"I dwelt not in Vaikuntha, nor in the hearts of Yogins, nor in the Sun; (but) where my Bhaktas sing, there be I, "Arada!"

EDITED BY
V. RAGHAVAN, M.A., Ph.D.
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NOTICE

All correspondence should be addressed to Dr. Raghavan, Editor, Journal of the Music Academy, Madras-14.

Articles on subjects of music and dance are accepted for publication on the understanding that they are contributed solely to the Journal of the Music Academy.

All manuscripts should be legibly written or preferably typewritten (double spaced—one side of the paper only) and should be signed by the writer (giving his address in full).

The Editor of the Journal is not responsible for the views expressed by individual contributors.

All books, advertisement moneys and cheques due to and intended for the Journal should be sent to Dr. V. Raghavan, Editor.
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The XLVIth Annual Conference of the Music Academy, Madras, was held at the premises of the Academy, 115-E, Mowbrays' Road, Madras-600014, from 21st December, 1972 to January 4th, 1973. The Conference was presided over by the well-known musicologist, Professor P. Sambamoorthy, retired Head of the Departments of Music in the University of Madras and the S. V. University, Tirupati.

The inaugural function was attended by a large and distinguished assembly of Members of the Academy, musicians, scholars and members of the public. The President of India, Sri V. V. Giri, inaugurated the Conference.

The illustrious guest was received by Sri T. S. Rajam, President of the Academy and the Secretaries, and the Conference-President, and members of the Executive and Experts Committees of the Academy were introduced to him. The President sat for a group-photo with the members of the Executive and Experts Committees. He was then taken inside the auditorium of the Academy where the inaugural function was held.

There was first the National Anthem and an invocation song by Vidushi M. L. Vasantakumari.

Messages

Sri T. V. Rajagopalan, Secretary, then read the following messages received for the success of the 46th Conference:

The former President of India, Dr. S. Radhakrishnan, sent his best wishes for the success of the Conference, concerts and discussions.

The Vice-President, Sri G. S. Pathak, sent his best wishes.
The following Governors of the States sent their messages:

Sri K. K. Shah, Governor of Tamilnadu, congratulated the Music Academy on its solid achievements.

The Governor of Mysore, Sri Mohanlal Sukhadia, the Governor of Bombay, Ali Yavar Jung, the Governor of Uttar Pradesh, Sri Akbar Ali Khan, Dr. D. C. Pavate, Governor of Punjab, Sri B. D. Jatti, Governor of Orissa, Sri Chhedi Lal, Lieutenant-Governor of Pondichery, sent their best wishes.

The Hon'ble Prime Minister of India sent her good wishes for the success of the Conference to be inaugurated by the President of India.

The following Ministers at the Centre sent their messages:


Hon'ble Prof. Sher Singh in the course of his message made a suggestion for the sympathetic consideration of the Academy that in the best interest of the National integration, the Music Academy might kindly come forward to organise a similar festival of music and dance in Delhi also, in the middle of August every year.

Sri P. V. Narasimha Rao, Chief Minister of Andhra Pradesh, wished the Conference all success.

Sri K. P. S. Menon, Chairman, Central Sangeet Natak Akademi, the Tamilnadu State Sangeeta Nataka Sangham, the Andhra Pradesh Sangeeta Nataka Academy, and the Mysore State Sangeeta Nataka Academy sent their warm greetings and good wishes for the Conference.

Dr. B. V. Keskar, Chairman, National Book Trust and former Union Minister, paid a tribute to the meritorious service of the Music Academy as a model institution in the field and added: "I wish that there was in the North of India some such institution to give a great fillip in the right direction to musical development."
Dr. V. K. Narayana Menon, Executive Director, National Centre for Performing Arts, Bombay, said in his message: "The Academy's great work is an example for other similar organisations to emulate."

On behalf of the Indian Musicological Society, Prof. R. C. Metha, Baroda, congratulated the Academy for its work of almost half a century.


