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Contents

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Bhagat Singh
A Revolutionary and a Patriot

The story of Bhagat Singh is truly awe inspiring. Born on September 28, 1907 at village Chak no. 105 in Lyallpur district (now in Pakistan), he grew up in an atmosphere which was charged with patriotism and a longing for freedom from foreign rule. His father Kishan Singh and uncles Ajit Singh and Swaran Singh were revolutionaries and had undergone imprisonment for their activities. The sacrifice of Kartar Singh Sarabha, who was executed at the age of nineteen for waging war against the British Empire, had a great impact on the young lad and he always carried Kartar Singh's photograph with him. Bhagat Singh was only twelve years old when the tragic Jallianwala Bagh massacre took place on April 13, 1919. He visited the site soon thereafter in the same month and brought back a fistful of the 'blood soaked' sand from there, put it in a bottle and kept it with him.

While in school Bhagat Singh learnt Urdu, Hindi and English along with Sanskrit. He also knew Gurmukhi script. In school, he came to know that his family was trying to get him married. He immediately wrote to his father that he had committed himself to the nation and marriage, therefore, was out of the question. He left Lahore and reached Kanpur in 1923 where he met Ganesh Shankar Vidyarthi, editor of *Pratap*, a newspaper in Hindi. He started working for *Pratap* and also joined the underground revolutionary organization Hindustan Republic Association established by Sachindra Nath Sanyal, the author of *Bandi Jeevan*. Bhagat Singh was just sixteen then. He returned to Lahore after six months.

From 1923 onwards, Bhagat Singh's intellectual development was phenomenal and he matured far beyond his years. He became a voracious reader, particularly of Marxist literature, and wrote articles and essays on relevant issues of the time with remarkable understanding of the subject he chose to write on. His extensive reading made him an atheist at nineteen.

By 1928, Bhagat Singh and his revolutionary colleagues were convinced about the need of a socialist agenda for their revolutionary party and they rechristened their party as the Hindustan Socialist Republican Association. Bhagat Singh also believed that to awaken the country from slumber, the youth needed to perform daring acts of revolution and make sacrifices to advance the cause of freedom.

The Simon Commission visited Lahore on December 30, 1928 and was greeted with boycott and protests. Lala Lajpat Rai led the demonstration against the Commission and was assaulted by the police with lathis. An Assistant Superintendent of Police named John

Saunders hit Lalaji who died subsequently on November 17, due to injuries caused by lathi blows. To avenge the death of Lala Lajpat Rai, Bhagat Singh and Rajguru shot dead John Saunders on December 17, 1928 in front of SSP Lahore's office in broad daylight and escaped. They owned responsibility for Saunders' assassination. Their fame, particularly of Bhagat Singh, spread throughout the country. In his autobiography, Jawaharlal Nehru says, "Bhagat Singh did not become popular because of his act of terrorism, but because he seemed to vindicate, for the moment, the honour of Lala Lajpat Rai and through him of the nation. He became a symbol; the act was forgotten, the symbol remained, and within a few months each town and village of the Punjab and to a lesser extent in the rest of northern India, resounded with his name. Innumerable songs grew up about him, and the popularity that the man achieved was something amazing." Pattabhi Sitaramayya, the Congress historian, went to the extent of acknowledging that Bhagat Singh was no less popular than Mahatma Gandhi.

Bhagat Singh knew his days were numbered and decided to perform as many revolutionary acts as possible. At that time the British rulers were determined to convert two bills viz. the Public Safety Bill and the Trade Disputes Bill into law. There was strong opposition to the move from the public and also from the members of the Central Assembly. The revolutionaries decided to throw harmless bombs into the Central Assembly. Bhagat Singh, who conceived the idea, was inspired by the French anarchist Auguste Vaillant who had bombed the French Chamber of Deputies in the year 1893 and was executed for the act. In emulating the Frenchman, Bhagat Singh's motive was to 'make the deaf hear' and not to cause any harm or damage to any member of the Assembly. He cut his hair and shaved off his beard, only retaining a fine moustache, so that he may enter the Assembly premises undetected.

