



SUNADA
MUSIC, MUSIC THERAPY & MORE...

JANUARY, 2019



From the Editor's Desk

Come January, everyone is busy organizing Thyagaraja Aradhana celebrations. It just goes to show the greatness of the Carnatic Music Saint Poet, the Song Bard of the South. SUNADA is doing the same by paying a homage in the form of a Sanskrit Shloka. The article on the Origin of Ragas in Carnatic style of singing is continued in this issue as promised. There are also some pictures taken at the launch of the biography on Shri P.B. Sreenivos. If the readers feel the articles are too technical, we would be more than happy to explain. Happy reading...

KS Vasantha Lakshmi, Founder & Editor, www.sunadavinodini.com

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NECTAR TO THE MIND
CHITTABODHAMRUTAM

By

Late Bhavaraju Bapiraju

This book of poems written in chaste Telugu has been liked by the educated and erudite of Andhra Pradesh. Not only is the author my grandfather, but he also served in the British Government before India got independence. This is just a very humble attempt to translate this great work so that it reaches a larger audience.

Translated by Kalipatnam Sita Vasantha Lakshmi,
(Nee Bhavaraju)

7

Attained by the holy who roam the earth in humility
Singing thy praise, unattainable to those consumed by the worldly joys
The effervescence of your enlightening knowledge of eternity
Offers salvation to the Saints in thy beautiful songs!

IN PRAISE OF THYAGARAJA

Rama Brahmakhya Vidyendra Suputram Loka visrutam
Rama Sankeertana dhaayna Poojanaasakta Maanasam
Kama krodhaadi rahitam Shiromanim
Thyagaraja gurum Vandey Sangeetaabधि Kalanidhim||

Meaning

Son of the famous Ramabrahmam, one whose mind is constantly immersed in the dhyana of Rama, one whose mind is without any anger and desires, to this Thyagaraja the treasure of the musical ocean that we salute!

EVOLUTION OF RAGAS

BY

Surmanki KS Vasantha Lakshmi

HISTORY OF MUSIC AND ITS EVOLUTION

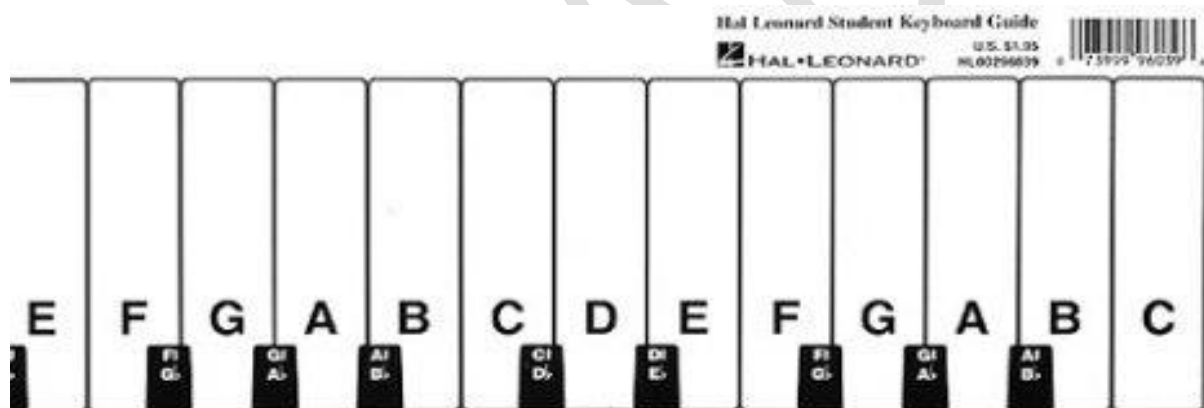
Continued...

ANCIENT MUSIC HISTORY OF MUSIC AND ITS EVOLUTION

The seven notes of the Indian Classical music can be understood better either sung or played on an instrument. Because a frequency division was made possible, the 12 notes have evolved into 16, 22 notes which led to the formation of the 72 Complete Ragas or Melakartas which have all the seven notes in the ascending and the descending order. Based on Shadjamam or Sa (Do) the remaining six notes. When most of us first visualize the frequency range from 20 Hz

to 20000 Hz, we imagine a nice, linear, tape-measure span of measurement, on which the marked increments are as equal as an inch or centimeter markings on a ruler. But in an actual response chart the measurements along lateral line definitely not an equal distance apart. In fact the seemingly 'small' span between 20 Hz and 40 Hz is actually wider than the 6,000 Hz of difference between 10000 and 16,000 Hz.

Keyboard Guide



Frequencies for equal-tempered scale, $A_4 = 440$ Hz

Other tuning choices, $A_4 =$

[432](#) [434](#) [436](#) [438](#) 440 [442](#) [444](#) [446](#)

Speed of Sound = 345 m/s = 1130 ft/s = 770 miles/hr

[More about Speed of Sound](#)

("Middle C" is C₄)

