probably use different routes. In the brain it seems that the pathway via cysteine dioxygenase and through hypotaurine is the major one. The oxidation reaction which produces taurine from hypotaurine is suggested to be important in anti-oxidative function in the brain and that hypotaurine itself may contribute as an antioxidant (Tillman & Roth) but this is not the view of the authors of the next paper (Kontró & Oja). In this and other topics covered in the book, one would have preferred to be able to read of the discussions of such papers, if these occurred.

A group of papers in this metabolic section describe the peptides of taurine that have been discovered (mainly γ-glutamyltaurine) and the roles of these and of γ-glutamyl transferase are speculated upon. There is some evidence that taurine produces hypoglycaemia and the paper by Kowalski & Kowalski suggests an involvement of the amino acid with insulin receptors. The last paper (van Gelder & Barbeau) of this section describes what is the current knowledge on the involvement of taurine in osmoregulation.

The third section concentrates on the role of taurine in the heart. The topics discussed include its possible involvement as a modulator of the regulation of intracellular extracellular Ca2+. One interesting contribution describes a clinical trial on the therapeutic effects of taurine treatment in cases of congestive heart failure (Azuma et al.). The results indicate some improvement in “cinemangiographic score” of heart failure severity. A subsequent presentation describes an investigation on the accumulation of taurine by blood platelets; the authors conclude that it does not provide a useful indicator of taurine levels elsewhere, for example, in the heart.

The fourth section deals with taurine as a neurotransmitter or modulator. Several of the 10 papers deal with electrophysiology and neuropharmacology of the amino acid in hippocampal slices, and tend to focus upon its suggested role in affecting Cl− conduction. Of interest to the precise functional role of taurine was the use of immunocytochemistry (based on cysteine sulphinate decarboxylase immunoreactivity) to map “taurine neurons”; the authors (Wu et al.) suggest that taurine may function as a neurotransmitter, not only in retinal amacrine cells, but also in interneurons making synaptic contacts with pyramidal cells in the hippocampus. The introduction to this paper gives a good critical summary of current evidence that taurine acts as a neurotransmitter. Also of interest in this section is the paper (Lehmann et al.) describing the use of an implanted perfusion dialysis tube to monitor very small levels of metabolites such as taurine in cerebral extracellular fluids. They found taurine to be released to the extracellular space in “emergency situations”, for example neuronal hyper-excitation and during ischaemia. They also suggest that taurine may affect Ca2+ homeostasis. The possible role of taurine in Ca2+ homeostasis was investigated (Segawa et al.) by examining the involvement of calmodulin in the ability of taurine to modulate K+-evoked release of catecholamines in vitro. They interpret their results as indicating that taurine may act by modifying the binding of Ca2+ to calmodulin. The final paper in this section examines the role of taurine in thermoregulation, possibly involving hypothalamic serotonin.

The fifth section is on taurine and the retina. Here the major themes are its role in photoreceptor membrane stabilization by preventing lipid peroxidation (Pasantes-Moraes & Cruz) and its possible interference in Ca2+ flux rates, from some evidence that it affects relevant retinal protein kinase activities (Lombardini).

The final section on neurological disorders includes contributions on its role in abnormal muscle function (denervated muscles and dystrophy) and especially in its potential role as an anticonvulsant. The paper by Tariello and colleagues provides a useful review of this topic and makes a plea for more clinical trials. This is followed by some experiments (Izumi et al.) showing that taurine affects the potency of established anticonvulsants (phenobarbital and diphenhydantoin) and others on the improved anticonvulsant properties of lipophilic taurine analogues (Huxtable and Nakagawa). The last paper describes the GABA-like antimuscarinic properties of taurine.

The concluding remarks by Huxtable summarise the progress in knowledge in this area over the past decade.

This publication, like so many proceedings of international symposia, is produced as camera-ready copy and suffers the inevitable disadvantages of this type of production. Some of the articles suffer from the lack of editing or of sub-editing so that errors in referencing have not been picked up, and the language of some contributions (where the authors are not English-speaking) could have been improved by skilled editorial attention. Also, as much of the work presented herein will prove to be of interest to many scientists and clinicians, the lack of discussion of novel or controversial papers is disappointing, as is the dearth of summaries or abstracts: only one-sixth of the 39 papers included these.

