

## BOOK REVIEWS

**Kernicterus.** Report based on a symposium held at the IXth International Congress of Paediatrics. Edited by ANDREW SASS-KÓRTSAK. (Pp. xi + 221; illustrated. 68s.) Toronto University Press; London: Oxford University Press. 1961.

It is important to realize that this book is an edited account of a symposium on kernicterus, held at the IXth International Congress of Paediatrics in Montreal in July 1959. It consists of 34 communications dealing with various aspects of bilirubin metabolism and encephalopathy and, although authors have prepared these in a form suitable for presentation in a book, they are essentially short papers given before a 'live audience'. Repetition is therefore frequent yet other aspects are dealt with only superficially. Limited discussion was allowed after each paper, but details of this are not included in the volume.

At the time, this must have been a very up-to-date account and the value of the book would have been increased had a section been included to deal with development in the past two years.

Despite these minor criticisms, the editor, Dr. Sass-Kórtsak, and the publishers, are to be complimented on the production. It is refreshing to have a book on this subject published in Canada and written in English.

The symposium comprised five panels each dealing with one particular aspect of kernicterus and this format is used in the book.

Panel A. Chairman: Bruce Chown. '*Kernicterus of prematurity: Incidence and aetiological factors.*'

Based on living infants and autopsy findings, estimates of the incidence of kernicterus, hyperbilirubinaemia and need for exchange transfusion are made, and the many factors influencing these are taken into account, e.g. sex, birth weight, race and exposure to drugs. It is evident that as yet there is no accepted opinion on these matters and it seems probable that iatrogenic factors may be responsible for differing experience in different centres. The experience in two hospitals is cited. The indication for exchange transfusion was similar in each, yet in one hospital 3% of premature infants required exchange transfusion, whereas in the other hospital 24% did so.

Panel B. Chairman: Wolf Zuelzer. '*Factors influencing the life of the red blood cell.*'

Although the symposium was not concerned with kernicterus due to blood group incompatibility, it is appreciated that any increase in red cell breakdown, whatever the cause, may lead to hyperbilirubinaemia. Drugs may cause jaundice by causing increased red cell

breakdown, but their effect may be modified by the integrity of metabolic pathways in the erythrocyte. These aspects and the mode of action of group specific antibodies are considered. Evidence is also presented suggesting that red cells formed during foetal life may have a shorter survival than those formed after birth.

Panel C. Chairman: G. H. Lathe. '*The metabolism and excretion of bilirubin.*'

It is in this field, during the past decade, that the major advance in our understanding of neonatal jaundice has been made. Bilirubin is insoluble at physiological pH and, before excretion, must be conjugated with glucuronic acid. Its transport in the plasma is accomplished by attachment to albumin, but other substances too, e.g. gantrisin, are also carried in this way. Therefore competition for binding sites on albumin may lead to the displacement of bilirubin and the development of kernicterus at relatively low plasma bilirubin levels. Conjugation with glucuronic acid occurs chiefly in the microsomes of liver cells but, especially in foetal life, may occur in other organs. At the stage of conjugation, too, other factors, e.g. drugs or anoxia, may have an effect, and it is possible that deficiency of glucuronyl transferase is not the only factor responsible for defective conjugation. On the other hand, there is evidence that bilirubin may be excreted other than as bilirubin glucuronide. Little is known of factors controlling the maturation of enzyme systems in the microsomes, nor anything of the transport of conjugated bilirubin through liver cells nor of its excretion into the bile.

All of these factors are dealt with in this the largest section of the book.

Panel D. Chairman: R. Zetterström. '*The pathology of kernicterus and the cytotoxicity of bilirubin.*'

Evidence is presented establishing that bilirubin is cytotoxic by uncoupling phosphorylation from respiration in mitochondria. Oxygen uptake and electron transport are interfered with, but some aspects can be corrected by certain substances, e.g. cytochrome C and D.P.N. Biliverdin, on the other hand, is not toxic, but haematin may be an additional toxic factor in some cases of bilirubin encephalopathy.

Various factors must play a part in determining whether or not bilirubin enters the nerve cells, but the susceptibility of different cells, different animals, and the same animal at different ages, also varies.

Panel E. Chairman: Richard Day. '*Factors influencing the distribution of bilirubin in the body.*'

In this section an attempt is made to explain why there is no simple numerical relation between the

plasma bilirubin level and the risk of kernicterus. Many influences, e.g. the plasma albumin level, the administration of drugs, dehydration, hypoglycaemia, the state of nutrition and the relative maturity, may all be concerned. It is difficult to evaluate the importance of each, and as yet it is not known why, under similar circumstances, one animal may succumb yet another remain unaffected.

