

and their great help afforded me at all times. I also beg to thank Professor E. E. Glynn, of Liverpool University, for his kindness in taking the photomicrographs of the first case.

Current Literature.

An Investigation into the Bacteriology of Dysentery in the Madras Lunatic Asylum (Civil Assistant-Surgeon M. Kesava Pai, M.D. *Indian Journal of Medical Research*, vol. iii, No. 1, July, 1915).—As the dysentery of armies in the field closely resembles the type prevalent in asylums, this paper is of some interest at the present time.

The opening paragraphs of the paper consist of references to other papers treating of the incidence of the bacillary type of the disease both in this country and in India. The summary of these paragraphs is as follows:—

In this country observers have already proved that asylum dysentery is exclusively bacillary in type, and that with the exception of six cases in which the Shiga bacillus was isolated by Eyre, all the others have been found to be due to the mannite-fermenting types. At El Tor in Arabia, Ruffer and Willmore isolated mannite-fermenting types from all cases but one from a large number of pilgrims suffering from the disease.

In India, on the other hand, amoebic dysentery is much more common, and among the bacillary types occurring the Shiga type of bacillus is more common than is the case in this country. In 81 cases of bacillary dysentery investigated by Forster most of the infections were due to the Shiga type, the Y bacillus being the next most common. Of 14 strains isolated by Wells at Hazaribagh Jail, 4 were of the Shiga type, 9 Flexner, and 1 Y bacillus. Of 13 strains isolated by Greig and Wells, 4 were of the Shiga type and 9 Flexner. They observed that in the bacillary cases the organism could only be detected when there was blood or mucus in the stool, and that the excretion of bacilli was sometimes intermittent. All these observers remark on the unreliability of the agglutination test in diagnosis.

The author then describes the work carried out by him on cases in the Madras Lunatic Asylum. Of 136 cases examined for bacillary dysentery from the beginning of 1911 to the end of November, 1914, 54 gave positive results. The Shiga bacillus was responsible for 18 of these, and mannite-fermenting bacilli for 36. Of the 82 negative cases 20 were examined in the diarrhoea stage, and were not passing any mucus or blood. The technique employed in the examination of the stools was as follows:—

“A little mucus from the stools was rinsed in three successive watch-glasses, each containing sterilized normal saline to free it, as far as possible, of the coli organisms normally present in the stool. With a sterilized bent glass rod as spreader, the material was then rubbed well over the surfaces of three MacConkey's plates in succession, without charging the rod a second time. The plates were incubated for twenty-

four hours, at the end of which time the non-acid colonies were sufficiently evident in the midst of the red colonies of the different types of *Bacillus coli* normally present in the faecal discharge. Though the rule was to find the acid colonies considerably larger in number than the non-acid colonies there were instances when the plates were covered with an almost pure growth of *B. dysenteriae*. Six to twelve of the dysentery-like non-acid colonies were then planted into a corresponding number of Durham's fermentation tubes containing neutral red, bile-salt, lactose peptone water, from which twenty-four hours later the organism was sub-planted into the different neutral red sugar media used for the classification of strains."

By this method the dysentery bacilli are easily detected in the culture from the blood and mucus, but could not be cultivated from the chronic stage of diarrhoea. Another important consideration was the time elapsing between the passing of the stool and the making of the culture, and also its method of preservation. The sending of the whole stool to the laboratory five miles away was the least satisfactory, many hours elapsing between the passing of the stool and its examination. Subsequently only the mucus was collected from the stool and sent to the laboratory in a test-tube packed in ice. This gave better results, but the best results were obtained by making the plate culture in the asylum itself.

During the course of these experiments the Shiga type of bacillus isolated both in the asylum and from patients in and near Madras invariably only produced acid in glucose and galactose. The Flexner type produced acid in glucose, galactose, maltose, mannite, and indol in sugar-free bouillon with the exception of two strains which failed to produce acid in maltose. The Y type showed a greater variance, especially with regard to their acid-producing powers in raffinose and maltose, while one strain produced acid in dulcitate.

A series of agglutination reactions were carried out with the sera of patients at different stages of the attack with their own and other strains of *B. dysenteriae*. The results obtained were unreliable and by no means characteristic.

Owing to this unreliability, not only as a diagnostic measure, but as a proof of causal relationship, the agglutination reaction of the strong polyvalent serum of the Lister Institute against the different strains isolated by the author was tried. These results were uniformly satisfactory.

All the strains were clumped by this serum in dilutions of 1 in 100 (the macroscopic method being used), and the end-point of some of the strains was as high as 1 in 2,000.

These results were controlled by non-lactose-fermenting organisms isolated from dysentery stools producing gas in glucose, a typhoid-like organism isolated from the urine of a convalescent typhoid patient, strains of *B. coli* from urine and faeces, a non-lactose-fermenting organism from a dysenteric stool, *B. typhosus*, and *B. paratyphosus* A and B. In no case was agglutination complete in a dilution of 1 in 100, and in two cases only, one of *B. coli* from a stool, and one of a non-lactose-fermenter from a dysenteric stool, was it complete in a dilution of 1 in 50.

Relapses have been seen in a number of cases in the asylum, and second attacks in the same patients due to different organisms. Having proved that the asylum cases were mostly bacillary, immunization was

tried, a polyvalent vaccine prepared from all strains isolated in the asylum being used. In 1913 a large number of the inmates of the asylum were inoculated with two doses each (125 and 250 million). The results were not satisfactory and a fresh vaccine consisting of two-thirds Shiga and one-third mannite-fermenting strains was tried. The results obtained were no better.

Twenty-six cases were investigated outside the asylum. Of these the Shiga bacillus was recovered from 8, Flexner from 2, and the Y bacillus from 5. Of the 11 negative cases 3 were proved to belong to the amœbic type.

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NEW WOUND THERAPY.

TO THE EDITOR OF "THE JOURNAL OF THE ROYAL ARMY MEDICAL CORPS."

SIR,—I wish to bring to the notice of R.A.M.C. officers at home and abroad the following treatment for septic wounds:—

Mix equal quantities of pure ichthyol and glycerine, spread on boric lint by means of a camel-hair brush, and apply to the wound. Dress the wound once daily.

If there is also suppuration from a sinus, as in the case of a bullet wound, syringe out with pure *sp. vini rectificat*; and in this case dressing with gauze is preferable to boric lint. This treatment produces a healthy granulating surface in a few days and does not cause any irritation of the wound.

The daily dressing has a great advantage over fomentations which necessitate frequent changing and disturb the patient, besides prolonging suppuration. The less moisture about a wound the better.

I have almost discarded that barbarity the drainage-tube. The results obtained by this ichthyol treatment are most brilliant.

I am, etc.,

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