

**E-BOOK**

**RAGAS - ORIGIN**

**&**

**STRUCTURE**

**(A DETAILED STUDY)**

## ***ACKNOWLEDGEMENTS AND REFERENCES***

This project was started about more than three years; wanted to launch early this year, but was delayed due to many factors, including the epidemic which hindered my travel to meet and discuss with experts. Anyhow, happy that the job is almost over; still a few more chapters are to be added, which will be done in due course. For this works, there had to be extensive searches, references – from books, other blogs and articles available in free domains. Wherever necessary the references are given in the article itself. Since the list of these is voluminous, I am not able to publish the full list; but thanking the authors of the respective reference materials.

Except this e-book, all other articles were published through Face Book as series and are consolidation of all the same.

Thank you all; soliciting all your support, hope this may be a useful attempt, as I am not sure there is any e-book available covering all the titles.

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## INTRODUCTION

It seems that music was the first to develop than language. Language is better thought of as a special type of music. The music developed first and provides the foundation—from an evolutionary and a developmental standpoint—for language acquisition. The modern human brain came into being 50,000 to 100,000 years ago. There is archaeological evidence—cave drawings, artistic weaponry, sculptures—that are as old as 70,000 years. The oldest musical instrument, a bone flute dated at 40,000 years old, was discovered in Germany a few years ago. It's not a large leap to think that singing emerged before more sophisticated wind playing. This archaeological evidence provides support for the idea that artistry, creativity, and music were a part of our ancestors' lives as the modern human brain was developing. Singing, dancing, and playing are important ways through which all children learn cognitive, language, social, and emotional skills. Perhaps it is through singing, dancing, and playing that early humans developed their cognitive, language, social, and emotional skills as well.

The original type of music is not at all found anywhere; the folk songs of the primitive tribes – mostly known as folk or traditional music. The more developed forms of these are still heard among the tribes in African countries; even in some parts of India where the Tribal population is still living the old traditional way.

As the time passed, these folk songs started changing into more sophisticated types with lyrics, notations etc., which paved the steps to the modern music. Same time, instrumental music also developed in various parts of the world; instruments, such as the seven holed flute and various types of stringed instruments have been recovered from the Indus Valley Civilization archaeological sites.

On a broad basis, the present type of music, other than the folk and traditional music, can be classified into four main streams - Carnatic music, Hindusthani music, Western music (cyclic or rhythmic) and the Arabic music (acyclic). Out of these, the first two are developed in India; the Carnatic music remaining connected to the Dravidian areas; while Hindusthani music is more connected to Persian (Iranian) music (these may be because of the Historical connections and influences of various countries on our culture and traditions. The major type of music is the Western type, followed in the maximum number of countries like European countries, China, Japan etc., the music is based on rhythms (beats) only. The fourth type is the Arabic music, mostly found in the Middle East and some of the nearby African states only; this type is a non- cyclic, involving beats and sub-beats on a broad look out.

Carnatic music is the system of music commonly associated with the southern India including the modern states Andhra Pradesh, Telangana, Karnataka, Kerala, and Tamil Nadu, but also practiced in Sri Lanka. It is one of two main subgenres of Indian classical music that evolved from ancient Hindu traditions, the other subgenre being Hindustani music, which emerged as a distinct form because of Persian and Islamic influences in northern India. The main emphasis in Carnatic music is on vocal music; most compositions are written to be sung, and even when played on instruments, they are meant to be performed in singing style.. Here is a history of its beginnings and evolution.

### **HISTORY OF MUSIC :**

It is not easy to point to one period of history or one ancient form of music as the source of contemporary Carnatic music. Several changes in theory and practice have surely taken place from Vedic times to the present day. Historical records allow us to trace the interesting pattern of evolutionary changes in music.

**Divine Origins:** It is the general belief in Indian culture, that all art forms have a divine origin. Carnatic music is also believed to have originated from the Gods. (In India, mythology has a very important place and its influence on the art and culture of the country is phenomenal, Carnatic music being no exception. Owing to its spiritual and devotional aspects, Carnatic music is associated with Hinduism, the dominant religion of India. The origin of this art has been attributed to the Gods and Goddesses. Moreover, individual deities are associated with different kinds of musical instruments. We cannot conceive of Krishna without the flute or Saraswati without the Vina. The literary sources such as the epics and mythological anthologies also mention the close association of music with divinity.

Apart from these sources, many saints and scholars believe that music is the greatest form of *tapasya* (penance) and the easiest way to reach godhead or to attain salvation. Most of the musical compositions are either philosophical in content or describe the various deities or incidents from Hindu mythology. There are others who believe that music itself is divine and that the perfect synchronisation of the performer with the musical sound, *Nada*, is the real divine bliss. This practice is called *Nadopasana*. Many musicians and music lovers visualise divine forms in the Ragas or the melodic entities of Carnatic music.)

**Natural Origins:** A number of musical sounds are naturally produced, e.g. the sound emanating from the bamboo reed when air passes through its hollows. Ancient man observed this phenomenon and designed the first flute! Some ancient treatises describe the connection of the origin of swaras to the sounds of animals and birds. Man, with his keen sense of observation and perception tried to simulate these sounds. His ability to distinguish between sounds of different frequencies, qualities and timbre would have been an important factor in the evolution of Carnatic music.

**Folk Origins:** Folk music, also said to have a natural origin, is considered by many scholars as one source that has influenced the structure of Carnatic music. While folk music evokes more spontaneity, a classical system like Carnatic music is more organised. Certain folk tunes

correspond to Carnatic melodies or ragas like Anandabhairavi, Punnagavarali, Yadukulakambhoji, etc.

**Vedic Origins:** It is generally accepted that the *Vedas* are a probable source of Indian music, which has developed over the centuries into the sophisticated system that it is today. The word “*Veda*” means knowledge. The thousands of hymns in the *Vedas*, which are dedicated to the Gods and Hindu rituals, in the form of chants were passed down by oral tradition from generation to generation. There are four *Vedas* - *Rig*, *Yajus*, *Sama* and *Atharvana*. Of these, the *Sama Veda* is said to have laid the foundation for Indian music. *Sama Veda* consists mostly of *Rig Vedic* hymns, set to musical tunes. These used to be sung during Vedic sacrifices, using musical notes (3 notes - 7 notes), sometimes accompanied by a musical instrument.

### LITERARY SOURCES :

**Sanskrit:** Apart from the *Sama Veda*, there are references to music and musical instruments in the *Upanishads*, *Brahmanas* and *Puranas*. Epics like *Ramayana* and *Mahabharata* also have some references to music. The music system in practice during Bharata's period must have been similar in some respects to the present day Carnatic system. Bharata's *Natya Sastra* mentions many musical concepts that continue to be relevant to Carnatic music today.

**Tamil:** Tamil works like *Silappadikaram*, *Tolkappiam* and other Sangam literature works give old Dravidian names for the seven notes in the octave, and describe how new scales can be developed by the modal shift of tonic (shifting the reference *Shadja*) from an existing scale. In the old Tamil music, the concept of *Pann* corresponds to that of the modern Raga. The rhythmic meters found in several sacred musical forms like *Tevaram*, *Tiruppugazh*, etc., resemble the talas that are in use today. Above all, Tamil music was practised by the native Dravidians of Southern India. Since Carnatic music is prevalent in South India, many scholars believe that the ancient Tamil music is an important source from which Carnatic music is derived.

In focus The Pann paadal that emerged during the Sangam period of Tamil literature is a proven source of Carnatic music.

Though we would all love to trace our classical music roots to Samaveda , Natyasastra and later Sanskrit treatises, few, beyond Tamil Nadu would admit that the ancient Tamil Pann (raga) music is a proven source of Carnatic music as it exists today. In what constituted the Sangam period of Tamil literature, which spans across Third century BC to Fourth century AD, there was an upsurge of culture, arts and literature which speaks of the antiquity of Tamil civilization. The Tamil-speaking region that extended across the present day Tamil Nadu, Kerala, parts of Andhra and Karnataka was ruled by the Chola, Chera and Pandya dynasties from 350 BC to 200 AD. This vast stretch of land that came under the reign of these three major dynasties was called Tamilzhakam (Tamil kingdom). A developed economy, administration and legal system created a n ecosystem suitable for literature and arts to flourish. Academies were founded called ‘sangam’ (gathering), wherein litterateurs, poets and artists flocked to articulate, assess and analyse creative works of a high order, to be appreciated by scholarly critics and royal patrons alike. As a consequence, creativity in arts was at its zenith and the outcome, among other things was Pann paadal (songs set to ragam).



The Sangam period is classified into three: 'Talaicchangam' (first Sangam), 'Idaicchangam' (middle Sangam) and 'Kadaicchangam' (last one). During the Kadaicchangam period poets and musicians thrived, as recorded in history. These Sangam were in and around Madurai, the then capital city. It is said that the famous mathematician Pythagoras learnt about the major seven scales of Tamil music on his visit to India and on return to Greece, he restructured the Greek musical system.

Tamil music scheme was divided into 'iyal' (prose), 'isai' (music), 'naatagam' (drama). Some musicologists state that Carnatic music derived from Tamil Isai since most of the tunes and music terminology of the former has its origin in the latter. For instance, in ancient Tamil music, the seven notes were called 'kural, tuttam, kaikkilai, uzhai, ili, vlari and taaram'. Later, around 200 BC and 200 AD, these notes came to be referred as 'sa-ri-ga-ma-pa-dha-ni'. The Sangam age Tamil music has a term called 'palai' which is equivalent to the 'grama' of Sanskrit musicology (Gandharva scales). Earlier Sangam age makes a mention of 12 swaras (comparable to *dwadasa swara sthaana*), in a musical scale employing the 'shadja-panchama' (latter day shadja grama), 'shadja-madhyama' links which were termed as 'kizhamai.' By modal shift of the tonic notes the ancient Tamils devised the seven major 'palai'. The 'graha bheda' method followed today was known as 'Pannu peyarthal' which appeared in various Sangam works that survived the onslaughts of time. The method of deriving pentatonic scale based on 'saptaka' (seven-tone scale) was known as 'nertiram'.

One look at the major seven palai or parent scales of music of the Pann system and its equivalents in Carnatic music is proof enough. For instance, the SemPalai (corresponds to the present Harikambhoji raga); Padumalai Palai (Natabhairavi); Sevvazhi Palai (Hanumatodi, sans madhyama); Arum Palai (Dheera Sankarabharanam); Kodi Palai (Kharaharapriya); Vilari Palai (Hanumatodi); and Merchem Palai (Mecha Kalyani). Out of these, came 103 pann derivatives like the 17 'Perumpan' (sampoorna/complete) 70 'Panniyal' (shadava/6); twelve 'Tiram' (audava/5) and four 'Tirattiram'(swara antaram). Sarngadeva's 'Sangeeta Ratnakara', (13th century AD) mentions some of these Pann. They had their own modes called 'yazhi' which are comparable to the 'moorchana' mentioned in Gandharva music. Pancha Marabu, the Sangam treatise on music dwells with all aspects of music, dance and musical instruments of the period. The Yaazl, a lute like musical instrument was akin to the veena of the Aryan origin.

The Pann and our raga equivalents will give us a right insight into the origin of Carnatic music. The Pann 'Naatta paadai' is nothing but the latter day 'Naata' ragam if one were to compare the musical scales.

Similarly, a host of other Pann like 'Indhalam' (Mayamalavagowla), 'Kurinchi' (HariKambhoji), 'Pazham Panchuram' (Sankarabharanam), 'Chendurutthi' (Madhyamavathi), 'Yaazhmoori' (Ataana), 'Seekaamaram' (Nadanamakriya), 'Koushikam' (Bhairavi), 'Pazhandhakka raakham' (Shuddha Saveri), 'Pooraneermai' (Bhoopalam) and so on.

***Some musicologists state that Carnatic music derived from Tamil Isai since most of the tunes and music terminology of the former has its origin in the latter.***

## **HISTORY OF CARNATIC MUSIC:**

Music is said to have begun from the sounds of the Universe, the “Om”. However, Carnatic itself can be traced back to a time when there were no distinctions among the styles of music in India.

### **THE ANCIENT PERIOD (Vedic period - 4<sup>th</sup> Century AD)**

This was the vital period in the history of Indian music. During this period there is no mention of the term, Carnatic music, in any of the sources, but there is sufficient reason to believe that this period was crucial to the original development of Carnatic music. Some important references are cited here:

#### **VEDAS**

Of the four Vedas, *Rig Veda* (hymns) was first recited in a monotone known as *archika*, which later developed into the two toned chant (*gatika*). This was subsequently replaced by a three-toned chant, *samika*, which had a main tone and two accents, one higher and one lower. *Sama Veda* is considered as the main source for the development of Indian music and the first full scale with seven notes in the descending order are seen in the rendering, even to this day. The melody is close to the scale of the raga, Kharaharapriya (22<sup>nd</sup> Melakarta) or Natakapriya (10<sup>th</sup> Melakarta). Several references to music of musical instruments are seen in the Vedas. One of the earliest references to musical theory is found in the *Rik Pratisakya* (around 400BC), which mentions the origin of seven notes from the three notes. Upanishads (the concluding part of Vedas), containing the essence of Vedas (100 BC - 300 BC), mention the musical notes and gives other musical references. Musical instruments like the Vina and Dundubhi are mentioned in the *Brihadaranyaka Upanishad*. The two great epics, Ramayana (circa 40 BC) and Mahabharata, also have several musical references. There is also a mention of Gandharvas [(demi-gods) (600 - 500 BC)], who were exceptionally versatile in music. Bharata in his *Natyasastra*, also acknowledges saying that music belonged to the Gandharvas.