Mrs. Henry Cowell added in her message that she had grateful and loving thoughts of the Academy and was sending the further instalment of the royalty of her husband's Madras Symphony for the Mridangam Prize in the Academy in Henry Cowell's name.

Messages were also received from Nanganallur Arts Academy, Madras, the Kalanjani and Karnataka Ganakala Parishad, Bangalore.

Sri K. Kamaraj wished the Conference all success.

Dr. P. V. Rajamannar referred in the course of his message to the value of the discussions of the Experts' Committee meetings.

Sri Dilip Kumar Mukherjee, Calcutta, who had taken part in the previous years in the Experts' Committee meetings, referred in his message to the high standard and rich traditions built up by the Music Academy.

Swami Prajnanananda, Calcutta, congratulated the Academy on the Experts' discussions and performances and referred to them as remarkable and matchless.

Members of the Academy's Experts' Committee who could not be present, Sri B. Subba Rao, Vidvans Sattur A. G. Subramaniam, Sri Emani Sankara Sastri and Sri Nedunuri Krishnamurthy and Sri Chennakesavayya sent their best wishes.
Sri P. R. Swamy Iyer, Member of the Academy, sent his best wishes.

Sri T. S. Rajam, President of the Academy, then thanked the Rashtrapati for accepting their invitation and praised the services rendered by him to the country and to the cause of labour. He referred to the close association of the Rashtrapati with the city of Madras and said that the various activities of the Music Academy, Madras, were well known to him. Sri T. S. Rajam welcomed also the gathering at the inaugural function. He then called upon Dr. V. Raghavan, Secretary, to present the Welcome Address.

Welcome Address

Dr. V. Raghavan then presented to the President of India the Welcome Address in the course of which he said:

"Revered Rashtrapati; We are most grateful to you for kindly accepting our request to come to us and inaugurate our 46th Annual Conference and connected festival of music and dance. The inauguration of our Conference in the Silver Jubilee year of India's Independence by the President of India is specially significant. We welcome you with great pleasure to this premier Institution in this field in Madras.

You are the second President of India whom, we may say, Madras has given to the country. You are an Andhra, born in Orissa and one who lived, worked and built up your public life in Madras, and in independent India, you have been Minister here and at the Centre, Ambassador in Ceylon and Governor in Kerala, Mysore and Uttar Pradesh; your frequent visits abroad have contributed to the growth and consolidation of peace and goodwill among nations. You are a true citizen not only of India but of the world. From leadership in labour movement to the highest positions in a democracy, the Vice-Presidency and Presidentship of the country, yours is a unique unbroken record which is a pride and model for everyone who has dedicated himself to the service of his motherland.

The well-being of a people lies not only in economic growth but also those aspects of life which sustain their creative and
recreational spirit and provide the necessary joy and zest for abundant life. The arts have thus a vital role in national development. Promotion of arts in the pre-Independence age had to be organised by voluntary effort by public-minded workers, leaders and bodies. By experience, initiative and performance, the private sector in arts holds the lead; and that is as it should be, for freedom is the soul of art and creative work.

The Music Academy, Madras is, as you know, an outcome of the Madras Session of the Indian National Congress and some of your former colleagues in the Congress here like Dr. U. Rama Rao and S. Satyamurti, and later K. V. Krishnaswami Iyer, were connected with the founding and development of this Academy. The Academy has had a sustained record of work through its Conference, College, Journal, Publications and Performances, has been occupying a leading place in the field of music and dance and enjoying both a national and international status. The Presidentship of our annual Conference is an honour for musicians which often leads to the Presidential Award. The Academy has collaborated closely through several of its Experts and Office-bearers, with the Government departments and agencies for the fostering of these arts like the All-India Radio and the Sangeet Natak Akademi. In our Conference and festival we bring together votaries of the Carnatic and Hindustani systems, as also exponents of different music cultures of the world, spreading thereby the message of integration and universality which music, arts and culture stand for.

