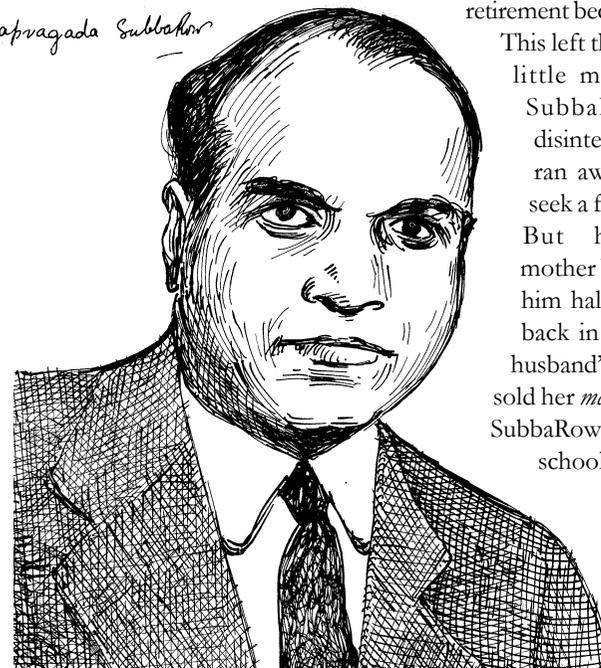


*"You've probably never heard of Dr. Yellapragada SubbaRow. Yet, because he lived, you may live longer." – Doron K. Antrim*

The *New York Herald Tribune* described Dr. Yellapragada SubbaRow as *"An eminent medical mind of the century."* He discovered cures for many killer diseases which brought great relief to millions of suffering people throughout the world.

SubbaRow was born on January 12, 1895 in Bhimavaram in the West Godavari district of Andhra Pradesh. He was the third of seven children. His father Jagganadham took premature retirement because of bad health.

*Yellapragada SubbaRow*



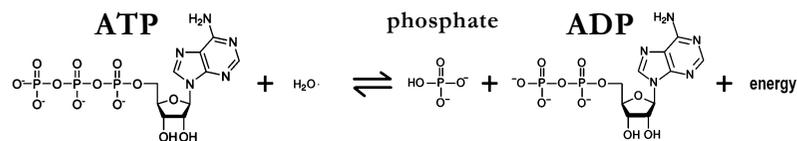
This left the family with very little money. At school SubbaRow remained disinterested and lost. He ran away from home to seek a fortune in Varanasi. But his determined mother Venkamma caught him halfway and put him back in school. After her husband's death Venkamma sold her *mangalasutram* so that SubbaRow could continue his schooling.

As a student of the Presidency College, SubbaRow spent most of his time at the Ramakrishna Mission. He had a strong ascetic streak in him and wanted to become a *sanyasi*. But his mother strongly disapproved of it. Finally, he joined the Madras Medical College so that he could later serve in one of the Mission's hospitals. But as his family could not support his medical studies he chose a typically Indian solution – got married and sought his father-in-law's help! SubbaRow's mother welcomed the decision for a different reason. She hoped it would cure him of his 'madness' for religion! Accordingly, on 10 May 1919, SubbaRow got married to Seshagiri, twelve years his junior. Seshagiri was destined to enjoy very little time with her husband on account of his consuming passion for work.

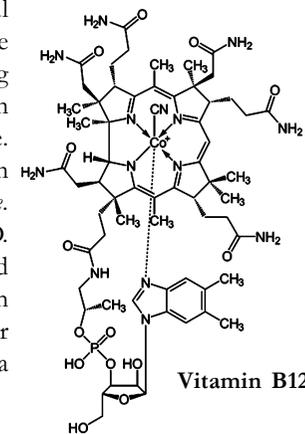
Influenced by Mahatma Gandhi's *Swadeshi* movement, SubbaRow boycotted British goods and started wearing a *khadi* gown. This offended his English professors, incurred their wrath and cost him the MBBS degree. When he was awarded the lower ranking LMS certificate he decided against western medical practice and joined the Madras Ayurvedic College as a lecturer in Anatomy.

