WHERE MESSY MOULD BECAME A BACTERIA KILLER: STORY ABOUT ST. MARY'S HOSPITAL, PADDINGTON, LONDON, UK

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The discovery of **PENICILLIN** has changed the way we treat bacterial infections, and it is one of the most spectacular medical discoveries of the 20th century. St Mary's Hospital in Paddington - London is the birthplace of this remarkable finding, and it is a fitting tribute to the work of sir Alexander Fleming. Visitors to the hospital can take a tour and visit the very room in which the discovery was made, as well as the museum dedicated to the history of penicillin. **It is a place which reminds us; that sometimes great discoveries can come from the most unlikely of places - in this case, a messy mould in a petri dish…**

St Mary's Paddington in London has an incredible history, one that began in 1845 when the church was built to serve the growing population of the area. Beautiful example of Victorian Gothic style, with its towers and spires dominating the skyline. Inside, visitors can admire its stained glass windows, ornate carvings, and intricately painted ceilings. The temple also houses a number of artefacts and relics.…, but this story is about more famous construction at the heart of so called " The little Venice district", strictly related to the Hospital. The birthplace of one of the most pioneering medical findings of the 20th century – penicillin[i]. It was here in 1928, in the research laboratories of the hospital, that Alexander Fleming made his cutting-edge invention of the antibiotic, which revolutionised the treatment of bacterial infections[ii]. Fleming's initial discovery was not a major breakthrough. It was simply a common mould at the time, called Penicillium, growing on a forgotten Petri dish[iii]. Coincidentally, Fleming found that the mould was able to kill bacteria, something that had never been seen before[iv]. The

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bacteria-killing properties of Penicillium were spearheading and would lead to one the most important medical discoveries of all time – antibiotic.

Fleming was not the only scientist to observe the bacteria-killing properties of Penicillium[v]. In 1929, two scientists, Howard Florey and Ernst Chain tested Penicillin on mice and observed that it was able to cure bacterial infections. Published their findings in a paper - quickly gained international attention. Penicillin was able to treat infections that had previously been untreatable, for example a staphylococcal infections and bacterial pneumonia. The discovery of Penicillin[vi] was so significant that in 1945, Alexander Fleming, Howard Florey, and Ernst Chain were awarded the Nobel Prize in Physiology or Medicine[vii].

Having in a mind that prior to penicillin, bacterial infections were often fatal. With the availability of penicillin, doctors were able to treat and cure not only a wide range of bacterial infections but also significantly reduce morbidity and mortality rates. Penicillin was the first drug to be mass-produced, and its success prompted scientists to search for other bactericidal remedies. In a matter of fact finding of penicillin paved over the years the way for other antibiotics, allowing doctors to treat more successfully bacterial diseases[viii]. In the years since its discovery, penicillin has become one of the most widely used drug in the world. It is estimated that over 200 million doses are prescribed each year.

Visitors to Imperial College of Medicine London (St Mary's Hospital) can still tour the laboratory where Fleming made his discovery. The research facility has been restored to its original messy state, with many of the original pieces of equipment still in place. Visitors can take a guided tour to learn about Fleming's life and work, as well as the history of the hospital. [ix] The memorial is located in the north aisle of the building and is inscribed with the words "for the discovery of the antibacterial action of penicillin". The museum is open to visitors all year round, and entry is free. The importance of Fleming's discovery cannot be overstated, and St Mary's Laboratory Museum is a fitting tribute to the remarkable man who made it. Visitors to the hospital can not only appreciate its beauty, but also learn about the history of penicillin and its impact on the world.

To this day, Fleming's discovery of Penicillin at St Mary's Hospital - Paddington London continues to be remembered and celebrated as milestone in medical history. Thus, reminds of the power of curiosity and persistence. The discovery changed the world we knew and remains

a testament to the power of scientific inquiry and will continue to be cherished for generations to come[x].

Alexander Fleming Laboratory Museum

Address: St Mary's Hospital, Praed Street, London, Greater London, England, W2 INY

Location: In St Mary's Hospital on Praed Street, immediately east of Paddington Station.

Nearest station: London underground station Paddington - 0.1 miles (straight line) - Zone: 1

REFERENCES

Adams, J. (2017). Antibiotics. Cavendish Square Publishing, LLC.

Capote, A. P., Suárez, A. L. T., Gutiérrez, M. M. M., & Almarales, B. R. Q. (2018). Alexander Fleming and the antibiotic revolution. Revista Científica Estudiantil de Cienfuegos INMEDSUR, 1(1), 72-77.

Ellis, H. (2020). The story of antibiotics part two: The early days of penicillin. Journal of Perioperative Practice, 30(12), 397-399.

Gaynes, R. (2017). The discovery of penicillin—new insights after more than 75 years of clinical use. Emerging infectious diseases, 23(5), 849.

Imperial College Healthcare NHS Trust. (2022). Alexander Fleming laboratory Museum. https://www.imperial.nhs.uk/about-us/who-we-are/fleming-museum.

Lalchhandama, K. (2020). Reappraising Fleming's snot and mould. Science Vision, 20(1), 29-42.

Lobanovska, M., & Pilla, G. (2017). Focus: drug development: Penicillin's discovery and antibiotic resistance: lessons for the future?. The Yale journal of biology and medicine, 90(1), 135.

Sage. (2019, October 27). Why is penicillin important in medicine? Sage-Answer – Just clear tips and lifehacks for every day. https://sage-answer.com/why-is-penicillin-important-in-medicine/#:~:

Song, F. (2022). Antimicrobial natural products. Antibiotics, 11(12), 1765.

Kardos, N., & Demain, A. L. (2011). Penicillin: the medicine with the greatest impact on therapeutic outcomes. Applied microbiology and biotechnology, 92(4), 677-687.

Paterson, I. K., Hoyle, A., Ochoa, G., Baker-Austin, C., & Taylor, N. G. (2016). Optimizing antibiotic usage to treat bacterial infections. Scientific reports, 6(1), 1-10.

ENDNOTES

[i] Ellis, The story of antibiotics part two: 30(12), 397-399. (2020).
[ii] Gaynes, The discovery of penicillin 1(1), 72-77. (2017).
[iii] Lalchhandama, Reappraising Fleming's snot and mould, 20(1), 29-42 (2020).
[iv] Capote et al. Alexander Fleming and the antibiotic revolution. Revista Científica Estudiantil de Cienfuegos INMEDSUR, 1(1), 72-77(2018)
[v] Lobanovska & Pilla, Focus: drug development, 90(1), 135 (2017).
[vi] Kardos & Demain, Penicillin, 92(4), 677-687 (2011).
[vii] Song, Antimicrobial natural products. 11(12), 1765(2022).
[viii] Paterson et al. Optimizing antibiotic usage to treat bacterial infections, 6(1), 1-10 (2016).
[ix] Capote et al. Alexander Fleming and the antibiotic revolution. Revista Científica Estudiantil de Cienfuegos INMEDSUR, 1(1), 72-77(2018)
[x] Sage, Why is penicillin important in medicine? (2019). https://sage-answer.com/why-is-penicillin-important-in-medicine/#:~: