

Plumbers, Plagues and Pestilence

Past Master Rodney Cartwright

At this time, when there is much alarm and despondency, it is easy to forget that in the years since 1365 there have been many challenges for the Worshipful Company of Plumbers. As a member of the medical profession, whose speciality was microbiology and infectious diseases, I have penned a brief description of some of the plagues and pestilences that have occurred during the past 655 years. I start with a word of caution. Never underestimate microbes. Even with medical advances history has shown us that they are indeed a hidden enemy.

1365

The Mayor, Recorder and Aldermen of the City of London decreed "*that no one of the trade of Plumbers shall meddle with works touching such trade within the said city, or take house or apprentices, or other workmen, in the same, if he be not made free of the City.*" The Worshipful Company of Plumbers was thus created. The founder members would have survived the English Pestilence of 1360 -61. A disease that, on 24 and 25 June 1361, was responsible for the deaths of 1,200 people in London and "*raged among Young Men and Children, being less fatal to Women.*" The cause is not known but was thought to differ from the cause of the Great Pestilence or Black Death of 1348.

1485

The country was beset by the Sweating Sickness or The English Sweat. Dr Thomas Forrestier in 1490 records: "*The sweating sickness first unfurled its banners in England in the city of London, on the 19th of September 1485. In a later observation he says "that more than fifteen thousand were cut off in sudden death, as if by the visitation of God, many dying while walking in the streets, without warning and without being confessed.*" The illness was thought to have been brought over from the Continent by French soldiers recruited by Henry VII for his army around the time of the Battle of Bosworth field in 1485.

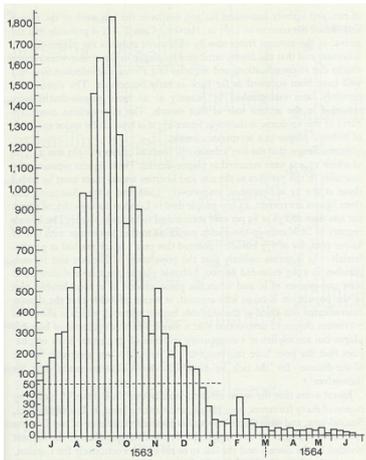
The cause of the illness is unknown, but it possibly was due to a virus of the hantavirus group.

1487,1499-1501

The Plague, which was due to a bacterium *Pasturella pestis*, is spread by the fleas from Black Rats. appeared in Britain and it is recorded that about 20,000 persons (one third of the population) in London perished. Sporadic outbreaks continued over the next century.

1563

A year when there was another major plague epidemic, the Great Plague of London, when during the year over, 20,000 are recorded as dying in the City from the infection. Perusal of records from the time enable an outbreak curve to be constructed



At this time the cause and mode of transmission of the disease, via rats and fleas, was not known but spread though the air by vapours was suspected so “on the 9th of July, 1563, plague having been already at work for several weeks, a commission was issued by the queen in Council, that every householder in London should, at seven in the evening, lay out wood and make bonfires in the streets and lanes, to the intent that they should thereby consume the corrupt airs, the fires to be made on three days of the week.”

A more useful action was the isolation of those infected together with their household so “on 30th September, 1563, it was ordered that all such houses as were infected should have their doors and windows

shut up, and the inmates not to stir out nor suffer any to come to them for forty days.” At least with coronavirus such isolation is only for 14 days!

A possible “plumbing connection” can be found in an Order by the Lord Mayor that “the “filthie dunghill lying in the highway near unto Fynnesburye Courte be removed and carried away; and not to suffer any such donge or fylthe from hensforthe there to be leyde.” This was of course before a sewerage system had been installed.

1665

Another Great London Plague. Out of a population of 460,000, there were 68,596 deaths from plague in this year, as recorded in parish registers and published by Dr N Hodges in his Loimologia. In the parish of St Magnus, there were 103 burials of which 30 were plague burials.

Shortly after this epidemic the Fire of London occurred. The fire burnt down much unsanitary housing with their rats and their fleas which transmitted the plague. It is thought that this may have why no further outbreaks of plague recurred in London. Perhaps this was a fire that paradoxically may have saved many lives.



1640 – 1840

Outbreaks of smallpox occurred regularly during this period. The outbreak of 1840, when 42,000 deaths in Britain, led to the Act to “Extend the Practice of Vaccination” being passed. This was the first Act for the control of smallpox and it provided free vaccination as a charge on the parish poor rates. Subsequent Acts followed in 1853, 1867 and 1898. Vaccination to control smallpox was introduced by Jenner in 1796. It was a highly effective vaccine offering around 95% protection. Smallpox vaccination was discontinued in 1971.

