

Newsletter

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Nehru Centre



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Dear Reader,

The Covid-19 pandemic caused major disruptions in the regular services of many institutions all over the world. Nehru Centre, too was affected in the most unexpected manner. We had to close our offices and our programmes as the safety of all of us and all of you was of primary importance. Thus, the printing of our monthly newsletter too had to be suspended. As we limp back to normal, we have begun with the printing and circulation of the Newsletter from December 2020. Since our programmes are still kept on hold, the contents are largely of an academic nature. We hope it will interest you to read the politico-historical, scientific, cultural, artistic and literary features in the following pages.

Except for May and June 2020, all the other previous issues may be read online on the Nehru Centre website

www.nehru-centre.org/newsletter.

We always look forward to your feedback and suggestions.

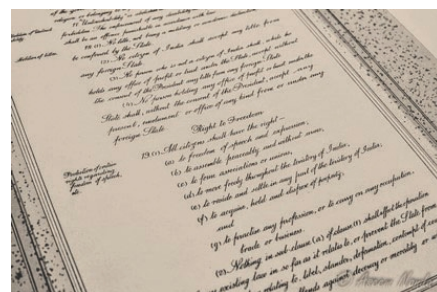
Chief Executive,
Nehru Centre.

Indian Constitution: A calligraphic work of art

In January 2020, Nehru Centre's newsletter carried a short piece on the making of the Constitution. In that article the role played by some of the prominent members of the Constituent Assembly like Dr. Rajendra Prasad, Jawaharlal Nehru, Vallabhbhai Patel, Dr. B. R. Ambedkar, Alladi Krishnaswami Aiyer, K. M. Munshi etc. was briefly touched upon. The contribution of Sir B. N. Rau, the constitutional advisor and Shri S. N. Mukherjee, the chief draftsman of the Constitution were also mentioned along with the salient features of that lengthy document.

This month, we bring to the fore some lesser known facts of the Constitution. Many of the present generation may not know that the entire Constitution was written in a flowing italic style in the best calligraphic tradition and hardly any would be knowing the name of the person who wrote it. Shri Prem Behari Narain Raizada of Delhi accomplished that feat. He had learnt calligraphy from his grandfather, Shri Ram Prashad who was a scholar of the Persian language.

When the draft of the Constitution of India was ready, Prime Minister



A page from the Constitution written by Shri Prem Behari Narain Raizada



Prem Behari Narain Raizada writing the Constitution

Jawaharlal Nehru asked Shri Prem Behari Raizada to write it in his hand in a flowing italic style. Prem Behari readily agreed. 'What would you charge?' Nehru enquired. 'Not a penny', said Raizada, but sought permission to write his name on every page of the Constitution and also his grandfather's name on the

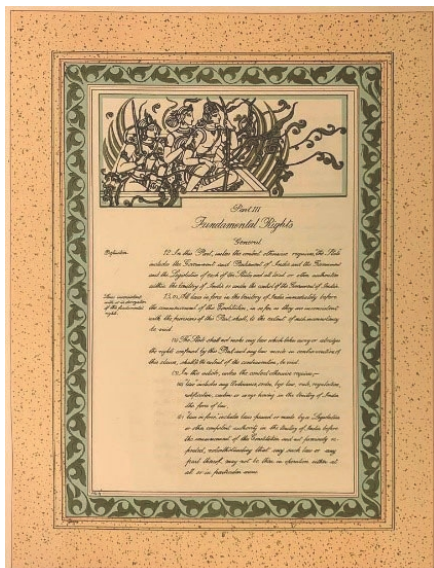
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last page. His request acceded, he was entrusted the great job of penning the Constitution. A room was allotted to him in the Constitution Hall.

The draft of the Constitution consisted of 395 articles, 8 schedules and the preamble. It took six months to complete the task with 432 pen-holder nibs.



Some nibs used to write the Constitution



Embossed in gold: The section on fundamental rights, which features a scene from the Ramayana.



Shri Behari shows the first manuscript to Dr. Rajendra Prasad

The original manuscript of the Constitution was written on parchment sheets measuring 16x22 inches which have a lifespan of a thousand years. The finished manuscript consisted of 251 pages and weighed 3.75 kg. It was signed by all the members of the Constituent Assembly.

Another little known feature of the manuscript is that each and every page of it is a piece of art. Nandlal Bose, the great painter of all times, embellished the border of every page with beautiful designs in the Shantiniketan style and adorned the beginning of each chapter with an image of India's glorious past. The pages of the manuscript are sprinkled

with scenes from the Vedic period and from the reigns of the great kings and rulers like Ashok, Chandragupta Vikramaditya, Akbar, Shivaji and others. The freedom movement is depicted by portraying the Dandi march and Gandhiji in Noakhali.

