

as amputations effected therapeutically to arrest gangrene following paronychia or Raynaud's disease.

The longest chapter concerns itself with trepanation and the syncytial Y. He holds that trepanation had no ritual significance (except possibly in the Loire region) but had invariably a therapeutic objective. He finds some interesting parallels to the syncytial Y among living peoples.

The book is profusely illustrated, but some plates add little to the text. The work ends with a glossary and a bibliography. The latter gives a useful list of French and Spanish work in this field; the former arouses curiosity about the readers for whom the book was written. Many names familiar to anybody with an elementary knowledge of biology are glossed; for example, humerus, femur. Others in everyday use in the medical world are glossed, often inaccurately; for example, glioma—a swelling of the nerves! Pathological conditions are given names never used in medical works in English; for example, parantium for paronychia. The translator would seem to be unfamiliar with much of the English medical vocabulary.

Nevertheless, in spite of many shortcomings the work contains much information, especially concerning the author's own observations and conclusions. Its chief defects are its superficial treatment of many topics, its lack of order and critical judgment. It omits any detailed consideration of the confusion caused by the post mortem action of environmental factors on human (and animal) remains and makes no suggestions about topics the further study of which might be most productive. As a serious study of a subject which is attracting increasing attention the book is disappointing. H. HUGHES

EARLY BEHAVIOUR

Brain and Early Behaviour

Development in the Foetus and Infant. Edited by R. J. Robinson. (Centre for Advanced Study in the Developmental Sciences.) Pp. xvi+374. (Academic Press: London and New York, January 1970.) 100s; \$15.

THIS book is a collection of nineteen papers from a study group on the brain mechanisms behind early behavioural development in the foetus and newborn infant, under the aegis of the Centre for Advanced Study in the Developmental Sciences being established at Minster Lovell near Oxford.

It was a multidisciplinary group, which included Heinz Prechtl of Groningen speaking on the brain and behaviour mechanisms of the newborn; Bergström of Helsinki on electrical parameters of the brain during ontogeny; Humphrey of Alabama on the neuroanatomical basis for postnatal repetition of human prenatal activity sequences; Schulte of Göttingen on nerve conduction velocity in relation to myelination and maturity; Wolff of Boston on motor development; Dittrichova of Prague and Petre-Quadens of Antwerp on cerebral sleep patterns; Bronson of California and Bower of Harvard on the development of vision; Lipsitt of Rhode Island and Papoušek of Prague on learning and conditioning in the foetus; Ploog of Munich on primate studies; Sander of Boston on the organization of behaviour; and Robinson of London on cerebral hemisphere function in the newborn. Seventy-five pages are occupied by discussion after the papers. As usual with published symposia, the discussions are difficult to read, but much interesting material would have been lost if they had been omitted. The book is intended to analyse early behaviour from the viewpoint of underlying brain mechanisms, and is expected by Robinson, who edited the book, to interest neurologists, paediatricians, psychologists and biologists.

The section on the smile of the baby in his first six weeks revealed the usual confusion about its interpretation and significance. When it seemed to be suggested that

the baby's smile in response to the mother's overtures, which include visual, kinetic and auditory stimuli, need not be distinguished from facial movements during sleep, Heinz Prechtl aptly asked what the sleeping baby was likely to be dreaming about. As always with these psychological studies, no mention was made of the relationship between the age of smiling and the maturity (and perhaps the personality) of the infant. After all, any paediatrician interested in the development of the infant knows that all mentally defective infants, such as mongols, are later than the average baby in beginning to smile; it would not be surprising if an infant with a high developmental potential were to begin to smile earlier than usual. I have personally seen three such infants who smiled in response to maternal overtures within four days of birth, and who a few days later were vocalizing well in association with the smile. One might add that, as always with these studies, there was no mention of the developmental features which precede the smile—the baby's intent regard of the mother as she speaks to him, his opening and closing of the mouth, his bobbing of the head up and down—until gradually the real smile becomes obvious.

I feel confident that the book will achieve its object. It is bound to be of interest to the neurophysiologist and to those paediatricians who are interested in developmental neurophysiology and in the application of the sophisticated apparatus and the computer so necessary for these studies. It would have been a pity if all the interesting information and provocative thoughts in it had not been made available to those not able to attend the meeting. I am glad to have the book in my departmental library. R. S. ILLINGWORTH

THE MEGALOBLAST

The Megaloblastic Anaemias

By I. Chanarin. Pp. xv+1,000. (Blackwell (Scientific): Oxford and Edinburgh, 1969.) 200s.

THOUGH preceded by the classic clinical papers of Combe, Addison and Biermer, Ehrlich's description of the megaloblast in 1880 was the first definitive pointer to the complex of diseases so ably marshalled by Dr Chanarin. Some idea of the magnitude of his undertaking may be gauged by the references, which total more than three thousand. It will therefore be appreciated that this is a tremendous source of information, dealing in its thirty-six chapters with the basic chemistry, nutritional aspects and metabolism of cobalamins and folates, the physiological and morphological effects of lack of these substances in man and other organisms, and the various clinical disorders associated with megaloblastic anaemia. Such diversification as illustrated by this book highlights the dilemma of the modern haematologist who must range over so many disciplines that he is in danger of becoming a jack-of-all-trades; but Chanarin has mastered the multidisciplinary approach and is particularly well qualified to do so in the sections dealing with folate metabolism, the FIGLU test and the estimation and function of intrinsic factor, in all of which he has made important contributions. This is the first major attempt to synthesize a detailed and comprehensive account of the megaloblastic anaemias and it is remarkable that it has been accomplished by one author.

The diagrams and illustrations are on the whole of high quality, but the megaloblasts facing pp. 352 and 358 do not have the impact of colour—essential for finer diagnostic distinctions. The erythroblasts opposite p. 370 would not be accepted as megaloblastic by every haematologist. One wonders whether the figure on p. 460 (racial distribution of pernicious anaemia) is relevant enough for inclusion, particularly because it is partly contradicted by more valid data in the following pages. A final point of criticism is of the thread of argument on pp. 818 and 819,