### **Bharata's Natyasastra (The 2<sup>nd</sup> - 4<sup>th</sup> century AD)**

This is the earliest treatise to extensively elaborate on the science of music and dance. Music is dealt only partly in this treatise. Yet, various aspects like the ancient melodies (*Jaatis*) which are the archetypes of Ragas, their characteristic features, structure and the classification of the ancient instruments have been made in this work. The notes (*swaras*), their varieties, combination (*varnas*) and other such aspects are also elaborately described.

Bharata has given the fundamentals of music as comprising Swara, Tala and Pada. The music till Bharata's period was known as *Marga* (literally meaning way).

In the ancient period, the native Dravidians of the south had their own style, which is generally called Tamil music, owing to the native regional language of the area. The Sangam literature till 3<sup>rd</sup> AD, in particular, has many references to this style. Works like *Silappadikaram* of Ilango Adigal, and its commentaries, describe the logical derivations of the important scales through the modal shift of tonic. The Tamil names of these notes have also been mentioned. Other

works like *Tolkappiam*, *Pattupattu*, etc. also give musical references. Some of these descriptions and references correspond to contemporary Carnatic music concepts.

### **MEDIEVAL PERIOD (5th - 16<sup>th</sup> Century AD)**

During this period, many important musical concepts evolved in clear terms and in this period, more care was taken to put into record, some of the important musical developments by several music scholars, to enable us to have proper historical links. Several musical composers and luminaries have also lived during this period.

The work of Matanga (6<sup>th</sup> - 7<sup>th</sup> Century A.D.), *Brihaddesi*, is the first to mention the word, Raga. This text also gives the names of the then popular Ragas, with their suitable structures, and a basic classification system. The other notable feature during that period was the gradual development of the art of music as an independent form, breaking away from being overly dependent on forms of dance and drama.

The Kudimiyanmalai inscriptions in a cave, near Pudukottai (Tamilnadu), has an array of musical diction (notation) of South Indian music in the 7<sup>th</sup> century AD. The *Tevarams* (6<sup>th</sup>-9<sup>th</sup> century AD), songs in praise of Lord Siva, used more than 20 scales with Tamil names, which were equivalent to the present system of Carnatic music. Many of these *Tevarams* are still rendered as musical pieces in concerts. This corpus, along with the *Divya Prabandham* (compositions of the Vaishnavite Azhwars, 6<sup>th</sup> - 8<sup>th</sup> century AD), have been a significant contribution of the Tamil speaking region to Carnatic music.

The *Tiruppugazh of Arunagirinathar*, who lived around the 15<sup>th</sup> century, is another inspiring Tamil work which significantly affected Carnatic music. This has complex rhythmic meters, which remain unique and unsurpassed in their grandeur.

The *Gita Govinda* of Jayadeva (12<sup>th</sup> century) is a monumental work of the medieval period in Sanskrit, consisting of 24 songs, each set to a particular Raga. The rhythmic meter is determined by the meter of the verse. These were, probably, the earliest examples close to the regular musical compositions and are called *Ashtapadis* (*ashta* meaning eight and *padi* meaning foot). These are popular throughout India even today, though the original tunes are lost. Contemporary musicians from both the Carnatic and Hindustani traditions have set these songs to music independently.

### **SANGEETHA RATNAKARA :**

An important musical treatise was written by Sarngadeva (1210-1247). This work contains five thousand couplets in Sanskrit written in nine chapters, comprehensively covering Swaras, Ragas, Prabandhas (musical form of this period), Tala-vadyas (percussion instruments), Gamakas (ornamentations) and other such aspects. This work establishes the complete growth of Indian music from the period of the *Natya Sastra* (2<sup>nd</sup> century) to the 13<sup>th</sup> century. This work stands out particularly as a link between the two new systems that gradually split and evolved separately after his period, namely, the Hindustani music and Carnatic music. The music between the period of *Brihaddesi* and the *Sangeeta Ratnakara* was known as the *Desi* system. Sarngadeva's work inspired many later scholars who wrote musicological treatises. The *Sangeeta Sara*, attributed to Vidyanarya (1320-1380) was the first to classify ragas as

Melas (Parent) and Janya ragas. After this work, there seems to have been a lull in the theoretical development for almost two centuries. Ramamatya wrote his treatise, *Swaramela Kalanidhi*, in the 16<sup>th</sup> century. The clear exposition of Mela, Raga and Vina technique must be accredited to him. His effort served as a firm and fitting foundation to the growth of the modern music system and may be considered as the milestone in the scientific development of our music.

### **MUSICAL FORMS:**

This period gradually traces the evolution from *Gandharvagana* forms like *Dhruvagana* of Bharata's period, through the different kinds of *Prabandhas*, to the present day forms. Several important forms were composed during this period - *Tevaram*, *Divyaprabandham*, *Tiruppavai* (is a part of *Divyaprabandham*), *Ashtapadis*, *Padams*, *Kritis*, *Gitams*, apart from the *Abhyasa gana*, *Alankara* and *Swaravalis* for beginners.

Tallapakkam Annamacharya (1425 - 1503 AD), composed in a new form called *Kriti*, having three sections, namely the Pallavi, Anupallavi and Charanam. This pattern became widely accepted and was popularised by later composers, in particular, the Trinity. This stands out as an outstanding contribution of Annamacharya to the practical side of our music. He is credited to have composed about thirty two thousand compositions of which around twelve thousand have been traced and some of these have been still preserved in copper plates. The *Kritis* were not as complicated as the earlier *Prabandha* forms.

Purandaradasa (1484 - 1564 AD) is known as the Sangeeta Pitamaha (the grandfather of Carnatic music). A prolific composer, he laid the foundation for the systematic learning of the system and he is credited to have formulated the swara exercises for practice, apart from composing simple songs, *Gitams*, and a number of compositions (*Kritis*) with high philosophical import.

In short, during the medieval period, one can say that Carnatic music gradually attained its individuality built over a historically strong foundation. In particular, after the 13<sup>th</sup> century, no major treatise is seen from the North. Tanjavur and Vijayanagara emerged as the major seats of Carnatic music, with a number of classic monumental works being produced in both the theoretical and practical aspects of music.

### **MODERN PERIOD (17<sup>th</sup> century to present day)**

The 17<sup>th</sup> century can be considered as a golden age of Carnatic music. It marks several important milestones of Carnatic music in diversified angles, thus, enriching this traditional art form, while preserving the past glories. Some of the most important developments in both *Lakshana* (theoretical) and *Lakshya* (practical) aspects took place during this period.

#### **Theoretical aspects:**

The well structured 72 Melakarta scheme was formulated by Venkatamakhi in his treatise *Chaturdandi Prakasika* in 1660 AD. This scheme is the proud heritage of our music, and is not simply of academic interest, but also has immense practical value to all musicians, musicologists and students. Other important treatises on music written during this period are

the *Sangeeta Saramrita* of Tulaja (1729 - 1735 AD), *Sangeeta Sudha* of Govinda Dikshita and the *Sangraha Choodamani* of Govinda (1750 A.D).

By the end of the 19<sup>th</sup> century, notational schemes were developed, for written representation of musical compositions. These were published in works like Subbarama Dikshitar's *Sangeeta Sampradaya Pradarsini* in Telugu and Manikka Mudaliar's Tamil work, *Sangeeta Chandrikai*. A M Chinnasami Mudaliar published south Indian music compositions written in western staff notation. These early pioneers in recent times have paved the way for a research-oriented understanding of this practical art form.

While the theoretical works were trying to keep pace with the practical music, the practical music itself was evolving continuously and a number of luminaries have made a tremendous impact on refinement of this art form, to keep it fresh and alive.

### **Practical aspects :**

In the 18<sup>th</sup> century, within a short period from 1763 - 1775 AD, were born the three great composers of Carnatic music, who were later to be celebrated as the Musical Trinity (*Trimurti*) – Shyama Sastri (1762 - 1827), Thyagaraja (1767-1847) and Muthuswami Dikshithar (1776-1835). All of them combined their immense knowledge, deep spirituality and profound traditional musicianship with an amazing sense of creativity and innovative spirit. This has made their contribution to Carnatic music invaluable. The art of musical composition was elevated to great heights at their hands. It can confidently be asserted that all later composers have tried to live up to the standards set by these three bright stars. Other great composers who have contributed to the vast repertoire of Carnatic music compositions include Swathi thirunal (1813-1847), Veena Kuppur, Subbaraya Sastri, Gopalakrishna Bharathi, Ghanam Krishna Iyer, Patnam Subramanya Iyer, Koteeswara Iyer, Muthaiah Bhagavathar, Mysore Vasudevachar and Papanasam Sivan.

### **MUSICAL CONCEPTS:**

The 72 Melakarta scheme was responsible for the transformation in the Raga system of Carnatic music. Several new Ragas came into existence and were popularised by means of compositions tuned by the Trinity of composers along with others who followed the 72 Melakarta scheme. Many different kinds of musical compositions developed, having different structural arrangements (musical forms). These include the Varnam, Kriti, Padam, Javali, Tillana, Swarajati and other varieties. These forms have continued to remain popular in the 20<sup>th</sup> century.

### **COMPOSITIONS:**

In contrast to Hindustani Music of the northern part of India, Carnatic music is taught and learned through compositions which encode many intricate musical details, but also provide scope for free improvisation. Nearly every rendition of a Carnatic music composition is different

and unique, as it embodies elements of the composer's vision, as well as the musician's interpretation.

In Carnatic music, the main emphasis is on vocal music; most compositions are written to be sung, and even when played on instruments, they are meant to be performed in a singing style (known as *gayaki*). Like Hindusthani Music, Carnatic music rests on two main elements: *raga*, the modes or melodic formulas, and *thala*, the rhythmic cycles.

However, as well as these musical elements, a Carnatic composition also has a component of the emotion or sentiment conveyed in the composition. It is probably because of this fact that most Carnatic music compositions are composed for singing. In addition to the rich musical experience, each composition brings out the knowledge and personality of the composer, and thus the words are as important as the musical element itself. This poses a special challenge for the musicians because rendering this music does not involve just playing or singing the correct musical notes; the musicians are expected to understand what was conveyed by the composer in various languages, and sing musical phrases that create the effect that was intended by the composer in his or her composition.

There are many types and forms of compositions. Geethams and Swarajatis (which have their own peculiar composition structures) are principally meant to serve as basic learning exercises, and while there are many other types of compositions (including Padam, Javali and Thillana); the most common forms are the Varnam, and the Kriti (or Keerthanam).

### **VARNAMS:**

Varnams are sophisticated musical forms that include swaras and lyrics. For students, they are useful for learning the swaras of various raagas, singing in multiple speeds rapidly, as well as learning the appropriate gamakas. They introduce the proper combinations of swaras for each raaga and require great discipline for singing. **VARNAMS** - literally means color. It is also performed at concerts as a starting piece. The varnams are divided into two sections. The first part has **PALLAVI**, **ANUPALLAVI**(both with lyrics or sahithyam) and **MUKTHAYI SWARAM** (meaning ending) and the second half has **CHARANAM**(this also has lyrics) and **CHITTAI SWARAMS**(meaning composed and set swara patterns). There are two different kinds of varnams. One is called **TANA VARNAM** (the above variety) and the second one is called **PADA VARNAM**. Used primarily in dance programs. These varnams have lyrics throughout, so the dancer can do her ABINAYA or miming for them. Varnams are also practiced and performed in two or sometimes in three speeds. There is also the third variety called **DARU VARNAM** that have lyrics, swaras and syllables.

## **KRITHIS :**

Carnatic songs (kritis) are varied in structure and style, but generally consist of three units:

1. Pallavi. This is the equivalent of a refrain in Western music. One or two lines.
2. Anupallavi. The second verse. Also two lines.
3. Charana. The final (and longest) verse that wraps up the song. The Charanam usually borrows patterns from the Anupallavi. There can be multiple charanas.

This kind of song is called a *keerthanam* or a *Kriti*. There are other possible structures for a *Kriti*, which may in addition include swara passages named *chittaswara*. A *chittaswara* consists only of notes, and has no words. Other compositions have a verse at the end of the *charana*, called the *madhyamakāla*. It is sung immediately after the *charana*, but at double speed.

## **Prominent composers :**

Many composers have contributed to Carnatic music. Purandara Dasa (1480 - 1564), known as the pioneer or father (*Pitamaha*) of Carnatic music, formulated the basic lessons of Carnatic music. He structured graded exercises known as *Swaravalis* and *Alankaras*, and at the same time, introduced the *Raga* Mayamalavagowla as the first scale to be learned by beginners. He also composed *Gitas* (simple songs) for novice students. Although only a fraction of them still exist, he is said to have composed around 475,000 compositions.

