

of urinary sediment soon after being evacuated by patients and freely diluted with water. The following phenomena were then observed: The inside of the egg, which is granular and semi-transparent, begins to show movements of contortion almost immediately; this movement, which is at first jerky and intermittent, is gradually communicated to the whole embryo, and finally becomes continuous. In some cases two polar cells can be seen (one at each pole), which are from time to time taken up in the body of the embryo, and again become separated, but generally remaining at the poles of the egg. At the end of fifteen minutes, on an average, the embryo suddenly breaks out of one of the sides of the ovum; it now contracts actively upon itself, somewhat in the shape of a dumb-bell, until it disengages itself completely from the shell, and, once free, it swims actively about and disappears from the field. I could never see embryos moving in their shell so long as the urine was undiluted; and if the urine was kept over-night and the sediment examined next morning, freely diluted with water, all the eggs were also found dead.

BARRACK-ROOM SORE THROAT.

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MAJOR MCNAUGHT'S paper on the bacteriology of sore throat (*JOURNAL OF THE ROYAL ARMY MEDICAL CORPS*, September, 1906) has "taken the wind out of my sails," as I was preparing an article on the same subject.

In the Orange River Colony "septic" sore throats are very rife among the troops during the winter, and I paid some attention to the matter. As the men are housed in huts, which are comparatively new, it would seem that the local conditions of barrack-rooms, which Lieutenant-Colonel Caldwell refers to in his "Military Hygiene," are not at fault; but it is rather remarkable that these sore throats are common during the dry, dusty winter, and show a tendency to disappear as soon as the rains begin. When the epidemic of sore throats at Bloemfontein was at its height, several cases of facial erysipelas occurred among the troops, and I learned that it existed in the town also. There is no military destructor here, and refuse is dumped in various places, more or less round the cantonments. I examined some of this refuse and found innumerable staphylococci in it—an organism which was also present in practically every case of sore throat. Of course, it is a very ubiquitous coccus, but putting all these facts together would lead one to think that the bad throats and the erysipelas were probably due to infection by dust. Anybody who has been in South Africa will admit that it is impossible to avoid a close acquaintance with dust, and that the face and fauces are bound to share in this unpleasant intimacy. It is significant that the laying of the dust

by the rain is followed by a diminution of the number of cases of sore throat. Nearly all the cases examined had congested fauces, while the tonsils were red, swollen, and exuding a dirty yellowish-white discharge. Several had a membrane, but in no case was *Bacillus diphtheriæ* found, and the subsequent clinical features of these cases showed that the negative bacteriological diagnosis was correct as regards diphtheria. Hoffmann's bacillus was occasionally present, but the organisms which were never absent were staphylococci.

I was much interested to see that Major McNaught had found a yeast in one case, as I also isolated one from a throat that was suspected to be diphtheritic. There does not seem to be much literature on the subject of pathogenic yeasts, but they do exist, and probably some bad cases of sore throat are due to them, as at Lincoln. They appear to float about in the air; though my laboratory attendant suggested that they might get entangled in the throat during the imbibition of beer!

The yeast I found had cells of various shapes, but most of them were ovoid and about the size of a red blood corpuscle. Each showed an envelope containing granular protoplasm, in which vacuoles were very evident, and many of these vacuoles had in them a rapidly moving dot. In a hanging drop preparation the cells showed undoubted slight motility, and budding was very clearly seen. On beer-wort an abundant, thick, whitish, creamy growth occurred in twenty-four hours at 22° C., while on agar the growth was of similar appearance, but was scanty and formed very slowly. From a broth culture acid was obtained, while the organism stained well with Gram and the ordinary colouring agents. Its pathogenicity on animals was not tried.

I think the theory of dust infection is, in this country, more probably right than the suggestion that the fauces and tonsils are devitalised by the cold weather, and that the "sore throats" thus caused become septic owing to their being attacked by the organisms which are apt to flourish in the too frequently neglected mouth and teeth of the soldier.