All in all, despite these shortcomings, the book gives a comprehensive view on the current state of knowledge about taurine.

H S BACHELARD


This thoughtfully titled book comprises 10 sessions, each introduced and summarised by a distinguished chairman, and ends with a summary of some of the most interesting contributions. This layout helps the non-specialist, and the book should be useful to postgraduates in immunology and medicine as well as those working on autoimmunity for whom it illustrates a variety of important techniques. There are two appendices useful to the specialist. One is an up-date on the primary and secondary structure of myelin basic protein (MBP) by Martenson; the second is a summary of the species-restricted encephalitogenic determinants on MBP by EC Alvord Jr.

The main part of the book includes several sections on the mechanisms of lesion formation in multiple sclerosis and experimental allergic encephalitis. Some appear to be immunological, and several papers describe the migration of inflammatory cells to the CNS. Changes in peripheral T cells such as the T4/T8 ratio appear not to correlate with multiple sclerosis relapses. An elegant paper by Tabira et al. shows that an antigen depot is necessary for relapses in experimental allergic encephalitis, and a provocative paper by Wege et al. describes MBP-reactive lymphocytes in JHM virus infected rats.

Several authors emphasise non-immunological factors, such as blood-brain barrier permeability and the susceptibility of MBP to enzymatic degradation. An important paper by Barna et al. suggests that astrocytosis in experimental allergic encephalitis may be regulated immunologically, by lymphokines.

Two sections are devoted to suppression in experimental allergic encephalitis and multiple sclerosis, including a controversial paper by Werkerle describing a T cell line which suppresses experimental allergic encephalitis induced by adoptive transfer of another T cell line. Both lines are MBP reactive and W3/25 positive.
Further sections include papers on: immuno- 
genic sites on MBP; the role of lipids in 
immunisation; the use of liposomes in treat-
ment of experimental allergic encephalitis; 
the presence of soluble factors including 
oligodendral Ig in the CSF and serum in mul-
ple sclerosis and experimental allergic 
encephalitis.

A major problem with multiple sclerosis 
research is that clinical multiple sclerosis 
may represent a final common pathway of 
pathogenic reactions which have been ini-
tiated by a variety of genetic and environ-
mental causes. As EC Alvord Jr points out, 
the early stages of multiple sclerosis are 
esentially unknown. Consequently much 
work on experimental allergic encephalitis 
concentrates on understanding and pre-
venting remission. However, multiple scle-
rosis may really be a progressive disease, with 
relapses merely the tip of the iceberg. 
Hopefully the new immunological techniques 
such as cell cloning and molecular genetic 
analysis will define the role of immunity in 
this disorder. This should facilitate analysis 
of the other genetic and environmental fac-
tors which are at present elusive.

WA TAYLOR

by: Kenneth M Heilman and Edward 
Valenstein. (Pp 540; £30-00.) Oxford: 

This second book will not be compared 
directly with Kolb and Wishaw's text. The 
two are intended to serve quite different 
functions. While Kolb and Wishaw's book 
is intended as a text for basic as well as 
advanced teaching of neuropsychology, the 
one edited by Heilman and Valenstein is a 
basic source book, providing the clinician 
with detailed descriptions of the major neu-
robehavioural disorders.

There are 16 chapters. With the exception 
of the first (a general introduction to neu-
ropsychology) and the last (recovery and 
treatment), each chapter deals with a specific 
syndrome or complex of syndromes. These 
are Aphasia (DF Benson), Alexia (RB 
Friedman and ML Albert), Agraphia (D 
Roehtgen), Acalculia (HS Levin and PA 
Sipers), Body Schema Disturbances (A Benton), 
Apraxia (KH Heilman and LJ Gonzalez 
Roth), Visuospatial, Visuospatial and Visuo-
constructive Disorders (A Benton), 
Agnosia (RM Bauer and AB Rubens), 
Neglect and Related Disorders (KH Heil-
man, RT Watson and E Valenstein), Cal-
losal Syndrome (JE Bogen), the Frontal 
Lobes (AR Damasio), Emotional Disorders 
Associated with Neurological Diseases (KH 
Heilman, D Bowers and E Valenstein), 
amnesic Disorders (N Butters and P 
Moliotis), Dementia (RJ Joynt and I Shoul-
son).

