WATER CONSERVANCY IN WAR.

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I have been so much struck by the impracticable suggestions on this subject put forward since the South African campaign, that I am emboldened to give the following short account of the method I employed in January, 1900, to effect this end, when Staff Medical Officer of the camp at Slingersfontein, situated some thirteen miles east of Rensberg.

Nearly all the writers deal with methods of filtration, boiling, or addition of chemicals, but practically ignore the immense utility of preserving as pure as possible an already existing, fairly satisfactory source of supply. In saying this, however, I wish to entirely associate myself with those competent to judge of the immense importance of every possible sanitary precaution being taken. It is difficult to magnify the value of sound sanitary advice given to our combatant brethren, if acted upon.

Though it would be only too easy to relate many examples of the absolute ignorance or indifference to sanitary rules which I witnessed, such as men bathing and washing their clothes in the drinking water supply, I will content myself with one typical experience only.

A temporary camp was formed at Glen Siding, on the Modder River, about fifteen miles north of Bloemfontein. I found the water-carts there being filled from a nice-looking open conduit, which was fed by a clear, ample spring rising between rocks 300 yards away. It was by far the best source of supply I had seen during the war. It flowed, unfortunately, through a plantation, in the seclusion of which I found three men washing their dirty clothes in the conduit, between the spring and the water-cart, which was being filled under the watchful eye of a sentry.

On January 17th, 1900, the 9th (Colchester) Bearer Company left Rensberg, where we had been a week, experiencing desultory fighting and learning a few of the vagaries of that excellent, if somewhat difficult, animal the mule, and after a rather trying march of only thirteen miles arrived at Slingersfontein. Here we formed camp under General Clements, D.S.O., who afforded me every assistance, not only in the work I am about to describe,
but also in giving the necessary orders following sanitary suggestions made by me.

Early on the 18th I inspected the water supply and found that it was obtained from two sources—Raasfontein and Slingersfontein Farms, about one and a half miles apart.

The former was a natural spring, rising half a mile from Raasfontein Farm, which flowed through open conduits across a cattle track into a rough earth-sided tank; from there it was conducted in iron pipes to a well at the farm, the overflow from which fed the cattle pond. Slingersfontein was a small trickling brook, which came by natural underground filtration from a dam on higher ground, some 400 yards away.

On the 19th I obtained General Clement's consent to begin the work. All troops were ordered to water at Slingersfontein for two days, and a party of the 18th Royal Irish was placed at my command for work at the Raasfontein supply. With this regimental party and the intelligent assistance of some of my own bearer company we soon cleared the spring, conduits and tank of all dead vegetable and animal matter (a dead sheep amongst other things), and completely surrounded them with barbed and other wire. From the commencement of the iron piping to the well we were safe from contamination.

The well and the ground near I had cleaned, and the sides of the former raised to prevent the access of surface water. The water soon cleared after the necessary disturbance caused by our cleaning of the conduits and well, and an excellent supply was ready by the time promised. A sentry was posted at the well to prevent any dipper being used, except a clean bucket, kept for that purpose only.

The troops being now ordered to use the Raasfontein well only, I tackled the Slingersfontein supply, little dreaming of the amount of work before me. I asked for no assistance, the bearer company then, as always, working intelligently and willingly. After first surrounding with a wire fence the whole brook from its source, where it broke ground, I built a clay dam across the outlet, and rebuilt it many times before I realised the destructive and levelling power of retained water. The little brook, within forty-eight hours, became a fair-sized pond, and needed all our engineering skill to provide the right amount of overflow. (See fig. 1.)

From the farm I obtained a large wooden box (their rain water tank) and about fifteen feet of two-inch iron piping. The pipe was let into the side of the box, the inner end, coming to the centre, was covered by a perforated jam-tin, and the box filled with brick,
broken to the size of hazel-nuts. It was then sunk in the pond and the end of the pipe carried through the dam. A clear, good water supply rewarded our efforts. The water below the dam was used for cattle, horses and mules. The overflow, collecting in a natural hollow, was much appreciated for bathing at the upper part, and for washing clothes lower down. Later on the supply was so good that the Royal Engineers erected above the dam a field pump, which is seen in the illustration. The three separate snap-shots are overlapped to give a panoramic view, and will, I trust, make the letterpress easily understood.

Jam-tins for cups were so much appreciated by the troops that they were often commandeered; one is being used by Tommy, a spare one being on a post near.

Slingersfontein Farm was ransacked by the Transvaalers before we arrived. I had the building and surrounding ground cleansed and used it for a temporary hospital, and also as a cook-house and mess-room for the bearer company; the trying dust-storms were thus avoided. The operating tent is under the trees, with the bearer company’s camp beyond.

I could not end this short account without acknowledging the valuable assistance I received from my excellent second in command, Major H. C. Thurston, C.M.G., R.A.M.C.

Remarks.—The special rules and suggestions I would call attention to are as follows:—

(1) Preserve immediately all existing good sources of water supply from contamination by men and animals.

(2) Boil all water when possible, and fill water-bottles with tea whenever occasion permits.
(3) An N.C.O. (artificer) from the Royal Engineers should be attached to the R.A.M.C. "field unit" (modified bearer company and field hospital combined). He would accompany the Staff Medical Officer (sanitary officer) to all sources of water supply, and attend to pumps and supervise the conservancy of existing supplies.

(4) The present water-carts should be condemned, no matter how serviceable they may appear, and a water-cart adopted which should have no internal angles, and should slope to a well, at the bottom of which a three-inch cock should be fitted to enable the interior to be rapidly and thoroughly cleansed. All water should be thoroughly strained through an easily cleansed canvas filter before it enters the cart. A filter might be fixed at the tap if a practicable one can be found. The Berkefeld so quickly fouled that it was often useless. A trustworthy N.C.O. should always be in charge of the water-cart. His duties would be to take every opportunity to keep it filled with good water, regulate the distribution, and be responsible for its cleanliness.