mal. Localization to the affected lobe was based mainly upon the preoperative EEG findings, often supplemented by electrocorticography.

The histological findings were reminiscent of tuberous sclerosis, but this diagnosis was not entirely acceptable because (a) no evidence of adenoma sebaceum or any of the other stigmata could be found either in the patients or in their families, (b) the incidence of mental subnormality and of epilepsy in the families was very low, (c) in most patients the onset of epilepsy was during puberty or later, and (d) there was a trend towards a normal or even raised IQ in the patients. Finally, the histological appearances were far from typical, consisting essentially of a neuronal over-population in the cortex rather than a paucity. Other distinguishing features included a total lack of calcification and of subpial glial 'wheatsheaving', both of which are often found in the tubers of tuberous sclerosis.

The uncovering of these lesions in the main resulted from a policy of resecting as much as possible of the affected lobe in one block, rather than by suction removal which would have precluded a detailed histological examination. Most of the patients were benefited as regards their epilepsy.

The cases therefore appeared to be an unusual type of cortical dysplasia in which circumscribed areas of anomalous neurones and often glia, visible only under the microscope, underlie the clinical and electrical manifestations of a focal form of epilepsy.

APPLICATION OF CRYOTHERAPY IN CEREBROVASCULAR ANOMALIES: AN EXPERIMENTAL AND CLINICAL STUDY

H. A. D. WALDER (Nijmegen) studied the effects of freezing of large vessels (common carotid artery and jugular vein) in the dog. There were no macroscopic changes after the application of the probe at -150°C for five to 10 minutes and, after thawing, normal blood flow was resumed. Significant degenerative changes were apparent microscopically, however, affecting the cellular components of the intima and muscularis after 24 to 48 hours when muscle nuclei were completely resorbed with no subsequent regeneration. In contrast the fibres in the muscularis (reticulum, elastic, and collagen) were intact but straightened, particularly the elastic fibres. The intima became detached from the internal elastic layer and at the transitional area joining normal intima a marked proliferation of endothelial cells was seen. This process, which was delayed four to six weeks after freezing, resulted in an asymmetrical stenosis of the lumen to about a third of its original diameter, often with thrombosis. These findings were confirmed by angiography.

Fusiform aneurysmal dilatation of the dog's carotid artery appeared three to six weeks after the injection of nitrogen mustard. The application of the cryogenic probe to these damaged arterial segments did not cause haemorrhage or other macroscopic change but angiography six weeks later showed partial thrombosis of the vessel or reduction of the dilatation to about normal diameter. Histological examination revealed thrombosis or endothelial proliferation as described above.

Eleven patients with cerebral arteriovenous malformations had been treated by this technique at open oper-

ation, although the author intended eventually to employ stereotaxis. Selection of patients had been influenced by the situation of the anomaly and by the view that age or general condition precluded surgical resection. Illustrative cases were described. One patient came to necropsy three weeks after operation after a pulmonary embolism from a femoral venous thrombosis. The malformation was completely thrombosed. Postoperative angiographic studies of the remaining 10 patients showed total disappearance of the shunt in five cases and considerable reduction in the others.

CRANIOPHARYNGIOMA—A RADIOLOGICAL TECHNIQUE FOR OUTLINING THE ANATOMY OF LARGE CYSTS

J. C. TAYLOR (Derby) presented details of a technique to demonstrate the radiological anatomy of a cystic craniopharyngioma more directly and completely than was achieved by the usual procedures of ventriculography and cerebral angiography. The method was derived from that used to outline cerebral abscess with the fine barium suspension known as Steripaque. The cysts were aspirated through an appropriately situated burr hole and 1 ml. Steripaque was injected. This was repeated as often as necessary, the barium becoming incorporated into the capsule as it is in the capsule of an abscess. Serial cystograms would subsequently demonstrate the size and position of the cyst and its extensions.

Four cases were described and their cystograms were shown. In one series a cyst was clearly outlined which extended through the foramen magnum, although other contrast studies had failed to suggest this. The treatment in these four cases was by radiotherapy after aspiration.

TEN-YEAR EXPERIENCE WITH A NEW METHOD IN THE TREATMENT OF CRANIOSYNOSTOSIS

A. J. M. VAN DER WERF (Amsterdam) had employed two methods to prevent bony regrowth and secondary closure of craniectomy channels in the treatment of craniosynostosis. In six cases dural strips were replaced by fascia lata, and in 23 cases the outer layer of the dura was dissected from the deeper layer and was sutured to the periosteum. The surgically produced 'sutures' remained patent in all cases, in some for as long as 10 years. Appositional bone formation occurred at a later date in those cases in which fascia lata was employed but it was thought that the dural layer method resulted in a better cosmetic result. Dissection of the outer layer of dura was not regarded as presenting difficulty and was the recommended procedure.

FRACTURE-DISLOCATION OF THE PETROUS TEMPORAL BONE

In the course of an investigation of traumatic paralysis of the 5th nerve by J. C. DE VILLIERS (Cape Town) some aspects of the mechanics of crush fractures of the skull were re-examined. He first described, with photographs of specimens, the anatomy of the petrous temporal bone and its relationship to surrounding structures. Horizontal and oblique crush fractures had been produced in eight fixed cadaver heads employing a type of vice used by