

# Celebrating the February Born Scientists

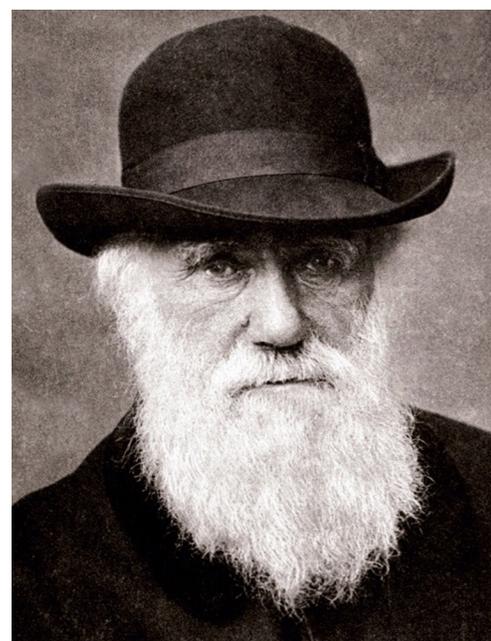
## Bhupati Chakrabarti

These luminaries, born in the month of February, have each illuminated the path of human progress in their own right. Their discoveries have transcended the bounds of their respective fields, shaping the world as we know it. As we reflect on their lives and legacies, we are reminded of the boundless potential of the human spirit to inquire, innovate, and inspire. Through their work, these scientists have left an enduring legacy, a testament to the power of curiosity and the relentless pursuit of knowledge.

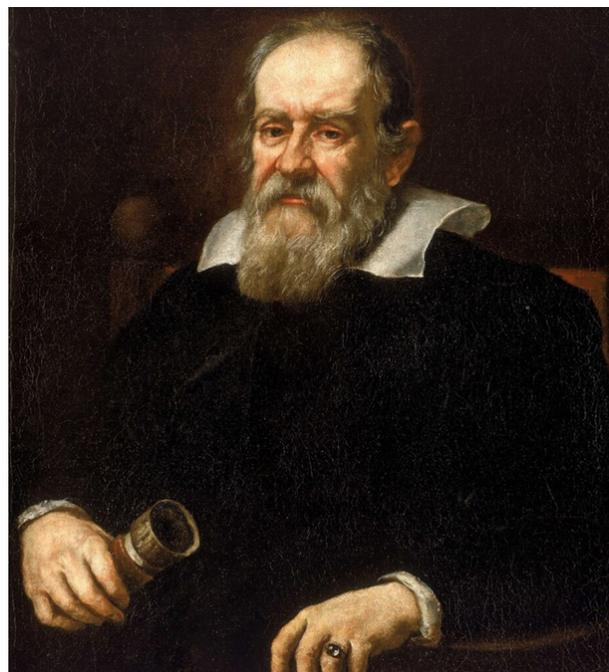


**Sambhunath De** was born on 1 February 1915 and was an Indian medical scientist whose work transformed the understanding of cholera. He completed his MB from Calcutta Medical College in 1939 and a Diploma in Tropical Medicine in 1942. After earning a PhD in Pathology from University College Hospital, London, in 1949, he returned to India and devoted his career to studying the pathogenesis of cholera. De made his most significant contribution in 1959 with the discovery of cholera toxin, proving for the first time that *Vibrio cholerae* causes disease by secreting an enterotoxin rather than by directly invading tissues. He also developed the ligated intestinal loop and ileal loop models, which became essential tools for studying cholera and diarrhoeal diseases caused by *E. coli*. His work clarified the mechanism of secretory diarrhoea and laid the foundation for oral rehydration therapy, which has saved millions of lives. Despite working in modest laboratory conditions, De published over 30 influential papers. He retired in 1973 and continued research until his death on 15 April 1985. His discoveries remain central to modern microbiology and medicine.

**Charles Darwin** was born on 12 February 1809 and was an English naturalist, geologist, and biologist best known for founding evolutionary biology. He proposed that all species descend from common ancestors through natural selection, a process in which individuals with advantageous traits are more likely to survive and reproduce. This idea, presented jointly with Alfred Russel Wallace in 1858, transformed scientific thinking. Darwin's early interest in nature led him away from medical studies at the University of Edinburgh. At Christ's College, Cambridge, he developed a strong interest in natural science. His five-year voyage aboard HMS Beagle from 1831 to 1836 proved crucial, allowing him to study geology, fossils, and living organisms around the world. These observations supported gradual geological change and inspired his evolutionary ideas. Darwin published influential works, including *On the Origin of Species* (1859), *The Descent of Man* (1871), and studies on orchids, emotions, and earthworms. By the late nineteenth century, evolution was widely accepted. Darwin's theory remains the unifying foundation of modern life sciences. It continues to influence biology, medicine, genetics, ecology, and scientific research worldwide today.



**Galileo Galilei** was born on 15 February 1564 and was an Italian astronomer, physicist, and engineer of the Renaissance. He is often called the father of observational astronomy, modern classical physics, the scientific method, and modern science. Galileo studied motion, gravity, inertia, projectile motion, and the principle of relativity, laying foundations for later scientists. He also worked in applied science, describing the motion of pendulums, inventing the hydrostatic balance, and developing early scientific instruments such as the thermoscope and military compasses. Using an improved telescope he built himself, Galileo made groundbreaking astronomical observations. He studied the Milky Way, the phases of Venus, Jupiter's four largest moons, Saturn's rings, sunspots, and the uneven surface of the Moon. These discoveries supported the Copernican theory that the Earth moves around the Sun. Galileo's support of heliocentrism brought him into conflict with the Catholic Church. In 1633 he was tried by the Roman Inquisition, forced to recant his views, and placed under house arrest. During this time, he wrote *Two New Sciences*, which became a cornerstone of modern physics and influenced scientific thinking worldwide.



**Sir Shanti Swarup Bhatnagar** was born on 21 February 1894 and was a distinguished Indian colloid chemist, academic, and scientific administrator. He is widely regarded as the Father of Research Laboratories in India. Bhatnagar was the first Director-General of the Council of Scientific and Industrial Research (CSIR) and the first Chairman of the University Grants Commission (UGC). In his honour, the Shanti Swarup Bhatnagar Prize for Science and Technology was instituted in 1958. Bhatnagar earned his Doctorate in Science from University College London in 1921 and began his academic career at Banaras Hindu University, where he also composed the university anthem. He later worked at Punjab University, Lahore, where his most important scientific contributions were made, especially in magnetochemistry.

He co-developed the Bhatnagar-Mathur Magnetic Interference Balance, a highly sensitive scientific instrument. He played a central role in establishing India's scientific infrastructure by founding national laboratories under CSIR after independence. Bhatnagar strongly believed in applying science to industry and nation-building. He constituted the one-man Commission in 1951 to negotiate with oil companies for starting refineries and this ultimately led to the establishment of many oil refineries in different parts of the country. He induced many individuals

and organisations to donate liberally for the cause of science and education. He died on 1 January 1955 at the age of 60, leaving a lasting legacy in Indian science and research administration.

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