On April 8, 1929, Bhagat Singh accompanied by Batukeshwar Dutt (also called B. K. Dutt), entered the Central Assembly and sat in the visitor's gallery. At about 12.30 pm as the President of the Central Assembly, Vitthalbhai Patel began to deliver his ruling on the Trade Disputes Bill, Bhagat Singh threw two bombs on the empty benches of the hall causing an explosion. At the same time, both Bhagat Singh and Batukeshwar Dutt started shouting slogans 'Inquilab Zindabad' and 'Down with imperialism'. They also threw pamphlets containing revolutionary ideas into the hall. Thereafter, both courted arrest. Both were tried and sentenced to imprisonment for life.

After the Central Assembly bombing 'Inquilab Zindabad' became a historic slogan. It later became a part of revolutionary groups and was adopted by many other organizations including the Indian National Congress. Coined by Hasrat Mohani, it became popular because of Bhagat Singh who gave it to the masses.

In the meantime, the trial of the case of the murder of ASP John Saunders, in which Bhagat Singh, Rajguru and Sukhdev Thapar were accused, started. All the three boycotted the trial and were sentenced to death. Three days before the execution, Bhagat Singh wrote to the Governor of Punjab that they had waged a war against British imperialism. Therefore, they should be treated as prisoners of war and should be shot dead and not hanged like common criminals.

After the death sentence was given to Bhagat Singh, Jaidev Kapoor, an associate of his, asked him if he regretted dying so young. Bhagat Singh's reply revealed the intensity of his patriotism. He said, "Stepping up on the path of revolution, I had thought that if I could spread the slogan of 'Inquilab Zindabad' throughout the country by giving away my life, I would feel that I have received the full value of my life. Today, sitting behind the bars of the execution barracks, I hear the sound of the slogan from crores of people. I believe that this slogan of mine would attack imperialism as the driving force of freedom struggle till the end. What more value can be of such a small life?"

In his introduction to the book *The Bhagat Singh Reader* edited by him, Chaman Lal beautifully sums up the legend of Bhagat Singh thus, "In a way, Bhagat Singh had what it took to take on the British colonial power his way. With a group of less than hundred people all over the country, he could unnerve and rattle the most powerful empire on earth, could chalk out a path to glory and martyrdom, and stir up millions of people at the same time. It was no small achievement for a man so young."

What Nehru said....

Terrorism usually represents the infancy of a revolutionary urge in a country. That stage passes, and with it passes terrorism as an important phenomenon. Occasional outbursts may continue because of local causes or individual suppressions.

...From 'An Autobiography'

Speed of Light

The nature of light has been often a subject of scientific inquiry and sometimes of speculation. Pythagoras (570 BC - 495 BC) known for his theorem of the right-angled triangle, thought that light rays emerged from our eyes and when these rays struck an object, we could see it. Greek philosopher Epicurus (341–270 BC), argued that objects produced light rays, which then travelled to the human eye.

It was only later that Greek scientists Euclid (325 BC - 265 BC) and Ptolemy (85 - 165) successfully discovered that light travels in a straight line. Taking this idea further, Arab physicist *Ibn al-Haytham* (965–1039), studied how the pinhole camera worked. *Ibn Sahl* (940 -1000) described the law of refraction i.e. the bending of light in water.

In spite of all these studies, it was difficult to calculate the speed of light with the instruments available at that time. Johannes Kepler (1571 - 1630) the German astronomer who gave us the laws of planetary motion and René Descartes (1596 - 1650) the famous French philosopher and mathematician thought that the speed of light must be infinite.

In 1629, the Dutch philosopher and scientist Isaac Beeckman (1588 – 1637) suggested an experiment to measure the speed of light. He surmised that if the time taken by light to travel a certain distance could be measured, then its speed also could be calculated. He suggested that one could place a mirror at a known distance and a flash of light could be aimed towards that mirror. The mirror could be so aligned that it reflected back the flash of light to the same point from where it emanated. The duration of time between the flash of light and the reflection from the mirror was to be noted and, in this way, the speed of light could be calculated. However, it is not known if anyone attempted to conduct this experiment.

A few years after this, Galileo Galilei (1564 - 1642) attempted to measure the speed of light. He and his assistant stood on two hilltops a mile apart. Each carried a lantern which had a shutter. The experiment was that Galileo would open the shutter of his lantern. Seeing the light from Galileo's lantern, his assistant would open the shutter of his lantern. Galileo attempted to measure the time delay between opening the shutter of his lantern and seeing the light from his assistant's lantern. There were no mechanical clocks at that time and Galileo was using his pulse to measure the time. After this experiment, Galileo correctly concluded that the speed of light was too fast to be measured by this method.

