

ded on biochemical tests, but this difference was minimized when identification depended upon a technique such as Lancefield grouping. Performance in antibiotic sensitivity testing did not differ significantly with the two specimen types.

Urinary cytology in the assessment of progress after renal transplantation

MARGARET BISSON, P. BISSON, D. SPRATT, AND SYLVIA DAVIES (*Renal Unit, Whipton Hospital and Area Department of Pathology, Exeter*) Cytological examination of the urine has provided immediate indication of early rejection after renal transplantation. The appearance of activated lymphocytes and immunoblasts in the urinary deposit correlates well with other parameters of rejection, such as reduced renal function and increased peripheral blood lymphocyte count. Other abnormalities, including tubular necrosis and infection, can be identified and differentiated from those of rejection. Results can be reported within an hour after receipt of a fresh sample of urine.

Hyphomycetes in the hands of laymen

D. O. HAINES (*Royal Naval Hospital, Haslar, Hampshire*) Chance consultation in 1973 led the author into an otherwise foreign territory when asked to provide services to a (non-microbiological) products assessment laboratory. The service required was to prepare and standardize fungal spore suspensions during comparative testing of US and British standards for resistance to mould growth of electronics equipment and assemblies.

This, because of the now recognized infectivity, especially in certain chronically ill or iatrogenically induced sub-immune workers, of some of the organisms used, especially species of non-pathogenic *aspergillus*, has brought about a re-examination of the principles, scientific validity, and technical performance of these tests.

Examination of mortality statistics and PHLS reports has not enabled any direct link between cases of *Aspergillus* infection and work in factories employing mould growth resistance tests to be made. The author would be grateful for reports from morbid anatomists and microbiologists coming across patients suffering from *Aspergillus* infection or allergy whose occupation may have been the source. The address for any such reports, which will receive 'medical and commercial confidential' handling is: Dr D. O.

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Leucocyte ascorbic acid in abnormal leucocyte states

G. M. G. BARTON AND O. S. ROATH (*Department of Pathology, General Infirmary, Salisbury, and Department of Haematology, Southampton University*) The leucocyte ascorbic acid (LAA) content is the most commonly used method of examining body vitamin C status, but no corrections or interpretations are made relating to the type or maturity of the leucocytes or whether a recognizable leucocyte disorder is present. Disorders with a high preponderance of one type of leucocyte were therefore investigated, noting that abnormal or immature cells might be present. The LAA was estimated in cases of infectious mononucleosis, reactive leucocytosis, and various types of leukaemia. Note was made of patients on cytotoxic drugs. Results show that the LAA content in most of the leukaemias, acute and chronic, was abnormally low. In infectious mononucleosis, some 50% were low. In patients with leucocytosis there was a wide scatter of levels. About half of the patients on cytotoxic drugs showed low levels. This might reflect their underlying condition. A significant depression of LAA values was found in pregnant patients. In none of these subjects was there any evidence of overt scorboutism or deficiency of vitamin C in the diet. It is therefore concluded from these studies that LAA resides largely in normal mature polymorphs, and that its assay in abnormal leucocyte states may be misleading as an index of body vitamin C status.

Value of microbiological examination at necropsy on the newborn

ROSALINDE HURLEY AND J. PRYSE-DAVIES (*Institute of Obstetrics and Gynaecology, Queen Charlotte's Hospital for Women, London*) Microbiological examination was made on material taken at necropsy on 585 of 613 (95.4%) neonates over a seven-year period. The specimens examined included cerebrospinal fluid, heart blood, and bronchial swabs. Bacteriological studies were made routinely, and virological studies where indicated by the necropsy findings. The microbiological findings, particularly those relating to neonatal meningitis or septicaemia, will be

described briefly, and the value of the investigations as a routine adjunct to necropsy will be illustrated.

Grade of histological differentiation, glutamate dehydrogenase activity and alpha-fetoprotein production in human hepatocellular carcinoma

P. P. ANTHONY (*Bland-Sutton Institute of Pathology, Middlesex Hospital, London*) C. L. VOGEL AND R. I. GLAZER (*Emory University, Atlanta, Georgia, USA*) and K. R. MCINTIRE (*National Cancer Institute, Bethesda, Maryland, USA*) Activity of glutamate dehydrogenase (GDH) in the liver and serum levels of alpha-fetoprotein (AFP) were correlated with the degree of histological differentiation in cases of human hepatocellular carcinoma to see if a metabolic behaviour pattern, similar to that seen in experimental animal tumours, could be detected.

GDH activity was measured spectrophotometrically in tumour tissue as well as in adjacent normal or cirrhotic liver in 19 patients. AFP levels were determined in these as well as in a further 163 patients by qualitative immunodiffusion and quantitative radioimmunoassay.

No differences in GDH activity were detected between normal or cirrhotic liver tissue. In hepatocellular carcinoma tissue enzyme activity was significantly reduced and this decrease was proportionately greater in poorly differentiated tumours. In this latter group qualitative immunodiffusion for AFP was more frequently positive and quantitative radioimmunoassay showed higher serum levels. Concurrent estimations of serum protocollagen proline hydroxylase, glutamic-oxalacetic transaminase, and alkaline phosphatase showed elevated levels in most patients irrespective of the grade of tumour.

These data suggest that patterns of metabolic behaviour exist in human hepatocellular carcinoma which can be related to the degree of differentiation and growth rate of the tumour.

Fatal post-traumatic vertebral-basilar ischaemia

R. A. GOODBODY (*Department of Neuro-pathology, Southampton University General Hospital*) Hutchinson and Yates (1966) reported spasm and thrombosis of an extracranial carotid artery as being responsible for fatal cerebral infarction. Animal experiments have suggested that simple spasm of these arteries may be