The contemporaries Thyagaraja (1759-1847), Muthuswami Dikshithar, (1776 - 1827) and Shyama Sastri, (1762-1827) are regarded as the Trinity of Carnatic music due to the quality of Syama Sastri's compositions, the variety of the compositions of Muthuswami Dikshitar, and Thyagaraja's prolific output in composing kritis

Prominent composers prior to the Trinity of Carnatic music include Annamacharya, Narayana Theertha, Bhadrachala Ramadas, Sadasiva Brahendra and Oottukkadu Venkata Kavi. Other prominent composers are Swathi Thirunal, Gopalakrishna Bharathi, Neelakanta Sivan, Patnam Subramania Iyer, Mysore Vasudevachar, Koteeswara Iyer, Muthiah Bhagavathar, Subramania Bharathiyar, and Papanasam Sivan. The compositions of these composers are rendered frequently by prominent artists of today.

Composers of Carnatic music were often inspired by religious devotion and were usually scholars proficient in one or more of the following languages: Kannada, Sanskrit, Tamil, Malayalam, and Telugu. They usually included a signature, called a *mudra*, in their

compositions. For example, all songs by Thyagaraja (who composed in Telugu) have the word *Thyagaraja* in them; all songs by Muthuswami Dikshitar (who composed in Sanskrit) have the words *Guruguha* in them; songs by Syama Sastri (who composed in Telugu) have the words *Syama Krishna* in them; and Purandaradasa, who composed in Kannada, used the signature *Purandara Vittala*. Swathithirunal used *Padmanabha*, *Pankajanabha*, *sarasijanabha*, *kamalanabha*, *jalajanabha* etc. *and composed in Malayalam, Tamil, Telugu, Kannada, Hindi and manipravalam*. Gopalakrishna Bharathi used the signature *Gopalakrishnan* and composed in Tamil. Papanasam Sivan, who has been hailed as the *Tamil Thyagaraja* of Carnatic music, also composed in Sanskrit, and used the signature *Ramadasan*.

## **Important Elements of Carnatic Music:**

### **Shruthi :**

Shruthi commonly refers to musical pitch. It is the approximate equivalent of a tonic (or less precisely a key) in Western music; it is the note from which all the others are derived. It is also used in the sense of graded pitches in an octave. While there are an infinite number of sounds falling within a scale (or raga) in Carnatic music, the number that can be distinguished by auditory perception is twenty-two (although over the years, several of them have converged). In this sense, while shruti is determined by auditory perception, it is also an expression in the listener's mind.

### **Here is a simple presentation - Introduction to Shruti - The Foundational Pitch - Carnatic Music Concepts:**

<https://www.youtube.com/watch?v=4XXI5tTXa0I>

### **Swara :**

*Swara* refers to a type of musical sound that is a single note, which defines the relative higher or lower position of a note, rather than a particular frequency. Swaras also refer to the solfege of Carnatic music, which consist of seven notes, "sa-ri-ga-ma-pa-da-ni" (compare with the Hindustani *sargam*: sa-re-ga-ma-pa-dha-ni or Western do-re-mi-fa-so-la-ti). These names are abbreviation of the longer names *shadja*, *rishabha*, *gandhara*, *madhyama*, *panchama*, *dhaivata* and *nishada*. Unlike other music systems, every member of the solfege (called a swara) has three variants. The exceptions are the drone notes, *shadja* and *panchama* (also known as the tonic and the dominant), which have only one form; and *madhyama* (the subdominant), which has two forms.



A seventh century stone inscription in Kudumiyan Malai in Tamil Nadu shows vowel changes to solfege symbols with ra, ri, ru, and so on, to denote the higher quarter-tones. In one scale, or ragam, there is usually only one variant of each note present. The exceptions exist in "light" ragas, in which, for artistic effect, there may be two, one ascending (in the *arohanam*) and another descending (in the *avarohanam*).

Please listen to the video:

<https://www.youtube.com/watch?v=8efvniS4vMU>

### **Raga System:**

The word "*Ragam*" was first used by Mathanga Muni through his work Brihaddesi. A voluminous work outlining various genres of Carnatic music, he categorized notes into ragams according to their nature. The term Ragam in Sanskrit means color. This means the emotional color in true sense. Thus songs which produce the same emotion / color are grouped into a ragam.

Thus a ragam is not a tune, but rather a emotion generator. Ragam takes the role of a vehicle for invoking emotions in an opera. It creates the mood / ambience. The song takes life when we attach ragam to it. Its like giving emotions or wings to the song. The emotion depends on the underlying notes, the tempo in which we render the notes, the frequency spacing and unique structure. Thus like chromatic colors like cyan, blue, indigo etc, Ragams also appear similar in finer aspects. One needs to listen carefully to identify allied ragams, as opposed to disparate ones.

Ragams got their names by ancient naming conventions, either by traditions, place of origin, the vishesha prayoga or chaya swara etc. One can get a fair idea about origins of ragam names from the meaning of the names itself.

Most of the ancient ragams like Saveri, Ghanta, Takka were sung in King's court. Vijayanagara empire and Tanjore court were two empires where music and other fine arts flourished. Carnatic music also has influences from its successor Hindustani music. Ragams also came from ancient Tamil Panns mentioned in Silapathikaram etc.

### **Ragam names based on Region:**

Jonpuri - Jonpur  
Kamboji - Kamboja / Modern Cambodia  
Sourashtram - Sourashtra  
Vijayanagari - Vijayanagar

### **Ragam names based on kriya or actions aiding in Dance Drama recitals:**

Nadanamakriya - Ragam which names the sound  
Kumudakriya  
Sindhuramakriya

### **Ragam names denoting the vishesha prayogams or notes in it :**

Dhanyasi - Dha is Nyasam / anchor note

Suddha Dhanyasi - Suddha Dha is the anchor note  
Saveri - Sa Ve Ri meaning Sa it self is RI, Ri lies so close to Sa  
Suddha Saveri - Suddha Sa is Ri here  
Devagandharam , Devagandhari - Ga note is the chaya note in both ragams

**Raga names which denote the emotion stemming from it :**

Bhoga Chaya Nattai - One which gives pleasure (this was used for ancient Dasiyattam in King's court)

Abhogi - One which deprives the lust (meaning which destroys the lusts in oneself)

Bhogasaveri - The lustful version of Saveri (Most of the Bhoga Ragams originated as part of Dance performed for pleasure in King's court)

Most of the modern ragams like Simhendra Madhyamam, Rishabapriya and other Melakarta ragams existed after Muddu Venkatamakhin proposed the permuted Melakarta system. Those were permuted scales and later framed as ragams by composers like Thyagaraja or Muthuswamy Deekshitar.

A *raga* in Carnatic music prescribes a set of rules for building a melody - very similar to the Western concept of mode. It specifies rules for movements up (*aarohanam*) and down (*avarohanam*), the scale of which notes should figure more and which notes should be used more sparingly, which notes may be sung with *gamaka* (a shake or oscillation of a note, also known as bending the pitch), which phrases should be used, phrases should be avoided, and so on.

In Carnatic music, the *sampoorna ragas* (those with all seven notes in their scales) are classified into a system called the *melakarta*, which groups them according to the kinds of notes that they have. There are seventy-two *melakarta ragas*, thirty six of whose madhyama (subdominant) is sadharana (perfect fourth from the tonic), the remaining thirty-six of whose madhyama (subdominant) is prati (an augmented fourth from the tonic). The *ragas* are grouped into sets of six, called Chakras ("wheels," though actually segments in the conventional representation) grouped according to the supertonic and mediant scale degrees. There is a system known as the 'Katapayadi sankhya to determine the names of Melakarta Ragas (Already posted and discussed later in this article)

*Ragas* may be divided into two classes: *Janaka ragas* (that is, melakarta or parent ragas) and *janya ragas* (descendant ragas of a particular janaka raga). Janya ragas are subclassified into various categories themselves.

There are potentially hundreds and thousands of ragas, of which with over five thousand have been listed; but only less than a thousand being known to exist.

## **Tala System :**

Tala refers to the beat set for a particular composition (a measure of time). Talas have cycles of a defined number of beats and rarely change within a song. They have specific components, which can be put together in over 108 combinations, allowing different compositions to have different rhythms.

Carnatic music singers usually keep the beat by moving their hands up and down in specified patterns, and using their fingers simultaneously to keep time. Tala is formed with three basic parts (called *angas*) which are *laghu*, *dhrta*, and *anudhrta*, though complex talas may have other parts like *plutam*, *guru* and *kaakapaadam*. There are seven basic *tala* groups which can be formed from the *laghu*, *dhrta*, and *anudhrta*: Dhruva tala, Matya tala, Rupaka tala, Jhampa tala, Triputa tala, Ata tala, and Eka tala.

A laghu has five variants (called *jaathis*) based on the counting pattern. Five *jaathis* times seven tala groups gives thirty-five basic *talas*, although use of other *angas* results in a total of 108 talas.

Please watch the video : <https://www.youtube.com/watch?v=MBvAYPvmEk>

## **Improvisation :**

There are four main types of improvisation in Carnatic music, but in every type, adhering to the scale and phrases of the raga is required.

## **Raga Alapana :**

This is the exposition of the ragam of the song that is about to be performed. A performer will explore the ragam first by singing lower octaves then moving up to higher ones and touching various aspects of the ragam while giving a hint of the song to be performed. It is a slow improvisation with no rhythm.

Theoretically, this ought to be the easiest type of improvisation, since the rules are so few, but in fact, it takes much skill to sing a pleasing, comprehensive (in the sense of giving a "feel for the ragam") and, most importantly, original ragam.

### **Niraval :**

This is usually performed by the more advanced concert artists and consists of singing one or two lines of a song repeatedly, but with improvised elaborations. Niraval comes out of the manodharma sangeetha; the selected line is repeated within the tala timing to illustrate the beauty of the raaga.

### **Kalpanaswaram :**

The most elementary type of improvisation, usually taught before any other form of improvisation. It consists of singing a pattern of notes which finishes on the beat and the note just before the beat and the note on which the song starts. The swara pattern should adhere to the original raga's swara pattern, which is called as *aarohanam-avarohanam*

### **Thanam:**

This form of improvisation was originally developed for the veena and consists of expanding the raga with syllables like *tha, nam, thom, aa, nom, na*, and so on.

### **Ragam Thanam Pallavi :**

This is a composite form of improvisation. As the name suggests, it consists of Raga Alapana, Thanam, and a pallavi line. The pallavi line is sung twice, and Niraval follows. After Niraval, the pallavi line is sung again, twice in normal speed, then sung once at half the speed, then twice at regular speed, then four times at twice the speed. Kalpanaswarams follow.

### **LEARNING CARNATIC MUSIC :**

Carnatic music is traditionally taught according to the system formulated by Purandara Dasa. This involves *swaravalis* (graded exercises), *alankaras* (exercises based on the seven talas), Geethams or simple songs, and Swarajatis. After the student has reached a certain standard, *Varnams* are taught, and later, the student learns Kritis. It typically takes several years of lessons before a student is adept enough to perform at a concert.

The lesson texts and exercises are more or less uniform across all the South Indian states. The learning structure is arranged in the increasing order of complexity. The lessons start with the learning of the *sarali varisai* (solfege set to a particular raga).

Carnatic music was traditionally taught in the gurukula system, where the student lived with and learned the art from his guru (master). Musicians take great pride in letting people know about their Guru Parampara, or the hierarchy of disciples from some prominent ancient musician or composer, to which they belong. People whose The disciple-hierarchies of Thyagaraja, Muthuswami Dikshitar, Syama Sastri, Swathi Thirunal, and Papanasam Sivan are often referred to.

From the late twentieth century onwards, changes in lifestyles and the need for aspiring young musicians to simultaneously maintain an academic career, have made this system untenable. In modern times, it is common for students to visit their gurus daily or weekly to learn music. Though new technology has made learning easier with the availability of quick-learn media such as learning exercises recorded on audio cassettes and CDs, these are discouraged by most gurus who emphasize that face-to-face learning is best for students.

### **Notation :**

Notation is not a new concept in Indian music. However, Carnatic music continued to be transmitted orally for centuries without being written down. The disadvantage with this system was that in order to learn about a Kṛiti composed, for example, by Purandara Dasa, it was necessary to find a person from Purandara Dasa's lineage of students.

Written notation of Carnatic music was established in the late seventeenth century and early eighteenth century, which coincided with rule of Shahaji II in Tanjore. Copies of Shahaji's musical manuscripts are still available at the Saraswathi Mahal Library in Tanjore, and they give us an idea of the music and its form. They contain snippets of solfege to be used when performing the mentioned ragas.

### **Melody :**

Unlike Western music, Carnatic music is notated almost exclusively in tonic solfa notation using either a Roman or Indic script to represent the solfa names. Past attempts to use the staff notation have mostly failed. Indian music makes use of hundreds of ragas, many more than the Church modes in Western music. It becomes difficult to write Carnatic music using the staff notation without the use of too many accidentals. Furthermore, the staff notation requires that the song be played in a certain key. The notions of key and absolute pitch are deeply rooted in Western music, whereas the Carnatic notation does not specify the key and prefers to use scale

degrees (relative pitch) to denote notes. The singer is free to choose the actual pitch of the tonic note. In the more precise forms of Carnatic notation, there are symbols placed above the notes indicating how the notes should be played or sung; however, informally this practice is not followed.

To show the length of a note, several devices are used. If the duration of note is to be doubled, the letter is either capitalized (if using Roman script) or lengthened by a diacritic (in Indian languages). For a duration of three, the letter is capitalized (or diacriticized) and followed by a comma. For a length of four, the letter is capitalized (or diacriticized) and then followed by a semicolon. In this way any duration can be indicated using a series of semicolons and commas.