First quantitative estimate of the speed of light

In 1610 Galileo discovered four satellites (or moons) of Jupiter. Just like the Moon of Earth, the satellites of Jupiter are also eclipsed by Jupiter. In 1676, Danish astronomer Ole Rømer (1644 – 1710) was studying Jupiter's closest moon Io (pronounced eye-oh) which orbits the planet once every 42 hours and 30 minutes. He discovered certain changes in the orbital period of Io. Further studies revealed to him that these changes were due to the changing distances between Jupiter and Earth as they orbit the Sun. Using his observations, he was able to calculate the speed of light. What Rømer demonstrated was that the speed of light was not only finite but also measurable.

The speed of light is, thus, calculated as 3,01,204.8 km per second. This value is just 0.5 % more than the speed of light as calculated using modern equipment.

In 1704, Isaac Newton published the book *Opticks* in which he reported that light would take seven to eight minutes to reach the Earth from the Sun. He also inquired if Rømer or any other observer noted light of different colours during the eclipse. It was reported to him that no colour was observed. Hence, Newton concluded that light rays did not change colour and travelled at the same speed.

Terrestrial measure of the speed of light

By the mid-nineteenth century, technology had developed enough for scientists to take actual measurements to find the speed of light. Pioneering work was done by two

French physicists Hippolyte Fizeau (1819 – 1896) and Léon Foucault (1819 – 1868) who were friends as well as collaborators. They worked together on many projects, including that of producing images of the Sun. However, sometime in 1849, they parted ways and conducted independent experiments to measure the speed of light. Their basic premise to measure the speed of light was the same as that suggested earlier by Beeckman.

Fizeau used an intense source of light which was reflected back by a mirror kept at a distance of 8 kilometres. The light from the source was made to pass through a rotating cogwheel that had 720 notches. The speed of the cogwheel could be changed. At the fastest speed, the cogwheel could rotate at 100 rotations per second. The light from the source could pass through one of the notches of the cogwheel, and the reflected light from the mirror could be observed from the same notch. To measure the speed of light, the wheel was rotated at such a speed that when the reflected light reached the cogwheel, it would have moved just enough to produce light which was, otherwise blocked by the adjacent teeth.

Knowing the rotational speed of the wheel and the distance between the wheel and the mirror, Fizeau calculated the speed of light to be 315000 km per second. This value is about 4.8 % higher than the modern value of 2,99,792.5 +/- 3 km/s. The main problem Fizeau faced was that he could not accurately observe the blocking of the light reflected from the mirror by the adjacent teeth.

Foucault improved Fizeau's apparatus by substituting the cogwheel with a rotating mirror. The light from the intense source was made to pass through a slit. Reflected light from the mirror at a distance was observed. Foucault determined the speed of light to be 2,98,000 km per second which was about 0.5% less than the modern value. Foucault also went one step further. He passed the light through a glass tube filled with water and observed that the speed of light decreases when it passes through water.

This result is viewed as driving the last nail in the coffin of Newton's corpuscular theory of light, which states that light is made up of small discrete particles called 'corpuscles' (little particles) which travel in a straight line with a finite velocity. According to this theory, when the light passes through water (or some other medium), the speed of light increases.

Nearly seventy years after the experiments by Fizeau and Foucault, Albert Abraham Michelson (1852 – 1931), the first American to win the Nobel Prize in science took it upon himself to improve upon finding the value of the speed of light to a better accuracy of 0.001% error. He set up his experiment at the Mount Wilson Observatory. The reflecting mirror was placed at the ridge of Mount San Antonio called Lookout Mountain.

Mount Wilson Observatory

The objective of this experiment was to know the exact distance between Mount Wilson and Lookout Mountain. He took the help of the U.S. Coast and Geodetic Survey to measure this distance. When the measurement of the distance was completed in 1924, it was reported that the error between the two peaks was 1 in 50,00,000. For the next two years, Michelson conducted his experiments, changing and refining his instrument. He published his result in *Astrophysical Journal* in 1927 and calculated the speed of light to be 299,796 km per second, which is 0.0000118 km per second less than the then accepted value of the speed of light. Michelson who was then 75 years old became the first person to accurately measure the speed of light.

