Viral and Epidemiological Studies

D. R. GAMBLE (*Public Health Laboratory, West Park Hospital, Epsom*) Epidemiological data suggest that juvenile diabetes may occur in genetically predisposed children but that its onset is associated with, and is probably triggered by, environmental factors. The nature of these factors is at present uncertain but there is growing evidence that diabetes may follow virus infection in animals and it may also do so in man.

The incidence of new cases of juvenile diabetes follows a seasonal pattern with a peak in cases occurring among children aged 9 years or over but not in younger patients. The age incidence increases from birth to a major peak at 11 years and then declines; minor peaks occur at 5 years and at 7 or 8 years. Children who first attend school or play groups before the age of 5 develop diabetes earlier than those who start school at 5, and in these children the peak incidence occurs sooner, at about 5 or 6 years. Environmental factors are clearly responsible for these differing patterns and, apart from virus infection, such factors as diet, stress, environmental temperature, physical activity, social class, and bacterial infections may be involved, either singly or in combination. Data will be presented on the effects of season, year, and age, on the incidence of juvenile diabetes, and the relationship of these findings to environmental factors will be discussed.

Diagnostic Laparotomy and Splenectomy in the Staging of Hodgkin's Disease

J. A. WHITTAKER (*Welsh National School of Medicine, Cardiff*) Forty-eight patients seen in a two-year period had histologically proven Hodgkin's disease. All were assessed clinically and radiologically and staged according to the recommendations of the Rye conference¹. Fourteen patients with stage 4 disease were excluded from the study and the remainder (34) underwent diagnostic laparotomy and splenectomy to determine the extent of Hodgkin's disease within the abdomen.

The preoperative staging was compared with the final staging which took account of operation findings and histological data from spleen sections and from lymph node and liver biopsies. Eighteen patients (53%) changed stage, including 15 advancing to a later stage. Whereas 10 of 11 patients with early clinical disease (stage 1-2) and systemic symptoms (weight

loss, sweating, fever, pruritus) advanced stage, only four of 15 without systemic symptoms did so. Clinical assessment of spleen size was unreliable and 13 patients who did not have palpable spleens had histological evidence of disease. Clinical assessment of liver involvement appeared more satisfactory and the only liver biopsies showing Hodgkin's disease came from patients whose livers were clinically enlarged. Lymphangiography proved more reliable in assessing intraabdominal lymphadenopathy than in many previously reported series with fewer than 10% of lymphangiograms incompatible with the operative findings. False negative findings were more frequent than false positives, but were only seen in patients whose disease was confined to coeliac axis or splenic pedicle nodes. No mortality and little significant morbidity resulted from the operation.

Laparotomy is recommended for exact staging in all patients with Hodgkin's disease confined to lymph nodes and is critically important in patients with systemic symptoms and disease apparently localized above the diaphragm.

Reference

¹Rosenberg, S. A. (1966). *Cancer Res.*, 26, 1310.

A Simplified Approach to Metabolic Bone Disease

R. P. TOWERS (*St Vincent's Hospital, Dublin*) Increasing appreciation of the importance and frequency of metabolic bone disease has led to greater demands by clinicians for precise information. The deficiencies of radiological and biochemical investigation mean that bone biopsy, with particular reference to the demonstration of osteoid seams, is necessary. As decalcification obscures the distinction between calcified bone and uncalcified bone, the use of undecalcified sections is necessary, but the preparation of these required special techniques and skill not always found in the routine histopathology laboratory.

Attention is drawn to the method published by Tripp and Mackay in 1972. Based upon a technique by Gomori in 1933, this procedure involves immersing pieces of alcohol-fixed bone in 2% aqueous Ag NO₃ in the dark for 48 hours, followed by a reducing process which leaves a black deposit of silver at the interface between bone and osteoid. Routine decalcification and paraffin embedding permit staining by a variety

of methods, van Gieson giving a particularly attractive result, with osteoid seams clearly demarcated.

While the quantity of osteoid can be expressed as a subjective opinion, more precise mensuration is often desirable, commonly making use of point-counting methods. An alternative which has been found satisfactory is to project sections stained as described above onto paper, outlining the complete trabeculae and the osteoid seams, cutting these out and weighing them, whereby the percentage of osteoid can be easily calculated. Estimation of total bone, necessary in studying osteoporosis, can be done using the same principle.

The above procedures are recommended as being satisfactory and within the competence of a non-specialized laboratory.

Reference

Tripp, E. O., and Mackay, E. H. (1972). *Stain Technol.*, 47, 129.

Granulomatous Orchitis due to Histoplasma Capsulatum Masquerading as Sperm Granuloma

M. MONROE (*Richmond Memorial Hospital, Richmond, Virginia, USA*) A case of disseminated histoplasmosis with death resulting from adrenal necrosis is presented. The patient, a 69-year-old white male, had in the week prior to death been treated for the 'influenzal syndrome', and following intravenous administration of saline solution, improved symptomatically. His death was sudden and unexpected. At necropsy massive adrenal necrosis was demonstrated, with *H. capsulatum* visualized by the Gomori methenemine silver stains. Other organs containing granulomata but no organisms were heart, lungs, liver, spleen, and hilar lymph nodes. A pure culture of *Histoplasma capsulatum* with tuberculate chlamydospores grew out of the adrenal. Two years prior to death the patient underwent left orchidectomy for a swollen testis, diagnosed clinically as a chronic abscess and pathologically as sperm granuloma. Review of the testicular lesion, stained by the Gomori methenemine silver stains technique, revealed a few but unquestionable *H. capsulatum* in the granulomatous tissue. No cases of histoplasmosis of the testis could be found in the AFIP files. This case emphasizes the necessity of staining all granulomatous lesions, and particularly those of the testis, by the Gomori methenemine