cutting had previously suggested that the area of the substantia innominata might be crucial for the success of the operation. In order to obtain a localized lesion in this region he has gone on to implant radioactive yttrium-90 seeds with a stereotactic device under radiological control. The short range of emanation of these seeds made the technique seem appropriate ; electrical and ultrasonic methods may refine it further when the optimal site of the lesion has been established.

How far the operation achieves its therapeutic aim is more difficult to assess. By the yardsticks of mortality and post-operative complications the 90 patients in Knight's series are reported to have done very well, though the impact of the surgical operation on personality and working capacity have still to be assessed in detail. On the central issue of the clinical benefits derived from this complex procedure Knight is refreshingly definite: " The majority of patients suffering from depressive illness can be improved by surgical means when psychiatric treatment fails."

Confirmation of so large a claim would be welcome in view of the distressing and often intractable nature of chronic affective disorders, but the effects of modified leucotomy on the course of these conditions are still controversial. The suggestive but inconclusive nature of the evidence from other studies has been discussed by J. L. T. Birley, who has concluded that " further evaluation of the operation can best be done—perhaps can only be done—by controlled clinical trials."[3] A study of this type would demand the collaboration of physicians and surgeons at several centres if results were to be obtained within a reasonable time. The recently published Medical Research Council's clinical trial of treatments of acute depressive illnesses has shown both the feasibility and the value of such studies in this field.[4] If surgical skill is not to outstrip clinical judgment the case for a controlled, and preferably prospective, investigation is a strong one.

Foetus and Newborn

The time may be coming when the medicine of the unborn foetus will occupy doctors almost as much as the medicine of post-natal life. In a very short time we have passed from regarding congenital malformations or early neonatal death as acts of God to the recognition that they are caused by adverse factors which can be studied and circumvented. Examples are the congenital abnormalities caused by maternal rubella or ingestion of thalidomide, and the death of some babies soon after birth primarily owing to the immaturity of enzyme systems in the lung or liver. Already in intrauterine transfusion of the foetus endangered by rhesus incompatibility we have an example of diagnosis and treatment applied to the unborn. But advances in this new branch of medicine and in the related fields of obstetrics and neonatal paediatrics require new foundations to be laid in studies of the physiology, pharmacology, morbid anatomy, biochemistry, and immunology of the foetus. Following the lead of Barcroft, and his successors such as Huggett and McCance, research workers in Great Britain have made notable advances in the study of the foetus and newborn. In a new issue of the *British Medical Bulletin*[1] recent work in this field is summarized in a series of papers by research workers.

Four of the papers in this issue deal with the problems of placental function and foetal nutrition. In one paper studies of placental morphometry are shown to provide information of importance to the study of placental transfer. Other papers deal with the requirements of an artificial placenta, with retardation of foetal growth by restriction of placental blood supply, and with the related problems of glycogen stores and hypoglycaemic episodes in newborn infants. A further group of papers is on the development of the central nervous system. They draw attention to the great gaps in our knowledge of this subject, which is particularly important for understanding the causes of mental defect and cerebral palsy. But failure of the respiratory functions of the placenta and lung is probably the commonest cause of cerebral damage near the time of birth, and it is certainly the commonest cause of death. Recent advances in understanding the cardiovascular and pulmonary adjustments which take place at birth are described in articles on the activation of the respiratory centre at birth, the properties of the liquid–air interface created by the first breath, and the responses of the pulmonary and systemic circulations.

As the newborn infant emerges soaking wet into a cold world, he requires the means to increase the production of heat to maintain the temperature of his body. Papers in the present issue deal with the mechanisms of heat regulation in newborn animals and the role of brown fat in the metabolic response to cold. From the earliest times keeping the baby warm has been an important part of baby care, but modern studies have shown that rather precise control of environmental temperature is important in lowering the metabolic needs of premature infants, for their surface is large in relation to their volume and so loss of heat is unduly high, while their equipment for respiratory exchange and assimilation of food can be imperfect.

Many of the problems of the newborn infant arise because the metabolic functions of the placenta are no longer available after birth, and enzyme systems have to develop in order to meet the new needs. The induction of enzyme activity and the development of metabolic pathways is certainly fundamental to many of the problems in the developing foetus. To this important subject the late Dr. Michael Dawkins has contributed a masterly paper which deals with the development of metabolic pathways in the liver. As a foreword rightly states, " Many of his friends will regard this *Bulletin* as a tribute to his memory."

Hospital Costing

The new sections of the hospital costing returns, which have just appeared, add some details to the main ones, which were published in December.[1] They give exact unit costs of departments like catering, laundry, power, medical records, physiotherapy, and of administration, and are intended to encourage finance officers to investigate any apparent excessive expenditure in their own hospitals. The results of the departmental costing are, however, summarized in the main returns, and these do provoke some questions. The average cost of maintaining an in-patient in an acute hospital for a week went up by nearly 8% between 1963–4 and 1964–5: from £33 9s. 6d. to £35 17s. 8d. This is about what one would have expected, having regard to the rise in prices and incomes in that period ; most of the cost of main-

[1] *Brit. med. Bull.*, 1966, 22, 1-102.

[1] *Hospital Costing Returns*, Parts 1-3, Ministry of Health, 1965. H.M.S.O.