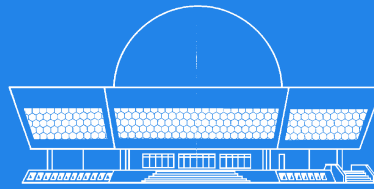
Bound in black leather and embossed in patterns of gold, the Constitution is, indeed, a great work of calligraphic art. Nani Palkhiwala aptly described it as a noble Constitution.

A fascimile of the original Constitution can be seen in the Centre's Library.

What Nehru said....

26th January 1950 is a day of high significance for India and the Indian people. It does mean the consummation of one important phase of our national struggle. That journey is over, to give place to another and perhaps more arduous journey. A pledge is fulfilled and the fulfilment of every pledge gives satisfaction and strength for future endeavour.

.... From his message to the nation, New Delhi, 25 January 1950.



NEHRU PLANETARIUM

Cepheid Variables

In the late 18th century a young man named John Goodricke discovered that the brightness of the second brightest star named Algol in the constellation of Perseus varied from time to time. This discovery led to a new branch in astronomy – the astronomy of variable stars. Goodricke had proposed that Algol was not just a single star but two stars which were rotating around each other. When the fainter star came between the earth and the star, the total brightness reduced. Such stars are called extrinsic variable stars. The graph of time versus the brightness of the variable star is called a light curve. (See newsletter Nov and Dec. 2020).

As time passed, John discovered more stars whose brightness changed. In 1784, he found that the brightness of the fourth brightest star in the constellation of Cepheus called Delta Cephei, changed over 5 days 8 hours and 47.4 minutes. The light curve of this star differed from that of Algol. The brightness of the star rose quickly and then faded slowly. (See figure 1)

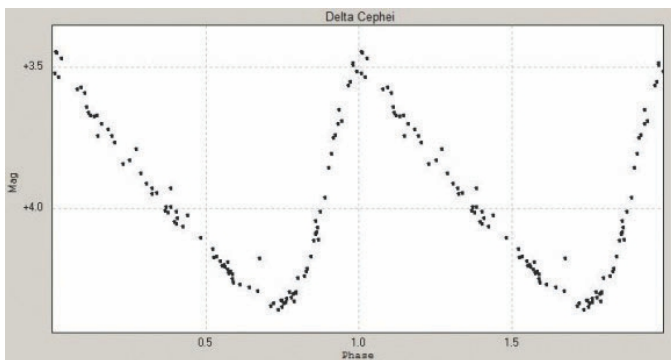


Fig 1 - Light curve of Delta Cephei

Later, more variable stars were discovered. Though the pattern of variation in their brightness seemed to be identical, they appeared at different periods. The stars brightened quickly and faded slowly but some stars would do so in just a few days' time and some others would take a longer time, even up to 100 days. The stars whose brightness varied with a pattern similar to that of Delta Cephei are collectively called Delta Cepheid variables or simply Cepheid variables.

In 1894, Russian astronomer A. A. Belopolasky used the spectroscopic method to study the expansion and contraction of the stars. In the first decade of the twentieth century, American astronomer Henrietta Swan Leavitt, working at the Harvard College Observatory, made a very significant discovery. She



Henrietta Swan Leavitt (1868 - 1921)

was studying stars in Large and Small Magellanic Clouds (LMC/SMC). Large and Small Magellanic clouds are nebulae or patches of light seen from the southern hemisphere of the earth. Persian

astronomers knew about these patches. However, it was through the writings of Ferdinand Magellan, the Portuguese explorer, that in 1519, the European astronomers learnt about these celestial clouds which now bear his name.

Leavitt, during her studies, discovered many Cepheid variables in LMC and SMC. Most interestingly, she found that the brighter stars shone longer than the fainter stars. She reported her discovery in 1912. In her report, she published a graph of magnitude (the term used for indicating the brightness of stars)

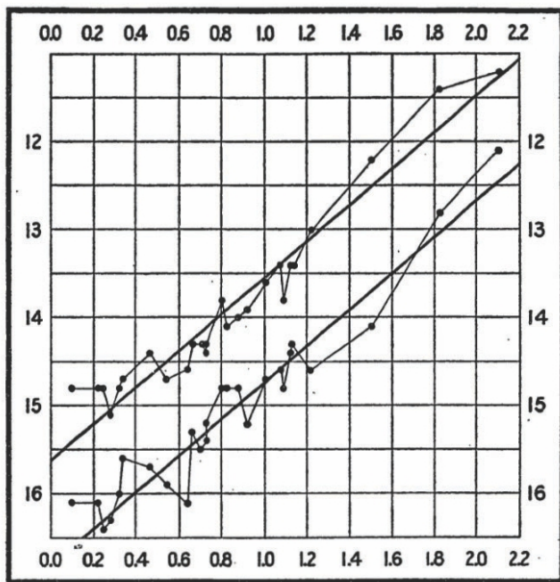


Fig. 2 - Leavitt's graph of magnitude

versus their duration. (See figure 2) In her own words, "A straight line can be readily drawn among each of the two series of points corresponding to maxima and minima, thus showing that there is a simple relation between the brightness of the Cepheid variables and their periods."

