

Newsletter

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Nehru Centre



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A Missing Page from the History of the Freedom Movement: Congress Radio

The two-day historic session of the All India Congress Committee was held on 7th and 8th August 1942 at the Gowalia Tank maidan, Bombay. The session passed the 'Quit India' resolution which resounded throughout the country along with Gandhiji's clarion call 'Do or Die'.

A twenty two year old student of Wilson College, Usha Mehta, and her friends attended the session on both the days and absorbed every word uttered by the leaders exhorting the people to further the cause of freedom. So, when in the wee hours of 9th August, Gandhiji and all important Congress leaders were arrested and severe censorship imposed on public communication, Usha Mehta and her friends decided to contribute their bit to the freedom struggle. They thought of circumventing the censorship by surreptitiously starting a radio station of their own to reach out to the people and give voice to their feelings.

On the face of it, the idea seemed preposterous. Usha Mehta and friends had neither money nor technical knowledge on how to operate a radio station. At this stage Babubhai Khakar, a businessman

and a fellow student in the *rashtra bhasha* class joined Usha Mehta's group. He was an associate of Ram Manohar Lohia and could obtain funds for the project.

The most important requirement to start a radio station was that of a transmitter and of a person having technical expertise to set it up. One Nariman Adarbad Printer appeared on the scene to fulfill both requirements. Printer had an amateur transmitting licence and also a transmitter. When the Second World War broke out in 1939, his licence was cancelled and he had to dismantle the transmitter. He, however, kept parts of the transmitting apparatus. Babubhai knew Printer and approached him with the proposition of starting a secret radio station. Printer agreed. With the help of another technical man, Rustom Cowasji Mirza, Printer assembled the transmitter, took a trial and found it working. This happened around the end of August. Getting a secret radio station started so soon after it was decided to have one was a remarkable feat.



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Feedback, comments are welcome.

Published for Nehru Centre
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Mumbai - 400 018.

The first station was set up in the hired top floor of a building called Sea View in Chowpatty. The place was hired on 26th August and the first broadcast from the Congress Radio was made on 27th August 1942 at the frequency of 41.78 meters. In the beginning there was only one programme at 8.45 pm which lasted about fifteen to twenty minutes. Later, morning programmes began with the song '*Hindustan Hamara*' and ended with '*Vande Mataram*'. Dr. Ram Manohar Lohia became a benefactor of the Congress Radio. He helped the radio station by supplying news bulletins, talks and speeches from leaders like Achyut Patwardhan and Jayaprakash Narayan. He also wrote speeches for the Congress Radio and relayed them along with Coomie Dastur. Hindi speeches were delivered by Moinuddin Harris, Achyut Patwardhan and Usha Mehta.

It was essential to keep the location of the radio station totally confidential and for that reason alone it had to be shifted frequently. During its two and half months active and successful existence, the Congress Radio changed its location seven times. In spite of that, it relentlessly carried on spreading the message of revolution and freedom with telling effect as described by Dr. Usha Thakkar in her book '*The Congress Radio*': "The youth of the city had embraced the movement with wholehearted zeal. They were unafraid of what the

future held for them – be it imprisonment and torture, or loss of professional security and comfort. Their ardour was kept alive by the leaders working from the underground. 'Bulletin No. 8 War of Independence' congratulated the Bombay students and advised them to go ahead with their activities and ensure that no school or college remained open until the national struggle came to a victorious conclusion. The powerful message given was: 'Education can wait but not the freedom'."



Young Usha Mehta

Alas, this revolutionary idea of Usha Mehta and her companions did not last long. Eventually the police caught up with the Congress Radio's operators. They arrested Printer and during interrogation he revealed everything. On 12th November 1942 while Usha Mehta was putting on the '*Vande Mataram*' record at Parekh Wadi Radio

Station, the police swooped on them. The scene is best described in her own words: "On entering the broadcasting room, the police ordered to stop playing the record. I not only refused to obey the order but mustered all the courage at my command and firmly replied, "The record will not stop. This is our national song. So all of you stand at attention. And lo and behold! One and all of them, including the chief, did stand at attention"."

