A DIPLOCOCCUS FROM THE URINO-GENITAL TRACT.

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THE organism we describe in this communication is one which is not infrequently met with in the urino-genital tract, yet appears to have escaped notice in the standard works on bacteriology. It is a diplococcus in no way allied to the pneumococcus, yet the two organisms may be, and indeed have been, confused.

Distribution.—We have isolated the organism from the urine of women, children, and much less commonly male adults, as well as from the vagina, and we have obtained pure cultures of it from pus from the interior of the uterus. It appears to be particularly common in the urine of small children; in an examination of carefully taken catheter specimens from 11 children with epidemic diarrhoea we met with it in 8 cases.

Morphology.—The organism appears in films from the tissues as a diplococcus. It may be present in the pus in enormous numbers, and is readily taken up by the leucocytes. In broth media it is found in pairs and short chains. Lanceolate and bacillary forms are very common both in solid and liquid media. The organism retains the stain by Gram's method. Neither in the tissues nor in cultures have we seen any appearance of a capsule.

Cultural characters.—Serum agar, agar slopes, and agar plates gave translucent pin-point colonies of the streptococcal type. The colonies are frequently somewhat coarser in the first cultures on agar plates, the subcultures yielding a profuse growth of very delicate colonies. Gelatin slope gives a profuse growth without liquefaction. Broth yields a general turbidity. Litmus milk is turned acid and completely decolourised in 24 hours, while we have observed this change to occur in six hours. A solid clot is generally formed in about three days. The complete and rapid decolourisation of litmus milk is the most noticeable and constant cultural characteristic. Neutral red broth is unaltered by some strains, while others produce a green fluorescence. Litmus salicin, dextrose, lactose, mannite, maltose, and saccharose are all acidified in from 24 to 48 hours. Litmus raffinose remains neutral for 24 hours, but as a rule becomes decolourised later. His's serum inulin medium is unaltered, but the organism grows well in it. The coccus grows abundantly on subculture, on all the ordinary media, and retains its vitality. An agar culture kept at the laboratory room temperature for three months grew readily on subculture and gave all its original cultural characters.

Pathogenicity.—The organism may be present in the urine without other evidence of disease. In one case it was obtained in pure culture from the urine of a man, aged 25, with a pyonephrosis and abundant pus in the urine. In another case it was the sole organism found in the persistent cervical discharge of a woman suffering from peritonitis who recovered without surgical interference after treatment by a vaccine prepared from the coccus.¹ The agglutination test performed with the sera of two patients from whom the organism was isolated was in both instances negative.

The following inoculations were made into animals. A suspension of 3 c.c. of normal saline solution was made from an agar culture. Of this 0.5 c.c. was injected intraperitoneally into each of two mice. One mouse became ill and was killed in 24 hours, the other died suddenly ten days later. No evidence of disease was found in either animal, but the organism was recovered from both in pure culture from the blood stream and from the peritoneum. Two c.c. of the same suspension were injected into the vein of a rabbit and no effect was produced. A third mouse was inoculated with the organism recovered from the first mouse without ill-effect; it was killed four weeks later, but the coccus could not be recovered from the tissues.

Remarks.—In its staining properties, its morphological

appearances, and in the nature of its colonies on agar this organism closely resembles the pneumococcus, yet in every other respect the two bacteria are widely different. It should hardly be necessary to insist that the diagnosis of a pneumococcal infection can only be made after full cultural and other investigations, yet we venture to think that the frequency with which the pneumococcus has been reported from the urine and from vaginal discharges depends upon the mistaken identity of that organism with the one we have described; in fact, we have evidence that this mistake does occur. The organism is one not infrequently met with, and may be unaccompanied by any evidence of disease. In a certain proportion of cases, however, it is associated with the ordinary phenomena of inflammation and may be the sole organism detected. The coccus appears to have little or no pathogenic action on mice or rabbits.

SPLENOMEGALIC POLYCYTHÆMIA WITH CYANOSIS.

(OSLER'S DISEASE OR MALADIE DE VAQUEZ.)

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A CASE of this extremely rare disease is worthy of record.

In March of this year I was called to attend a patient aged 56; he was stated to be suffering from "a cold on the chest." At first sight the thing that at once struck one was the patient's extreme cyanosis. The lips and ears in particular were nearly black, and the whole countenance was livid. The patient was seated comfortably in a chair, and instinctively one felt, without being able, perhaps, to trace the steps of the mental process, that one was face to face with something that did not "fit in" with any ordinary condition.

The respirations and general demeanour of the patient at once put out of court any suggestion of acute respiratory or cardiac trouble. The cyanosis was not the distinctive colour of that of congenital heart disease, which, so far as I know, is simulated by no other pathological condition. Advanced emphysema, although we know it may be accompanied by extreme cyanosis and comparative comfort, was negatived by the obvious absence of anything approaching an emphysematous shaped chest. One could see at a glance that there was no clubbing of the fingers.

The patient's immediate history was unimportant. He resided on the south coast, and had been in town for two or three weeks' change. Some days before he had caught a cold which had settled on his chest. He was spitting up some mucus. His past history was as follows. For many years he has suffered from migraine. The attacks were very severe and prostrated him for two days at a time. Fifteen years ago he had some oedema of one ankle and leg, and consulted Dr. Frederick Taylor for that and the migraine. Dr. Taylor told him that he was sound organically, and under treatment the oedema disappeared and he derived marked benefit so far as the migraine was concerned. About nine years ago he consulted the late Dr. J. F. Payne, who corroborated what Dr. Taylor had said. Some two or three years later he again saw Dr. Taylor, who examined him and pronounced him free from organic disease. Up to six or seven years ago, then, we are justified in assuming that the present disease had not manifested itself.

About four years ago he had a sudden attack of vertigo and lost consciousness for about one minute. At intervals since he had occasionally felt giddy, but had never again "lost himself." For several years his friends have been remarking that he was getting "a better colour," having previously been pale in complexion. His life has been regular and his habits abstemious. He does not smoke. Beyond coughs and colds occasionally, he has had no other illnesses, and up to the time of my seeing him had not the remotest idea that anything was wrong. To slight dyspnoea on exertion and so on constipation he paid no attention. The patient had never been abroad.

On examination there was general cyanosis, most marked in the ears and under mucous membranes. The gums, tongue, pharynx, and inside of the mouth generally were of a deep purple colour. The gums bled with extreme ease,

¹ The husband of this patient suffered from a urethral discharge, but he avoided, possibly unwisely, a bacteriological examination.