

REVIEW ARTICLE

Contribution Of Medical Students To Medical Discoveries

Al-Shamsi M. M. *

* University of Kufa, College of Medicine

Medical students can and do make valuable contribution to medicine when they are given the opportunity to become involved in research. Sir James Paget (1814 – 1899) discovered the round worm *Trichinella Spiralis* in 1834, one year after entering St Bartholomews Hospital Medical School. He became the first English pathologist and subsequently president of the Royal College Of Surgeons in 1858. Paget contributed to many areas of medicine and has two classic descriptions of disease named after him.

William Stokes (1804 -1878) published An Introduction to the Use of Stethoscope in 1825 while he was still a student in Edinburgh. In the field of genetics, Walter S Sutton (1877 – 1916) detailed in 1903 the chromosome theory of heredity while still a medical student (1).

In 1896 , shortly after he entered Harvard Medical School, Walter Bradford Cannon, accompanied by Albert Moster , a second year student, approached the professor of physiology, Henry Pickering Bowditch , asking to be set an experimental project. As a result he began to study deglutition with the help of the X-ray discovered a year earlier by Wilhelm Rontgen using barium subnitrate as contrast medium. Later Cannon extended the work to the movement of the stomach and, within a decade, to the analysis of the influence of emotion on alimentary function(2,3,4). A curious aspect of the approach of Problem solving is that the technique was proposed not by a teacher but by a student ,Walter B Cannon (5) .

Who discovered insulin? the answer will be Banting and Best , the story started when Fredrick Banting , an orthopedic surgeon with an unsuccessful practice , decided to switch to

research. In 1921 , he approached John Macleod , professor of physiology at the university of Toronto , with a project to discover a cure for diabetes mellitus. He asked for an assistant and after a toss of coin , decided upon Charles Best , a second year medical student . Joined later by James Collip , they discovered and purified insulin. The Nobel committee , however , awarded the prize only to Banting and Macleod. Banting shared half of his prize money with Best and Macleod shared his with Collip (6, 7).

Paul Langerhan was also a medical student in 1869 when he discovered the islets in the pancreas that now bear his name. This was his second finding , a year earlier , he had already showed cells in the skin using gold chloride stain . These cells are known as Langerhan cells (8).

Niels Stensen was a medical student when he discovered the parotid duct in sheep in 1661. Stensen gave up the practice of medicine to become the founding father of the science of geology, he must be one of the earliest examples of what would be called nominative determinism in the 20th century. This term is used when one s profession or occupation is reflected in one s name , Sten is Danish for stone and Sen means son. (9)

In Lima , the capital of Peru , Daniel Carrion , a medical student , believed that Oroya fever and Verruga Peruana were the same disease , to prove this , he inoculated himself with blood from a Verruga , developed Oroya fever and proved his theory. Sadly , he also succumbed to the disease (10).

Bruce MacCallum, Martin Flack and Helen Taussig are students who made important contributions to pulmonary and cardiovascular

pathology. (11) Many of students discoveries were done in the 18th and 19th centuries, when medical science was young and much was remaining to be discovered especially in anatomy and dissection similar opportunities may not easily be available today.

The story of surgical anaesthesia is very interesting, between 1842 and 1846 four well-known attempts at applying surgical anaesthesia were made with varying success. The fourth attempt in October 1846, was followed by an unseemly struggle between three of the men involved in experimentation over credit for the discovery. William E Clarke was a medical student at the Berkshire medical college in Massachusetts. In January 1842 he discovered that the sister of one of his classmates needed a tooth extracted, using a towel, Clarke applied ether and the tooth was painlessly removed. However his preceptor, professor E M Moore told him that the entire incident could be explained as the hysterical reaction of woman to pain (12).

In 1874, Maurice Raynaud, while still a medical student, described a triad of episodic pallor, cyanosis and erythema following exposure to cold stress, the term Raynaud phenomenon describes this clinical triad. (13)

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