It did not take time for astronomers to understand the significance of this important discovery, which was a direct correlation between the brightness of the stars and their distance. As all the stars in LMC or SMC can be considered to be at nearly the same distance from the earth, this relation can be used to estimate the distance between them. This correlation is now called

the period-luminosity relation. Luminosity is the total energy or intrinsic brightness of the stars.

Simultaneously, some other astronomers were measuring distances to stars by the method of parallax. The method is similar to the one used by geographical surveyors.

Leavitt died at the age of 53 from cancer. But her work was continued by another young astronomer Harlow Shapley. He studied Cepheids in a cluster of stars called globular clusters and found that they were not centred around the Sun, as was believed then, but at a point somewhere in the constellation of Sagittarius. It may be noted that until this time, humanity had no knowledge of the actual extent of our universe.

In 1924, Edwin Hubble, working at the Mount Wilson Observatory was observing Cepheid variables in the Andromeda nebula. He estimated the distance to the nebula to be 1.5 million light years from the earth. This distance is far too larger than that of any celestial object ever measured from the earth. Eventually, it was realized that the Andromeda nebula was actually a galaxy and was at a distance of 2.5 million light years from the earth.

In 1941 British astronomer Arthur Eddington found the true cause for the variation of brightness of a Cepheid variable. He theoretically showed that variability of Cepheids is due to the evolutionary process of the star. At a stage in its life cycle, a star rapidly expands due to excess energy pressure generated inside it. It cools as the energy is radiated out and slowly contracts.

As the cause for the variation in brightness of Cepheid variable stars is due to the changes taking place inside the stars, these stars are called intrinsic variable stars. There are other types of intrinsic variable stars but Cepheids have played a major role in scaling our universe.

INDIAN CLASSICAL DANCE: MANIPURI

The Manipuri dance form is one of the major classical Indian dance styles. Like the other Indian classical dance forms, Manipuri dance also traces its roots to the ancient Sanskrit text, the *Natyashastra*. In its present form, it is comparatively unfettered, being bound only in a limited manner to the literary word and the rigidity of the *tala* (time measure). It is seemingly free and spontaneous, apparently easy and flowing. This dance style is the manifestation of a deeply ritualistic tradition and a vitality with which an art-form throbs only when it is shared by the community at large.

From the eighteenth century onwards, the history of Manipuri dance can be studied fairly accurately. The present form and repertoire of the dance is attributed to King Bhagyachandra of the Meitei dynasty that ruled Manipur. It is believed that Bhagyachandra in a religious trance, saw Lord Krishna and the *gopis* (milkmaids) performing the *raasleela*.

That appears to be the inspiration for Manipuri dance style focussing on the theme of *Raasleela*. The first *Manipur Maha Raasleela* was performed in 1777. Theories about the antiquity of Manipuri dance rely on the oral tradition, archaeological discoveries and references to it in Asian manuscripts.



In technique, the Manipuri dance has a flow and grace which contrasts distinctly with the precision and clarity of the South Indian styles. The vertical line of the body is never broken. In fact, the body merely curves itself into the figure of eight. An effort is made to connect two parts of the body through beautiful curves. The music too is slow and rhythmic.

The dancer begins with the movement known as the *chali*. The *chali* need not be identified with the *chari* (leg movements) of the *Natyashastra*, but it is definitely a

movement which suggests basic ways of walking and covering space. The movements of the *chali* are connected to form the various types of *parengs* (series of body movements).

The elaborate costume of the Manipuri dance known as *Kumil* consists of a long skirt stiffened at the bottom, with a much shorter gathered overskirt of very fine material. Both are beautifully embroidered with mirrors, silver sequins and silver and gold thread. A close-fitting blouse, usually of dark green velvet and decorated with fine embroidery at the neck and sleeve bands, is also worn. A variety of necklaces, bracelets, armlets, rings, anklets and ear-rings are used as jewellery. The head-dress is particularly beautiful, with a very fine veil covering the face and secured in position on the head by silver ornaments.

Millennium show: A century of art from Maharashtra

In the 18th century, many British artists visited India in search of royal patronage. They brought with them the new technique of oil painting. Tilly Kettle, was a British artist who visited the Nawab of Avadh and painted his full size oil portrait. James Wales, another British artist, visited the court of Peshwa Sawai Madhavrao and inspired him to set up an art school in Shanivarwada in Poona in 1790. This was one of the first art schools in the country. Thus, the western technique of oil painting was introduced in India and synthesised with the traditional art forms.