We are now very near our Golden Jubilee, this being our 46th Conference.

May we request you, respected Rashtrapati, to inaugurate now our Conference and connected festival of concerts.

We remain,
Your friends and admirers in
THE MUSIC ACADEMY, MADRAS"

Presidential Address

Then, varying the usual procedure under instructions from the Government and the Secretariat of the President of India, Prof.
P. Sambamoorthy, President of the Conference, was called upon to deliver his Presidential Address. Prof. P. Sambamoorthy said in the course of his Address:

“I am thankful to the Madras Music Academy for having elected me the President of the ‘Shadvidha-margini’ (46th) Session of the Conference. This office carries with it high prestige. Eminent musicians, Musicologists and composers have presided over the deliberations of this Conference. The discussions herein were both stimulating and illuminating. Considerable light was thrown on many of the knotty problems relating to the theory and practice of Music. The concerts held in the evenings were marked by classical dignity.

The Music Academy has a proud record of achievement to its credit. The Journal published by it contains articles of high research value. In these days of paucity of scholars engaged in musical research, it is not an easy task to get a sufficient number of scholarly articles. The Editor of the Journal deserves praise for maintaining the high standard of its excellence.

The Academy has also published valuable *lakshana granthas* and books containing unpublished compositions of composers in notation.

The Academy is running a Teacher’s College of Music. The one-year course that is now offered should be expanded so that justice can be done to the study of the Theory, Practice and Pedagogy of Music.

**Our Legacy**

We are legatees of a great system of Music. This system has been developed on a strong theoretical basis. It has a rich repertoire of Art Music, Sacred Music, Dance Music and Folk Music. It has also many Operas, Dance-dramas and Kuravanji Natakas.

**Raga**

The concept of *Raga* is our proud gift to World Music. The quarter-tones and micro-tones of which the occidentals are just theoretically aware of, are actually used here. This has evoked the admiration of Western savants. The Ragas derive their individual-
ities through the use of subtle srutis, nuances, gamakas and ranjaka prayogas (embroidered phrases). In the same Raga, a note is sometimes sounded slightly sharpened in the ascent and slightly flattened in the descent. It is, therefore, impossible to play the Ragas on the key-board instruments like the Harmonium and the Piano.

The innumerable rhythms used in Indian Music are totally unknown in the West.

The Music of India has been developed by the best brains of the country. The compositions of Tyagaraja and other composers have made us gaze at the sparkling, lustrous and colourful personalities of the Ragas. Improvisation is an integral feature of Indian Music.

Man is a melodic creature by nature. He has soared to great heights in the realm of pure melody and has made us have a glimpse of the resplendent beauty of the Ragas.

South India has been famous for its talent in the sphere of music and dance, since the days of Bharata. It is the bounden duty of all of us to see that this great system of Music is transmitted to the coming generations in an untarnished manner.

**Education in Music**

It is the fundamental right of a child to be taught Music. All the advanced countries of the world have made provision for the teaching of Music to boys and girls. But, it is unfortunate that in South India, there are many schools, inclusive of girls' schools, which have no provision for teaching even general singing.

General singing should be taught in all Primary Schools and Secondary Schools. Music should be included amongst the elective subjects for the S.S.L.C. Examination. Music should also find a place as an optional subject in the Matriculation Examination. Post-graduate Departments for Music should be established in all those Universities which do not have them. The Degree of Doctorate in Music should be instituted in all Universities having Departments of Music and this should be the highest Research Degree. Universities of standing should honour outstanding scholars in the realm of Music by conferring upon them 'Honorary Doctorates'.
A University of Fine Arts

It is time that a University of Fine Arts is established for giving instruction in the various branches of Fine Arts at the highest level. Courses leading to the Degrees B. Mus. and M. Mus. and Bachelor of Dance and Master of Dance may be instituted. Research Degrees like Ph.D. and D. Mus. may also be instituted. A Diploma course in *Katha Kalakshepam* may be offered. While Vocal, Vina, Violin, Gottu Vadyam, Flute and Nagaswaram may be offered as Main practical subjects in the Degree course, separate Diploma courses in Mridangam, Kanjira, Ghatam, Dolak, Konugol, Tavil and Jalata-rangam may be given.