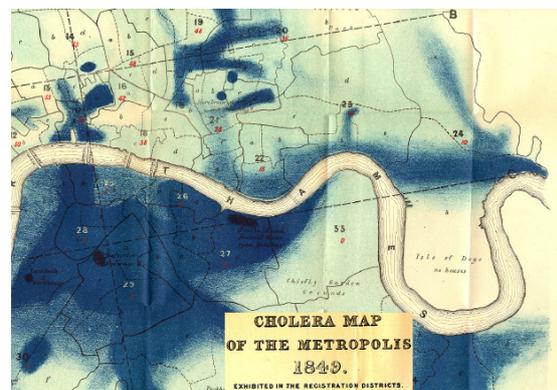
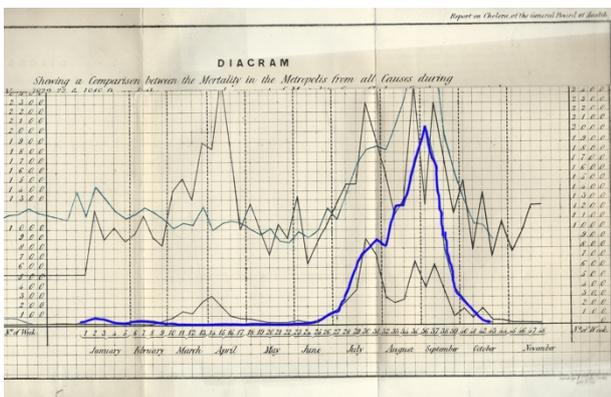


Smallpox is caused by a virus that is very infectious and passed readily through the air from person to person killing 33% of those infected. It is the only infection that has been completely eradicated, the last recorded case being in Somalia in 1977. The last case in London was in 1973 and due to a laboratory incident. A technician was infected and spread it to two other persons who subsequently died. The response was a widespread vaccination campaign with no further cases occurring.

19th Century

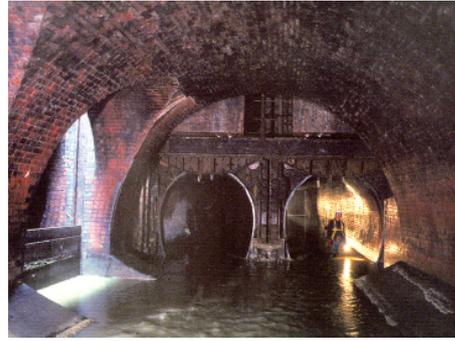
During this century, cholera outbreaks ravaged the City on numerous occasions. They were well documented in Local Government Board Reports. Brought into this country on ships, the disease was highly infectious and often rapidly fatal as shown by the description of the illness in The Local Government Board Report “Cholera in England 1893.” “On September 7th, a fatal attack, certified as due to “choleraic diarrhœa cholera,” took place in the person of an adult female residing in the parish of St Margaret and St John Westminster. The woman in question was employed as a “cleaner” in the House of Commons and it was there that she was attacked with severe abdominal pain, vomiting, and profuse diarrhœa on September 5th. Returning to her home she suffered from frequent and copious rice-water stools, cramps, blueness of extremities, sunken eyes, livid complexion, sub-normal temperature, intense thirst, diminution – if not suppression of urine and collapse which terminated in death during the night of September 6th–7th.”

In the 1848-9 outbreak, there were many deaths in London and the blue line in the graph shows the mortality in the Metropolis. The map of London illustrates the spread of cholera in 1849. The dark blue represents the highest incidence.



Perhaps the main interest for plumbers is the recognition of the role of drinking water and of sewage in the spread of the disease. This was due to the work of two persons, well known to plumbers and water engineers, who took actions that were milestones in the control of cholera. Dr John Snow in 1854 investigated an outbreak in Soho and recognised that water from a pump in Broad Street could be source of the infection. He removed the pump handle and the outbreak was controlled. The other was an engineer, Sir Thomas Bazalgette who in 1865 built the first comprehensive sewage system in London. No further large outbreaks of cholera in the City were recorded following the new sewage system becoming operational



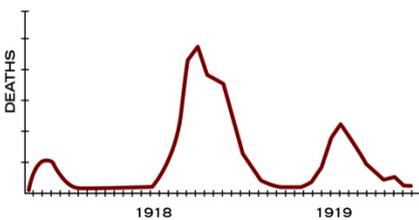
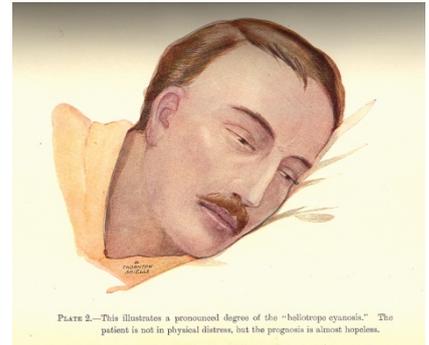


The importance of plumbing large and small for the maintenance of good public health was recognised.

