

burn Group of Hospitals for 10 years. The number of cases investigated is over 1,000 a year.

In an illness which might possibly be the result of a virus infection samples are taken on admission. As a routine, throat swabs are inoculated into tissue cultures which are incubated on the wards and paired specimens of serum are collected. Other samples such as stools, CSF etc., are collected when indicated. Thus respiratory infections, aseptic meningitis, exanthemata, and other 'infectious' disease, gastro-enteritis, etc., are included in the series.

The results 1962-69 inclusive are analysed. The times of the year when the various illnesses occur is clearly demonstrated. The types of illness caused by various respiratory and enteroviruses are described and the rashes which may occur are shown.

It has not been possible to investigate rhinoviruses and certain other viruses, but between 200 and 300 cases per annum with positive results have been obtained. A positive result, however, is not necessarily the same as a positive diagnosis of the illness.

L. HOHENAUER (Innsbruck). 'Acute Bronchiolitis.' To be published elsewhere.

W. B. DOIG introduced by PROFESSOR J. H. HUTCHISON (Glasgow). 'The Value of Blood Gas Analysis in Lower Respiratory Tract Infection in Infancy.'

E. ZWEYMÜLLER (Wein). 'The Insensible Loss of Water of the Newborn Infant.' The insensible water loss through the lungs and the total body surface of newborn babies has been measured for the first time directly. The infant was placed in a specially adapted incubator into which air of accurately adjustable relative humidity and temperature was supplied at a given rate. The increase in humidity in the incubator caused by the infant was measured gravimetrically, enabling the mean water loss of the infant during the measuring period of 10 minutes to be calculated. The following conclusions resulted:

(1) The insensible water loss under basal conditions is between 390-460 mg./kg. per hour, or between 6.36-7.47 g./m.<sup>2</sup> body surface per hour.

(2) During the first 24 hours of life the water loss is independent of age.

(3) Values for females are a little higher than for males, but this is on the border of significance.

(4) The mode of sleep greatly influences the insensible water loss, long-sleeping infants tending to lose much less water than short-sleeping infants.

(5) The insensible water loss increases steeply with increasing activity of the infant, by a factor of at least 1.7; in infants who cry intensively this increase is probably much larger.

D. L. KENNAIRD introduced by PROFESSOR K. W. CROSS (London). 'Measurement of Oxygen Consumption and Evaporative Water Loss in Infants with Congenital Heart Disease.' Metabolic rate + evaporative water loss was estimated using a closed circuit apparatus on 60 infants suffering from various forms of congenital heart

disease. Their ages ranged from a few days to 10 months and their weight from 2 to 6 kg.

Metabolic rate + evaporative water loss was raised in infants with large left-to-right shunts and in heart failure. It was also raised in those infants with an increased risk of heart failure, but not in overt failure at the time of study. These infants had a much lower limit to their neutral thermal environment than normal, and if nursed at the upper limit of neutral thermal environment they were found to have a raised metabolic rate. This places an additional strain on an already stressed infant.

Infants with the more severe forms of cyanotic heart disease had a low metabolic rate, and a diminished or even absent response to cold stress. Therefore these infants have an increased susceptibility to cold and should be nursed at the upper limit neutral thermal environment or even above.

S. A. HAIDER introduced by DR. W. DICKSON (Bolton). 'Investigation of Endemic Diarrhoea in the Special Care Nursery'. For over 2 years cases of diarrhoea had occurred intermittently in the Special Care Nursery of the Bolton District General Hospital, for which no cause was found on routine investigation. It was observed that unless the cases were detected early and managed properly some of them became seriously ill. This prospective study was undertaken to evaluate the over-all significance and to assess the clinical, pathological, and therapeutic implications of the endemic diarrhoea. During the observation period of 4 months, 209 babies were admitted to the unit and 44 of them developed diarrhoea. The unaffected babies of similar birthweight and age over the same period served as a standard of comparison.

Analysis of the results showed:

(1) The incidence of diarrhoea was proportionately higher in the babies who had other neonatal illnesses. Small-for-dates babies and male infants were significantly more susceptible to the illness.

(2) Dietetic factors and disaccharide intolerance did not appear to play a significant role in the pathogenesis.

(3) The epidemiological pattern and the clinical features suggested an infective aetiology but no pathogenic bacteria or viruses were cultured from the stools by conventional laboratory techniques.

(4) The polymorphonuclear leucocytic count in the affected cases was not significantly different from that of the unaffected babies in the first 2 weeks of life.

(5) Rapid rise in the serum IgM and also the fall on recovery suggested an infective cause for the diarrhoea.

(6) Rare or yet unknown strains of pathogenic *Esch. coli* or anaerobic pathogenic organisms might have been responsible.

(7) Intestinal antibiotics like neomycin sulphate may be useful in speeding the recovery and controlling the spread of infection in certain situations.

S. HALVORSEN and P. SKJÆLLAEN (Oslo). 'Regulation of Erythropoiesis by Stimulators and Inhibitors. Circulating Inhibitors in Plasma from Newborn Infants' (under consideration for *Acta Paediatrica*.)