Usha Mehta and her companion Chandrakantbhai were arrested. After the arrest when both of them, accompanied by policemen, stepped out of the radio station, they found a policeman posted at each and every step all the way down. Usha Mehta said to Chandrakantbhai, "Bhai, we do not know whether we will ever get such a reception again, but today we are getting a Guard of Honour – and that too from the rifled policeman. He was equally unperturbed and reacted saying, "Yes, this is certainly a memorable day for us."

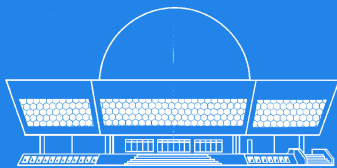
Such was the mettle and zeal of the young freedom fighters. This lesser known story of Usha Mehta and the Congress Radio is, indeed, one that the youth of today should know and read about.

Inspired by "Congress Radio: Usha Mehta and the underground Radio Station of 1942" written by Dr. Usha Thakkar

What Nehru said....

As I talked to Mahatma Gandhi and tried to follow his argument, I saw a passion in his eyes and also heard it in his words; and I knew that that passion was the passion of India - the passion that is moving vast numbers of Indians today. In a much smaller measure, I too have experienced that passion and I know what it means. Before that mighty urge of the people petty arguments and controversies become small and without much meaning... When Mahatma Gandhi says to the British 'Withdraw', he says something which every self-respecting Indian feels.

... From an interview to the press, June 16, 1942, Bombay



NEHRU PLANETARIUM

From an Atom to Saha's Equation

An Atom

The word 'atom' comes from the Greek word 'atomos' which means 'indivisible'. An atom is the smallest particle of matter. Greek philosophers Leucippus and Democritus are credited with having introduced the idea of 'atomism' in 5th century BC. A very similar idea was also said to have been proposed by Indian sage Kanada in his Sanskrit aphorisms *Vaiśeṣika Sūtra* or *Kanada Sūtra*. Kanada proposed that *paramanu* (atom) was an indestructible particle of matter which was indivisible because it was a state at which no measurement was possible. The concept of atoms was philosophical in nature. Ancient thinkers thought that water, earth, fire, air and aether (or void, *vyom*, or *śūnya*) as elements and all other material are made up of one or more of these elements. These ideas remained unchanged for nearly twenty centuries. During the Renaissance in Europe, natural philosophy started giving way to modern science.

By the 19th century, science and technology started making rapid progress.

The first attempt to understand the smallest unit of an element was made by John Dalton, an English chemist in the early 1800s. Based on his research, he introduced an atomic theory of elements, the five main points of which were:

- a) Elements are made of extremely small particles called atoms.
- b) Atoms of the same element are identical in size, mass and other properties whereas atoms of different elements differ.
- c) Atoms cannot be subdivided, created or destroyed.
- d) Atoms of different elements combine in simple whole-number ratios to form chemical compounds.
- e) In chemical reactions, atoms are combined, separated or rearranged.

Towards the end of the 19th century, J. J. Thomson (British physicist), proposed a new model of an atom based on his experimental discoveries. He said that an atom is a mixture of negatively and positively charged particles. He called these negatively charged particles 'corpuscles,' later called electrons.

Atom is divisible

A few years later, Ernest Rutherford (New Zealand-born British physicist) and his colleagues carried out many laboratory experiments to understand the nature of the atom. They discovered that the atom is made up of three main types of particles: protons, electrons and neutrons. Protons were those positively charged particles in which positive charge was not distributed evenly inside the atom but was concentrated in a tiny nucleus at the centre. Electrons were fundamental particles that do not consist of smaller particles. They

orbited the nucleus like planets that orbit the sun. Rutherford also discovered that the mass of the nucleus of most atoms exceeded the total mass of protons. He speculated that this surplus mass was composed of previously unknown neutrally charged particles which were called neutrons.

This experiment posed two questions: firstly, if the nucleus was packed with positively charged particles then why didn't these particles repel each other like the same poles of a magnet and secondly, unlike planets which have no charge, why didn't negatively charged particles fall inside the nucleus of positively charged particles?

As the experimentalists were working hard to 'look' inside an atom, theoretical physicists were trying to work out the laws of nature governing the atomic structure.