In 1905, Einstein published his special theory of relativity in which he postulated that nothing can travel faster than the speed of light which was considered to be a universal constant. This universal constant proved so crucial that Einstein, appreciating Michelson's work said, "Without your work this theory would today be scarcely more than an interesting speculation."

Today the speed of light is one of the most important critical values in science. This value appears in many equations related to atoms, gravity, electricity and magnetism. With improved technology, the speed of light is measured more accurately and it is defined to be exactly 2,99,792.458 kilometres per second.

Folk Dances of India - Kashmir

Apart from being a paradise on earth, Jammu and Kashmir is also renowned for its traditional folk music and dance that are performed by the local people. Jammu and Kashmir dance forms are not only limited to the state but they attract people from all over the country and now form an integral part of the rich Indian culture.

Some popular folk dances of Jammu and Kashmir are:

Kud: Kud is a typical community dance performed in the middle mountain ranges of Jammu. During the rainy season, when maize is harvested, the villagers come down from nearby hills and gather in the vicinity of the *gramdevata*, the presiding deity of the village. The farmers dance to express their gratitude to the deity for protecting their crops, cattle and children from natural calamities, Men, women and children wearing their best dress gather around a bonfire for nightlong festivities. Music is provided by (*dhauns*) the drum, (*bansuri*) the bamboo flute and (*ransingha*) a kind of trumpet. The costumes of the dancers vary from place to place as do the songs sung. The Kud is usually danced all night on moonlit nights.

Kud Dance

Bachcha Nagma: This dance is performed by boys, usually in their early teens, dressed as girls. It is said that earlier a class of women dancers called Hafizas used to perform this dance and also sing Sufiana Kalam, the traditional sophisticated music of Kashmir valley. Bachcha Nagma is an offshoot of the dance of the Hafizas which has gradually died out. The teenage dancer sings and dances to the orchestra that accompanies him. Tuneful music is provided by the (*rabab*) a lute-like local instrument, (*shehnai*) the reeded wind instrument, the *dugi-tabla* pair which in Kashmir is called *dukra*, and at times the *tumbaknari,* a typical Kashmiri drum.

Bachcha Nagma Dance

Rouf: In the Kashmir valley, the village girls dance the Rouf to herald the arrival of spring after a long cold winter. They stand in two rows facing each other and the dancers of each row interlock themselves by putting their hands at the back of the flanking two dancers. The stepping and dance movements are simple. On the rhythmic beats they come one step forward and on the next beat go backward in consonance with the stepping. All the dancers sing while dancing. Musical accompaniment is provided usually by (*rabab*) a local string instrument and *tumbaknari*.

Rouf Dance

MAHESH KARAMBELE

Mahesh has solo and group shows to his credit and won awards. His paintings are realistic in oil on canvas.

Tuesday 30th November to Monday 6th December 2021 (AC Gallery)

DEEPKALA FOUNDATION

Deepkala Foundation, a Mumbai based art foundation, promotes artists and their art-work. Landscapes, seascapes, historical monuments etc. in vivid mediums and style will be on display.

Tuesday 7th December to Monday 13th December 2021 (AC Gallery)

ADISHWAR JAIN

Painting by Adishwar Jain

Adishwar is currently being considered as most renowned torn-paper collage artist of India. He uses magazines, newspapers, labels, old greeting cards, calendars and various textiles for his unique collage paintings.

Tuesday 7th December to Monday 13th December 2021 (Circular Gallery)

GROUP SHOW

This group will display works of ex-students of Sir J. J. Institute of Applied Art. It will include calligraphy, Indian folk art forms, photography, figurative compositions, abstract forms and collage work.

Tuesday 14th December to Monday 20th December 2021 (AC Gallery)

BIKRAM FARAK
AMARENDRA MOHARANA
JUGASHREE BISOI
SANJAY BISWAL

Painting by Bikram Farak

This group show will display works of artists from Odisha, with mixed media, acrylic on canvas and realistic art.

Tuesday 14th December to Monday 20th December 2021 (Circular Gallery)

JAIWANT WAGHERE
RUSHABH JHALA
PRAKASH KAKAD
DHIRAJ PATIL

Artists will display their works in acrylic and oil on canvas in this group show.