However, a simpler notation has evolved which does not use semicolons and capitalization, but rather indicates all extensions of notes using a corresponding number of commas. Thus, *Sā* quadrupled in length would be denoted as "S,,,".

### **Rhythm :**

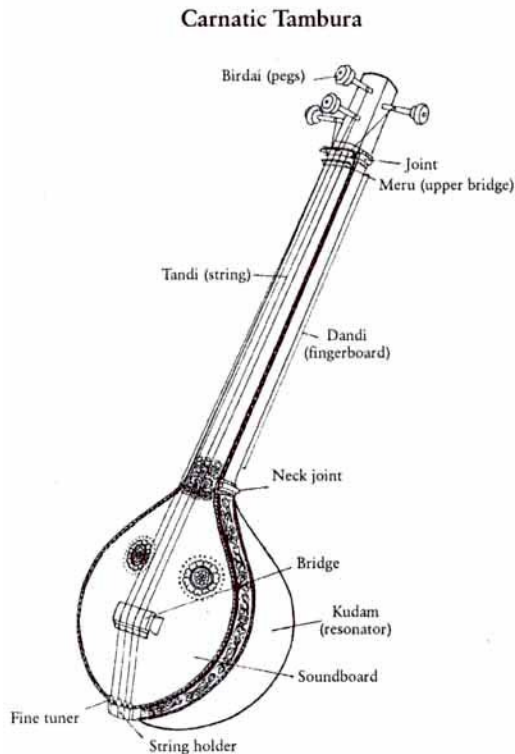
The notation is divided into columns, depending on the structure of the Taalam. The division between a *laghu* and a *dhrutam* is indicated by a |, called a *ḍaṇḍā*, and so is the division between two *dhrutams* or a *dhrutam* and an *anudhrutam*. The end of a cycle is marked by a ||, called a *double ḍaṇḍā*, and looks like a caesura.

### **Concerts :**

Carnatic music concerts are usually performed by a small ensemble of musicians who sit on a slightly elevated stage. Carnatic music concerts can be vocal recitals, accompanied by supporting instruments, or purely instrumental concerts. Whether it is vocal or purely instrumental, a typical concert features the compositions which form the core of this music. The lead musician must also choose a signature octave based on his or her (vocal) range of comfort. However, it is expected that a musician maintains that same pitch once it is selected, and so to help all the performers maintain the selected pitch, the *tambura* is the traditional drone instrument used in concerts. Today, tamburas are increasingly being replaced by Shruthi boxes, and now more commonly, the "Electronic Tambura".

In a vocal recital, a concert team may have one or more vocalists, accompanied by instrumentalists. Other instruments such as the veena or flute can be found to occasionally accompany a lead vocalist, but usually a vocalist is supported by a violin player (who sits on his

or her left), and a few percussion players including at least a mridangam (who usually sits on the other side of the vocalist, facing the instrumentalist). Other percussion instruments include the ghatam, *kanjira* and *morsing*, which accompany the main percussion instrument and play almost in a contrapuntal fashion along with the beats. The objective of the accompanying instruments is far more than following the melody and keeping the beats. The accompaniments form an integral part of every composition, and they closely follow and augment the melodic phrases outlined by the lead singer. The vocalist and the violinist take turns while elaborating or while exhibiting creativity in sections like raga, niraval and kalpanaswaram. Unlike Hindusthani kusic concerts, where an accompanying Tabla player can keep beats without following the musical phrases at times, in carnatic music, the accompaniments have to follow intricacies of the composition, since there are percussion elements such as eduppu, in several compositions. Some of the best concerts feature considerable interaction, with the lead musicians and the accompaniments exchanging notes, and accompanying musicians predicting the lead singer's musical phrases.



## Content:

A contemporary Carnatic concert ((called a *kutcheri*) usually lasts about three hours, and comprises a number of varied compositions. Carnatic songs are composed in a particular *raga*, which means that they do not deviate from the notes in the *raga*. Each composition is set with specific notes and beats, but performers improvise extensively. Improvisation occurs in the melody of the composition as well as in using the notes to expound the beauty of the *raga*.

Concerts usually begin with a *varnam* or an invocatory item which will act as the opening piece. The *varnam* is composed with an emphasis on the *swaras* of the *raga*, but will also have lyrics, the *saahityam*. It is lively and fast to get the audience's attention. An invocatory item may alternatively follow the *varnam*.

After the *varnam* and invocatory item, the artist sings longer compositions called *kirtanas* (commonly referred to as *kritis*). Each *kriti* sticks to one specific *raga*, although some, known as *ragamalika* (a garland of *ragas*), are composed with more than one *raga*.

After singing the opening *kriti*, usually, the performer sings the *kalpanaswaram* of the *raga* to the beat. The performer must improvise a string of *swaras* in any octave according to the rules of the *raga* and return to beginning of the cycle of beats smoothly, joining the *swaras* with a phrase selected from the *kriti*. The violin performs these alternately with the main performer. In very long strings of *swara*, the performers must calculate their notes accurately to ensure that they stick to the *raga*, have no awkward pauses and lapses in the beat of the song, and create a complex pattern of notes that an experienced audience can follow.

Performers then begin the main compositions with a section called *raga alapana* exploring the *raga*. In this, they use the sounds *aa*, *ri*, *na*, *ta*, and so on, instead of *swaras*, to slowly elaborate the notes and flow of the *raga*. This begins slowly and builds to a crescendo, and finally establishes a complicated exposition of the *raga* that shows the performer's skill. All of this is done without any rhythmic accompaniment, or beat. Then the melodic accompaniment (violin or veena), expounds the *raga*. Experienced listeners can identify many ragas after they hear just a few notes. With the *raga* thus established, the song begins, usually with lyrics. In this, the accompaniment (usually violin, sometimes veena) performs along with the main performer and the percussion (such as a mridangam). In the next stage of the song, they may sing *niraval* or *kalpanaswaram* again.



In most concerts, the main item will at least have a section at the end of the item, for the percussion to perform solo (called the *tani avartanam*). The percussion performers perform complex patterns of rhythm and display their skill. If multiple percussion instruments are employed, they engage in a rhythmic dialogue until the main performer picks up the melody once again. Some experienced artists may follow the main piece with a *ragam thanam pallavi* mid-concert, if they do not use it as the main item.

Following the main composition, the concert continues with shorter and lighter songs. Some of the types of songs performed towards the end of the concerts are *tillanas* and *thukkadas*, bits of popular kritis or compositions requested by the audience. Every concert that is the last of the day ends with a mangalam, a thankful prayer and conclusion to the musical event.

### **ARIYAKUDI SYSTEM:**

The present system of Carnatic concerts was formulated by Sri. Ariyakudi Ramanujam Iyengar.

A carnatic music concert usually can last for a duration of anywhere between 1 to 4 hours. However, a normal kutcheri usually lasts for a period of around 2 to 2.5 hours. The choice of the kritis, the length and complexity of the manodharmam components presented, are all dependent on the duration of the concert. The items presented in a typical carnatic concert can be listed as follows:

1. Varnam - This is the opening item of a concert. Varnams are compositions in different ragas which include both lyrics (sahithyam) and swaras. Varnam may be rendered in first and second speeds or in a medium pace (known as madhyama kala). From the artiste's point of view, rendering of varnam in the beginning of a concert, is like a warm up exercise for the throat. It is also possible that an artiste omits the varnam and straight away opens the concert with some keerthana.
2. Kritis - After the varnam, the artiste goes on to render one or two brisk kritis with or without any manodharmam components. Many artistes prefer to start with either a kriti on Lord Vinayaka or with compositions in ragas best suited for opening a concert, like nattai, mayamalava gowlai, hamsadwani, kedaram etc. It is possible that the artiste sings a brief alapana and few rounds of kalpana swaras also.

3. Sub-main item - The artiste usually renders a short alapana in the raga of the kriti and then moves on to sing the composition. The rendering of neraval/kaplanaswara is entirely the artiste's decision.

4. Chauka kala kriti - A slow rendition of some majestic and monumental compositions of famous composers with or without raga alapana. Eg., Dikshithar's kamalamba navavaranam and navagraha kirtanas, Shyama Sastri's compositions like Mayamma, O Jagadamba.

5. Main item - The main item comprises a lengthy alapana of the raga, followed by rendition of the kriti, neraval followed by swarakalpana. Some artistes may render RTP as the main item in which case the sub-main item is taken up for a longer duration. Before concluding the main piece, the artiste gives an opportunity for the percussionists to showcase their talent, in perfect adherence to the tala and this is referred to as the 'thani aavarthanam'.

6. Thukkada - The songs sung after the main item are all commonly referred to as 'thukkadas' meaning 'tidbits'. This segment consists of songs in lighter ragas (behag, maund, desh, kaapi, yamuna kalyani, sindhu bhairavi, bageshri, revathi etc) and have a very popular appeal among all types of rasikas. These days, abhangs have become a very popular number in the thukkada segment. Ragamalika compositions, bhajans, Bharathiyar songs, padams, javalis, and thillanas are some of items that can come under this category.

7. Mangalam - The concert is concluded with 'mangalam', an item which symbolizes auspiciousness and well being of all. Mangalam is mostly sung in ragas like Madhyamavathi, Saurashtram or Suruti.

## **SWARAS :**

There are basically seven swaras, Sa, Ri, Ga, Ma, Pa, Dha, Ni. Out of these seven Sa and Pa are called Prakruthi swaras and have only one constant frequency each. The other five notes have different positions (tones and semi-tones); Ma has two positions, M1 and M2; all the other four have three positions each. These five notes are called Vikruthi swaras.

The different names given to these tones and semitones are:

S – Shadjam

R1 – Suddha Rishabham; R2 – Chathusruthi Ri; R3- Shadsruthi Ri

G1 – Suddha Gandharam; G2 – Sadharana Ga; G3 – Anthara Ga

M1 – Suddha Madhyamam; M2 – Prathi Madhyamam

P – Panchamam

D1 – Suddha Dhaivatham; D2 – Chathusruthi Dha; D3 – Shadsruthi Dha

N1 – Suddha Nishadam; N2 – Kaishiki Ni; N3 – Kakali ni.

So, if we calculate the total positions, Sa (1), Pa (1), Ma (2) and the others,  $4 \times 3 = 12$ ; totalling to 16 positions. But in actual practice, we can find that some of these semitones though represented by different symbols, represent only one semitone. That is the positions of R2 & G1 are same, so also R3 & G2, D2 & N1, D3 & N2. Thus the total number of positions on the keyboard comes to 12; these are called 'Dwadasa swaras' or 12-note system.



Sl. No.	Carnatic Note	Name	Western Note
1	S	Shadajam	C
2	R1	Suddha Rishabham	C#
3	R2/ G1	Chatushruti Rishabham/ Sudhha Gandharam	D
4	R3/ G2	Shatshruti Rishabham/ Sadharana Gandharam	D#
5	G3	Antara Gandharam	E
6	M1	Suddha Madhyamam	F
7	M2	Prati Madhyamam	F#
8	P	Panchamam	G
9	D1	Suddha Dhaivatam	G#
10	D2/ N1	Chatushruti Dhaivatam/ Suddha Nishadam	A
11	D3/ N2	Shatshruti Dhaivatam/ Kaisiki Nishadam	A#
12	N3	Kakali Nishadam	B
	S'	(Upper sthayi) Shadajam	C'

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### STHAYEES :

Beginning from Sa (Aadhara shadajam) upto Ni, all the 7 notes and their semitones (totally 12 notes) form one Sthayee. After these notes, the 13<sup>th</sup> note will be next Shadajam, which will have double the frequency of the 1<sup>st</sup> Sa. From this another Sthayee can start with all the 12 notes again. Usually, there are three sthayees used in vocal music; the Normal or Madhya sthayee or Aadhara sthayee, the upper or Thaara sthayee and Mandra sthayee or lower sthayee. Other than these, above the Thaara sthayee, there is Athithaara sthayee and below the mandra sthayee, Anumandra sthayee; but these can be attained only in instruments like Violin or Veena only. Well experienced vocalists can sing all the three sthayees with ease, but this requires a lot

of practice and dedication. From the list attached, it can be seen that if we consider the frequency of Aadhara Shadjam as '1', the 12<sup>th</sup> note Kakali Nishadam (N3) has a frequency 1.88 times that of Sa; the upper Shadjam will be 2.00. The same way, the frequencies of the lower sthayee notes also can be calculated.

No.	Carnatic swara	Just Ratio	Key	Ratio
1	Shadja - S	1	C	1
2	Suddha Rishabham - R1	16/15	D♯	1.059
3	Chatusruti Rishabham - R2 and Suddha Gandharam - G1	9/8	D	1.122
4	Sadharana Gandharam - G2 and Shatshruti Rishabham - R3	6/5	E♯	1.189
5	Antara Gandharam - G3	5/4	E	1.25
6	Suddha Madhyamam - M1	4/3	F	1.335
7	Prati Madhyamam - M2	7/5 (45/32)	F♯	1.414
8	Panchama - P	3/2	G	1.498
9	Suddha Daivatam - D1	8/5	A♯	1.587
10	Chatusruti Daivatam - D2 or Suddha Nishadam - N1	27/16	A	1.682
11	Kaisiki Nishadam - N2 or Shatshruti Daivatam - D3	16/9	B♯	1.782
12	Kakali Nishadam - N3	15/8	B	1.888

## RAGAS :

A *raga* in Carnatic music prescribes a set of rules for building a melody – very similar to the Western concept of mode. It specifies rules for movements up (*arohanam*) and down (*avarohanam*), the scale of which notes should figure more and which notes should be used more sparingly, which notes may be sung with gamaka (ornamentation), which phrases should be used or avoided, and so on. In effect, it is a series of obligatory musical events which must be observed, either absolutely or with a particular frequency.

