

# Contents

Contributors

Foreword

Preface

## SECTION 1

### BASIC NEUROSCIENCES

- 1 An Introduction to the Development of the Central Nervous System, 3  
RICHARD HAYWARD
- 2 Developmental Anomalies of the Central Nervous System, 21  
HAROLD J. HOFFMAN
- 3 Practical Techniques in the Study of Stereotactic Neuroanatomy, 70  
FARHAD AFSHAR
- 4 The Chemical Basis of Neurological Function, 90  
ALAN DAVISON
- 5 Numeracy and the Neurosurgeon, 107  
BRYAN JENNETT

## SECTION 2

### FUNCTIONS OF THE BRAIN

- 6 Altered Consciousness and Coma, 117  
BRYAN JENNETT
- 7 The Sensory System, Pain and Painful States, 127  
JOHN SCADDING

- 8 The Control of Movement and its Clinical Disorders, 158

RICHARD HARDIE AND ANDREW LEES

- 9 The Limbic System, 180

JOHN BARTLETT

- 10 Brain Organization of Language and Speech, 189

GEORGE OJEMANN

- 11 The Neural Control of Respiratory Function, 200

JOHN NEWSOM-DAVIS

- 12 Thirst and Hunger, 212

RICHARD HAYWARD

## SECTION 3

### MAINTENANCE OF BRAIN FUNCTION

- 13 Cerebral Metabolism and Blood Flow, 223  
DAFYDD THOMAS AND ALAN CROCKARD

- 14 Cerebral Arterial Spasm (Cerebral Vasospasm), 240

DAVID BOULLIN

- 15 Raised Intracranial Pressure and its Effect on Brain Function, 266

J. DOUGLAS MILLER

- 16 Pathophysiology of the Cerebrospinal Fluid Circulation, 279

MICHAEL POLLAY

- 17 Anaesthesia and the Maintenance of Brain Function, 297

LAURENCE LOH

SECTION 4  
RESPONSE OF THE NERVOUS SYSTEM TO  
DISEASE

- 18 The Response of the Brain to Hypoxia, 309  
DAVID GRAHAM
- 19 Brain Swelling, Brain Oedema and the  
Blood-Brain Barrier, 333  
ALAN CROCKARD
- 20 Aneurysms and Vascular Malformations,  
350  
FRANCESCO SCARAVILLI
- 21 The Classification of Tumours of the  
Nervous System, 367  
DAVID THOMAS
- 22 Immune Reactions within the Nervous  
System, 379  
DAVID THOMAS
- 23 Cell Kinetics and the Effects of  
Chemotherapy and Radiotherapy, 386  
DAVID THOMAS
- 24 Experimental Neuro-oncology, 392  
STEPHEN C. SARTS AND DARELL D. BIGNER
- 25 The Effects on the Brain of Systemic  
Disorders, 417  
ALAN CROCKARD
- 26 The Pathophysiology of Disc Degeneration,  
428  
G. R. BELL AND F. A. SIMEONE
- 27 Infections of the Central Nervous System  
1: Bacterial, Fungal and Parasitic, 441  
JULIAN T. HOFF
- 28 Infections of the Central Nervous System  
2: Viral, including Reye's Syndrome, 456  
JOHN E. MCGILLICUDDY

- 29 Pathogenesis and Neuropharmacology of  
Epilepsy, 477  
ALAN RICHENS AND ELIZABETH RIMMER

SECTION 5  
INVESTIGATIONS OF THE NERVOUS SYSTEM

- 30 The Production and Measurement of  
Evoked Potentials, 493  
NICHOLAS MURRAY
- 31 Electromyography and Nerve Conduction  
Studies, 515  
MICHAEL J. AMINOFF
- 32 Diagnostic Imaging Techniques, 536  
ALAN VALENTINE AND IVAN MOSELEY
- 33 Tests of Endocrine Function for  
Neurological Patients, 563  
STAFFORD L. LIGHTMAN
- 34 Audiologic and Vestibular Testing, 579  
MALCOLM D. GRAHAM
- 35 Psychological Testing in Clinical  
Neurology, 596  
J.R. WILLISON AND ELIZABETH K.  
WARRINGTON
- 36 Tests of Autonomic Function, 600  
ROGER BANNISTER
- 37 Neural Control and the Investigation of  
Bladder Function, 608  
ANANIAS C. DIOKNO

Index, 623