the stretch as cylinders. The authors discuss a number of possible mechanisms for perinatal brain damage based on physiological principles established for the adult. Inevitably some of their ideas are speculative but with more information from neonatal intensive care units and carefully monitored experimental laboratory work, CAT scanning, and so on. It should be possible to establish with reasonable certainty the pathophysiology of the cerebral circulation in the newborn infant. Given this knowledge it is hoped to reduce the frequency with which catastrophic vascular brain damage occurs and to rationalise treatment in affected neonates.

The authors give a lucid account of a difficult and complex subject. The book is beautifully illustrated, has two appendices on postmortem techniques and a subject index. A list of useful references is attached to each chapter. This book is highly recommended and, though intended primarily for the paediatrician, it should be of particular interest to pathologists, obstetricians, and those concerned with perinatal care.

D. I. GRAHAM

**Critical Resection Length and Gap Distance in Peripheral Nerves By Gerhard Orf. (Pp. 91; illustrated; Dm 58.00.) Springer-Verlag: Wien, New York. 1978.**

This slim volume reports the author's results and conclusions of a study on 56 rabbits in which one sciatic nerve was subjected to stretching, amounting to 2 and 10% of the total length of the nerve from a minimum of one day to a maximum of 35 weeks. The nerves were stretched around metal cylinders rather than sectioned and resutured in order to avoid any distortion of the results caused by parenchymal degeneration from neurography. The mechanical responses and the effects on the perception of pain and motor reactions and the changes produced in the target muscles are described. The histological appearances of the nerve at various degrees of stretch as these affect the perineurium and the epineurium, the axons themselves, the vasa nervorum, nerve roots, spinal cord, and ganglia are presented.

The author shows quite convincingly that stretching of the nerve by more than 3% of the total length (the critical resection length) gives rise to significant damage in the nerve trunk from a combination of axonal rupture, increase in intraneural pressure, and compression of the vasa nervorum. As the critical resection length increases progressively towards 10%, retrograde cellular changes are found in the spinal cord and there is progressive delay in axon regeneration within the nerve trunk. Where, however, a nerve is anatomically tethered, as for instance, in the ulnar nerve close to the elbow, then the critical resection length is reduced to 2%. The critical gap distance, which consists of the critical resection length and the extent of retraction, is usually in the region of 8%. The author concludes that there is no place in modern reconstructive peripheral nerve surgery for the use of manipulative auxiliary measures to obtain a tension-free nerve suture on the grounds that the subsequent mobilisation of the limb to a normal position will still give rise to nerve damage if the critical resection length and critical gap distance are exceeded. In all of these cases they recommend interfascicular autografting.

This is a careful and detailed study with copious references to the literature. While exclusively carried out on the experimental animal, it is likely that percentage results can be applied to the human condition, although this will require confirmation in clinical practice. Furthermore, the author found that there was considerable variation in the ability of individual sciatic nerves in these animals to withstand stresses, and it remains possible that their results may not be strictly applicable to nerves in other situations. Notwithstanding, this book makes a valuable contribution to what has hitherto been a rather opinionated subject.

This is a very specialised volume and will be of interest mainly to those involved in peripheral nerve injury and repair to whom I can recommend it thoroughly.

J. P. BALLANTYNE

**Modern Concepts in Brain Tumor Therapy: Laboratory and Clinical Investigations** Edited by Audrey E. Evans. (Pp. 219; illustrated; £25.00.) Castle House Publications: Tunbridge Wells. 1979.

Although the title of this book suggests that it is a critical appraisal of present therapy for malignant brain tumours, it is in fact no more than a disjointed collection of papers, some good, some bad, presented at a conference of the Cancer Clinical Investigations Review Committee. The book has four main sections: (1) fundamental research into therapy, including pharmokinetics, (2) neuropathology, (3) new markers of diagnosis, and (4) methods of therapy including the analysis of response.

The papers in the first two sections are clear evaluations of current knowledge, and are undoubtedly the best of the book. Although some of them are dependent on animal models there is frank acknowledgment that they are not necessarily relevant to man. Most of the papers on diagnosis are good and interesting descriptions of new biochemical markers—CSF sterols and polyanimes, astrocytin, and malignin. Radiology has not been forgotten, but a disproportionate amount of time is spent on arteriography, pneumoencephalography, and radionuclide scanning, techniques superseded by CAT scanning.

The section on treatment contains a realistic appraisal of the aims and activities of the Brain Tumor Study Group, a co-operative endeavour undertaken by the National Cancer Institute. It emphasises the importance of testing preliminary results by controlled clinical trials and reviews the methods for assessing the efficacy of treatment. It also describes the results of some of the group's own therapeutic trials; mithramycin is ineffective, but a combination of radiotherapy and BCNU significantly increases survival. There is no discussion, however, on the philosophical and indeed practical questions concerning the price in human terms. The paper on surgical decompression is poor and contains little evidence to support its claim that bulk removal of the tumour is beneficial. Operation still offers little to the patient with a malignant brain tumour.

One of the contributors maintains that progress in the treatment of brain tumours will come by short steps; this book is indeed a small one. It is of no value to the occasional oncologist and of only limited use to the research worker in this field.

S. L. GALBRAITH