Raga can be defined as a combination of few musical notes and is the most fundamental concept in Carnatic music. All compositions and artiste's improvisations that we hear in concert platforms are all raga based.

In Carnatic music, there are two types of Ragas; the Sampoorna Ragas and the Asampoorna Ragas. The *sampoorna ragas* (those with all seven notes in their scales) are classified into a system called the melakartha, which groups them according to the kinds of notes that they have. There are seventy-two *melakarta ragas*, thirty six of whose madhyama (subdominant) is shuddha (perfect fourth from the tonic), the remaining thirty-six of whose madhyama (subdominant) is prati (an augmented fourth from the tonic). The *ragas* are grouped into sets of six, called chakras ("wheels", though actually segments in the conventional representation) grouped according to the supertonic and mediant scale degrees. There is a system known as the Katapayadi system to determine the names of *melakarta ragas*.

*Ragas* may be divided into two classes: *janaka ragas* (i.e. melakarta or parent ragas) and *janya ragas* (descendant ragas of a particular janaka raga). Janya ragas are themselves subclassified into various categories; like Shadava (hexatonic - six notes), oudava (pentatonic – five notes), swaranthara (four or less notes), also there are combinations of these, in regular style and vakra (zig-zag) style etc.

From each of our 72 melakartha raagas, 483 (Upaanga) Janya raagas can be listed out and for 72 melakartha raagas it would be 34,776 and just add the 72 to this , then we get 34,848 raags in total in "Upaaga" variety which mean, for the janya raagas that we get from each melakartha raaga, the notes that are used in that melakartha will only be used...There are "Bhashanga Janya Raagas" which uses foreign note that mean, if you have to use lower Ma denoted by M1 (Sudhdha Madhyama swara) if there is M2 (Prathi Madhyama) is used then it is called Bhashaanga janya raaga an example for this is Yamuna Kalyani which is a Bhashanga Janya of Kalyani Melakartha raaga. Although kalyani has only prathi madhyama swara M2, this Yamuna Kalyani has both M1 and M2 in it. Like that many raagas... Bhairavi has both small and big dhaivatham D1 and D2 in it; likewise lots of bashanga janyas are there and they are countless...So finally the theory says that "Raagas are Countless".

## MELAKARTHA RAGAS:

Melakarta Ragas are fundamental ragas in Carnatic Music; they are the Janaka (Parent) ragas from which other ragas are originated. These are referred to as Mela ragas also, all are sampurna ragas. It is to be noted that though all mela ragas are sampurna ragas, all sampurna ragas need not be mela ragas.

## HISTORY OF MELA RAGAS

The *mela* system of ragas was first propounded by Raamamaatya in his work *Swaramelakalanidhi* (1550). He is considered the father of *mela* system of ragas. Later, Venkatamakhin, a gifted musicologist in the 17th century, expounded a new *mela* system known today as *mela* in his work *Chaturdandi Prakaasikaa*. He made some bold and controversial claims and defined somewhat arbitrarily 6 *svaras* from the known 12 semitones, at that time, to arrive at 72 *mela* ragas. The controversial parts relate to double counting of R2 (and similar *svaras*) and his exclusive selection of *madhyamas* for which there is no specific reasoning (also known as *asampurna melas* as opposed to Sampurna ragas). However, today the 72 *mela* ragas use a standardized pattern, unlike Venkatamakhi's pattern, and have gained a significant following. Govindhacharya is credited with the standardization of rules and known for giving different names for standard ragas that have a different structure but the same swaras as those proposed by Venkatamakhi. The scales in this page are those proposed by Govindacharya.

## MELAKARTHA SCALE

Each *mela* raga has a different scale. This scheme envisages the lower Sa (*Keezh Shadja*), upper Sa (*Mael Shadja*) and Pa (*Panchama*) as fixed swaras, with the Ma (*Madhyama*) having two variants and the remaining swaras Ri (*Rishabha*), Ga (*Gandhaara*), Dha (*Dhaivata*) and Ni (*Nishaada*) as having three variants each. This leads to 72 seven-note combinations (scales) referred to as the *Mela* ragas as follows.

There are twelve semitones of the octave S, R1, R2=G1, R3=G2, G3, M1, M2, P, D1, D2=N1, D3=N2, N3. A *mela* raga must necessarily have S and P, one of the M's, one each of the R's and G's, and one each of the D's and N's. Also, R must necessarily precede G, also D must precede N (*krama sampurna*). This gives  $2 \times 6 \times 6 = 72$  ragas. Finding *mela* ragas is a mathematical process. By following a simple set of rules we can find the corresponding raga and the scale associated with it.

## RULES FOR MELAKARTHA SCHEME

1. These should be sampurna ragas (contain all the seven notes of the octave in both ascending and descending scales)
2. The upper Shadjam should be included in the scale. (There are ragas ending with Ni, Which cannot be considered mela)

3. These ragas should have all the notes in the exact order in both the ascend and descend –krama sampurna ragas – without any zig-zag (vakra) pattern.
4. The ascending and descending scales should contain only same notes.

## DETERMINING MELA RAGAS

A hundred years after Venkatamakhin's time the *Katapayadi sankhya* rule came to be applied to the nomenclature of the *melakarta* ragas. The *sankhya* associates Sanskrit consonants with digits. The digits corresponding to the first two syllables of the name of a raga, when reversed, give the index of the raga. Thus the scale of a *melakarta* raga can be easily derived from its name.

## KATAPAYADI SYSTEM :

This is a very simple but systematic method of determining the mela number of any melakarta raga. This is based on the sloka - कादिनव टादिनव पादिपञ्चक यद्यष्टक क्षःशुन्यम् - (Kaadi nava, taadi nava, paadi pancha, yadyashtaka, ksha shoonyam). According to this rule, the values of each letter is assigned as shown in the Figure:

कटपयादि संख्या - kaTapayAdi for Melakarta Ragam Names & Numbers									
1	2	3	4	5	6	7	8	9	0
क	ख	ग	घ	ङ	च	छ	ज	झ	ञ
ट	ठ	ड	ढ	ण	त	थ	द	ध	न
प	फ	ब	भ	म					
य	र	ल	व	श	ष	स	ह		
ka	kha	ga	gha	nga	cha	Cha	ja	Jha	nya
Ta	Tha	Da	Dha	Na	ta	tha	da	dha	na
pa	pha	ba	bha	ma					
ya	ra	la	va	sha	Sha	sa	ha		

This is a general rule and when applied to the melaragas, the phrase 'samkhyanam vamatho gathi' (the figure is to be reversed or to be read in the reverse order).

This can be explained in a simple manner. Take the case of Harikambhoji raga. As per the above system, Ha = 8; ri (ra) = 2, so it comes 8 and 2, on reversing it gives 28, which is its mela number. Similarly, in Mayamalavagoula, ma = 5, ya = 1; 5 and 1, on reversing it gives 15<sup>th</sup> mela raga.

An interesting point to be noted here is the letter 'na' denotes zero; hence all ragas with their names starting with 'na' will be multiples of 10; examples are Natakapriya (10), Natabhairavi (20), Naganandini (30), Navaneetham (40), Namanarayani (50), Neethimathi (60) and Nasikabhushani (70).

Names of some ragas which were already established with certain names could not be brought under this rule. So certain prefixes were added to maintain the scheme – Thodi became Hanumathodi, Sankarabharanam is prefixed with 'Dheera', Kalyani, with 'Mecha' etc. to comply with this rule.



## ASAMPOORNA MELAKARTHA SYSTEM:

This is the type of system originally proposed in the 17<sup>th</sup> century by Venkatamakhin in his 'Chathurdanda prakashika'. This proposal used scales with notes that do not conform to the Sampoorna raga system. Skipped notes or repeated notes, etc., were used in some of the ragas. Some of the ragas of any *Melakarta* system will use Vivdi swaras (discordant notes). The original system is supposed to avoid such ill-effects and was followed by the Muthuswami Dikshithar school. The naming of the original system followed katapayadi system. Muthuswami Dikshitar's compositions use the name of these ragas in the lyrics of the songs and is still referred to by those names.

Here is a list of the Asampoorna mela ragas (used in Dikshithar system) and the corresponding ragas in the conventional system :



mela ragas list.zip

## MELACHAKRAS:

All the 72 Melakarta Ragas are grouped into 12 Chakras of 6 ragas each. The first 6 chakras containing ragas from (1) Kanakangi to (36) Chalanatta are called Purva Mela ragas and are all Suddha Madhyama ragas. The remaining 36 ragas from (36) Salagam to (72) Rasikapriya are grouped into the next 6 chakras and form the Uthara Mela Ragas; these are all Prathimadhyama ragas. The sequence of notes used for the mela ragas 1 to 36 will be repeating from 37 to 72 in the same order; except the change of M1 to M2. So, to the number of any Suddha madhyama raga, if the number 36 is added it will give the corresponding Prathi madhyama raga. As an example, if you take (8) Thodi raga, to find the Prathimadhyama equivalent, add 36, which gives (44), which is Bhavapriya; similarly (29) Sankarabharanam and (65) Kalyani etc.

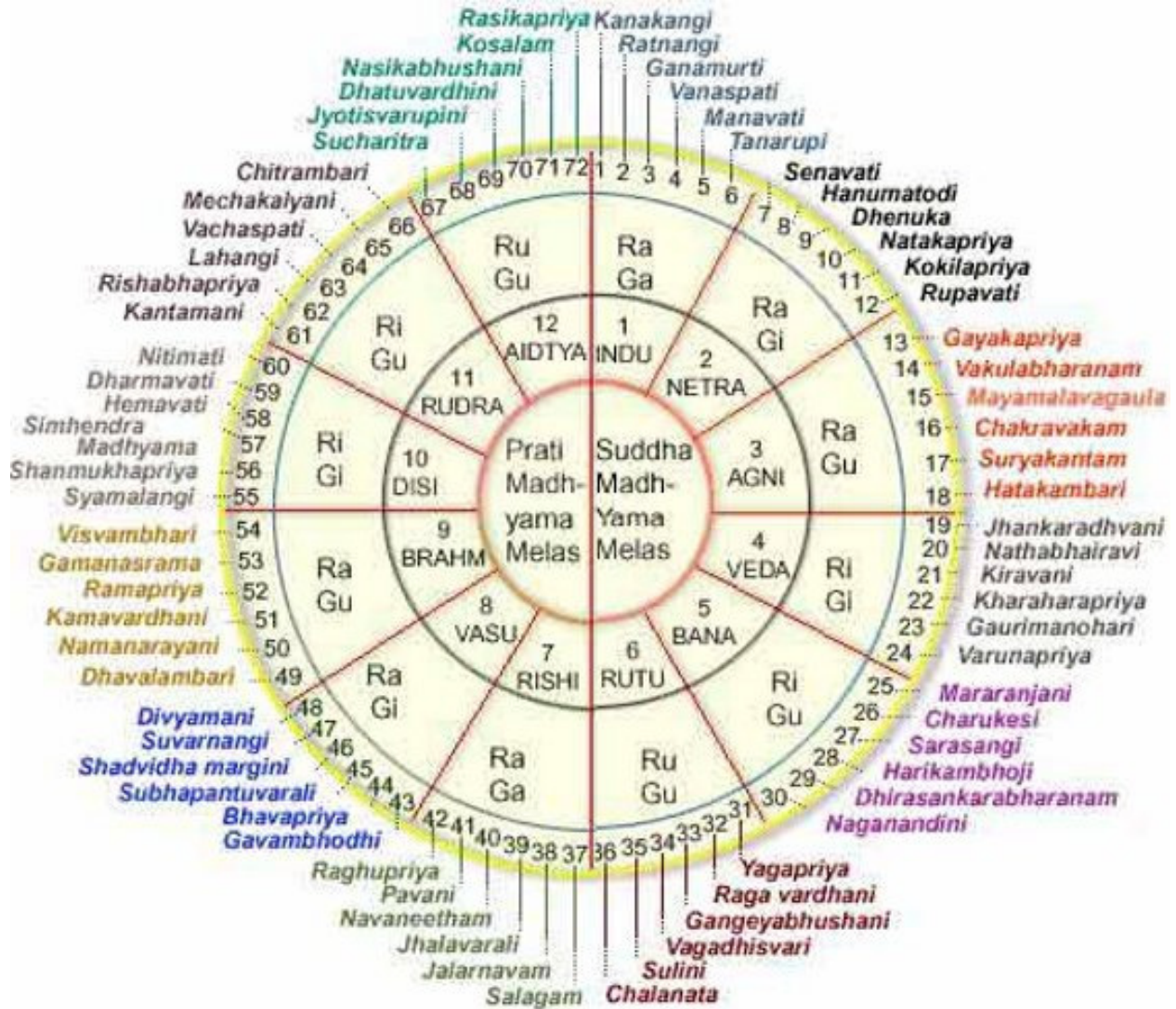
Coming to the Mela chakras, as we have found earlier, each contain only 6 ragas; each chakra is named as per the nomenclature shown:

The 72 *Melakarta* ragas are split into 12 groups called *chakras*, each containing 6 ragas. The ragas within the chakra differ only in the *dhaivatam* and *nishadam* notes (D and N), as illustrated below. The name of each of the 12 *chakras* suggest their ordinal number as well.

