

DOCUMENT 19 (Online Companion)

John Snow, "The Cholera near Golden Square, and at Deptford¹

To the Editor of the Medical Times and Gazette.

Sir,—As soon as I became acquainted with the situation and extent of the late outbreak of cholera in Broad Street, Golden Square, and the adjoining street[s], I suspected some contamination of the water of the much frequented street-pump in Broad Street, near the end of Cambridge Street: but on examining the water, on the evening of the 3rd **inst.**, I found so little impurity in it of an organic nature, that I hesitated to come to a conclusion. Further inquiry, however, showed me that there was no other circumstance or thing common to the circumscribed locality in which this sudden increase of cholera occurred, and not extending beyond this locality, except the water of the above pump. I found, moreover, that the water varied, during the next two days, in the amount of organic impurity it contained; and I concluded that, at the commencement of the outbreak, it might have been still more impure. I requested permission, therefore, to take a list at the General Register Office of the deaths from [321/322] cholera registered during the week ending September 2, in the subdistricts of Golden Square, Berwick Street, and St. Ann's, Soho. Eighty-nine deaths from cholera were registered during the week, in the three subdistricts. Of these, only six occurred in the four first days of the week, four occurred on Thursday, the 31st **ult.**, and the remaining seventy-nine on Friday and Saturday. I considered, therefore, that the outbreak commenced on the Thursday; and I made an inquiry, in detail, respecting the eighty-three deaths registered as having taken place during the last three days of the week. On proceeding to the spot, I found that nearly all the deaths had taken place within a short distance of the pump. There were only ten deaths in houses situated decidedly nearer to another street pump. In five of these cases the families of the deceased persons informed me that they always sent to the pump in Broad Street, as they preferred the water to that of the pumps which were nearer. In three other cases the deceased were children who went to school near the pump in Broad Street. Two of them were known to drink the water, and the parents of the third think it probable that it did so. The other two deaths, beyond the district which this pump supplies, represent only the amount of mortality from cholera that was occurring before the eruption took place. With regard to the deaths occurring in the locality belonging to the pump, there were 61 instances in which I was informed that the deceased persons used to drink the pump water from Broad Street, either constantly or

inst.: The current month, September.

ult.: The previous month, August.

¹ *Medical Times and Gazette* (23 September 1854): 321–22.

occasionally. In 6 instances I could get no information, owing to the death or departure of every one connected with the deceased individuals; and in 6 cases I was informed that the deceased persons did not drink the pump water before their illness.

The result of this inquiry, then, is, that there has been no particular outbreak or prevalence of cholera in this part of London except among the persons who were in the habit of drinking the water of the above-mentioned pump-well.

I had an interview with the Board of Guardians of St. James's parish, on the evening of the 7th inst., and represented the above circumstances to them. In consequence of what I said, the handle of the pump was removed on the following day. The number of attacks of cholera had been diminished before this measure was adopted, but whether they had diminished in a greater proportion than might be accounted for by the flight of the great bulk of the population I am unable to say. In two or three days after the use of the water was discontinued the number of fresh attacks became very few.

I have not thought it necessary to inquire into the very large number of deaths that occurred in the week ending 9 September, as I deem the above inquiry sufficient to establish the cause of the outbreak. I have, however, inquired respecting a few deaths in that week, which took place a little further from the pump than the others; and I found that, in all the cases but one, the persons had been drinking water from that pump. A great number of work-people who were employed in and near Broad Street died of cholera at their own homes in other parts of London. Mr. Marshall, surgeon, of Greek Street, was kind enough to inquire respecting seven workmen, who had been employed in the manufacture of dentists' materials at Nos. 8 and 9, Broad Street, and who died at their own homes. He learned that they were all in the habit of drinking water from the pump, generally drinking about half a pint once or twice a-day, while two persons who reside constantly on the premises, but do not drink the pump water, have only had diarrhoea.

The pump-well in Broad Street is from 28 to 30 feet in depth, and the sewer, which passes a few yards from it, is 22 feet below the surface. This sewer proceeds from Marshall-street, where some cases of cholera had occurred before the great outbreak.

I am of opinion that the contamination of the water of the pump-wells of large towns is a matter of vital importance. Most of the pumps in this neighbourhood yield water that is very impure and I believe that it is merely to the accident of the cholera evacuations not having passed along the sewers nearest to the wells that many localities in London near a favourite pump have escaped a catastrophe similar to that which has just occurred in this parish.

In the autumn of 1848, when cholera had just commenced in London, a number of cases occurred about Bridge Street, Blackfriars; and it was found by Mr. Hutchinson, Surgeon, of Farringdon Street, that the well of St. Bride's pump had a communication with the Fleet ditch, up which the tide flows. I have a strong impression that many a case of typhoid fever occurring in a respectable neighbourhood has its origin in the water of the neighbouring pump.

On the 12th instant, I went to Deptford, to make inquiries respecting a most fatal outbreak of cholera which had taken place there, being confined to two streets, called New Street and French's Fields. I found that this outbreak of cholera was caused by an accidental contamination of the drinking water, occurring in an unusual manner. The people in these two streets, in which about ninety deaths from cholera occurred in a few days, have the water of the Kent Water-works; but for three or four weeks before my inquiry, they told me that the water, when it first came in, had generally smelt highly offensive, and frothed like soap-suds. They had been in the habit of throwing away a few pailsful of what first came in, and retaining that which came afterwards, and was pretty clear. On inquiring in all the surrounding streets, viz., Wellington Street, Old King Street, and Hughes' Fields, I found that there had been no alteration in the water. I conclude, therefore, that some leakage had taken place into the pipes supplying these two streets, during the intervals when the water was not turned on. There are no sewers in these streets, and the refuse of all kinds, consequently, saturates the ground in which the pipes are laid. There were a few cases of cholera in and near New Street just before the great outbreak.

I have very nearly concluded the inquiry respecting the comparative influence of the water of the Lambeth Water Company and that of the Southwark and Vauxhall Company, of which I gave some account in the Number of the *Medical Times and Gazette* of the 2nd inst. The result, which I shall communicate when completed, will show that among the population having the impure water of the Thames, from Battersea Fields, the mortality from cholera has been ten times as great as among the population having the improved water from Thames Ditton.

I am, Sir, etc.

John Snow, M.D.
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