The 19th century saw the setting up of art schools in Madras, Calcutta and Bombay to impart art education. The Sir J. J. School of Art which celebrated its centenary in 1957 is one of the outstanding art schools in the country. Some of the eminent students of the school were Pestonji Bomanji, M. F. Pithawala, Abalal Rehman and S. D. Satwalekar. These artists proved their expertise in handling both oil and water colours. M. V. Dhurandhar, A. M. Mali, A. H. Muller, L. N. Taskar, S. P. Agaskar achieved fame for their figurative paintings. It should be mentioned here that, till the early 20th century, Britishers headed the J. J. School of Art. Principal Griffith and other teachers guided students to do fine pencil shading and handle water and oil colours. Principal Cecil Burns too was an expert water colourist. Captain Gladstone Solomon who took over after Principal Burns introduced mural art.

With the establishment of the Bombay Art Society and the Western India Fine Arts Society, amateur artists got a platform to exhibit their works. The benevolence and appreciation of British officers and well-known Indian personalities greatly helped them to display and sell their works.

The first two decades of the 20th century saw the revival of traditional Indian art style. The subject 'Indian Art' was introduced in the syllabus. Artists also dabbled in a variety of art techniques like water colours, oil paintings of landscapes, subjects and portraits. Soon, sculptures were also rendered with great skill.



'Sant Sangam' by M. V. Dhurandhar

Around 1940, there were signs of revolt against the age-old ideas of 'good painting.' A group of young artists led by P. T. Reddy, calling themselves 'Young Turks' experimented with new forms of painting. This group was not very effective in creating an impact. But the seeds of revolt were sown and, consequently, the Progressive Artists Group emerged. Six leading artists were its founding members: - K. H. Ara, F. N. Souza, S. H. Raza, H. A. Gade, M. F. Hussain and Sadanand Bakre.

In the 1950s many important centres of art were formed. They were the Jehangir Art Gallery in Bombay, the Fine Art Society of Baroda and the National Gallery of Modern Art and the Lalit Kala Academy in New Delhi. Later, artists experimented with mixed media, acrylic colours and abstract art.

The painters who were foremost in the field of art during the 1970s and 1980s were Akbar Padamsee, Tyeb Mehta, Laxman Shreshta, Badri Narayan, Jehangir Sabawala and the sculptors Adi Davierwalla and Pilloo Pochkhanawalla.

The Millennium Show held in two parts, in the Art Gallery, thus celebrated the 100-year journey of art in Maharashtra. Part I displayed water colours and charcoal works and Part II showcased modern media creations like oil, acrylic, poster colours and mixed media, thus explaining the changes in artistic style and mediums.

UNESCO World Heritage Sites in India

16. Rani-ki-Vav (Queen's Step Well) at Patan, Gujarat

Step-wells were built in the semi-arid regions of Gujarat and Rajasthan to store water. They are called 'vav' or 'baoli' in the local language. They are the best examples of a combination of rainwater harvesting techniques accompanied with brilliant architecture. Rani-ki-Vav at Patan in northern Gujarat is said to have been built by queen Udayamati in memory of her husband King Bhimadeva I (CE 1022-64) of the Chalukya Dynasty and thus derives its name. The term 'step-well' refers to a long corridor with steps leading down to five or six levels below the ground, which was an architectural marvel in itself.

Rani-ki-Vav is rectangular in plan and laid out on an east-west orientation with the entrance in the east and the well being located in the west. Its entrance is on the ground level. From it descends a straight stairway to the water level of the well. The stairway has, additionally, a small flight of stairs situated laterally. There are three open *angana* (courtyards) separated from each other by four major *kutas* (pavilions). An apsidal* well is situated at its extreme end. The walls of the stepped corridor are embellished with niches, pillars, plasters and projections. Even the projections that join the pavilions are ornamented with sculptures. The overall length is about 65 metres from the entrance to the rear wall of the well. The apsidal well is more than 29 metres in depth.



Rani-ki-Vav view from top



Inside view of Rani-ki-Vav

Along the side walls of the Rani-ki-Vav are a very wide range of classical and iconographical depictions of gods and goddesses of the Hindu pantheon as also Puranic forms. The architecture and the depiction of over six hundred religious and secular sculptures, and several symbols and floral motifs indicate that the water monument has assumed religious significance in society in addition to its utilitarian function.

The sculptures found in the niches are usually flanked by *apsaras* (celestial maidens). The influence of Gupta art traditions is very much evident in the architectural ornamentation as well as in the image-making process. Even today they appear as alive as the day they were sculpted.

UNESCO has declared the Rani-ki-Vav as a world heritage site in 2014.

*Apsidal - A semicircular recess covered with a hemispherical vault or semi-dome, in architectural terms.

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