The Degree of B.F.A. (Bachelor of Fine Arts) and M.F.A. (Master of Fine Arts) in Painting, Sculpture and Architecture may be instituted. A Diploma course in these subjects may be offered. A Diploma course in Musical Instruments' Making, Repairing and Servicing may also be offered.

Chairs in the names of eminent Musicologists who lived during the last quarter of the 19th century and the first quarter of the 20th century like Rajah Sir Sourendra Mohan Tagore, Pandit Vishnu Digambar, Pandit V. N. Bhatkhande, Tachur Singaracharlu, Subbarama Dikshitar, A. M. Chinnaswamy Mudaliar and Abraham Pandit r may be established. Chairs and Endowment lectures and concerts in the names of the Musical Trinity and other great composers may be instituted.

Training College

A College for the training of Music Teachers at a Graduate level can be instituted. Karnatic Music is a single unitary system. We have developed distinctive methods relating to the teaching of the different branches of Music. Music Teachers from other countries will find it profitable to undergo this course either as full time students or as casual students. In addition to the course in the pedagogy of Music, the one-year course offered herein, should include brief courses in *Katha Kalakshepam*, Bharata Natyam, Folk Dance and the production of Operas and Dance Dramas. About thirty class-worthy songs representative of the different regions of India should be taught in this Course.
The Trainees herein should be enabled to visit different schools teaching Music and also participate in planned excursions to places of musical importance. They should also be enabled to learn one concert instrument. Those who pass out of this Course may be appointed as Inspectors of Music and Directors of Music. They may also be appointed as part-time Directors of Music in Colleges. Besides giving explanatory lecture-recitals on composers, musical instruments and musical forms, they can also teach some simple songs with catchy music in them.

An examination in Karnatic Music at the highest level (Sangita Lakshana Lakshya Pravina) may be conducted for the benefit of students in South India and students of Karnatic Music in different places in North India. Students in Malaysia, Singapore, Ceylon, South Africa and Mauritius also can take these examinations. All the Theory papers can be sent for valuation to India and a touring examiner may visit the several Centres and conduct the practical examination on the spot. A Central Music Board may be instituted and entrusted with the task of conducting these examinations. South Indians in overseas countries will feel it a joy to sit for these Examinations.

Degree in Sacred Music

A Degree in devotional music may be instituted. Universities like those in Tokyo, Japan have such Degrees. We have a rich repertoire of Sacred Music from the days of the Tevaram, Tiruvachakam, Divyaprabandham and Thiruppugazh. The Ashtapadis of Jayadeva, Tarangas of Narayana Tirtha, Abhangas of Tukaram, the Bhajans of Meera Bai, Kabir Das and Tulasi Das, the devotional songs of Vaishnavas of Bengal, Sankara Dev of Assam and others, the Devarnamas of Haridasas, the Divyanama Kirtanas and Utsava Sampradaya Kirtanas of Tyagaraja, the songs forming part of the Bhajana-paddhati, the Arutpa of Ramalinga Swamigal, all form a rich legacy of Sacred Music. Those who take this Degree in Sacred Music can be appointed in temples. They can teach these songs to worshippers and also give discourses on the lives and works of the composers of sacred music. They can also man the several Bhajana Mandiras which are now sinking into oblivion.

M—2
Instrumental Music

Instrumental Music has been given an honoured place in India. Siva, Vishnu (Krishna), Brahma and Parvati, Lakshmi and Saraswati are associated with Instrumental Music. Many of the luminaries figuring in the history of Indian Music have been performers on some concert instrument or other.