Note	Frequency (Hz)	Wavelength (cm)
C ₀	16.35	2109.89
C [#] ₀ /D ^b ₀	17.32	1991.47
D ₀	18.35	1879.69
D [#] ₀ /E ^b ₀	19.45	1774.20
E ₀	20.60	1674.62
F ₀	21.83	1580.63
F [#] ₀ /G ^b ₀	23.12	1491.91
G ₀	24.50	1408.18
G [#] ₀ /A ^b ₀	25.96	1329.14
A ₀	27.50	1254.55
A [#] ₀ /B ^b ₀	29.14	1184.13
B ₀	30.87	1117.67
C ₁	32.70	1054.94
C [#] ₁ /D ^b ₁	34.65	995.73
D ₁	36.71	939.85
D [#] ₁ /E ^b ₁	38.89	887.10
E ₁	41.20	837.31
F ₁	43.65	790.31
F [#] ₁ /G ^b ₁	46.25	745.96
G ₁	49.00	704.09
G [#] ₁ /A ^b ₁	51.91	664.57
A ₁	55.00	627.27
A [#] ₁ /B ^b ₁	58.27	592.07
B ₁	61.74	558.84

C_2	65.41	527.47
$C^\#_2/D^b_2$	69.30	497.87
D_2	73.42	469.92
$D^\#_2/E^b_2$	77.78	443.55
E_2	82.41	418.65
F_2	87.31	395.16
$F^\#_2/G^b_2$	92.50	372.98
G_2	98.00	352.04
$G^\#_2/A^b_2$	103.83	332.29
A_2	110.00	313.64
$A^\#_2/B^b_2$	116.54	296.03
B_2	123.47	279.42
C_3	130.81	263.74
$C^\#_3/D^b_3$	138.59	248.93
D_3	146.83	234.96
$D^\#_3/E^b_3$	155.56	221.77
E_3	164.81	209.33
F_3	174.61	197.58
$F^\#_3/G^b_3$	185.00	186.49
G_3	196.00	176.02
$G^\#_3/A^b_3$	207.65	166.14
A_3	220.00	156.82
$A^\#_3/B^b_3$	233.08	148.02
B_3	246.94	139.71
C_4	261.63	131.87
$C^\#_4/D^b_4$	277.18	124.47
D_4	293.66	117.48
$D^\#_4/E^b_4$	311.13	110.89
E_4	329.63	104.66
F_4	349.23	98.79

F [#] ₄ /G ^b ₄	369.99	93.24
G ₄	392.00	88.01
G [#] ₄ /A ^b ₄	415.30	83.07
A ₄	440.00	78.41
A [#] ₄ /B ^b ₄	466.16	74.01
B ₄	493.88	69.85
C ₅	523.25	65.93
C [#] ₅ /D ^b ₅	554.37	62.23
D ₅	587.33	58.74
D [#] ₅ /E ^b ₅	622.25	55.44
E ₅	659.25	52.33
F ₅	698.46	49.39
F [#] ₅ /G ^b ₅	739.99	46.62
G ₅	783.99	44.01
G [#] ₅ /A ^b ₅	830.61	41.54
A ₅	880.00	39.20
A [#] ₅ /B ^b ₅	932.33	37.00
B ₅	987.77	34.93
C ₆	1046.50	32.97
C [#] ₆ /D ^b ₆	1108.73	31.12
D ₆	1174.66	29.37
D [#] ₆ /E ^b ₆	1244.51	27.72
E ₆	1318.51	26.17
F ₆	1396.91	24.70
F [#] ₆ /G ^b ₆	1479.98	23.31
G ₆	1567.98	22.00
G [#] ₆ /A ^b ₆	1661.22	20.77
A ₆	1760.00	19.60
A [#] ₆ /B ^b ₆	1864.66	18.50
B ₆	1975.53	17.46

C ₇	2093.00	16.48
C [#] ₇ /D ^b ₇	2217.46	15.56
D ₇	2349.32	14.69
D [#] ₇ /E ^b ₇	2489.02	13.86
E ₇	2637.02	13.08
F ₇	2793.83	12.35
F [#] ₇ /G ^b ₇	2959.96	11.66
G ₇	3135.96	11.00
G [#] ₇ /A ^b ₇	3322.44	10.38
A ₇	3520.00	9.80
A [#] ₇ /B ^b ₇	3729.31	9.25
B ₇	3951.07	8.73
C ₈	4186.01	8.24
C [#] ₈ /D ^b ₈	4434.92	7.78
D ₈	4698.63	7.34
D [#] ₈ /E ^b ₈	4978.03	6.93
E ₈	5274.04	6.54
F ₈	5587.65	6.17
F [#] ₈ /G ^b ₈	5919.91	5.83
G ₈	6271.93	5.50
G [#] ₈ /A ^b ₈	6644.88	5.19
A ₈	7040.00	4.90
A [#] ₈ /B ^b ₈	7458.62	4.63
B ₈	7902.13	4.37

(To convert lengths in cm to inches, divide by 2.54)

Around us.....

Dr Jaya Shreedhar (daughter of Gemini Ganeshan) a medical doctor, paid an eloquent and emotive tribute to Shri P.B.Srinivos, her father's screen voice for over two decade in her flawless English on the occasion of the launching of the Biographic book on PB Srinivos, authored by Dr. Ranganath Nandyal, recently in Bangalore. In the picture from Left to Right: Dr, Jaya Shreedhar, Dr. Nandyal, the author and Pundit Janardan Mitta, Sitar player.



WHAT YOU THINK.....



Thanks a lot for sharing.

I will read and benefit from it.

DKM Kartha, USA

We thoroughly enjoy reading this unique musical magazine. We feel that is one of its kind and the first ever in India that such a magazine has ever been produced. Wishing you more success and readership.

Vishnu Parivar, Tirupati, India.

Thanks and Happy New Year,

Rammohan Eechampati USA

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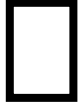
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St. Poet Thyagaraja

SUNADA



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