The Association of Clinical Pathologists: 81st general meeting

The 81st general meeting of the Association of Clinical Pathologists was held at Imperial College, London, on 26, 27, and 28 September 1968. A symposium on 'Alcohol' included papers on 'Breath alcohol analysis', 'Chemical determination of alcohol', 'Bacterial production of alcohol', 'Fallacies in the interpretation of blood alcohol values', and 'Medico-legal aspects'. A second symposium contained papers on 'Infections in the newborn', and the symposium held jointly with the Association of Clinical Biochemists was on 'Factors influencing the normal range in the clinical laboratory'. The popular buzz groups provided opportunities for informal discussions by small groups on a variety of topics and there was a slide seminar on 'Soft tissue lesions'. The Presidential Address, by M. G. Nelson, was on 'Automation in the laboratory'. Abstracts of some of the other papers follow.

THE INFLUENCE OF ORAL CONTRACEPTIVES ON THE PRESENCE AND PERSISTENCE OF *Candida albicans* AND β -HAEMOLYTIC STREPTOCOCCI IN THE VAGINA

C. A. MORRIS (Bristol) Preliminary observations on the vaginal flora of 291 women attending a family planning clinic are recorded in the Journal (*J. clin. Path.*, 1967, 20, 636).

Further studies have been made on this same population and samples collected by domiciliary visits at intervals of one and two years, the results being analysed statistically.

Patients with asymptomatic candidiasis on one occasion were significantly more likely to have *Candida albicans* again when sampled a year later than were women with no yeasts on the first occasion. This principle applied also to the carriage of β -haemolytic streptococci of Lancefield's groups B and D.

There was no significant difference in the incidence of *C. albicans* in preliminary and final samples collected. The persistence and new infection rate with *C. albicans* was not significantly higher in patients taking oral contraceptives than in other women, even following prolonged use of these hormones. The highest incidence, not quite significant, occurred in a small population taking a lynoestrenol/mestranol preparation, indicating that products of predominant oestrogenic activity may contribute to the establishment of vaginal candidiasis.

There was a significant association of *C. albicans* with β -haemolytic streptococci groups B and D.

It is suggested that common environmental factors favour the carriage of *C. albicans* and β -haemolytic streptococci in the vagina and this is probably largely independent of methods of contraception. These species may persist in the vagina for many months without the patient developing symptoms and signs of infection.

A NEW APPROACH TO THE INVESTIGATION OF SCALP RINGWORM IN LONDON SCHOOLCHILDREN

YVONNE M. CLAYTON AND GILLIAN MIDGLEY (London)
During the past two years studies were carried out by

the Department of Medical Mycology of St. John's Hospital for Diseases of the Skin on the incidence of scalp ringworm in children attending primary day schools in five London boroughs. The investigations were undertaken with the cooperation of the local health departments either as a result of following up cases referred to the department or after direct requests from the school health authorities.

The scalps of all the children in each school were examined for hair loss, for fluorescence under a Wood's lamp, and samples from each child were taken for culture studies using 3 in. plastic massage brushes. A brush was passed through the hair six times and then replaced in a numbered polythene bag. On return to the laboratory, cultures were made by pressing each brush into the surface of Sabouraud's dextrose agar medium contained in standard size petri dishes. Children with clinical signs of infection produced fungal colonies from every point of the brush. Cultures from carriers showed only 1 to 10 colonies. In classes where cases of scalp ringworm were present, scalp carriage rates of between 12% and 30% were found whereas in other classes in the same school the carriage rate recorded was between 1% and 5%.

Twenty-one schools were visited and over 10,000 children were investigated using this brush-sampling technique. The species responsible for scalp ringworm in the various schools were *Microsporum audouinii*, *M. audouinii* var. *rivalierii*, *M. canis*, *M. ferrugineum*, *Trichophyton sulphureum*, *T. violaceum*, and *T. soudanense*.

A NEW MEDIUM FOR THE INVESTIGATION OF SALMONELLA OUTBREAKS

D. SHANSON (Westminster Hospital, London, introduced by B. W. LACEY) A new medium containing magnesium chloride (4.3 g%), novobiocin (6.8 mg%), and cobalt sulphate (11.8 mg%) in MacConkey base has been found highly selective for *S. paratyphi B* and all the common salmonellae responsible for food poisoning in Britain. *S. paratyphi B* and all 34 food poisoning salmonellae tested, including *typhimurium*, *enteritidis*, *panama*,

brandenburg, stanley, and anatum, showed no reduction in viable count compared with MacConkey's medium. The growth of salmonellae was somewhat slower than on ordinary MacConkey agar but most produced colonies of 1 mm diameter at 22 hours and only five required incubation for 36 hours. Six of the 41 *Salmonella* species tested failed to grow (*typhi*, *paratyphi A* and *C*, *cholerae-suis*, *gallinarum* and *pullorum*) but all are rare causes of food poisoning in Britain. All the faecal flora was prevented from growing apart from occasional strains of lactose-fermenters and some paracolons. Inocula of one million organisms of *Pseudomonas pyocyanea*, *E. coli*, *Proteus mirabilis*, *vulgaris* and *morgani*, *Klebsiella aerogenes*, and *Shigella sonnei* were completely suppressed. The new medium was simple and reproducible from batch to batch.