The use of the syndrome concept is a clear 
reflection of the clinical bias of the book. 
Implicit in the concept is the treating of each 
syndrome as a neurobehavioural condition 
isolated from other syndromes. A multi-
authored text such as this further encour-
gages such an approach. Of great value 
would have been a chapter attempting to provide 
an integrated picture of the relationships 
between brain and behaviour. While a daemoning 
task, the lack of such a chapter rele-
gates the book into a mere collection of 
-independent, if authorative essays.

The second edition is little changed from 
the first in terms of organisation and 
authors. The major change is the omission 
from the second edition of chapters on 
Childhood Learning Disability, and Hyper-
activity Syndrome. The remaining chapters 
have, of course, been updated with increased 
emphasis on the clinico pathological corre-
lations provided by the new generations of 
brain imaging techniques. Despite this, 
the price is high for what is essentially an occa-
nional reference text, and may discourage 
individual purchasers, particularly those 
who already possess the first edition.

RICHARD BROWN

Epileptic Syndromes in Infancy, Childhood 
and Adolescence. (Current Problems in Epile-
sy II.) Edited by J Roger, C Dravet, 
M Bureau, F E Dreyfuss and P Wolf. 
(Pp 350; £34-00.) London: John Libbey 

This excellent book which describes the dis-
creet syndromes of epilepsy from infancy to 
adolescence came from a meeting at the 
Centre Saint-Paul, Marseilles in 1983. It 
contains admirably short but comprehensive 
scientific accounts of the separable syn-
dromes of epilepsy seen in the developing 
nervous system. The EEG illustrations are 
clear and appropriate and the discussion 
summaries are a very helpful summary of 
different points of view for example of the 
definition of the Lennox-Gastaut syn-
drome. For many the international classifica-
tion on epileptic seizures has been only a 
partial solution to our communica-
tion on this subject because of the wide 
differences in the significance of similar 
attacks as part of different syndromes. 
This book fully redresses the balance making 
the point time and again that a predicted 
statement on outcome can often be made at an 
early stage if attention is paid to this sort of 
syndrome definition. A huge amount of 
work has been done on pulling the literature 
together and all research workers in the 
fields of epilepsy and paediatric handhelds 
and neurology I think would be both grate-
ful for this book and find it an essential 
source of reference. A great deal of the credit 
for the work in the book goes to certain cen-
tres of epilepsy research particularly in 
France and other parts of Europe. In a short 
but emotional preface Henri Gastaut claims 
a significant advance in our understanding 
of epilepsy and I agree with him. This is cer-
tainly one of the most interesting and useful 
books for a long time.

NIGEL LEIGH

Core Text of Neuroanatomy. 3rd edn. 
By Malcolm B Carpenter. (Pp 473; £19-00.) 

This is an updated edition of a popular 
textbook of neuroanatomy, first published 
in 1978, and revised in 1982. It is intended 
for medical and basic science students, rather 
than clinicians and Professor Carpenter has 
succeeded admirably in fulfilling his aim of 
explaining the organisation of the central 
nerve system in a lucid, meaningful fashion.

His extensive experience of teaching and 
research are evident throughout the text, 
which is readable, authoritative and up-to-
date. In the eight years which have elapsed 
since the previous edition, chemical 
neuroanatomy has come of age, and a new 
range of neuroanatomical techniques have 
have become available, and the important 
advances have been incorporated. The 
author is adept at explaining anatomy in 
fundamental terms; for example, the sections 
on functional organisation of the visual sys-
tem, and on the basal ganglia are master-
pieces of lucid exposition. Unfortunately for 
clinicians, this book does not cover clinical 
neuroanatomy extensively enough for us to 
cope with Brodal's classic, but that is not 
its brief. There can be no doubt that this 
book deservedly will remain a favourite on 
neuroscience courses.

NIGEL LEIGH