John Snow

Physician, epidemiologist, and anaesthetist. Born in York, UK, on March 15, 1813, he died in London on June 16, 1858, aged 45 years.

The Lancet wishes to correct, after an unduly prolonged period of reflection, an impression that it may have given in its obituary of Dr John Snow on June 26, 1858. The obituary briefly stated:

“Dr John Snow: This well-known physician died at noon, on the 16th instant, at his house in Sackville Street, from an attack of apoplexy. His researches on chloroform and other anaesthetics were appreciated by the profession.”

The journal accepts that some readers may wrongly have inferred that The Lancet failed to recognise Dr Snow’s remarkable achievements in the field of epidemiology and, in particular, his visionary work in deducing the mode of transmission of epidemic cholera. The Editor would also like to add that comments such as “In riding his hobby very hard, he has fallen down through a gully-hole and has never since been able to get out again” and “Has he any facts to show in proof? No!” published in an Editorial on Dr Snow’s theories in 1855, were perhaps somewhat overly negative in tone.

Even allowing for Lancet founding Editor Thomas Wakley’s surprising contempt for Snow, the obituary was extraordinary in its brevity and its failure even to mention cholera. The excoriating Editorial 3 years earlier had been provoked by Snow’s support for what were known as the “nuisance traders”. Snow told Members of Parliament that the foul smells from processes such as tanning and soap boiling were not capable of producing acute fever or epidemic disease in an individual. Wakley, incensed at what he saw as an attempt to block important public health reforms, accused Snow of unscientific thinking.

The following year, The Lancet published Snow’s paper “On the Supposed Influence of Offensive Trades on Mortality”, which used the Registrar-General’s Weekly Returns of Deaths in London to argue that workers in the nuisance trades suffered no more ill health than those in other occupations. Wakley followed this, however, with an Editorial that stated there was no doubt that the noxious gases and vapours of the capital’s air exerted “a most efficient and malignant influence in the causation and aggravation of disease”.

Wakley may have been the most outspoken of Snow’s critics but his views were shared by most medical men at the time: miasma, or the stench from decaying vegetable and animal matter, was widely held responsible for epidemic disease. Snow’s On the Mode of Communication of Cholera, first published in 1849, set out the then radical idea that cholera was a disorder of the digestive system not the blood; and that it was contagious and spread through the oral-faecal route, largely through contaminated drinking water.

Snow’s intervention in Broad Street, Soho, in 1854, when he persuaded the authorities to remove the handle from a contaminated pump well, has caught the public imagination, but it was his “Grand Experiment” that same year that secured his huge reputation in epidemiology.

During Britain’s second cholera epidemic in 1848–49, both the Lambeth and the Southwark and Vauxhall water companies were taking their supplies from the Thames next to where the London sewers were discharged. By the time of the 1854–55 epidemic, however, Lambeth had moved its works up river out of reach of the sewage. Here, Snow saw, was the perfect means of testing his theory. He compared the numbers of cholera victims whose water was supplied by the two different companies in 1848–49 with the numbers in 1854–55. During 1848–49, the death rates for the two companies were the same, but by 1854, after Lambeth’s move, Southwark and Vauxhall’s rate was between eight and nine times higher, and in the first 4 weeks of the epidemic, Southwark and Vauxhall customers had a 14-fold higher risk. In 1855, Snow published a much-expanded second edition of On the Mode of Communication of Cholera that included these results. Again he was largely ignored, although by then the idea that polluted water had some part to play in cholera was gaining ground.
The eldest of nine children, Snow was born in humble circumstances and a rich uncle almost certainly paid for his medical education. He was apprenticed aged 14 years to a surgeon in Newcastle where he attended lectures at the new Newcastle upon Tyne School of Medicine and walked the wards of the local infirmary. One of his early encounters with cholera was in 1832 when there was an outbreak at a nearby pit village, Killingworth, and the 19-year-old surgeon’s apprentice was sent off alone to look after the affected families. The episode sparked a life-long interest in the disease, later inspiring the work that became part of his legacy. In 1837, Snow came to London to finish his education, passing the Royal College of Surgeons’ and the Society of Apothecaries’ examinations the following year. He went on to obtain his Bachelor of Medicine degree from the University of London and his MD. Later in his career he was elected President of the London Medical Society.

In 1846 when ether was first used in surgery in Britain, Snow was already investigating respiration and asphyxia. Now he began a quest for the perfect anaesthetic, publishing first on ether and then on chloroform. He built up a solid anaesthesia practice and in the early 1850s administered chloroform to Queen Victoria at the birth of two of her children. According to Joshua Parsons, a friend from his student days, Snow had no interest in money or fame, however: “The naked truth for its own sake was what he sought and loved. No consideration of honour or profit seemed to have the power to buy his opinions on any subject.”

In his private life, Snow is described as austere and painfully shy, as Dr Benjamin Ward Richardson, one of a small circle of friends and later Snow’s biographer, made clear: “He took no wine nor strong drink; he lived on anchorite’s fare, clothed plainly, kept no company, and found every amusement in his science books, his experiments and simple exercise.” In later life he came out of his shell enough to visit the opera occasionally and Richardson also discovered a surprising talent for telling funny anecdotes. Snow also confided to his friend that he regretted never marrying.

At the time of his premature death, almost certainly from a stroke, Snow had published many books, papers, and letters to journals on a wide range of subjects, including rickets, chest deformities, the circulation of the blood, lead poisoning, and scarlet fever. Although he gained a reputation in the field of anaesthesia during his lifetime, it was only after his death that his theories on the transmission of cholera were finally accepted. Henry Whitehead, who was a curate in Soho at the time of the Broad Street outbreak, later kept a portrait of Snow on his study wall to remind him, he said, “that the highest order of work is achieved not by fussy demand for ‘something to be done’, but by patient study of the eternal laws”.

Others were more generous about Snow than Wakley had been. After the obituary, The Lancet published letters from former colleagues in support of Snow’s contribution. Dr Hooper Attree, a former house surgeon at the Middlesex Hospital where some of the Broad Street cases were taken, wrote: “I trust that the profession will evince some public testimony towards the late Dr John Snow. Who does not remember his frankness, his cordiality, his honesty, the absence of all disguise or affectation under an apparent off-hand manner? Her Majesty the Queen has been deprived of the future valuable services of a trustworthy, well-deserving, much-esteemed subject, by his sudden death. The poor have lost in him a real friend in the hour of need.” And the medical officer of the Poland Street workhouse, John French, remarked that “although ephemeral criticism has been uniformly against him, yet I venture confidently to predict, that the facts which have been brought to light by his indefatigable industry will prove to posterity that he was by far the most important investigator of the subject of cholera who has yet appeared”. Here the workhouse medical officer was to prove more visionary than Thomas Wakley.

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