A visiting American doctor encouraged him to go to the USA for further studies. Supported by a charity and his father-in-law, SubbaRow set off, promising his wife, still in her teens, that he would return in three years. However, he was never to see her again. He arrived in Boston on October 26, 1923 with 100 dollars in his pocket. His LMS medical degree did not qualify him to get a scholarship or an internship. In the initial period SubbaRow's professor Dr. Richard Strong helped him with fees and living expenses. In his spare time SubbaRow supported himself by cleaning hospital bedpans and doing other odd jobs.

He finally managed to get a diploma in Tropical Medicine from the Harvard Medical School and joined the biochemistry laboratory of Dr. Cyrus Fiske. Here he devised the now famous Fiske-SubbaRow method for estimation of phosphorous in blood and urine. This very sensitive procedure has now become a classic and is today taught to all biochemistry students. In recent years, it has become an important tool to diagnose disorders of the thyroid and renal rickets.



This method also helped SubbaRow to demolish the claim that glycogen was the fountainhead of energy required for muscular contraction. This claim had won Hill and Meyerhof, the 1922 Nobel Prize for medicine and physiology. SubbaRow discovered that adenosine triphosphate (ATP) provided the energy for every biochemical process including muscle contractions. Thus, a resting muscle has a higher concentration of ATP than a fatigued muscle. These findings were published in the April 1927, issue of *Science*. This research earned him a PhD. SubbaRow now commanded high respect and people held him in awe. It also led to the Rockefeller Foundation offering him a Fellowship.



SubbaRow next took up the challenge of pernicious anaemia, which afflicted many. He extracted vitamin B12 from pig liver which proved effective against anaemia. This set off a world-wide search for more vitamins, yielding a rich harvest in subsequent years.

SubbaRow thought that the giant pharmaceutical firms might offer greater scope for research than universities. So in 1940, he joined the world-renowned Lederle Laboratories. Here after a long struggle he succeeded in synthesising folic acid. In the last fifty years folic acid, along with vitamin B12 has proven itself very effective against the prevention of anaemia.

SubbaRow's research team was engaged in a battle against a whole range of human sufferings. He led his team from the front. As an MD he motivated PhD's to help alleviate human ailments, and as a PhD he inspired MD's to help him fashion chemicals to combat specific microbes. SubbaRow was a complete scientist – a chemist amongst chemists and a clinician amongst clinicians.

His last search was for a panacea – a cure for all fevers. In 1928, Alexander Fleming discovered the power of the penicillin mould to destroy germs. Thus was born the golden age of *antibiotics*. SubbaRow was too perceptive to miss the message and set up his own research into antibiotics. He hired a botanist to screen moulds from samples of soil, brought from all over the world. Finally, he succeeded in growing mould A-377, which was “*deadly like a cobra to a broad spectrum of disease germs and yet mild like a kitten to their animal hosts.*” This resulted in the development of *tetracycline* - one of the most widely used broad-spectrum antibiotics.

SubbaRow was constantly raising his sights and his next targets were cures for polio and cancer. One of the medicines he developed, *teorpterin*, proved effective against one type of cancer - leukaemia.

On the morning of Monday, 9 August 1948, his associates noticed his absence at work. SubbaRow was an obsessive workaholic so this was very unusual. On opening his apartment he was found dead of a massive heart attack. He was just 53. After leaving India he had never returned to his native land.

SubbaRow never sold his scientific discoveries, nor did he seek patents for any of his drugs. He shunned interviews to the press, awards, honours and recognition. SubbaRow’s birth centenary was celebrated in 1995. His name was recommended for the country’s highest civilian honour – the Bharat Ratna. SubbaRow insisted on remaining an Indian citizen even after his entitlement to American citizenship. And, although he made his contributions abroad, they all came from his India-born talents, drives and inspirations. Money and fame mattered little to him. He remained focused on finding cures for dreaded diseases and thus improved the well being of the whole of humanity.