At the beginning of the 20th century, Max Planck (German theoretical physicist) and Albert Einstein (German-born theoretical physicist) postulated that light energy is emitted or absorbed in discrete amounts known as quanta, giving birth to the quantum theory.

In 1913, based on this work, Niels Bohr (Danish physicist) proposed a modified model of an atom. He said that electrons could only orbit the nucleus in fixed orbits as their

distance from the nucleus was calculated on the basis of their energy. An electron could jump from a higher orbit to a lower orbit by radiating an appropriate amount of energy (which is light). It could, alternatively, jump from a lower orbit to a higher one by absorbing energy.

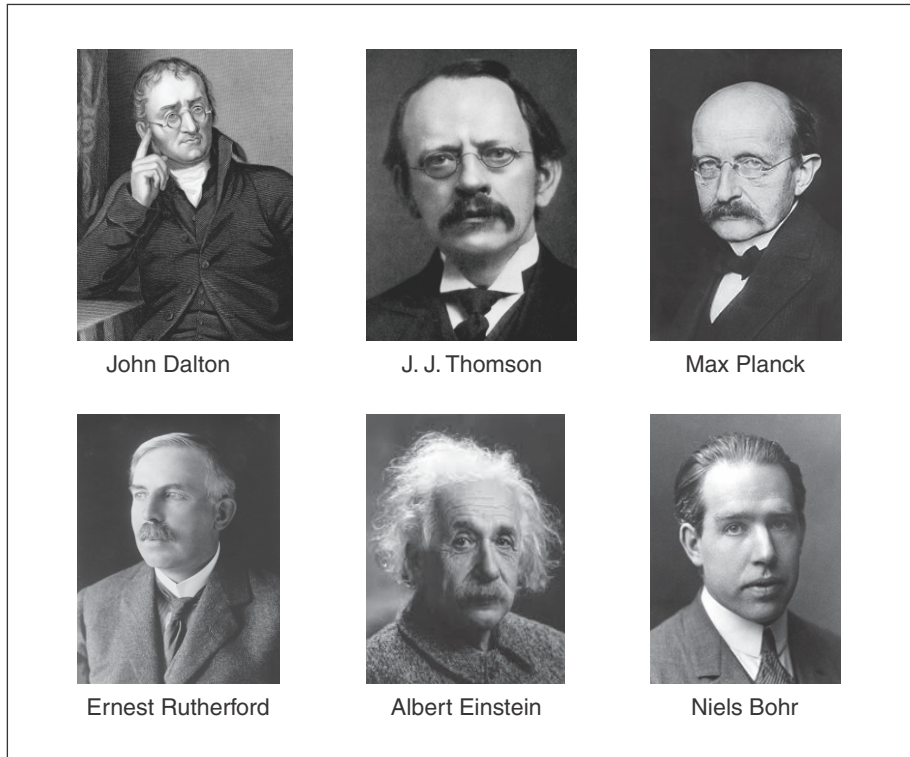
The number of protons in an atom of element uniquely defines the nature of that element. The number of protons is called the atomic number of that element and is denoted by Z. Atomic numbers of hydrogen and gold are Z=1 and Z=79 respectively. The total charge of an atom is neutral owing to the equal number of electrons and protons. The atom is in a neutral state.

Fourth state of matter: Plasma

Sometimes, electrons can be knocked out from an atom due to very high temperature. The atom then loses negative charge and its net charge becomes positive. If an atom acquires an extra electron, then its total charge becomes negative. The atom is then said to be positively or negatively ionized, respectively.

In the last issue of our newsletter, we wrote about the eminent Indian physicist Dr Meghnad Saha, whose contribution to physics and astronomy is of paramount importance. He worked out an equation, known as Saha's ionization equation which is also called Saha's equation. This equation is useful in finding the surface temperature of stars.

The knocking off or acquiring of an extra electron happens more easily in a matter when it is in the gaseous state. When all or most electrons are removed from the atoms of gas, then the gas is said to be in the state of



plasma. Plasma is the fourth state of matter after solid, liquid and gaseous state.