All actively concerned in the study of neonatal jaundice will find this book stimulating and of immense value for not only does 'Kernicterus' deal with most aspects of the subject, but it indicates the way in which future research might be directed.

On the other hand paediatricians concerned primarily with the day-to-day clinical care of children will find the content of theoretical rather than of practical value and will probably consider the price of 68s. too high.

**Antibiotics and Sulphonamides in Paediatrics.** By JOSEPH UNGAR and LEONARD HAAS. (Oxford Antibiotics Monographs.) (Pp. vii + 149; 6 tables. 15s.) London: Oxford University Press. 1962.

This comprehensive little book should find a place in the pocket of every doctor who undertakes the care of infants and children. It should be made compulsory for paediatric housemen. While it is essentially practical, the basic principles necessary for the intelligent use of antibiotics are clearly set out.

It is divided into three parts. The first, a brief introduction, deals with general aspects such as the development of bacterial resistance and the use of drug combinations. The middle section is packed with useful information covering all the preparations of value in current use. Taking them singly or in groups, it describes their properties. Stability, toxic effects, absorption and excretion are covered, and are followed by advice on methods of administration and dosage.

The final section is the most controversial. It deals with the management of paediatric infections grouped under anatomical systems. The advice is sound and up to date and contains a brief section on the newborn infant. Some might disagree with the daily use of intrathecal streptomycin in *Esch. coli* meningitis of the newborn, but little else was found with which to quarrel. It is remarkable to find so much of value, so clearly printed in such a small book.

**Vaccins et Sérums.** By P. CHASSAGNE. (Pp. 404. NF. 60.) Paris: Doin and Cie. 1961.

This monograph by Professor Chassagne is another in the series 'Bibliothèque de Thérapeutique Médicale' under the direction of Professor Raymond Turpin. After a rather cursory first part, dealing with immunity in general, the main (second) part describes in detail the various immunological procedures in use in France. The third (and last) part contains useful information on the principal regulations about vaccination in France and a lengthy tabulation of the obligatory and recommended vaccination procedures in most other countries in the world (based on the latest W.H.O. recommendations).

British readers will find the French views on immunization most interesting, if only for comparison with British and American ideas, but there are some omissions which are unexpected even in a French book, e.g. A. T. Glenny's work on primary and secondary stimuli and other principles of immunization, and also Pearl Kendrick's outstanding contributions to the preparation and assay of pertussis vaccine. At a time when the trend in Britain is to reduce the volumes of vaccines to 0.5 ml., it is surprising to find that the recommended second dose of cholera vaccine for an adult is 2 ml., and that the third dose of diphtheria toxoid for a child under the age of 18 months is also 2 ml. There are good accounts of vaccination procedures against tuberculosis, poliomyelitis and rabies, but it is disconcerting to meet descriptions of dysentery bacteriophage (the results being 'sometimes brilliant') and meningococcal vaccine.

The book contains some interesting statistics: for example, there were 3,167 deaths from diphtheria in France in 1945, but only 31 in 1960. In the chapter on tetanus, it is stated that there were 80 cases in the non-vaccinated German Army in Normandy, and 'numerous cases' in the non-vaccinated Japanese Army. The non-vaccinated civilians in the liberation of Manila in the Philippines had no fewer than 400 cases of tetanus.

A major defect, which could perhaps be remedied in subsequent editions, is the lack of references: there is little point in quoting names (and even dates) without providing the means of referring to the original papers or books.

This paper-covered book of 404 pages costs 60 NF. As a useful reference book it should be found in all British medical libraries.

**A Ciba Foundation Symposium on Somatic Stability in the Newly Born.** (Editors for the Ciba Foundation: G. E. W. Wolstenholme and Maeve O'Connor.) (Pp. xii + 393; 63 figures. 50s.) London: Churchill. 1961.

Published proceedings of symposia are of great value to the participants as a permanent record of their deliberations. However, with the growing number of congresses and symposia there should be other good reasons for their publication. In the first place the work reported should be recent, of high quality and better presented as part of a symposium than as an article in a journal. The discussions should be authoritative and stimulating and there should be a theme uniting the original communications and discussions. Finally, publication should be neither so hurried as to give no time for second thoughts nor so delayed that the data has been published elsewhere or superseded. On all these counts it is possible to welcome the publication in book form of this symposium held at the Ciba Foundation in January 1961.

The theme is stated explicitly in the title and the 30 participants, although drawn from many disciplines, were united in considering the stabilizing and adaptive mechanisms which are present to safeguard the transition from intrauterine life to more or less independent existence. The viewpoint is essentially biological and the experimental approach receives the greatest emphasis.