The number of persons studying instrumental music is deplorably low in South India. The number of performers on the Vina is fast dwindling. Vina is our national Instrument and an elaborate technique in its play has been evolved. Veyi Sadhakam is becoming a thing of the past. It is a delight to watch the dexterous movements of the left hand fingers and the nimble pluckings of the right hand fingers when tanas in fast tempo are played. In the series of concerts arranged during music festivals we find vocal music looming large. But instrumental music should also be given a proper share.

Yazh

Tamil classical works like the Silappadikaram give glowing accounts about the ancient Yazh. But we have allowed that instrument to die. It is time that some young musicians were helped with scholarships to practise this ancient instrument and once again instal it on the concert pedestal.

In the last century, there were specialists in instruments like the Mayuri, Sarinda, Swarabath and Swaramandali. Jagannatha Bhut Goswami of Tanjore gave concerts on the Mayuri. Sarinda Naidu lived in Pudukkottai and his performances on the Sarinda were heard with rapt attention. Swarabath was a royal instrument and Swati Thirunal Maharajah of Travancore was an adept in playing this instrument. But, at present, there are no accomplished performers on these instruments. The Sarangi was used as an accompaniment by the Oduvars during the recitals of the Tevaram. The Sarangi is now used only in one or two temples in Tirunelveli District. It is time that something was done to stimulate interest in the playing of these instruments.

National Archives

Musical Instruments Gallery:

All the Musical Instruments inclusive of Concert Instruments, Folk Instruments, Temple Instruments, and Martial Instruments
may be collected and kept here in a live form. It should be possible for visitors to play on these instruments and form an idea of their compass and tone colour. Photographs of persons playing on them should be kept in front of each instrument so that visitors can form an idea of the posture of holding and performing on these instruments. A short programme of music for about two minutes' duration and record on the tape or disc, may be played for the benefit of visitors.

Books & Manuscripts:

A library of all the printed Books on Indian Music in English and Indian languages should be kept here. All manuscripts on Indian Music (Palm-leaf and paper manuscripts inclusive) should likewise be acquired and kept. Books which are out of print should also be acquired and kept.

Audio-Visual AIDS:

Audio-Visual Aids relating to:

1. Techniques of play of Musical Instruments,
2. Varieties of Pinnal Kolattam or Plait dances,
3. Marching in Kolam-formation,
4. Musical Kolams,
5. Tandava Dipa-aradhana,
6. Scenes from Operas, Dance dramas and Kuravanji natakas, and
7. Sarva Vadyam

may be prepared and kept in the Archives. They will be of educational value.

Portraits of Luminaries:

A section in this gallery may contain the portraits of all great Composers, Musicians, Musicologists and Patrons of Music. The Tamburas and other Musical Instruments used by Musical Luminaries, the religious objects worshipped by them, may also be acquired and kept in this National Gallery.

Rare coins like those of: (i) Samudragupta playing on the harp; (ii) the Ram tanka coins of Bhadrachala Ramadas; and
(iii) the coin of Yoga Narendra Malla of Palem with the title Sangitarnava Paraga inscribed on it, may also be kept here. The Buddha used a Vina with 21 strings of gold during his discourses. Tirujnana Sambandar got providentially a pair of golden cymbals. Replicas of these instruments may be made and kept in the Gallery. It may be mentioned that gold gives a good ringing tone.

Publications

There are the manuscripts of Tanas. These Note Books contain elaborate sancharas for well-known and apurva ragas. These tanas are elaborated and presented under the section Ayittam, Yeduppu, Muktyai, Udgraham, Makarini, Sanchari, Dvitiya Sanchari, Tritiya Sanchari, Rishabha sthayi, Panchama sthayi, Sthayi tanam, Tisra jati tanam, Sarva laghu tanam, Dhalu tanam and Pattu tanam. These tanas throw light on the rakti prayogas and visesha sancharas that each raga admits of. These tana mss. also called Tana nighantu, and Katakam, provided the basis for the composition of tana varnas later on. These manuscripts when published will be of use to scholars of music and students of the Vina.