Let us consider gas (hydrogen) in the upper region of a star. Due to the different levels of temperatures and pressure, we find three types of particles; negatively charged electrons, positively charged protons and neutral atoms, in which electrons and protons are bound together. The number of different types of particles is termed as 'number density' of that type of particle. The motion of these particles in the gas depends on their mass and temperature. The higher the temperature, the faster they move. Electrons that have negligible mass ($9.1093837015 \times 10^{-31}$ kg) move faster in the gas. Protons are about 2000 times more massive than electrons and move slower compared to electrons.

When the temperatures are low, electrons move slowly and can be captured by the protons. Together they

become atoms. Thus, the number density of electrons and protons reduces whereas that of neutral atoms increases.

The Saha ionization equation relates surface temperature of stars and the exact number density of free electrons, protons and atoms. By using Saha's equation, one can accurately determine the temperature of the outer regions of stars. Later the equation was found to be useful in cosmology too.

All the scientists mentioned above received the Nobel Prize in recognition of their contribution in the field of atomic theory. J. J. Thomson (physics 1906), Ernest Rutherford (chemistry 1908), Max Planck (physics 1911), Albert Einstein (physics 1921), Niels Bohr (physics 1921). Meghnad Saha was nominated for the prize five times but did not receive it. There was no Nobel Prize at the time of John Dalton.

Folk Dances of India - Himachal Pradesh

Folk dances are a spontaneous human expression of the joy of living and Himachal Pradesh is a state which espouses that joy in its people. No festivity here is complete without dancing. Some popular folk dances of Himachal Pradesh are:

Nati Dance: Several forms of this dance are prevalent in the Kullu, Sirmaur, Mandi, Mahasu and Chamba region. In Kullu, this is known as the Siraji Nati as the songs sung for this have come here from Kullu while the rhythm pattern originates from the inner Siraji area. Rhythm is a main feature of this dance, and often it derives its name from the particular rhythm it employs. The instruments that accompany this dance range from drums, *shehnai* (a wind instrument), cymbals and *ranasinga* (an instrument similar to a trombone). The costume comprises of *chola* (top coat), *ghaghra* (skirt), *gachi*, *lachhi*, a floral shawl and *boomani* with silver chains. The women wear heavy armlets and silver and gold ornaments known as *tunki* and *chanki* around their necks. The men and women hold hands and clap as they dance.

Demon (Rakshasa) Dance: These dances from the Kinnaur area are reminiscent of the prehistoric period. The Demon dance is called thus as the performers wear demon masks. It depicts the attack of the demons on the crops and their defeat by the good forces. Dressed in their demon costumes, the dancers enhance the beautiful sight as they dance against the backdrop of the mountains. The leader is known as *ghure* and the rest follow in his footsteps. In some areas, men and women dance separately.

Dangi Dance: The Dangi dance is a dance form of the Chamba area. It is performed at festivals, weddings and during *jatras* by the *Gaddi* women in straight lines and semi-circular patterns. This is accompanied by the singing of the love ballads of *Sunni* and *Bhukhu*. The dancers join hands and move forward and backward in this graceful dance. The Dangi is danced to complex rhythms like *Dhamal* and *Lahauli* on drums. The *Lahauli* beat goes slowly and in this the *gaddi* dancers lower and raise their legs slowly as they dance in circles.



Nati Dance



Demon (Rakshasa) Dance



Dangi Dance

SANDHYA KETKAR



Painting by Sandhya Ketkar

Sandhya Ketkar former lecturer in S.N.D.T. University in the Art & Painting Department, Mumbai. She has many shows to her credit and won awards. Her paintings are realistic on various monuments and figurative compositions.

**Tuesday 2nd November to
Monday 8th November 2021
(AC Gallery)**

CHILDREN'S ART EXHIBITION



Painting by Soumil Ghadi



Painting by Tanishka Tawade

Saraswati Purushottam Memorial Trust, Mumbai has been organising exhibition of art works created by children from various schools every year.

**Tuesday 9th November to
Monday 15th November 2021
(Circular Gallery)**



To commemorate Pt. Jawaharlal Nehru's birth anniversary, Nehru Centre Art Gallery organises an annual art exhibition of children's works. Children from Mumbai, Thane and U.K. will participate this year.



