

## **Sources**

# **A Dublin Observer of the Lisbon Yellow Fever Epidemic**

By J. B. Lyons (1)

### **Abstract**

*The history of yellow fever is discussed with relevance to the Lisbon epidemic of 1857. Robert S. D. Lyons, Professor of Medicine at the Catholic University Medical School in Dublin, was given leave by the rector to investigate its pathology and set off for Portugal in November. He performed autopsies and studied possible environmental factors, with negative results. The professor's 'prolonged absence' began to worry the rector in January, but before long, Dr. Lyons returned to his duties and published a report.*

We are accustomed, nowadays, to professors who spend much of their time jetting from one conference to another. In 1857 this type of absentee academic was unknown and it caused a stir in Dublin when the professor of medicine and pathology at the Catholic University Medical School went off to Lisbon to study the yellow fever epidemic. This reaction is possibly more understandable when one realises that the newly-founded Catholic University was something of an «upstart institution, a gesture of independence against the ascending faction, and very much on its mettle in competition with Trinity College, the Queen's University and the College of Surgeons. What would the older schools think of a professor who could so lightly turn his back on his class?

The young man who pained his elders by setting off for Lisbon was Dr Robert S.D. Lyons (Meenan 1986). He was a native of Cork, thirty-one years old and the younger son of Sir William Lyons, a well-to-do merchant. He was an accepted authority on the use of the microscope and at the invitation of the British Government had spent a year as Pathologist-in-Chief in the Crimea investigating the fevers which were depleting the British forces. His conclusions were incorporated in a *Report on the Pathology of the Diseases of the Army in the East* (Lyons 1856).

Lyons requested leave of absence from John Henry Newman, rector of the Catholic University, on 22 November 1857. He explained that 'the most recent accounts of the

great Epidemic now raging at Lisbon, concur in describing it as yellow fever of a very bad type. I am extremely desirous of availing myself of this opportunity for investigating the Pathology of this very formidable disease' (Dessain 1958).

Yellow fever, to glance momentarily at its history, is characterised by pyrexia, jaundice and haematemesis -the sinister *vomito negro* and may have originated in either Africa or Central America. Drake's fleet was infected in the 16th century after putting into Spanish and west African ports. Spain and Portugal were the first European countries to have colonies in the tropics and da Rosa's *Trattado unico de la constitucion pestiencial de Pernambuco*, published in Lisbon at 1694, may have been the first medical book to describe it. The term "Yellow fever" was used by Griffith Hughes in his *Natural History of Barbados* in 1750 (Bean 1983).

Many yellow fever epidemics involved the West Indies, the eastern states of America and the great river valleys in the 18th & 19th centuries. The area of Europe commonly affected was the Iberian Peninsula. There was a yellow fever epidemic in Lisbon in 1723. A few isolated cases occurred in Porto in 1850 and 1851 and a small epidemic in 1856 with 120 cases and 53 deaths.

The few cases which occurred in Lisbon early in August 1857 attracted little attention but, by September, the authorities feared that they were dealing with an epidemic. On September 9th, three cases were admitted to St Joseph's Hospital, one from the rue des Confiseurs and

two from l'impasse du Jardin. Day by day the numbers of new cases multiplied until the official figures on November 17th indicated that there had been 10,554 cases and 3,550 deaths. Unlike cholera, which selected the poor and weak, it did not discriminate between the classes. Many fled the peril; others would have followed were it not for the example of the young king, Dom Pedro V, who stayed in the stricken city and calmly visited the sick. Nevertheless, the capital's squares, gardens and streets were deserted and the fine shops in les rues d'Or et d'Argent shut their doors. Fourteen of Lisbon's 250 doctors succumbed to the disease.

Present-day ease of communication makes it hard to appreciate that Portugal in 1857 lay several days steaming from the British Isles. Preoccupied with the dramas of the Indian Mutiny, *The Times* had little space for foreign news. Now and then shipping intelligence did refer to the foreign news. Now and then shipping intelligence did refer to the Lisbon epidemic. On November 3rd, P & O Steamers were still calling at Lisbon. The average number of people dying daily at Lisbon from fever was 80 to 100. November 11 : "A strict quarantine is maintained from Lisbon during the last week" (*Times* 1854).

