

of the Nervous System (if sufficient Applicants) on Fridays at 12 noon. (5) Clinical Demonstrations on Methods of Examination (if sufficient Applicants), Tuesdays and Thursdays at 12 noon.

For further information and syllabus apply to J. G. Greenfield, Dean of the Medical School.

JOINT BOARD OF RESEARCH FOR MENTAL DISEASES.

CITY AND UNIVERSITY OF BIRMINGHAM.

Annual Report of the Laboratory for the Year ending March 14th, 1929.

[Abridged.]

THERE have been no changes in the staff during the year.

General.—Work during the past year has centred around chronic infections of the nasal sinuses and intestinal tract. The relation of these to local damage of the nervous system and endocrine imbalance *via* a disturbed pituitary have been investigated, histologically by the careful examining and sectioning of *post-mortem* sinus material, bacteriologically by the agglutination reaction, chemically by determinations of the basal metabolism during sleep and of the chloride content of the cerebro-spinal fluid as indicative of low-grade meningitis.

Bacteriological.—Of 328 bacteriological examinations of *fæces* and urine we have recovered two typical and one atypical Dysentery Y organisms. Also on 15 occasions we have found Salmonella organisms differing only by absence of agglutination or in some other minor points from pathogenic paratyphoid organisms. *B. Friedländer* has occurred 29 times and *B. fæcalis alkaligines*, *B. alkalescens* and *B. proteus* each four times. Much work has been done on nasal sinus bacteriology, the specimens all being collected personally by the Director at operations for irrigation of suspected sinuses. 790 specimens (including swabs and controls) have been examined from 73 cases. 68/104 sphenoids, 60/97 ethmoids and 68/90 antra gave organisms, the remainder being sterile. *Staphylococcus albus* and *aureus* totalled 103, diphtheroids were common, *B. Hofmann* being present in no less than 52 instances. In 37 specimens organisms of the intestinal group were isolated, and streptococci from 73.

As in previous years, a large proportion of new admissions give positive agglutination to the para-typhoid group of organisms. Of 549 new admissions, 112 gave positive results, *i.e.*, 20.4%. Since it has been shown that the agglutination titre disappears much more rapidly in mental hospital patients than normal, the above figures indicate even more strongly the importance of gastro-intestinal infection in the early stages of mental disorder, and, therefore, in the *ætiology* of mental disease. Of 176 specimens from the Monyhull Colony 30 were positive, *i.e.*, 17%, which points to a possible *ætiological* relationship of gastro-intestinal infection in early life to mental deficiency. Of a total 877 Widal examinations 243 were positive. This does not include vaccinated subjects, but does include a few repeats of the same cases. Of 968 Wassermann reactions, 217, *i.e.*, 22.4%, were positive, and of these 5/167 were from the Monyhull Colony (*i.e.*, 3%, which is low in comparison with the very varied published results for mental defectives). Of 95 throat swabs for K.L.B. only 3 were positive. Work on the bacteriology of the intestinal tract of animals with sinus infections is in progress.

Many positive serological reactions have been followed by repeat examinations. One case of high Gaertner was about 250 Oxford units on each of 18 occasions examined. 16 positives remained positive on subsequent examinations. There was usually, however, an extraordinary variation in the quantitative titre; 33 positives afterwards became negative, and 7 originally negative, examined for other purposes, later were positive. The further investigation of such cases is somewhat complicated owing to the vaccine treatment by T.A.B. being often employed on account of its clinical value.

Histological.—As has been previously found, about half of the number of sphenoidal sinuses examined *post-mortem* show gross macroscopic inflammatory

changes of the mucosa (22/51). 124 specimens of cerebro-spinal fluid have been examined cytologically to assist the correlation of changes in the permeability of the brain membranes and to follow the results of treatment. Experiments are in progress in order to detect areas of pathological change by injection of dyes into the cerebro-spinal system.

Chemical.—The investigation of basal metabolism during sleep has been continued. Although this has involved much work, we are not yet in a position to correlate the findings. The investigation of the permeability of the brain membranes has been continued and supplemented by similar investigations of animals under treatment. A method has been evolved for the estimation of the oxygen content of the blood, using an apparatus of the Haldane type which we have modified for greater sensitivity and use with small quantities of blood. 10 specimens of human and 20 of animal bloods have so far been investigated. The Fleischl-Meischl hæmoglobinometer has been used to check the hæmoglobin content of the blood in each case. The cholesterol content of the blood and differential fat analysis of the adrenals are being investigated in animals following injection of a paratyphoid vaccine. By modifying the technique of existing methods a satisfactory process of analysis of cerebro-spinal fluid for chloride requiring only 0.15 c.c. of fluid has been evolved, and so far 40 specimens have been examined. The results are as follows (normal 725–750 mgrm. per 100 c.c.): Average of our results (40 specimens)—718. Only one specimen was high (780 mgrm.), 34 were below 725 (lowest 684). These findings corroborate the theoretical consideration upon which the research was undertaken, that a low-grade meningitis is very common in mental hospital patients.

Post-mortem Technique for the Examination of Nasal Sinuses.

Apparatus required: Skull coronet, fine tenon saw, large trephine not less than 2 in. diameter, brace or large handle for ditto, wooden or metal guide for ditto, hammer, straight chisel, stout knife curved on the flat, Hobbies' treadle fretsaw.

The brain is removed with the minimum amount of damage.

The trephine guide is fixed so that the anterior part of the pituitary fossa is roughly central. By means of the trephine a circular saw-cut can then be made about 1½ in. deep. The occipital bone is chiselled through at the base of the saw-cut, the chisel passing deeply, as horizontal as possible, under the sphenoid block. By additional chiselling the other bony attachments are cut through and the soft parts severed by the curved knife. The block can then be removed and placed into Kaiserling solution. After fixation it is divided by a medial saw-cut with the fretsaw, thus exposing the sphenoidal sinuses.

The ethmoidal sinuses are opened by the above procedure, and should be examined both on the sphenoid block and that left behind in the skull (usually a part of the posterior ethmoidal cells comes away with the sphenoid block).

The frontal sinuses are opened by chiselling into the corner of the anterior fossa opposite the root of the nose.

The trephine is re-inserted into the hole and the circular cut continued down to the hard palate. After removal of central *débris* the antra can be examined and a note made of the condition of the mucosa.

By suitable chiselling into the temporal bone, the portion containing the middle ear can be wrenched away with lion forceps and examined.

THE ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION AND THE
GENERAL NURSING COUNCIL FOR ENGLAND AND WALES:
MENTAL NURSES AND STATE REGISTRATION.

An interesting debate took place at the 15th Annual Meeting of the National Asylum Workers' Union at Blackpool on the stalemate position between our Association and the General Nursing Council for England and Wales in regard to the recognition of the Association's mental nursing certificate for State registration.

It arose on the presentation of the Executive Council's Report on July 10, and those interested will find it fully recorded in the *N.A.W.U. Magazine* for August, 1929.