- Indu stands for the moon, of which we have only one – hence it is the first *chakra*.
- Netra means eyes, of which we have two – hence it is the second.
- Agni is the third *chakra* it indicates three kinds of Agni.(Dakshina, Ahavaniyam and Garha Patyam)So agni indicates 3rd *Chakra*.

- Veda denoting four Vedas (Rig, Yajur, Sama and Atharva) is the name of the fourth *chakra*.
- Baana comes fifth as it stands for the five Arrows of Manmatha (Ashokam, Aravindam, Chootham, Navamalika, Neelotpalam)
- Rithu is the sixth *chakra* standing for the 6 seasons of Hindu calendar, which are Vasanta, Greeshma, Varsha. Sharat, Hemanta and Shishira.
- Rishi, meaning sage, is the seventh *chakra* representing the Seven Sages – Mareechi, Angirassu, Athri, Pulasthya, Pulaha, Krathu and Vasishta.
- Vasu stands for the Ashta vasus (eight *vasus* of Hinduism), Apa, Dhruva, Soma Dhara, Anila, Anala, Pradwisha and Prabhasa.
- Brahma comes next of which there are 9 (Angirassu, Athri, Krathu, Pulasthya, Balaha, Bhriugu, Mareechi, Vasishta and Daksha).
- Dishu *Chakra* indicates Ten directions (East, West, North, South, North East, North West, South East, South West, Sky and Earth). Hence it is 10th *Chakra*.
- Eleventh *chakra* is Rudra of which there are eleven (Aja, Ekapada, Ahirbudhanya, Twashta, Rudra, Shambhu, Hara, Thryambaka, Aparajitha, Eashana and Tribhuvana)
- Twelfth comes Adithya of which there are twelve (Dhatha, Mithra, Aryama, Rudra, Varuna, Surya, Bhaga, PUsha, Savitha, Arkka, Bhaskara and Urukrama)

These 12 *chakras* were also established by Venkatamakhi.



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Now, coming to the identification procedure, we have seen that the first six (1-6) chakras differ from the next six (7-12) in the type of madhyamam (M1 and M2). The chakras 1 to 6 and 7 to 12 differ with each other in the type of R (Rishabham) and G (Gandharam). As we had already seen in the previous chapters, based on the shodasha swaras, there are three variants each for each of these notes, R1, R2, R3, G1, G2 and G3. So there can be six pair combinations of these possible; R1G1, R1G2, R1G3, R2G2, R2G3 and R3G3. Therefore, the different chakras from 1 to 6 and 7 to 12 will be consisting of :

R1G1 - 1 & 7 chakras

R1G2 - 2 & 8 ,,

R1 G3 – 3 & 9 ,,

R2G2 - 4 & 10 ,,

R2 G3 – 5 & 11 ,,

R3 G3 - 6 & 12 ,,

Also, within each chakra, the other two remaining notes, D (Dhaivatham) and N (Nishadam) vary. As in the case of R & G, we can get six combinations like D1N1, D1N2, D1N3, D2N2, D2N3 and D3N3. This will be applicable to all ragas from 1 to 6 in a particular chakra. So, in any chakra,

D1 N1 – 1<sup>st</sup> raga

D1 N2 – 2<sup>nd</sup>

D1 N3 – 3<sup>rd</sup>

D2 N2 – 4<sup>th</sup>

D2 N3 – 5<sup>th</sup>

D3 N3 – 6<sup>th</sup> raga

## NAMING OF THE MELA RAGAS – THE “KATAPAYADI SYSTEM”:

Almost all evidences of the use of *Ka-ṭa-pa-yā-di* system is from South India, especially Kerala.

The "ka-Ta-pa-ya" rule used by ancient Indian mathematicians and grammarians is a tool to map names to numbers. Writing the consonants of the Sanskrit alphabet as four groups with "ka, Ta, pa, ya" as the beginning letters of the groups we get :

कटपयादि संख्या - kaTapayAdi for Melakarta Ragam Names & Numbers									
1	2	3	4	5	6	7	8	9	0
क	ख	ग	घ	ङ	च	छ	ज	झ	ञ
ट	ठ	ड	ढ	ण	त	थ	द	ध	न
प	फ	ब	भ	म					
य	र	ल	व	श	ष	स	ह		
ka	kha	ga	gha	nga	cha	Cha	ja	Jha	nya
Ta	Tha	Da	Dha	Na	ta	tha	da	dha	na
pa	pha	ba	bha	ma					
ya	ra	la	va	sha	Sha	sa	ha		

This is explained by the sloka :

“Kaadi Nava, Taadi nava, Paadi pancha, Yaadyashta” – meaning , from the letter ‘ka’ upto ‘jha’ (1 to 9), ‘ta to ‘dha’ (1 to 9), ‘pa to ‘ma’ (1 to 5) and ‘ya’ to ‘ha (1 to 8) will be the numbering system; eventually, ‘nga’ and ‘na’ are for ‘zero’.

Venkatamakhi applied the "kaTapaya" scheme to name the janaka raagas to fit their place in the melakarta list. Under this naming scheme, the number of a janaka raaga is obtained by decoding the first two letters using the "kaTapaya" scheme. For the naming scheme used for the melakarta raagas, apart from the decoding rules mentioned above for conjoint consonants, in case one of the consonants is from the 'ya' group, the first consonant is to be considered instead of the last. And finally, to get back to the mela number, these figures are to be reversed as per “samkhyanam vamatho gathi” (numbers to be read from right to left).

Now, for example:

"kharaharapriya" : kha = 2 and ra = 2 i.e 22, reversing the digits : 22

"shanmukhapriya" : sha = 6 and mu = 5 i.e 65, reversing the digits : 56

"natabhairavi" : na = 0 and Ta = 2 i.e 02, reversing the digits : 20

Also, it can be noted that names of all the ragas appearing as multiples of 10, will start with ‘na’, like – natakapriya (10), natabhairavi (20), naganandini (30), navaneetham (40), namanarayani (50), neethimathi (60) and nasikabhushani (70). Again in names of all the mela ragas from 1 to 9, the second letter will be ‘na’ – Kanakangi, Ratnangi, Ganamurthi, Vanaspathi, Manavathi, Thanarupi etc.

In some ragas, the existing names were not found to comply with this scheme, like Thodi (8), Sankarabharanam (29), Kalyani (65) etc., so prefixes were added to their names as Hanuma thodi, Dheera Sankarabharanam, Mecha kalyani etc.

### **Ragas not obeying 'Katapayadi rule':**

It can be seen that ragas like Chakravakam, Divyamani, Viswambhari, Shyamalangi, Simhendra madhyamam, Chithrambari and Jyothiswaroopini do not obey the rule; samyuktaksharas or conjunct consonant figure in the Katapayadi prefixes. The rule is, that the second or the last component letter of the conjunct consonant (i.e. the consonant immediately preceding the vowel) should be taken into consideration. Thus in Ratnangi, Suryakanta, Jhankaradhvani, Gangeyabhushani, Shadvidhamargini, Shanmukhapriya, Dharmavati and Kantamani, the correct serial numbers are obtained in this manner.

But in the case of the following melakartas : Chakravaka, Divyamani, Viswambhari, Syamalangi, Simhendra madhyama, Chitrambari and Jyotisvarupini, the first component letter of the concerned conjunct consonant has to be taken (as shown in the following table), in order that the application of the katapayadi formula might give the correct serial number. It can be assumed that these mela names were hurriedly coined and constitute an exception to the katapayadi rule. Also, Janya ragas do not obey katapayadi rule.

## **A STUDY ON DIFFERENT TYPES OF RAGAS**

### **JANYA RAGAS:**

Janya Ragas are ragas developed from the 72 Melakarha Ragas; this means, all the ragas except the Mela Ragas are janyas. Depending on their structure, these can be sub-divided into different types based on the number of notes present, as Sampoorana (all 7 notes available), Shadava (only 6 notes), Oudava (only 5 notes) and Swarantara (less than 5 notes). Hence we can have various combinations as:

Sampoorana – Sampoorana (please do not get confused with mela ragas, as they are sampoorana ragas) Though these ragas contain all seven notes in both directions, they may differ or may be additional notes or lesser notes. An example is Bhairavi; where the Dhaivatham (D2) in the arohanam is an anya swaram. Similarly, Ragam Chitharanjani has all the 7 notes of its janaka ragam Kharaharapriya; but lacking upper shadjam; similarly ragas like Kannada, maanji etc contain all notes of the janaka ragam and additional notes either in one or both directions.

**Sampoorana – Shadava:** Arohanam contains all the 7 notes, while avarohanam has only six

Example – Marga Hindolam (missing Ri in avarohanam)

**Sampoorana – oudava:** Arohanam contains all 7 notes; Avarohanam contains only 5 notes

eg: Garudadhvani - S R2 G3 M1 P D2 N3 S - S D2 P G3 R2 S (missing N3, M1)

**Shadava – Sampooranam:** Arohanam contains only six notes; Avarohanam contains all 7 notes.

Eg. Kapi Narayani - S R2 M1 P D2 N2 S - S N2 D2 P M1 G3 R2 S (missing G3 in arohanam)

**Shadava – Shadava:** contains only 6 notes each in both directions

Eg. Malayamarutham - S R1 G3 P D2 N2 S - S N2 D2 P G3 R1 S

**Shadava – Oudava:** contains six notes in arohanam and five in avarohanam

Eg. Bahudaari - S G3 M1 P D2 N2 S - S N2 P M1 G3 S

**Oudava – Sampoorna:** Only 5 notes in arohanam and all 7 notes in avarohanam

Eg. Abheri - S G2 M1 P N2 S - S N2 D2 P M1 G2 R2 S

**Oudava – Shadava:** 5 notes in arohanam and 6 notes in avarohanam

Eg. Manirangu - S R2 M1 P N2 S - S N2 P M1 G2 R2 S

**Oudava – Oudava:** only 5 notes in both directions

Eg. Hindolam - S G2 M1 D1 N2 S - S N2 D1 M1 G2 S

It has to be noted that the above examples have been shown with similar notes in both directions. But there are ragas belonging to the above groups with different notes in arohanam and avarohanam.

Eg. Andolika - S R2 M1 P N2 S - S N2 D2 M1 R2 S

Amritavahini - S R2 M1 P D1 N2 S - S N2 D1 M1 G2 R2 S

**Swaranthara Ragas:** These are ragas with 4 or less notes. Here also there can be combinations like the above. Till the last century, any raga with less than 5 notes was not considered at all; this became prominent when Dr. M.Balamuraleekrishna created ragas like Lavangi, Mahathi (4 notes only); Sarvasri (3 notes) etc; many musicians and musicologists could not accept the same as ragas. But it is interesting to note that when Saint Thyagaraja composed “ninvina namadi endu” in Navarasa kannada, with 4 notes in arohanam and 6 notes in avarohanam (Swaranthara – Shadava), or Sri. G.N.Balasubramaniam created ragam Sivasakthi, with 4 notes in arohanam and 5 notes in avarohanam (Swaranthara – oudava) and composed “Sri chakraraja nilaye” in the raga, nobody raised their brows !

**Vakra Ragas:** There are many ragas where the notes are used in zig-zag manner; this may be in arohanam or avarohanam only or both.

Eg. Reethigoula - S G2 R2 G2 M1 N2 D2 M1 N2 N2 S - S N2 D2 M1 G2 M1 P M1 G2 R2 S

The above shows multiple use of many notes in zig-zag manner. Another type is change in positions, as;

Kathana kuthuhalam – arohanam - S R2 M1 D2 N3 G3 P S

Kapi jingala – both directions - S N2 S R2 G2 M1 - M1 G2 R2 S N2 D2 N2 S

Shriragam – avarohanam - S N2 P D2 N2 P M1 R2 G2 R2 S (or) S N2 P M1 R2 G2 R2 S

The Vakra ragas also can have all the above combinations from Sampoorana to Oudava types, with the three types above.

### **PANCHAMA – VARJA RAGAS:**

The basic notes of all mela ragas are the Lower (Adhara Shadjam), Panchamam and the Upper (ThAra sthayi Shadjam). The shruthi also is set on these notes. So, losing the panchamam causes the singer to be more careful in renditions. There are two types of “Panchama-varja” ragas:

**1. Ragas without Panchamam:** From the normal 7 notes, panchamam is eschewed alone or along with other note / notes to get a new raga.