Abhijay Sawant (4 years)
I.E.S. Orion School, Dadar,
Mumbai



Grantha Waghere (4 years)
Smt. K. C. Gandhi English
School, Kalyan (West)



Saanavi Kudav (7 years)
Fatima High School,
Vidya Vihar (West), Mumbai



Anaya Narvekar (8 years)
Arya Vidya Mandir,
Santracruz (West), Mumbai



Ishita Narvekar (8 years)
Arya Vidya Mandir,
Santracruz (West), Mumbai



Anaisha Shetty (8 years)
Sunitidevi Singhania School,
Thane



Soundarya Rana (9 years)
Hiranandani Foundation School,
Thane (West)



Advika Menon (9 years)
Hiranandani Foundation School,
Thane (West)



Soumil Ghadi (11 years)
IES V. N. Sule Guruji
Vidyalaya, Dadar (East), Mumbai



Devang Ghadigaonkar (11 years)
K.V.V. English School,
Vikhroli (East), Mumbai



Aastha Gupta (12 years)
St. Joseph Convent School,
Bandra, Mumbai



Saanavi Naik (13 years)
Villa Theresa High School,
Peddar Road, Mumbai



Tanishka Tawade (13 years)
Northampton High School,
United Kingdom



Ayaan Waghoo (14 years)
St. Paul High School,
Parel, Mumbai



Anoushka Pinheiro (17 years)
St. Xavier's College,
Mumbai

**Tuesday 9th November to Monday
15th November 2021 (AC Gallery)**

**MANISHA JHA . URMILA DEVI
CHANDRAKALA DEVI
BANDANA JHA . PUJA JHA**



Painting by Manisha Jha

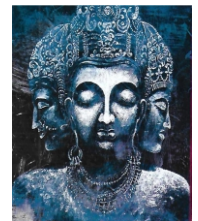
This group exhibition will display traditional Mithila and Madhubani art.

**Tuesday 16th November to
Monday 22nd November 2021
(AC Gallery)**

NAVKAR ART FOUNDATION



Painting by Sanjay Sancheti



Painting by Pratibha Dugad

Since last six years this foundation provides a platform for artists following Jainism to showcase their art works.

**Tuesday 23rd November to
Monday 29th November 2021
(AC & Circular Gallery)**

UNESCO World Heritage Sites in India

26. Hill Forts of Rajasthan

The forts in Rajasthan have some of the most strategic locations among any in the world. Built by the rulers of the Rajput kingdoms between the 14th and 17th centuries, their unassailability was their most precious asset in an age of bloody treachery and ruthless battle. The canons are silent today, and the forts, some declared world heritage sites by UNESCO, are citadels of extraordinary architectural brilliance in the most rugged of terrains, the Aravalli mountains in west India.

Amber/Amer Fort: The fortified complex of Amber is built on a hilltop overlooking the Maota Lake/Mahavata Sarovar. It was the capital of the Kacchwaha Rajputs from the 12th century until they moved to Jaipur in 1727. The old 11th century fort that stood here originally was built by Raja Man Singh and the many beautiful buildings that were added by Raja Jai Singh later are truly spectacular. The Mughal influence is strong, both in the architecture as well as in the decorative elements. The main entrance to the historic fort is through Suraj Pol or the Sun Gate, which faces the rising sun, the sun being the Kacchwaha emblem. The gate's lofty arch, flanked by *jharokhas*, leads to Jaleb Chowk, a huge courtyard which contained the guard's quarters and administrative offices.



Amber/Amer Fort

Chittorgarh Fort: The giant 700-acre fort sprawls across a 500 feet high, half-a-mile wide and three-mile long hill, rising abruptly from the plains. Its ruined palaces, temples and towers were witness to sieges and *jauhars* or mass immolation by women and children. The fort covers 65 historic structures, which include four palaces, nineteen large temples, twenty water bodies, four memorials and some victory towers.



