demandes devront être soumises au plus tard le ler décembre 1998. Pour de plus amples renseignements, s'adressez à Rebecca Rupp, Directrice nationale des programmes, Épilepsie Canada, 1470 rue Peel St, bureau 745, Montéal, Québec H3A 1T1.

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