An outbreak of *S. enteritidis* food poisoning amongst nursing staff allowed a comparison of the results from the new medium with those from deoxycholate-citrate agar (DCA). Each sample of faeces from 640 people was examined in two laboratories, one employing selenite F and the new medium and another making orthodox use of first class DCA and selenite F. The total number of salmonellae isolated from the new medium was 36 compared with only 22 from DCA.

The new medium appeared to be a distinct advance on any other for the investigation of salmonella food poisoning.

AN APPRECIATION OF THE BRUCCELLIN SKIN TEST

C. H. L. HOWELLS (Wolverhampton) The paper describes an epidemiological and serological survey of brucellin on volunteers. Each had venepuncture and received 0.1 ml of brucellin (Olin, 1935) intradermally, using a disposable tuberculin syringe and needle. Details of age, occupation, consumption of unpasteurized milk, contact with cattle, and any history of brucellosis were noted. Participants suffering from brucellosis were excluded. Reactions were measured 48 hours later (positive tests = 10 mm erythema). Second venepuncture was done three weeks later to determine whether there had been any antibody stimulation. Agglutinations in phenol saline and mercaptoethanol, Coombs test, and complement-fixation tests were performed at Colindale, Truro, Northallerton, and Wolverhampton.

Proportion of positive reactions was greater in farming areas and increased with age. Consumption of unpasteurized milk and contact with cattle were associated factors. Four to seven per cent of healthy young adults might have been exposed to *Brucella* organism in the past, as positive skin reactions persisted after circulating antibody disappeared. Serological tests were more valuable than skin tests in assessing level of infection in community. In the survey, antibody was detected more easily with agglutination and Coombs tests than with mercaptoethanol and complement-fixation tests. This finding was expected in healthy volunteers since the latter tests indicate active infection and the former measure residual antibody.

It was concluded that the brucellin test is a poor indication of disease since many with positive tests did not

possess antibody and some with negative tests did. Positive tests in farming areas were of little diagnostic significance since many of the healthy population were positive. Stimulation of antibody by brucellin was a further disadvantage. Caution therefore is needed in interpreting serological tests in anyone previously skin tested.

Brucellin appeared to be less useful than serological methods in epidemiology, while in diagnosis its use might be entirely misleading.

AN ASSESSMENT OF SERUM ^{57}Co CYANOCOBALAMIN AS AN INDEX OF VITAMIN B_{12} ABSORPTION

D. DONALDSON AND P. T. LASCELLES (London) A technique has been developed for assaying accurately the low levels of ^{57}Co cyanocobalamin obtained in the serum during the conventional Schilling test. Emphasis is placed on the length of time (approximately two hours) required for obtaining reliable data in counts that are only slightly above the background. The maximum radioactivity was found by serum tolerance tests to occur at eight hours. Correlation between the eight-hour serum levels and 24-hr urinary excretion was studied in 96 patients and the data subsequently were subjected to mathematical analysis.

Patients studied in the survey include those with pernicious anaemia, with and without neurological involvement, malabsorption and postgastrectomy states, undiagnosed peripheral neuropathies, patients with hypopituitarism and myxoedema, and folate-deficient epileptic patients on treatment.

By serum counting it was possible clearly to demarcate patients with pernicious anaemia from the normal controls, but pernicious anaemia (part two, with intrinsic factor), malabsorption syndrome and postgastrectomy patients, and folate-deficient epileptic patients on treatment fell into an intermediate range which could not be differentiated from the normals.

A further group, namely, eight hypopituitary and myxoedematous patients on replacement therapy had significantly higher serum and urine levels than the normal controls. No obvious explanation was apparent.

The value of counting serum radioactivity in Schilling tests is shown to be of particular value where urine collection is inaccurate, where there may be contamination of urine with extraneous radioactivity, and where there is the possibility that other isotopes have been given to the patient.

INVESTIGATION OF THE CELLULAR DEFECT IN VITAMIN B_{12} DEFICIENCY

D. G. CHALMERS (Cambridge) By flash labelling with tritiated thymidine freshly aspirated human bone marrow, it is possible to determine, in individual cells, their morphological category, their content of DNA, and whether they were in DNA synthesis at the time of aspiration.

Previous investigations of pernicious anaemia have shown a failure of DNA synthesis in a proportion of cells in this condition, and a pile up of cells in G_2 .

In the knowledge that RNA synthesis, as measured by