1918-1919

The influenza outbreak of 1918-19, was worldwide and in the report of the Chief Medical Officer to the Minister of Health it is recorded that the infection “*destroyed more human lives in a few months than did the European war in 5 years, carrying off upwards of 150,000 persons in England & Wales alone.*” Outbreaks of influenza, and influenza like illnesses, are recorded in times back to before the Plumbers Company was formed but none had the severity or as well documented as this outbreak. The 1918-19 outbreak was predominant in young adults. “*The patient would be seized rapidly, or almost suddenly, with a sense of such prostration as to be utterly unable to carry on with whatever he may be doing. The men’s temperatures were raised to varying heights of about 103° or 104°F, the pulse rates were less raised in proportion: the tongue was coated: the face flushed. In addition, there was a soreness of the throat, huskiness of the voice and a tendency to throat clearing. A headache was common*”. These were the symptoms in the mild cases that recovered.

Some, however, would progress to the pneumonic stage when there was a sudden and rapid change for the worse with cough and sputum often blood stained, increasing rate of breathing and respiratory distress. The facies at first flushes and red rapidly changed to a bluish colour with death in a day or two.



In the UK, cases first appeared in May 1918 and increased until July when they fell back. In October, the numbers began to rapidly rise peaking in November at levels 10 times those of July. There was again a falling off with another but lower peak in March 1919. Thus there were three peaks of differing intensity, the second and third both exceeding the first. This was also the

experience in the USA as the graph shows.

This outbreak is remembered by the Plumbers Company as Liveryman Aubrey Charles Finch Hill who served in the RAF died while on active service on 24th October 1918 from influenza pneumonia aged 43 yrs. He is buried in the Fillièvres British Cemetery, Pas de Calais, France. The picture shows Past Master Rodney Cartwright and the then Acting Clerk Air Commodore Paul Nash at the cemetery for the Centenary Armistice Day Ceremony in Fillièvres in 2018.



Outbreaks of influenza have continued to occur at varying intervals and severity. This is due to changes in the structure of the virus producing strains against which we have no immunity. Each year, virologists attempt to best guess the strains that will circulate and the flu vaccine is modified accordingly.

1969 -70 was a particularly trying time with the emergence of the Hong Kong variant that resulted in a world wide pandemic. At least two waves of illnesses occurred. Cases first appeared in the autumn of 1969, followed by a quiescent phase, then an explosive recurrence starting on Boxing Day.

We can expect that the influenza virus will be always with us forever changing and trying to outwit medical science. This virus is spread through the air and on surfaces from person to person.

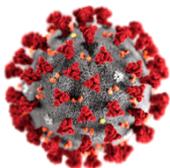
1950s and Polio

There was an outbreak of polio in the 1950s. Many schools were shut and children kept at home due to the fear that close contact spread the infection. In fact the main route of spread is through human faeces, or faecal contamination of food or water, underlying the importance, as for cholera control, of good plumbing and sewage systems. Fortunately effective vaccines



were developed against this virus and a worldwide campaign means that only a few cases are now reported. Those that do occur are mainly in countries with civil unrest where vaccination campaigns have been disrupted.

2019 -20



Covid-19 - a virus that has caused challenges both medical and economic throughout the world. It is a new virus about which much has been learnt and about which there remains much still unknown. What will the progress of the pandemic be? No-one can say with any certainty, although it is true that the number of new experts appears to be rising more rapidly than the cases of infection! It is highly possible

that we will see a second or third wave of cases but when and how big is anyone's guess.

This virus has affected the way the Company functions. The last Court meeting and committee meetings are by Zoom. Changes and challenges do however give us opportunities and we must learn how to adjust and continue progressing forwards.

I hope that these few notes have illustrated how the Company since 1365 has weathered many epidemics of "plague" and pestilence in this country yet has always become stronger.

July 2020