Lyons explained to the rector of the Catholic University that the French government had sent two doctors but nobody had gone from the United Kingdom. "I am myself willing, should you grant me the necessary leave of absence to proceed to Portugal myself, with a view to a pathological inquiry on the spot" (Dessain 1958). Dr Newman agreed on November 23rd that he should go and contributed £50 towards his expenses, whereupon Lyons set off without delay.

By the time he reached Lisbon, the epidemic had passed its zenith but he saw many cases, nevertheless, and although his mission was a voluntary one, he was welcomed by the Civil governor, the Count de Sobral, and by the medical faculty. He acknowledged too, in his subsequent reports "the many gracious courtesies" shown to him by Dom Pedro V. He was allowed to carry out post-mortem

examinations in the medical school's "spacious, cool and well-ventilated Salle des Dissections" attached to the great hospital of St José. He studied the environment and the climatic conditions (Lyons 1859).

The algid form predominated in the Lisbon epidemic, but Lyons also saw examples of sthenic, haemorrhagic and typhous forms. "The treatment of the several forms of yellow fever", wrote Lyons, "resolves itself into the use of stimulants, counter-irritants, purgatives, including croton oil, and the employment of special remedies, such as quinine, bark, iron, etc. (Lyons 1864, 386). Blisters or mustard poultices were advocated while others favoured the wet sheet. "A wine of strong body, and with a considerable percentage of alcohol, was much employed in hospital practice; it was that known as "Lavradio". It was of the colour of deep-bodied port, but combined with the port flavour somewhat of that of the claret grape; it was a sound, strong-bodied, full-flavoured, and rich wine" (Lyons 1864,381 ). The benefits of these measures, as one readily understands today, were unimpressive.

Lyons performed at least twenty-four full autopsies. His descriptions of the external appearances were particularly detailed. He noted "a special physiognomy of a very marked character, which once seized, is never forgotten, though like many other striking phenomena, by no means readily admitting of being well conveyed in words". The skin was invariably yellow. "The tint varied a good deal; it was sometimes a light, faint, sometimes a rich canary or gamboge colour, sometimes a light, faint, sometimes of a deeper yellow with a more dusky hue ...". He remarked on the size of the penis in the majority of the male cadavers, adding a comment which may surprise, if not gratify, our Portuguese colleagues -"I am informed (on medical authority) that a very enlarged state of the genitals is by no means an uncommon physiological condition amongst the population in question (Lyons 1864,397). He examined the internal organs and the brain and its membranes. He found microscopic examination unreliable in determining the extent of fatty degeneration of disrupted

hepatic cells. Measurement of the specific gravity of liver specimens was more informative.

The possible relevance of climatic conditions had to be considered and Lyons availed himself of meteorological observations made in the Royal Observatory established by the Infant, Dom Luiz, and those of John Martin (1789-1869), an English doctor practising in Lisbon. He found the observatory's elevated position unsatisfactory for the provision of pertinent information but fortunately Martin's data were "entirely reliable". These showed "an excess of temperature in the epidemic months of 1857".

Noting "that the years 1855, 1856, 1857 present an extraordinary increase of rainfall, and in a sort of descending scale from 1855" Lyons asks: "Does there exist in Lisbon a rain cycle gradually advancing from year to year to a maximum, and then gradually falling to an average? It may be that a succession of rainy years gradually influences the constitution of the population, till with other current causes, a climax of complicated morbid elements is brought about which leads to the outbreak of epidemic disease" (Lyons 1859, 479). He collected information regarding winds, cloud formation, ozone and humidity.

