Book reviews

occasional comments on the clinical usefulness.

The figures are clear and fully explained by their legends so as to be independent of the text. They are mostly culled from original publications but some were specially produced. The layout is excellent; each chapter has a summary and up to four levels of numbered headings and subheadings. Each section lists the contents in detail. The index is valuable and gives reminder of other headings under which the reader may find something useful. The book is therefore ideally suited for quick reference.

EM SEDGWICK

Central Cardiovascular Control: Basic and Clinical Aspects. Current Topics in Neuroendocrinology. Vol 3. Edited by D Canten and D Pfaff. (Pp 192; \$35.00.) Heidelberg: Springer-Verlag, 1983.

The central regulation of blood pressure and cardiac function have attracted intensive research both in animals and man over the past decade and these advances are ably reviewed in this small volume of articles. Though authorities such as Guyton conventionally attribute only the short term control of circulation to the autonomic nervous system, principally by means of baroreceptors, this book pays as much attention to the long term adjustment to the demands of the body by means of centrally mediated changes of sympathetic tone and changes in the renal circulation which are equally important in regulating blood pressure.

The earlier chapters review the neurophysiology, neurochemistry and immunohistochemistry of the central baroreflex pathways. The descending pathways and transmitters involved determined from animal experiments are as yet uncertain. In man, with all the problems caused by the erect posture, the regulating mechanisms can be expected to differ substantially. The infusion of pressor drugs like phenylphrine has shown the relationship between the change in blood pressure and reflex inhibition of the heart. However, changes in systemic resistance were not revealed in man until the elegant use of neck pressure to "unload" the carotid (but not aortic) baroreceptors, coupled with lower body negative pressure which can be used to stimulate the cardiopulmonary receptors. Newer techniques also include microneuronography to record directly the activity in muscle sympathetic nerves, as well as plasma catecholamine studies measuring the overspill of

noradrenaline from sympathetic endings. These methods have shown the relative separation of the control of different parts of the splanchnic and muscular contributions to the peripheral resistance. The conclusion for man is that though the carotid baroreceptor input may be the major influence on heart rate, unloading the cardiopulmonary receptors initiates splanchnic and forearm vasoconstriction, the latter being reduced by simultaneous activation of the carotid baroreceptors (by neck suction).

In this volume there is much evidence from animal studies but its main usefulness to the cardiologist or neurologist interested in the circulation lies in its authoritative review of much complex physiology. Experiments in man have brought closer, but not yet solved the enigma of the central triggering factors in hypertension. Changes in membrane permeability, changes in central transmitter systems, or the influence of an antinatriuretic hormone are the currently favoured possibilities but further experiments, at the present rate of progress, can be expected to yield more definitive conclusions about the cause of hypertension over the next decade.

R BANNISTER

Spinal Cord Monitoring. Edited by J Schramm and SJ Jones. (Pp 335; DM168.00.) Berlin: Springer-Verlag, 1985.

The increasing sophistication of spinal and vertebral column surgery has created a demand for intra-operative monitoring of spinal cord function. Spinal monitoring may signal impending damage to the spinal cord, thereby providing the surgeon with some warning of that most feared, but fortunately rare complication of this surgery, paraplegia. Not surprisingly, much of the initial work in this field was developed by the surgeons themselves. More recently neurophysiological techniques have been applied to the challenge of providing a dynamic assessment of spinal cord function.

This volume, containing contributions from the second international symposium on spinal monitoring held in Erlangen in October 1984, reflects the interest generated in this area. It comprises 39 papers on topics organised into sections on physiology, pharmacology, traumatic cord lesions, monitoring cortical evoked potentials, monitoring spinal evoked potentials and atraumatic cord lesions. Within these sections are to be found discussions on topics ranging from the use of epidural spinal

evoked potentials to observations on sensory evoked potential changes in experimental injury and disease of the spinal cord. The latter includes scoliosis, trauma, cervical spondylosis with myelopathy, and vascular lesions of the spinal cord. Spinal monitoring in aortic surgery is also discussed. Novel techniques are mentioned, including descending lumbosacral cord potentials elicited by upper limb stimulation (thought to reflect descending propriospinal activity), and a method for lateral column assessment using a peripheral autonomic surface potential. Only one chapter is devoted to the technique of electrical stimulation of the motor cortex and monitoring of the descending motor potential. This method will almost certainly provide the foundations for future developments in monitoring techniques, to complement the existing sensory evoked potentials.

Most of the contributions are brief and inevitably in a volume of this sort with over 100 authors listed, there is considerable repetition. These reservations aside, the volume provides a wide range of personal and practical experience (rather than a comprehensive review) and will be of interest to those involved in this expanding field.

B THOMPSON

A Neurobiologic View of Speech Production and the Dysarthrias. By Ronald Netsell. (Pp 180; £19.00.) London: Taylor & Francis Ltd, 1986.

This account relates largely to the physiological mechanisms of the motor control of speech production in health and disease. There is special attention paid to the acquisition of this fine motor skill and some attention, particularly in chapter 6, which is written with a clinician, JC Rosenbeck, to the pathophysiology and treatment of the dysarthrias. Each chapter is re-printed from various multi-author review editions published during the last five years as "state of the art" reviews. There is thus a tendency firstly for much of the material, especially that relating to general concepts of motor control, to be repeated in each chapter, and secondly for the text to hover in generalisations about, for example, levels in the nervous system, corollary discharges and neuro-transmitters, rather than develop a clear cut progression of ideas as one advances through the book.

Chapter 4, "Speech motor control: theoretical issues with a clinical impact", may be read as more or less representative of