Independent work

Theme: Robert Koch

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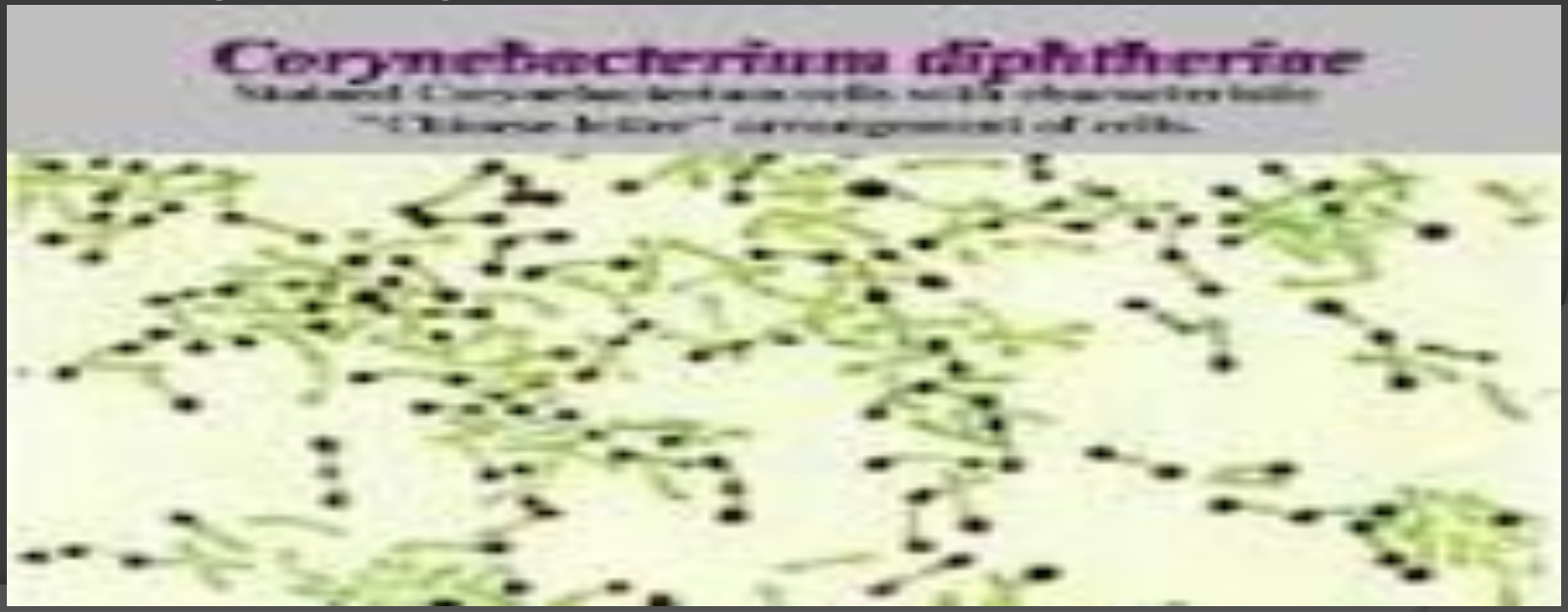
Heinrich Hermann Robert Koch - 11 December 1843 – 27 May 1910) was a German physician. He became famous for isolating *Bacillus anthracis* (1877), the Tuberculosis bacillus (1882) and Vibrio cholera (1883) and for his development of Koch's postulates.

He was awarded the Nobel Prize in Physiology or Medicine in 1905 for his tuberculosis findings. He is considered one of the founders of microbiology, inspiring such major figures as Paul Ehrlich and Gerhard Domagk.

- Koch was born in Clausthal-Zellerfeld in the Harz Mountains, then part of Kingdom of Hanover, as the son of a mining official. He studied medicine under Friedrich Gustav Jakob Henle at the University of Göttingen and graduated in 1866. He then served in the Franco-Prussian War and later became district medical officer in Wollstein (Wolsztyn) Prussian Poland .Working with very limited resources, he became one of the founders of bacteriology the other major figure being Louis Pasteur.
- After Casimir Davaine demonstrated the direct transmission of the anthrax bacillus between cows, Koch studied anthrax more closely. He invented methods to purify the bacillus from blood samples and grow pure cultures. He found that, while it could not survive outside a host for long, anthrax built persisting endospores that could last a long time.
- These endospores, embedded in soil, were the cause of unexplained "spontaneous" outbreaks of anthrax. Koch published his findings in 1876, and was rewarded with a job at the Imperial Health Office in Berlin in 1880. In 1881, he urged the sterilization of surgical instruments using heat.

In 1883, Koch worked with a French research team in Alexandria , Egypt, studying cholera. Koch identified the *vibrio* bacterium that caused cholera, though he never managed to prove it in experiments. The bacterium had been previously isolated by Italian anatomist Filippo Pacini in 1854, but his work had been ignored due to the predominance of the miasma theory of disease. Koch was unaware of Pacini's work and made an independent discovery, and his greater preeminence allowed the discovery to be widely spread for the benefit of others. In 1965, however, the bacterium was formally renamed *Vibrio cholerae Pacini 1854*.

- Koch's pupils found the organisms responsible for diphtheria, typhoid, pneumonia, gonorrhoea, cerebrospinal meningitis, leprosy, bubonic plague, tetanus, and syphilis, among others, by using his methods.
- As for Koch's personal life, he had no interest in politics and religion did not play a role in his life. He married Emmy Fraaze after graduation from medical school in 1866. They had a daughter together, Gertrud, who was one day to become the wife of Dr.E Pfhul. On his 28th birthday, his wife gave him a microscope which he used frequently in his experiments and other discoveries. Koch remarried to Hedwig Freiberg in 1893.



- In 1905 he was awarded the Nobel Prize for Physiology or Medicine. In 1906, he returned to Central Africa to work on the control of human trypanosomiasis, and there he reported that atoxyl is as effective against this disease as quinine is against malaria. Thereafter Koch continued his experimental work on bacteriology and serology.

Koch is famous for his description of the life cycle of the anthrax bacillus and its relationship to anthrax disease, published in 1876 to great acclaim; his painstaking identification of the tuberculosis bacillus in 1882; and his identification of the cholera bacillus in 1884, which for many people proved its contagiousness.

Koch's string of heroic accomplishments were transformed into disgrace, however, when in 1890 he prematurely announced a cure for tuberculosis—his secret formula, tuberculin. For about three months there was an international celebration but it turned out that tuberculin was useless as a treatment. It also came to light that Koch had a substantial financial interest in the manufacture and use of the product.

- Koch on the Moon is named after him. The Robert Koch Prize and Medal were created to honour microbiologists who make groundbreaking discoveries or who contribute to global health in a unique way. The now-defunct Robert Koch Hospital at Koch, Missouri (south of St. Louis, Missouri), was also named in his honor. A hagiographic account of Koch's career can be found in the 1939 Nazi propaganda film *Robert Koch, der Bekämpfer des Todes* (The fighter against death), directed by Hans Steinhoff and starring Emil Jannings as Koch.