

“ON THE RELATIVE EFFICACY OF THE DOULTON,
BERKEFELD AND BROWNLOW FILTERS.”

By ANDREW WILSON, F.R.S.E.

THE following communication has reached the Editors of the *Journal of Hygiene* with the request that it shall be published¹:—

DEAR SIR,

In your issue of January 1908, Vol. VIII. No. 1, appears an article by Dr William Bulloch and others headed “On the relative efficacy of the Doulton, Berkefeld and Brownlow Filters.”

This article states on page 67 that “of 10 ‘Berkefeld’ Filters only one gave a sterile filtrate on the first day, the remaining nine gave contaminated filtrates within 15 minutes, that is to say as soon as the filters were started.”

To this statement I, as scientific adviser to the Berkefeld Filter Co., Ltd., 121, Oxford Street, London, W., must take objection on the grounds that the filters were not properly treated by Dr Bulloch, and that the results of his tests are therefore absolutely worthless and must give readers the idea that the “Berkefeld” Filter is not a reliable germ-proof filter.

The treatment of the “Berkefeld” Filter by Dr Bulloch to which I take objection is, that, according to his own statement on page 65 of his article, the filters were sterilised by heating to 120° C. for one hour in the metal cases supplied by the makers.

It is a well-known fact that in consequence of the composition and the mounting of the “Berkefeld” Filtering Cylinders, they do not stand sterilisation in an autoclave at 120° C. The only way effectually to sterilise the cylinder without injuring it is to place it in a vessel with

¹ The reply to this letter follows; see pp. 35—45. ED.

cold or tepid water and to boil it for about one hour. These directions are given in all the lists issued by the Berkefeld Filter Co., Ltd., and I have not the least doubt that by sterilising the filtering cylinders in an autoclave at 120° C. the cylinders or the cement by means of which the cylinders are fixed in the metal mounts have been cracked, so much so that, although invisible to the naked eye, the cracks allowed the free passage of the test organisms.

The same mistake in the sterilisation of the filtering cylinders was made by Dr Kirchner, to whose investigations, which lie as far back as 1891, reference is made by Dr Bulloch. I wish to point out moreover that Dr Kirchner's work has been severely criticised by Professor Gruber, of the Hygienic Institute of the University of Vienna (and now Professor and Director of the Hygienic Institute of the University of Munich), who in a paper published in the *Centralblatt für Bakteriologie und Parasitenkunde*, Vol. XIV. 1893, p. 488, has shown that the results are entirely incorrect.

Having supervised exhaustive experiments with the "Berkefeld" Filtering Cylinder, I have always found that any cylinder properly sterilised, yielded an absolutely sterile filtrate. I take this opportunity of drawing your kind attention to the report to the *British Medical Journal* (No. 1768, Nov. 17th, 1894, and No. 1934, Jan. 26th, 1898) by Dr Sims Woodhead, which may be looked upon as a standard work on the testing of Filters.

As it has now come to my and the Berkefeld Filter Co.'s notice that Messrs Doulton & Co., Ltd., Lambeth, London, S.E., are making use of Dr Bulloch's article for advertising purposes, I consider that the Berkefeld Filter Co., Ltd., is entitled to the publication of this explanation in your paper independently of any action they may be advised to take to restrain the circulation of incorrect statements which tend to depreciate the "Berkefeld" Filter.

Yours faithfully,

(Signed) ANDREW WILSON.