Chittorgarh Fort

Kumbhalgarh Fort: Known as the 'Eye of Mewar', the massive fortress of Kumbhalgarh is situated between Jodhpur and Udaipur at a height of 3445 feet. The fortress is named after Rana Kumbha of Chittorgarh, who built it in the 15th century. Its massive perimeter wall spans an astounding 36 kilometres and its wide ramparts could accommodate six horsemen riding abreast. The path to its entrance had seven fortified spiked gates, which were meant to deter elephants from mowing them down.



Kumbhalgarh Fort

Jaisalmer Fort: Jaisalmer, India's golden city, was founded when Rawal Jaisal began building a fort in 1156 A.D. The fort was raised between 1156 and 1171 on the rocky ridge of *Trikuta*, surrounded by a vast, flat sandy expanse. Seemingly crafted from a single block of stone, it is much larger than it appears to be at first sight. Inside the fort, the cubical structures of palaces and dwellings contrast with the cylindrical bastions.

Ranthambore Fort: Ranthambore Fort lies within the Ranthambore National Park, near the city of Sawai Madhopur. Inside the fort, there are three Hindu temples dedicated to Ganesha, Shiva and Ramlallaji constructed in 12th and 13th centuries from red Karauli stone. There is also a Jain temple of Lord Sumatinath (5th Jain Tirthankar) and Lord Sambhavanath.

Gagron Fort: Gagron Fort is a hill and water fort and is situated in Jhalawar district of Rajasthan, in the Hadoti region of India. Built by King Bijaldev in the 12th century, it was later controlled by Sher Shah and Akbar. The fort is constructed on the confluence of Ahu River and Kali Sindh River and is surrounded by water on three sides and a moat on the fourth side. Hence, it is also called Jaladurg.

UNESCO declared the Hill Forts of Rajasthan as World Heritage Site in 2013.

Further reading at Nehru Centre Library.

- Forts and Palaces of India: Sentinels of History by Bindu Manchanda; Roli Books, New Delhi, 2010. Call No. R725.17(54)/Man. Barcode- 15221

NEHRU CENTRE PUBLICATIONS

Books for Sale

Nehru Revisited
 India's Defence Preparedness
 Nehru and Indian Constitutionalism
 Internal Security in India
 Constitutionalism and Democracy
 in South Asia
 मुंबई: काल आणि आज
 Mumbai: Past and Present
 India and Central Asia
 Witness to History
 India-Russia Relations
 India-China Relations
 Remembering Einstein
 Challenges to Democracy in India
 Rule of Law in a Free Society
 Science in India
 Exploring The Universe

Colourful art catalogues for sale

- (1) GOPALRAO DEUSKAR (1995)
 - (2) VINAYAKRAO KARMARKAR (1996)
 - (3) MITTER BEDI (1997)
 - (4) S. L. & G. S. HALDANKAR (1998)
 - (5) BALAJI & HARISH TALIM (1999)
 - (6) D. G. KULKARNI (DIZI) (2001)
 - (7) NARAYAN L. SONAVADEKAR (2003)
 - (8) NAGESH B. SABANAVAR (2004)
 - (9) SAMAKALEEN (2005)
 - (10) VINAYAK S. MASOJI (2006)
- and many others

ART FUSION catalogues

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New Arrivals: Books

Sr. No.	Title	Author/s
1.	My Kumaon: Uncollected writings	Jim Corbett
2.	State of India's health: Body burden: Lifestyle diseases	Sunita Narain, Vibha Varshney and Richard Mahapatra
3.	Dot that went for a walk: 51 short stories	Sarada Akkineni, Reema Gupta and Lakshmi Nambiar
4.	Sir M Visvesvaraya: The legendary nation builder	National Council of Science Museums
5.	Taking India forward: The road ahead: Democracy, secularism and social cohesion	Zeenat Shaukat Ali
6.	Vanishing homes of India	T. S. Nagarajan
7.	Annual Status of Education Report (Rural) 2018	ASER Centre
8.	Hyderabad: Images and memories	A. T. Jayanti
9.	Between Bombay & Mumbai: 25 years in pictures through a changing city	Fawzan Husain
10.	Power and diplomacy: India's foreign policies during the Cold War	Zorawar Daulet Singh

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