Tyagaraja's work: A Variorum or Definitive Edition

A vast literature on Tyagaraja has emerged in recent times through Research. It is time that a Musical Variorum Edition of Tyagaraja's Kritis, Kirtanas and operas is brought out. A team of scholars should be appointed for the purpose. The edition should contain the texts of songs with variations in readings. The circumstances if any, that occasioned the songs should be referred to. Besides giving the notation for the songs, the variation in the musical renderings that have crept in later times should be indicated.

The famous Anthology Bhagavata Bhajana Paddhati, published by T. P. Kodandarama Iyer and containing more than 1,000 songs of various composers deserves to be re-printed. This book was published more than 50 years ago and not a single copy of it is now available.

The Yazh Nool by Swami Vipulananda has run out of stock. It is a valuable publication and should be reprinted.
Of Tourist Importance

Tourists visiting South India are taken to certain routine places. They should also be taken to temples which contain fine specimens of Musical Stone Pillars, like those in Madurai, Tirunelveli, and Suchindram. The corner pillars in the Soundaravalli Tayar Mandapam in the shrine in Tadikombu give the Vedic notes Udatta, Anudatta and Svarita. South India is rich in lithophones. The stone Nagaswaram and stone Mukha Vina deserve to be more widely known.

Yali Mandapam

Just before reaching Mahabalipuram, there is a place mis-named Tiger's Cave. The name gives the impression that a Tiger was inhabiting the place. There is here a small Mandapam scooped out of a rock. The place is just sufficient to seat four performers. Religious Discourses to the accompaniment of music must have been given from this Mandapam. The auditorium-like place below is a sandy stretch and about 8 feet below the platform. Vyalas (Dragon) numbering 11 are chiselled in the frontal face of the top of the Mandapam. The sea-coast is just a furlong from this place. Yet one can listen to the music performed in a pure form undisturbed by the noise of the waves. The noise of the waves which dash against the top of the Mandapam are scattered and neutralised by the rugged faces of the Vyalas. This is an example of a rock-cut miniature open-air theatre. This Yali Mandapam belongs to the 7th century A.D. Visitors who go to Mahabalipuram would do well to spend about 10 to 15 minutes there and experiment by giving a short talk or song or play on an instrument. The sandy floor below can accommodate about 600 persons.

Kudumiyamalai Music Inscription

This musical inscription is the only one of its kind in the whole of India. It is too much to expect research scholars and students to undertake the journey to Kudumiyamalai in the erstwhile State of Pudukkottai and make an on-the-spot study under uncongenial surroundings. A replica of that inscription can be made and kept in a place like Madras either in the premises of the Museum or in the office of the Hindu Religious Endowments Board. The dimensions of the flat rocky face of the inscription are 13 feet by 14
feet. A replica in stone, marble, plaster of paris or of some other material with the music as given in the Pallava script carefully engraved can be displayed. A transcription of the inscription in Devanagari characters can also be made and kept adjacent to it, so that one can have an idea of the inscription clearly. Since this inscription belongs to the 7th Century A.D., tourists from abroad will also find it interesting to study.

Kala Dharma

It is the duty of a Musician to sing a composition in the manner in which it was composed. Unfortunately just about 40 years back some changes were introduced in the tunes of some compositions of Tyagaraja, The Ragas and Talas were also changed in a few cases. The following Kritis may be mentioned as instances. The tunes of Sundari ni divyarupamunu in Kalyani raga, Sundari nannindarilo in Begada raga and Sangita jnanamu in Dhanyasi raga have been slightly changed and are now sung in the changed garb. The kriti "Jnanamosagarada" was composed by Tyagaraja in the Shadvidha margini raga but it is now sung in the raga Purvi Kalyani. Curiously enough, the charana of this Kriti as changed into Purvi Kalyani is exactly like that of the charana of the Kriti Paripurna kama in Purvi Kalyani raga. The tala of the song 'Naradamuni vedalina' figuring in the 'Prahlada Bhakti Vijayam' is only Chapu. It is now set to Rupaka tala and sung. This Conference can go into these changes and record its findings.