Eg. Ragam Lalitha - S R1 G3 M1 D1 N3 S - S N3 D1 M1 G3 R1 S (only P is missing)

Ragam Abhogi - S R2 G2 M1 D2 S - S D2 M1 G2 R2 S ( P, N2 missing)

There are hundreds of such ragas; an exhaustive list can be made:



panchama varja ragas.zip

### **2. Dwimadhyama – panchama varja ragas:**

The well-known musician, Sri. Tanjore S. Kalyanaraman is the originator of this scheme. Out of the 72 mela ragas, 36 are Suddha madhyama ragas and the next 36 are the Prathi madhyama ragas with same structure; differing in M1 and M2 only. Hence without the madhyamam, there can be only 36 combinations, like in ragam Niroshtha. If the Panchamam is removed and both the Madhyamams added (or replace Panchamam with the second variety of Madhyamam) will result in 36 ragas with both madhyamams; TSK named these by adding ‘sri’ to the mela raga name as suffix. As an example,

Kanakangi – S R1 G1 M1 P D1 N1 S

Kanakasri - S R1 G1 M1 M2 D1 N1 S

All the ragas can be modified to get ragas with names Rathnasri, Ganasri, Vanasri, Manasri etc. upto Soolasri and Chalasri.

### **RAGAS WITH LIMITED SANCHARAM:**

These ragas are allowed to travel only within the Madhya sthayi and never allowed to touch the ‘Thaara sthayi’ Shadjam. There are four types of ragas under this category:



**1. Nishadanthya ragas :** These ragas are allowed to go upto the Madhya sthayee Nishadam only.

Eg. Punnagavarali - N2 , S R1 G2 M1 P D1 N2 - N2 D1 P M1 G2 R1 S N2

Nadhanamakriya - S R1 G3 M1 P D1 N3 - N3 D1 P M1 G3 R1 S N3

Chittharanjani - S R2 G2 M1 P D2 N2 - N2 D2 P M1 G2 R2 S

**2. Dhaivathanthya ragas:** The sancharam limited to Madhya sthayee Dhaivatham only.

Eg. Kurinji - S N3 S R2 G3 M1 P D2 - D2 P M1 G3 R2 S N3 S

**3. Panchamanthya ragas:** Those ending with Madhya sthayee Panchamam.

Eg. Navroj - P D2 N3 S R2 G3 M1 P - P M1 G1 R3 S N2 D2 P

**4. Madhyamanthya ragas:** The upper limit is only Madhya sthayee Madhyamam.

Eg. KApi jingala - S N2 S R2 G2 M1 - M1 G2 R2 S N2 D2 N2 S

## UPANGA AND BHASHANGA RAGAS

Upanga ragas are those janya ragas containing only the notes in the janaka raga. But in Bhashanga ragas, other notes (notes which are not found in the janaka raga) called anya swaras also are found; the number of these may vary from raga to raga. These anya swaras are sometimes found in the raga scale itself (eg. Bhairavi); or may be used while singing only, in which case, the note can be included or avoided – these notes bring in to beautify the raga only (eg. Saranga, M1 is used as anyaswaram in the specification; but in Bilahari raga, sometimes N2 is added as anyaswaram to give more beauty to the raga.

Most of the ragas are of Carnatic origin; still some of the ragas have been adopted from Hindusthani music, like Desh, Hamir kalyani, Hamsanandi etc; such ragas are also known as Deshiya (Desi) ragas. There are a good number of such ragas in Carnatic music. Similarly many carnatic ragas like Hamsadhvani, Abhogi etc have been borrowed to Hindusthani music from Carnatic also.

## GRAHA SWARA, NYASA SWARA, JEEVA SWARA AND AMSA SWARA

**Graha swaras** are the notes in which a raga / phrase should begin. Examples can be Hindolam (S, M, N), Sankarabharanam (S, R, M, P) etc. Sometimes the Graha swara may be the same as the Jeeva swara or / and Amsa swara.

**Nyasa swaras** are just the opposite of Graha swaras; ie. The ending note of a raga phrase or composition (eg. Nishadam in Sankarabharanam, Dhaivatham in Saveri etc).

**Jeeva swaras** – the note or notes bringing the melodic identity of the raga (eg. M1 in Saranga, G M P N in Sankarabharanam etc).

**Amsa swaras** – has almost the same property of Jeeva swara; except that all Jeeva swaras are not Amsa swaras. There can be more than one Amsa swara in a raga. Amsa swaras are also vishranthi swaras, hence alapana can be formulated around these notes (eg. M, P in Thodi, Panchamam in Anandabhairavi etc).

### **VADI, SAMVADI, VIVADI AND ANUVADI NOTES :**

Swaras are of four types; Vadi, Samvadi, Vivadi and Anuvadi types.

**1. Vadi** : It is the principal or the predominant note of a raga. The vadi swara is compared to a king. This royal or regnant note is sounded several times in a raga.

**2. Samvadi** : Samvadi svaras are those between which there are eight or twelve srutis. In other words, if two notes are related as shadja and panchama, or as shadja and suddha madhyama they are called samvadi svaras. Samvaditva, means the consonance of the fifth or the fourth. The samvadi svara is like a minister to the king vadi. It may be noted that the madhyama is only as inverted panchama or under-fifth.

Shadja and Panchama, Sa and Suddha Ma, Suddha Ri and Suddha Da, Suddha Ga and Suddha Ni, Sadharana Ga and kaisiki Ni, Antara Ga and Kakali Ni, Suddha Ri and Prati Ma are Samvadi svaras.

**3. Vivadi** : Dissonant note. It is a note which should not be used in a Raga. As an exception however, it is used by skillful musicians in an implied form in order to enhance the beauty of the Raga. Vivadi notes are often addressed as enemy notes. Shadshruthi Rishabam, Suddha Gandharam, Shadsruthi Dhaivatham, Suddha Nishadam are considered as vivadi swaras and the ragas which have any of these are vivadi ragas.

**4. Anuvadi** : Assonant note. Swaras which are neither vadi, samvadi nor vivadi are called as Anuvadi Svaras. The anuvadi svara is compared to a servant. Compared to the samvadi svara, the anuvadi svara relatively speaking is somewhat less consonant.

Thus 'the sonant on the speaking note is the vadi. The consonant note is the samvadi. The note which clashes with it and produces a discordant effect is the vivadi or the dissonant note. The note which increases the beauty of the raga is the anuvadi or the assonant note'.

### **VIVADI RAGAS :**

Vivadi is said to be a 'dosha' caused by the dissonant notes.

Mostly the ragas with sudha rishabham (R1) and sudha gandharam (G1) or shatsruthi rishabham (R3) and anthara gandharam (G3) or sudha dhaivatham (D1) and sudha nishadham (N1) or shatsruthi dhaivatham (D3) and kakali nishadam (N3) falls into this group.

If we take the mela chakras, 1,6,7 and 12 all the ragas (6x4 = 24) contain vivadi notes (melas 1 & 7 contain R1G1 combination and 7 & 12 contain R3G3). In addition, the 1<sup>st</sup> and 6<sup>th</sup> raga in all

the other chakras contain D1N1 and D3N3 combinations (total 8 chakras x 2 = 16). In the 72 sampoorna raga list there are such 40 vivadi ragas that is ragas with vivadi swaras are found. One need to take utmost care in dealing with ragas or one has to very skillfully handle and render to make it presentable and melodious. Though vivadi swaras need to be avoided in certain occasions these swaras are applied by eminent musicians to add color to swara prasthara or ragaexploration. Even there can be janya ragas with vivadhi swaras but some vivadhi janya ragas which rendered applying some techniques are highly popular and acclaimed like natai, varali etc.

These vivadi ragas were not sung until recent times, as they are not pleasant to listen. These raga notes are sung in vakra or giving a an elongation (meend) to the vivadi note to compensate the 'dosham'. The modern day musicians are found to specialize in these ragas and compositions; some of them giving short to medium alapana also. But a very detailed alapana is still difficult. Some mela ragas like Vagdheeswari, Nasikabhushani are heard sung brilliantly now a days, and the compositions in these ragas also becoming very popular.

#### **GHANA PANCHAKA RAGAS:**

The ragas Nattai, Goula, Arabhi, Varali and Shri ragas are known as Ghanapanchaka ragas. These ragas are sung in madhyama kalam to bring out the full effects; Sadguru Thyagaraja has composed the Pancharatna krithis in these ragas. In addition, there are compositions in ragamalika form, containing these five ragas only, in the same order.

In addition to the above, there is another set of five ragas known as the Dwithiya Ghana Panchaka Ragas; consisting of Narayana goula, Reethi goula, Saranga natta, Bowli and Nattai kurinji.

In addition to the above, there are '**Goulantha ragas**' – ie. Ragas which end with 'goula' in their names. Sri. Muthuswami Diskshithar has composed a set of Nine krithis on Goddess Neelotpallamba, the consort of Lord Thyagaraja of Tiruvarur. These are in the eight vibhakthis and the eight goulas, with NARI reethigoula appearing twice, as : Narayana goula, NARI reethigoula, Kannada goula , Kedara goula, Goula, Mayamalava goula, Purva goula and Chaya goula respectively for the first eight krithis and the ninth one again in NARI rithigoula.

#### **RAKTHI RAGAS:**

'Rakthi' and 'Virakthi' are two words giving opposite meaning; the approximate meaning of Rakthi can be attraction or delight etc; while Virakthi is displeasure or hatred etc.

Some of the ancient Carnatic ragams were denoted as Rakthi ragams. One should note that this is just a categorization of ragams based on its characteristic where "delight of the ragam" is the attribute. Mostly, alapanas and taanams in these ragas when sung in vilamba kalam, produces much 'delight'; for example, Thodi, Bhairavi, Mohanam etc. Ragams where, it is easy to bring out the delight or rakthi, are called rakthi ragams. Rakthi ragams are prominently used for Padams and Javalis, are slowly sung with spaced out sangathis. These ragams show

inherent nature of Rakthi due to its vakra sancharams, and heavy gamaka laden prayogams. A musician has to put less effort to bring rakthi in these ragams since ragam themselves aid the performer. These rely on phrases and sahityam that embellish the song. They do not need swaram to be sung to show the beauty of the ragam. On the other hand, newer scale oriented ragams need extra polish or effort to bring the rakthi in it. The role of Kalpana swara rendition is used in this context. Swara oriented brisk sarva laghu ragams give us rakthi through their notes and patterns. A ragam such as Sriranjani gives us delight in swara rendition where as an inherently rakthi ragam like Ahiri need not showcase its swara beauty.

Some inherent rakthi ragams are Ananda bhairavi, Reethigowlai, Sahana, Nattai kurinji etc. These ragams once thrived as folk, village and Tamil pann music since they were catchy and popular among all persons. (Rakthi in layam would mean the same thing but it is the rhythmic pleasure contrary to melodic pleasure. It comes from the layam of the song or melody and the slow melam enhances the mood and ambience).

### **SUDDHA, CHAYALAGA & SANKEERNA RAGAS:**

**Suddha ragas:** They are pure ragas and they conformed to the prescribed rules. They included within their compass the modern melakarta ragas and janya ragas of the upanga type.

Eg: Mayamalavagaula, Madhyamavati, Mohanam, Kalyani.

**Chayalaga, Saalaga or Saalanka ragas:** Ragas which combined in itself the lakshana of another raga by taking a foreign note or by possessing common sancharas. That is the chhaya trace or shade of another raga or the colour of another raga was found in a salaga raga in a remote manner.

Examples: Saurashtra (shows traces of Chakravakam), Saranga (shows Kalyani at places).

A salaga raga need not necessarily be a bhashanga raga. Bilahari may be cited as an example of a bhashanga raga of the non-chhayalaga type and Saurashtra as an example of a bhashanga raga of the chhayalaga type.

**Sankeerna, Sankrama or Misra raga:** Traces of more than one raga were discernible in such ragas either on account of the presence of foreign notes or sancharas suggestive of other ragas. Sankirna ragas are extreme types of Chhayalaga ragas. The chhayas of the foreign ragas are very pronounced in them. Nevertheless, Sankirna ragas have their own melodic individuality.

Examples: Aahiri, Ghanta, Manji, Jujavanti (Dwijavanthi).

In Jujavanti one can see in its sancharas, traces of Kedaragaula, Sahana and Yadukula kambhoji.

By their very nature, Sankirna ragas do not give scope for an elaborate alapana.

## **SPECIAL PROPERTIES:**

### **RAGAS AND RASAS:**

Ragas are associated with any of the 'Navarasas', here is an approximate list, following Prof. Sambamoorthy's books:

Veera - Arabhi, Gaula, Naata, KEdAra, Begada, Gambheera Naata, Hamsadhwani, AtAnA

KaruNa - Mukhari, Todi, Bhairavi, PunnagavarALi, SaavEri,

SahAna, KaanadA, HindOLam, ShanmukhapriyA, DhanyAsi

Ananda - Kaamboji, DevamanOhari, KundalavarAli, Navarasa

Haasya - KaanadA, Janaranjani, Mohanam, Ananda Bhairavi

Raudra - AtaanA, Aarabhi, VasantA, SuraTi, Kaamavardhani, ChalanAta, KalyAni

BhayAnak - Para(j)s, REvati, Shuba pantu varaLi, Gauli Pantu, Vaachaspati, DwijAvanti, SarasAngi, RishabhapriyA

ShrungAra - BEhAg, Kaapi, KamAs

Adbuta - Kadanakutoohalam

Shanta – Saama, Dhanyasi

Shoka - MukhAri, Shubha pantu varALi

Note: The above are only approximations; it is the way in which a musician handles the raga. For example, though Mukhari is attributed to 'shoka' rasa, it actually gives karunA and bhakti rasAs. It purely depends on the handling of the raga. Bilahari is said to remove 'shoka' of the singer and hearers. More of a 'happiness giving' (ananda) raga. Bilahari has many credentials to its credit. More so, if one feels dejected, proper singing/ hearing of this raga would make him/her very active and would feel charged up, a real tonic sort.

