

NOTES ON A CASE OF BLACKWATER FEVER.

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I MUST express my indebtedness to Dr. Theodore Fisher, of Clifton, for permission to publish the case and also for clinical notes supplied.

The patient was a missionary who had recently returned from Africa. He described an attack of "hæmoglobinuric fever" from which he suffered in September, 1894, when at Benguella on the west coast. That was his first attack. After returning from a cycle ride from Bath to Bristol against a strong wind he was taken ill with vomiting and fever running up to 102.6° F., but without an initial rigor. The next day at 2 A.M., however, he had a severe rigor lasting twenty minutes in which the temperature went up to 103°. On the third day a second rigor occurred, the temperature going up to the same height as before. He continued to vomit at intervals and his condition was considered to be very serious. That evening his urine was noticed to be black, like porter, and his temperature was then 102.6°. On the fourth day the vomiting ceased, the rigors also left him, and the temperature went down to 99°, where it remained for several days. The dense, porter-like colour of the urine remained for fifty hours from its first appearance before any change became evident, when it began gradually to clear up.

Examination of the blood was made twenty-four hours after the last rigor. The count showed the presence of 4,000,000 red cells and 6200 colourless corpuscles per cubic millimetre. The white corpuscles were in the following proportion: polymorphonuclear, 75 per cent.; lymphocytes, 18 per cent.; large mononuclear, 4 per cent.; and coarsely granular eosinophile, 3 per cent. The examination of the fresh specimen of blood showed absence of rouleaux formation; there was very little distortion of blood-cells either in shape or size, and no organisms were visible. In specimens of blood fixed in Gulland's solution and counter-stained with methylene blue the following changes were noticed. The most obvious point was the presence of a considerable number of faded or phantom-like red cells which looked as if they had had the colour washed out of them and presented only a thin pink rim and centre, whilst the more normal cells around them were deeply stained with eosine. These corpuscles were not distorted or in any way broken up, neither did they contain any malarial organisms. In the examination of 6 or 8 films of blood about 8 definite intra-corpuscular malarial organisms were seen, all of a spherical shape and containing a dot of black pigment. All of them were small, none of them nearly filling up the cell they inhabited. In one place a rosette-shaped organism had evidently just broken up, as there was a collection of 8 or 10 spore-like bodies loosely arranged around a small mass of pigment. There were a considerable number of faintly stained extra-corpuscular bodies, mostly in groups of 2 or 3 from which could be traced delicate flagella. The blood which had been collected in the pipette of a Thoma Zeiss hæmocytometer was re-examined after two days and there was a great increase apparent in the extra-corpuscular variety, as numbers of actively motile organisms were seen hurrying about the field. These when examined with an oil immersion lens were seen to be spherical and not bacilli, although owing to the free dilution of the blood with saline solution at the time of its withdrawal satisfactory permanent preparations could not be obtained.

Examination of the urine was unfortunately not carried out until it had almost regained its normal colour. Spectroscopic examination revealed a faint hæmoglobin band. The reaction was acid. The specific gravity was 1015. There was no albumin or reducing substance. There was a dirty-brown sediment. Microscopical examination showed the presence of some reddish-brown granular tube-casts and also numbers of small rounded cells resembling the bladder epithelium cells and containing some refractile spherical bodies. There were no blood corpuscles. Scattered about the field were seen small clusters of oval transparent bodies collected in groups of about 4 or 6, and sometimes smaller individuals were seen radiating from the central group.

They stained easily and deeply with methylene blue and were seen to be growing by gemmation. The urine, which had been kept in a stoppered bottle, was examined at the end of a few days and the number of these bodies was found to have considerably increased. Some of the sediment was added to a solution of glucose in water and put in a warm place. When examined at the end of forty-eight hours the fluid was turbid and there were considerable numbers of these torulæ, but there was no decrease in the specific gravity of the liquid nor was there any gas formation. Thus, although they seemed to be some kind of torula, yet it was evidently not the common yeast plant. Some such bodies as these have several times been noticed by other observers in the urine of patients suffering from hæmoglobinuric fever, but their origin and significance are quite unknown.

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AN OUTBREAK OF ACUTE DERMATITIS DUE TO ZINC SALT AND ASSOCIATED WITH CLOTHING.

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ON Nov. 23rd, 1898, a man came to the out-patient department of the General Hospital, Birmingham, complaining of a rash on the front of his right wrist which presented the appearance of a patch of urticaria. It was associated with itching, was apparently present on no other part of the body, and there was nothing to distinguish it from ordinary urticaria. The patient ascribed the condition to a new blue frieze overcoat which he had only put on that morning, and he mentioned that several of his fellow workmen who had also been provided with similar new overcoats that morning were suffering from the same complaint. He was immediately succeeded by another man in the same employ who exhibited a rash, also in the region of the wrists and corresponding to the margins of the sleeves. This case presented a somewhat different appearance from the former, and appeared to be a more advanced stage of the same condition. On one of the second patient's wrists was a patch about 1½ in. by ½ in. of numerous minute cream-white spots, and in the middle of each of these there was a hair follicle which stood out as a dark centre. The margin of the patch was outlined by a narrow zone of hyperæmia. This patient complained of a pricking rather than an itching sensation. The second man was followed by others who presented the same appearances on one or both wrists or on the neck. In one of the cases a patch was present on the back of the calf of the right leg, corresponding to the level of the lower margin of his overcoat. For some reason he had omitted to put on his leggings that morning, and as the day was wet the moisture from his coat had soaked through his trousers. Towards the evening other men similarly affected arrived, their cases exhibiting a still later stage in the condition. There were now patches averaging from ¾ in. to ¼ in. They were of a uniform cream-white colour, evidently resulting from the spreading and fusion of the individual minute white spots which I have already mentioned. The patches were slightly depressed and the appearance was now strongly suggestive of necrosis of the epidermis following the application of a strong irritant. On the margins of some of the necrosed patches was an inflammatory zone, while in places the minute white spots were to be seen as before. Tactile sensation at this stage was impaired but not lost. Some of the patches had a somewhat bluish tint, probably due to the dye of the coat. Altogether 21 patients were seen on Nov. 23rd. On the next day (Nov. 24th) the old cases appeared for inspection, in addition to which there were 13 new cases. The old cases more or less presented the same appearance as on the previous evening, but tactile sensation was now entirely lost in the necrosed areas. It was noticed that the appearances were most marked in the neighbourhood of existing abrasions. In 3 cases there was some spreading inflammation up the arm with enlarged glands in the axilla.

There seems no doubt that the cause of the condition described was to be found in some irritating substance contained in the new overcoats. The day being wet the moisture absorbed some of this deleterious material and so