Ministry of Fine Arts

A Ministry of Fine Arts may be set up at the centre to look to the development of fine arts in India. It can co-ordinate the activities of the various music institutions and promote inter-provincial understanding in the sphere of fine arts. A Director of Education in Fine Arts may be appointed in each State. A Musical Inspectorate is a long-felt desideratum in each State. It can see that music is taught on proper lines and make available the successful methods adopted in one school to other schools.

Musical Insurance and Musicians' Benevolent Fund

It is time that steps were taken to popularise Musical Insurance. Performers of Musical Instruments may insure their fingers, singers their voices and Dancers their feet at attractive rates of premium.
When singers lose their voices, when fingers of the instrumentalists sustain injuries and when the feet of dancers get incapacitated through one reason or another the insured amounts should become payable.

Musicians are giving aesthetic joy to thousands of concert-goers and listeners over the Radio. Music teachers likewise teach music to thousands of pupils. It is the duty of the society to look to the comforts and well-being of Musicians and Music teachers during their old age. A Musicians' Benevolent Fund can be started. Moneys may be donated to this Fund by the State, Sangita Sabhas, Rasikas and others.

Utilisation of Raw Materials

The Red Wood grown on the Tirupati Hills is exported to a foreign country. After extracting oil from it, the wood is used for making musical instruments in that country. Violin Bows which are now imported from the West can be made with this red wood. The horse-hair from Rajasthan can be used as the violin hair in this connection.

In Neyveli, huge quantities of clay lie unutilised. Pottery factories may carry on research with this clay so that Jalatarangam cups can be made on a commercial scale and sold at a cheap price. Besides use as a concert instrument, this may be of use in Schools. Children in the Primary and Secondary schools can learn to distinguish differences in pitch by the removal or addition of water. The fact of inverse law, i.e. greater the water less the pitch and vice versa can be taught to the children. The children will love to perform the experiment. Jalatarangam may also be a useful instrument in the percussion band in schools.

Musical Illiteracy

Many people in rural parts are ignorant of even some of the fundamental facts relating to Indian Music. They have no knowledge of the important concert instruments, and they cannot give the names of the great Composers of India. Travelling Squads of Artists about 8 in number may visit the villages according to a planned itinerary. They can stay in a village for a week, give a Katha Kalakshepam one day and a dance performance on
another day. One of them can give an explanatory lecture recital on the work and life of a great composer on the third day. On the fourth day, they can teach simple devotional songs along with some Namavalis. These songs can be printed on sheets of paper and distributed to them. After covering one village, they can go to the next village and repeat the same programme. The Squad of Artists may include a singer, a performer each on the Violin, Vina and Mridangam, a Kathaka, a Dancer, a Nattuvanar and a Lecturer.

**Musical Wealth of India**

The richness of instruments is unique in respect of the music of India. An Exhibition of all the musical instruments of India inclusive of concert instruments, folk instruments, temple instruments and martial instruments can be sent to different places in India to make the people get acquainted with the wealth of musical instruments. These exhibitions could also be put on wheels and sent round in a Railway Special. The musical instruments should be kept in a live condition and there should be performers to perform on these instruments and show their techniques of play, their range and timbre. About 500 musical instruments representative of the different regions of India may be properly arranged and displayed in the bogies. A performance hour may be set up every evening and the instruments played upon in a particular order.

**Recognition of Music Schools**

A number of private schools have been doing good work and presenting students for the Madras Government Technical Examinations in Indian Music. These Schools should be given recognition by the Government.

