ness to remarkable advances in neuroanatomical technique. It is the product of a multi-disciplinary meeting of neuroscientists at the National Institutes of Health in June, 1981 and its 28 chapters cover concise areas of neurocytological research. Common to all is the critical application of cytochemical techniques to solve problems in neuroscience research, be they anatomical, physiological or pharmacological. This is not a textbook of cytochemistry, and one will not find, for example, technical aspects of catecholamine or peptide localisation covered comprehensively. The aim is to show how neuroscientists are exploiting these new techniques to solve a great variety of problems, and at the same time to provide a critical account of their use.

The well established techniques based on anterograde and retrograde transport of tracer substances are touched upon in a fine opening chapter in which Hendrickson shows how she and her colleagues have combined autoradiographic tracer studies with conventional histochemistry, immunocytochemistry, and 14C-deoxyglucose autoradiography to analyse the nature of occular dominance columns of the monkey striate cortex. A relatively new approach which features in several chapters, and is reviewed in detail by Cuénod and colleagues, is transmitter specific retrograde labelling. Various tritiated neurotransmitters (including amino acids, biogenic amines, and choline) can be localised within neurons, pathways, or (with electron microscope autoradiography) synapses, following intracerebral injection, although the biological significance of this intriguing phenomenon remains uncertain. Theoretical aspects of immunocytochemical technique are well covered, with consideration of antigen-defined immunocytochemistry, the use of monoclonal antibodies, and a helpful chapter on the validity of these techniques, and the significance of false negatives and false positives. There are two chapters on the localisation of GABA-ergic neurons (both giving detailed protocols) and there are technical details in the chapters on the localisation of serotonergic systems and description of intracellular labelling (with horseradish peroxidase) of physiologically identified neurons in the central nervous system. As one would expect, neuropeptides figure prominently, introduced by Chan-Palay in a fascinating account of the co-existence of neuropeptide substances within individual neurons in the mammalian CNS, and including chapters on the cytochemistry of enteric nerves, the dorsal horn of the spinal cord, the avian retina and tectum, neuroendocrine and autonomic synapses, and consideration of peptide heterogeneity and neurotypy.

The editors and publishers must be congratulated on presenting an elegantly finished, finely illustrated, and relatively up-to-date volume packed with ideas and technical information. It will be frequently consulted in the library and the laboratory. Its eclecticism, and the nature of modern neuroscience, ensure that it will be read by neuroscientists of many disciplines, and its price will be within the budget of most departments. This is not a book which aims to bridge the gap between basic neuroscience and clinical neurology, but for neuropsychologists, neuropathologists, and clinicians who wish to keep abreast of a rapidly changing field, a departmental copy will be well worthwhile.

**NIGEL LEIGH**


This book is written by various members of the multidisciplinary team of a special rehabilitation centre for spinal injuries. It is intended to be (and probably is) a comprehensive source of reference dealing with the subject. There are four sections. The first presents a survey of the normal radiological anatomy of the spine and cord in a novel and attractive way. The second part deals with the acute phase of spinal cord injuries. Fractures and dislocations and their complications are described and illustrated, and the neuroradiological chapter includes many computed tomographic and angiographic images. The third part deals with rehabilitation, being concerned mainly with the disturbances of the urinary tract and bones and joints which complicate spinal trauma. Part four comprises unrelated topics—children's spinal injuries, the value of radionuclides in diagnosis, the detection of associated injuries.

Prospective purchasers would do well to check carefully what sort of book they are buying. Only one-third of the contents actually deal with the radiological signs of spinal trauma. Most of the remaining space is taken up with describing possible complications of a chronically immobilised patient. These complications are common to cases of chest and abdominal trauma and certain non-traumatic situations as well as spinal injuries. Your reviewer questions the relevance in this book of chapters describing peripheral venography, the ultrasonic findings in gallstones and the surgical aspects of reducing and stabilising spinal fractures. Perhaps the authors are unsure of the audience they are seeking: despite their effort to cover all aspects from diagnosis in the early hours to the final reaches of rehabilitation, one wonders if they have produced a text that is sufficiently relevant or complete to make the book compelling reading for surgeons, neurologists and other non-radiologists.

The radiologist has much to learn, particularly from the chapters dealing with radiological anatomy and acute spinal trauma. The chapters on cord anatomy (by a neurologist) and on the vertebral column (by a neuroradiologist) are excellent and complete, correctly stressing the primary importance of imaging the integrity of the canal and its contents in every case of spinal injury. Chapters 4 and 5, dealing with fractures and dislocations and neuroradiological assessment, are probably the best in the book, being profusely illustrated with examples of injuries to the cord and vertebrae shown by angiography and computed tomography which have not yet reached our textbooks. Apart from this, the book has several other merits: an up-to-date albeit all-American review of the literature appended to each chapter, commendably high quality line drawings and radiographs, and a general readability of the text. A book to be recommended for the departmental library.

**EDMUND H. BURROWS**


This book presents a comprehensive physiological atlas of the thalamic and mesencephalic regions in man. It is based upon neurostimulation data obtained during 198 stereotactic thalamic procedures, carried out for varying conditions, over a ten year period.

A careful analysis of over 9000 stimulation sites along 835 trajectories has been made and the results plotted on the brain maps of the Schaltenbrand and Bailey Stereotaxic Atlas. Such techniques demonstrate the precise location of over thirty different physiological responses. They also illustrate the degree of precision such methods provide for determining modality topography and somatotopical organisation of human thalamic nuclei.