Tuesday 21st December to Monday 27th December 2021 (Circular Gallery)

NEHRU CENTRE ART GALLERY STUDY CAMP COLLECTION

Works from the Nehru Centre Art Gallery Study Camp collection will be on display.

21st December 2021 to 3rd January 2022 (AC Gallery)

GROUP SHOW

Arvind Sawant and a group of eight artists will exhibit their artworks in mix media.

Tuesday 28th December 2021 to Monday 3rd January 2022 (Circular Gallery)

BAL-DISHA 2021

The exhibition was inaugurated by participating children artists on 9th November 2021.

It received immense response from art lovers.

UNESCO World Heritage Sites in India

27. Victorian Gothic and Art Deco Ensembles of Mumbai

Ownership of Bombay's islands transferred from Portugal to Britain in 1661, when Charles II married Catherine of Braganza, a Portuguese princess. Bombay grew as an urban centre under the direction of the British who brought their aesthetic values with them from 'home'. In the 18th and early 19th centuries, they experimented with the neo-Classical style of architecture. Later the city charted a new course that reflected contemporary European fashions. Gothic architecture of the medieval ages became high fashion, admired for its human scale and the manual construction techniques that its appearance evoked.

The University Convocation Hall, the University Library and the Rajabai Tower form the finest group of buildings in the Victorian Gothic style. The Victoria Terminus (VT) was built to house offices and a terminal for the Great Indian Peninsula Railway, and is now officially called Chhatrapati Shivaji Terminus (CST).

Art Deco emerged in India in the 1930s. Interestingly, while its appearance coincided with the waves of nationalism and the aspirations of *swarajya* or self-rule, the style was really a spontaneous burst of exuberant westernization before independence. The shores of Bombay, the great reclamations and frantic building activity that were taking place in the city in the 1930s provided a platform for the art deco construction. This urban development was also evident in the form of higher buildings facilitated by the use of the newly introduced construction material - reinforced cement concrete (RCC) which signalled the dawn of the modern era in Bombay.

Art Deco in Bombay had forms that were angular, and façades that were often stepped back. This was especially true in taller and non-residential buildings. Decorative elements in Bombay's buildings ranged from industrial symbols to palm trees, sunray patterns, the favourite decorative themes expressed in bas-relief stucco panels, etched glass and metal work in balconies.

UNESCO has declared Victorian Gothic and Art Deco Ensembles of Mumbai as a World Heritage Site in 2018.

Further reading at Nehru Centre Library:

- Bombay Gothic *by* Christopher W. London; India Book House Pvt. Ltd., Mumbai, 2002. Call No. 915.4792/Lon. Barcode - 12444
- The Heritage Buildings of Bombay *by* Rajan Narayan; English Edition Publishers and Distributors, Pvt. Ltd. Mumbai, 2002 Call No. R722.44792/Nar. Barcode - 12203

Chhatrapati Shivaji Maharaj Terminus

Rajabai Clock Tower

Features of Art Deco Buildings

R. N. I. No. MAHENG/1999/121 Date of Publication: 18th of every month MCW / 114 / 2021-23

For Private Circulation Only | Posted at Worli, MDG, Mumbai - 400 018. on 24/25th of previous month

NEHRU CENTRE PUBLICATIONS

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Colourful art catalogues for sale

(1) GOPALRAO DEUSKAR (1995)
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(6) D. G. KULKARNI (DIZI) (2001)
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ART FUSION catalogues

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New Arrivals: Books

Sr. No.	Title	Author/s
1.	Inquilab: Bhagat Singh on religion and revolution	**S. Irfan Habib**
2.	Lost letters and feminist history: The political friendship of Mohandas K. Gandhi and Sarala Devi Chaudhurani	**Geraldine Forbes**
3.	Tharoorosaurus	**Shashi Tharoor**
4.	The Bhagat Singh reader	**Chaman Lal**
5.	Savarkar: Echoes from a forgotten past, 1883-1924	**Vikram Sampath**
6.	Savarkar: A contested legacy, 1924-1966	**Vikram Sampath**
7.	The sunlight plane	**Damini Kane**
8.	The right to education in India: The importance of enforceability of a fundamental right	**Florian Matthey-Prakash**
9.	Backstage: The story behind India's high growth years	**Montek Singh Ahluwalia**
10.	Two great masters: Living a happy and joyous life	**Amrit Gupta**

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