Other environmental factors also attracted his attention. Lisbon, like many 19th century cities, had not yet attained standards expected by present day public health authorities. Lyons commented on the defective water supply and the lack of privies and house drains in some districts. "Thus, in numerous main and lateral streets and passages of the quarters Alfama, Mouraria, and Bairro Alto, the human dejecta with which the pavement was thickly strewn furnished to the passer-by, at every step, unceasing opportunities for keprological studies to which his attention became forcibly and unavoidably drawn". His eyes told him "that a costive state of the bowels is, if not a universal, at least a very general characteristic of the Lisbon population". The sewers, furthermore, were sometimes choked at their embouchures on the Tagus. The state of the river was insalubrious. At low tide a vast area of extremely foetid decomposing mud exhaled

noxious gases very prejudicial to health (Lyons 1864: 445).

Addressing himself to the widely held belief that the disease had been introduced by passengers from the Brazil mail steamer *Tamar*, or from hides imported from south America, Lyons thought this unlikely. Yellow fever "of a malignant and fatal character" had occurred in both Lisbon and Porto in 1856 and the 1857 epidemic was by no means confined to the Custom House district but also raged in areas well removed from the river. And despite the strongly favoured importation theory, it was noticeable that "little if any apprehension on personal contagion was entertained by those in attendance upon ... the sick".

*A large number of the inhabitants, it cannot be denied (variously estimated at 30,000 to 40,000), sought safety for themselves and their families by a precipitate flight from the foci of infection; and the closed doors, abandoned houses, and the suspension of the hum of business in whole streets of the most active centres of commerce, realised to the spectator all the most striking features of a plague-stricken city.*

*Nevertheless, amongst the population which remained, humanity was spared those humiliating and appalling scenes, which the medical historian tells us were so constantly presented in the epidemics of the middle ages, of the sick and the dying abandoned by their nearest relations and friends.*

*So far from this being the case, it must be stated, that no higher eulogium could be passed on the people of any city, that during the late Portuguese epidemic devoted attention to the sick was the universal rule with all classes of society; and even on the friendless and the stranger I have seen all the care and anxious solicitude bestowed that could be lavished on the nearest and the dearest friend or relation (Lyons 1864,447).*

The total number of cases of yellow fever in the Lisbon epidemic of 1857 was estimated at between 16,000 and 17,000 and there were about 5,500 deaths.

The professor's "prolonged absence" began to worry Dr Newman who, on 11 January 1858,

wrote to an influential member of the Catholic University Medical School to ask what was to be thought of it (Dessain 226). They decided that the less said about it the better; the School's unfriendly critics were to be ignored. Before long, however, Lyons resumed his professional duties in Dublin and we find him writing to the Rector in February on university business. He published a detailed report on yellow fever in *The Atlantis* and included an account of the disease in his *Treatise on Fever*. He undertook no further professional journeys abroad but, when elected to parliament in 1880, showed a special interest in forestation. He died suddenly in 1886.

By then Pasteur and others had established the aetiological role of bacteria in fever. After years of neglect and derision, Carlos Finlay's theory of an insect vector for the yellow fever germ was to be confirmed in Cuba by Walter Reid and his colleagues in the American Army Medical Corps. This knowledge allowed the application of rational preventive measures but was purchased at a price. The record of martyrology headed by the names of Dr Jesse Lazear and Dr Myers was added to when Adrian Stokes and Hideo Noguchi sacrificed their lives in West Africa. The former was born

in Lausanne in 1887, a grandson of Dr William Stokes, physician to Dublin's Meath Hospital, and I shall conclude with a few words about him.

Stokes graduated from Dublin University in 1910. During the first World War he served as pathologist in the RAMC and, having returned to Dublin for a few years, was appointed pathologist to Guy's Hospital, London, in 1922. He accepted temporary posts in West Africa with the Rockefeller Foundation's Yellow Fever Commission in 1920 and 1927. On the latter occasion he disproved Noguchi's contention that the *Spirochaeta icteroides* caused yellow fever and used the Rhesus monkey as a susceptible experimental animal. He contracted the disease himself in the laboratory and died on 19th September 1927.

His funeral sermon was held in a small brick chapel. There was a "slave tree" close by, under which African natives had been marketed. One of Stokes's colleagues took it for a symbol: by his work, Adrian Stokes had helped to rid the world of a lethal enslavement (Sawyer).

J. B. Lyons

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### Notes

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