Aside from these rasas, there is "bhakthi rasa," the feeling of devotion. Many ragas invoke this, most notably the ragas used in the Vedas and slokas, like Kharaharapriya and Revathi. Some types of songs also go with certain ragas. Lullabies typically use ragas like NeelambariorNavroj, among others. Mangalams and finishing songs use Madhyamavathi, Surutti, sowrashtram etc.

Again, different composers may use various ragas to evoke emotions other than what is assigned to that raga. So, you may find a laali inMadhyamavathi, a sad song in Hamsadhwani. The composers define the music, so the raga itself may be adapted to the feeling that seems to suit the song!

### **RAGAS AND TIMINGS:**

Early Morning - 4 to 6 a.m. – Bhoopalam, Revagupti, Bowli, Malayamarutham etc.

Morning - 6 to 9 a.m. - Bilahari, Dhanyasi, Suddha Dhanyasi, Kedaram etc.

Forenoon – 9 a.m. to Noon – Asaaveri, Devamanohari, Saveri, Abhogi etc.

Mid-day - 12 to 1 p.m. – Madhyamavathi group (Madhyamavathi, Manirangu, Shri, Brindavana Saranga) etc.

Afternoon - 1 to 4 p.m. – Begada, Mukhari, Saranga etc.

Evening - 4 to 7 p.m. – Anandabhairavi, Vasantha, Purvikalyani, Shanmukhapriya, Nattaikurinji

Night - 7 to 10 p.m. - Kedaragoula, Neelambari, Bhairavi, Simhendramadhyamam etc.

Sarvakalika (all times) – Sankarabharanam, Kambhoji, Bhairavi, Kalyani etc.

### **THERAPEUTIC EFFECTS OF RAGAS:**

Various ragas are found to be effective in the treatment of different types of disorders; a few are given below:

**Ahir Bhairav** - Gives free relaxed feeling and mitigates dust allergies and skin disease. Good for arthritic conditions

**Amrutavarshini** - Ushana vyathi nasini ( alleviates diseases related to heat)

**Ananda Bhairavi** - Suppresses stomach pain in both men and women. Reduces kidney type problems. Controls blood pressure

**Bhairavi** - Reduces anxiety, pressures, skin, disease, allergies

**Bhupala** - To awaken someone out of deep sleep

**Desh** - The suppression of the senses releases a negative force. The process of sublimation needs a spiritual path. Rag Desh can provide that. Its energy gives the listener serenity, peace, inner joy, right valor, universal love and patriotism

**Dwijavanti** - Quells paralysis and sicorders of the mind

**Ganamurthi** - Helpful in diabetes

**Hamsadhwani** - Energy giving. Provides good thinking, chaitanya. Sarvarogaharini (panacea)

**Hemavati** - Good for joint and back pain

**Hindolam** - Improves digestive power. Cures stomach related diseases.

**Kalyani** - Gives energy and removes tension and acts as general tonic. Dispels the darkness of fear; Gives motherly comfort and increases confidence. Kalyani means mangalam. Recited with faith and devotion, it is believed to clinch marriage alliances. Many authentic reports exist about the raga's power to destroy fear in many forms: fear of poverty, of love, of power, of ill-health, of death, and so on.

**Kapi** - Sick patients get over their depression, anxiety. Reduces absent mindedness.

**Kharaharapriya** - Curative for heart disease and nervous irritability, neurosis, worry and distress.

**Kedaram** - Gives energy and removes tension.

**Keeravani** - Promotes dhyana (meditation) at mental and physical levels.

**Kokilam** - Helps to prevent stone formation, burning sensations, sleeplessness and anxiety.

**Madhyamavati** - Clears paralysis, giddiness, pain in legs/hands, etc. and nervous complaints

**Malaya Maruta** - To awaken someone out of deep sleep

**Maya Malava Gowla** - Counters pollution. It can be called the Gateway to Carnatic music. The history of Carnatic music says that the blessed musician, Purandaradasar, introduced the system of Mayamalava gowla. This raga has the power to neutralize toxins in the body. Practicing it in the early hours of the morning, in the midst of nature will enhance the strength of the vocal chords.

**Mohanam** - Mohana is present where beauty and love coexist. It filters out the ill-effects of kama (desire for sex) , krodha (anger) and moha (lust), bestowing immense benefits on the listener. Also said to cure chronic headaches, indigestion, and depression.

**Neelambari** - To get rid of insomnia

**Ranjani** - Cures kidney disease

**Rathipathipriya** - Adds strength and vigor to a happy wedded life. This 5-svara raga has the power to eliminate poverty. The prayoga of the swaras can wipe off the vibrations of bitter feelings emitted by ill will.

**Sama** - Makes mind sober, tranquil, induces good sleep. Good for world peace.

**Saramati** - Elevates from depressed state. Cures balagraha dosham in children ( undiagnosed crying and irritability). For sleeplessness, itching, eye and ear problems, skin problems, and the problems of hearing irregular sounds.

**Sindhu Bhairavi** - Removes sins and sorrows and saves from unforeseen events

**Sivaranjani** - Powerful raga for meditation; bestows benevolence of God. Removes sadness, ushana roga santi (diseases related to excess heat). Good for general health.

**Shankarabharanam** - The power of this raga is incredible. It cures mental illness, soothes the turbulent mind and restores peace and harmony. If rendered with total devotion for a stipulated period, it can cure mental disorders said to be beyond the scope of medical treatment. It also is said to have the power to shower wealth.

**Shanmukhapriya** - Sharpens the intellect of the singer as well as the listener. Instills courage in one's mind and replenishes the energy in the body.

**Subhapantuvarali** - Alleviates mental dilemmas and indecisiveness.

**Suddha dhanyasi** - Remover of sorrows. Gives a happy feeling. Tonic for nerves. Cures rhinitis and migraine.

**Suruti** - Mitigates stomach burn, insomnia, fear, disgust

**Vakulabharanam** - Alleviates asthma, bronchitis, heart disease, depression, skin disease and skin allergy

**Varali** - Varali is good for vayu tatva, heart, skin ailments and gastric problems.

**Vasanta / Vasanti** - Controls high and low blood pressure, cures heart as well as nervous diseases. Can clear the fog of confusion when a series of medical tests has to be analysed. It heals nervous breakdowns.

**Viswambari** - General tonic, acts quickly

**Yamuna Kalyani** - Gives freshness and dynamism.

#### **HINDUSTHANI RAGAS USED IN MUSIC THERAPY:**

Thodi, Bhupali, Ahir Bhairav : Provides relief from Cold and Headache, High Blood pressure

Shivaranjani : Treats memory problems

Bhairavi : provides relief from Sinus, cold, phlegm, tooth ache

Chandrakouns : Treatment of Heart ailment and Diabetes

Darbari Kanada : Eases tension and provides relaxation

Behag and Bahar : for sound sonorous sleep

Darbari : Relief from tension

Malkouns, Asavari : cures low blood pressure.

Tilak kamod, hamsadhwani, kalavathi, Durga - Easing tension



## **SOME SPECIAL PRAYOGAS IN SAHITHYAM:**

### **SWARAKSHARA :**

In cases, the composers use the notes themselves as part of the Sahithyam; these are called Swarakshara prayogas. Maharaja Swathithirunal is said to be a prominent composer using this prayoga.

Eg. The Mohanam raga composition of Sri. GNB, 'Sada palaya", the first three letters correspond to the notes used SDP. (The ragaswaroopam of Mohanam is SRGPDS – SDPGRS). Ramaswami Dikshithar has composed a 'Swarasthana pada varnam' – with the pallavi as "sarigAni dAni pAmarini nI pada"; an excellent example of Swarakshara prayoga. Dr. M. Balamuraleekrishna's thodi raga krithi, "ma manini" is another example; "padapAda padam" - varnam - Kalyani - by Dr.Shrikanth K.Murthy is also a good example.

### **PRASAMS:**

Prasams are using same letters or words in the closest lines in the lyrics; this can be of different types; Adyakshara prasam (First letter being same), Dwithiyakshara prasam (second letter), Anthyakshara prasam (last letter) etc. If we check various compositions of the different composers, we can have hundreds of examples.

1. Thyagaraja krithi, Abhimanamennadu – ragam Kunjari, the pallavi and anupallavi begin with same notes "A" and belong to Adyakshara prasam:

Abhimanamennadu..., Anathudai...,Aparadhamulanni..., Abhirama...

2. In the same krithi, the charanam belongs to Dwithiyakshara prasam:

kanna talliyu..., anniyu nIvE..., ninu vinA gati..., nannu brOvu...

3. The Periyasami Tooran's composition, "Muruga Muruga" in Saveri, the complete song has the Dwithiyakshara prasam.

4. Almost all compositions of Muthuswami Dikshithar have many of these prasams throughout the lyrics. Another speciality of these compositions is that they are written in a particular vibhakthi; so the endings of each line will be similar, confirming Anthyakshara prasams. In fact, Dikshithar compositions are the best example for all these, the lyrics have become more attractive by the deployment of the Prasams throughout.

### **VIBHAKTHIS:**

As mentioned above, Sri. Dikshithar has composed his krithis in any one or more vibhakthis. He has also composed group krithis like Abhayamba Vibhakthi krithis, Neelotpalamba Vibhakthi krithis, Guruguha Vibhakthi krithis, Kamalamba Navavarana krithis etc, where each composition is based on a particular vibhakthi, from 1 to 8; has eight cases, nominative, vocative, accusative, genitive, dative, ablative, locative and instrumental.

The various vibhakthis are:

prathama vibhakthi	nominative	[name of agent/subject of the verb.]
dvitīyā vibhakthi	accusative	[destination of action.]
tṛtīyā vibhakthi	instrumental	[one that facilitates action.]
caturthī vibhakthi	dative	[beneficiary/purpose of action.]
pañcamī vibhakthi	ablative	[source of action/cause/motive.]
ṣaṣṭhī vibhakthi	genitive	[ration of source/possession - Gramm.]
saptamī vibhakthi	locative	[place/time where/when action occurs]
*sambodhana vibhakthi	vocative	[calling or addressing - Gramm.]

(The eighth vibhakthi is called Sambodhana or Sambodhana prathama vibhakthi).

## **YATIS :**

'Yati' is generally a pattern found in carnatic compositions, normally words in a line or lines are arranged in some specific manner or pattern to give beauty to the song. These are achieved by arrangement of the words in specific fashion repeatedly, as described below.

Normally, Yatis are classified into four types; Srothovaha yati, Gopuccha yati, Mridanga yati and Damaru yati. The composer should have the technical skill to employ yatis in their composition. Among the earlier prominent composers, Oothukad Venkatakavi and Muthuswami Dikshithar have used yatis very cleverly. Let us see each yati in detail.

### **SROTHOVAHA YATI:**

The name originates from Srothas (origin) – the origin of a river, where it will be thin and flowing down it thickens and widens. So, this yati also begins with one word, increasing to two, three etc combinations of the same word, developing a triangular pattern, with the corner at top (see picture below). An example can be found in the composition, "Rakshamam sharanagatham" by Bangalore Nagaraj (Meenakshisutha), where this is used in the charanam (8):

Lakshanajitha –shubha

Lakshanajitha – koti shubha

Lakshanajitha – Shathakoti shubha

Lakshanajitha – madana shathakoti shubha ...

Another example can be sited from the composition of Oothukad Venkatakavi, “Mummada vezha”, this yati is found in the charanam (2):

tattuvam

paratattuvam

parApara tattuvam

paramparApara sattuva

### **GOPUCCHA YATI:**

This yati is just the reverse order of the above; beginning from a wider line of words, decreasing, just like a ‘cow’s tail’ (gopuccha), hence the name. the best example can be “thyagaraja yoga vaibhavam” by Muthuswami Dikshithar, in ragam Anandabhairavi; in the pallavi:

thyagaraja yoga vaibhavam

agaraja yoga vaibhavam

raja yoga vaibhavam

yoga vaibhavam

vaibhavam

bhavam

vam

In the composition, “Jataadhara Shankara” in ragam Thodi, by Oothukad Venkatakavi, the charanam (1) :

M P D P M G R S

D P M G R S

P M G R S

M G R S ...

### **MRIDANGA YATI:**

It is a combination of Srothovaha yati and Gopuccha yati to give a shape of mridangam (see picture below)

### **DAMARU YATI:**

The reverse of the above; combination of Gopuccha yati with Srothovaha yati, giving a pattern of ‘Damaru’ (the percussion instrument in the hands of Lord Shiva). This is also called Veda madhyamam (see picture below).

In addition to the above types, Sama Yati or Pipilika Yati (row of ants) – repeating same pattern; and Vishama Yathi – random pattern are also found rarely.

## DIFFERENT TYPES OF YATIS

### SROTHOVAHA YATI

A  
A B  
A B C  
A B C D  
A B C D E

### GOPUCCHA YATI

A B C D E  
A B C D  
A B C  
A B  
A

### MRIDANGA YATI

A  
A B  
A B C  
A B C D  
A B C D E  
A B C D  
A B C  
A B  
A

### DAMARU YATI

A B C D E  
A B C D  
A B C  
A B  
A  
A B  
A B C  
A B C D  
A B C D E

The letters A, B, C, D and E represent words in lyrics