**Musical Remembrancer**

The Radio Stations can appoint a Musical Remembrancer. Sometimes incorrect ragas and wrong composers are mentioned for the pieces performed. The Remembrancer can help the announcers in all cases of doubt.

**International Councils**

There are many International Councils functioning as limbs of the UNESCO without India being adequately represented.
Although India is rich in folk music, still she is not properly represented in the International Folk Music Council. The Central Government can do the needful in this matter.

Lakshana and Lakshya

The rift that now exists between the votaries of Lakshana and Lakshya should be narrowed down. Each should be regarded as complimentary to the other.

Tyagaraja himself was a great Lakshanakara. He has extolled the greatness of the Science of Music thus:

"Sangita sastra jnanamu sarupya saukhyadame manasa"

‘Knowledge of the Science of Music conduces to Bliss Divine’. His collection of manuscripts on music which has since passed into the Walajapet collection may be cited as a proof. In his kriti ‘Vidulaku mrokkeda’ (Mayamalavagula) he enumerates the Lakshanakaras, of whose works he was evidently aware.

Melodic Orchestra

The melodic orchestra has a great future in India. It has come to stay in the All India Radio. This Orchestra can provide employment to a number of performers on musical instruments. It can also provide employment to performers of upa-tala vadyas.

An Orchestra should be regarded as an Emblem of a State. The orchestra is as old as the Ramayana. The Kutapa of Bharata, Palliyam of ancient Tamil Literature and the Sangita Mela of the time of Shahaji and Serfoji Maharajahs, are all Melodic Orchestras of different categories. Even now there are families in Tanjore whose ancestors were performers in the Orchestra of Maharaja Serfoji. Orchestral performances are pleasant to hear because of the rich tone and combinational tone colour effect. The orchestras can play during State-functions and in the University Convocations and such other public functions. There are many compositions which can suitably be arranged for the performance by a melodic orchestra.

Conclusion: Popularisation of Classical Music

Classical music can live only when the bulk of the educated public is made to take interest in the study and appreciation of
music. Explanatory lecture-recitals on composers, musical forms and instruments can be given. Concerts of academic importance can be held by the Sangita Sabhas once a week. The Wednesday concerts or mid-week concerts may yield good results.

Classical music is like gold and no hurricane of pop music can sweep it off. But lovers of music should not be complacent regarding this matter. They should strive to see that every aspect of our cultural heritage is preserved."

Address by Sri V. V. Giri

The President of India then delivered his Address, declaring the Conference open. He said in the course of his Address:

I have great pleasure in inaugurating this forty-sixth Annual Conference of the Music Academy, Madras. At the outset, I must confess to a sense of hesitancy in addressing a learned body of this kind. I am neither a musician nor a musicologist. I am aware of the great name the Academy has as a pioneer in the preservation and propagation of Carnatic music in all its pristine purity. Here, you honour the most eminent among the Sangita Vidwans and provide forums for discussion, demonstration, research and dissemination. For the younger vidwans and the new aspirants, a performance under the auspices of the Academy is a much coveted opportunity.

We have had a long and distinguished tradition of music in the South. While we have divided ourselves into linguistic States—whose consequences continue to trouble us in a variety of ways—the orthodox form of Carnatic music has remained an uninterrupted heritage in the whole of South India. The kritis of Tyagaraja, Muthuswami Dikshitar and Syama Sastry, the Musical Trinity as they are known, are assiduously learnt and sung in all parts of the South. The Pancharatna Kirtanas of Tyagaraja and the Navavarana Kirtanas of Dikshitar are sung with almost religious fervour in every important concert. Swati Tirunal, that musician Prince of Travancore, composed songs in a number of languages including Hindustani. Purandara Dasa is yet another name among the greats in this line. Those masters set the tradition and pattern for a succession of versatile music composers in the South, and we have today many notable compositions which have widened the choice of concert-
singing and enriched listening experience. These compositions are not imitations or blind reproductions. They are the result of deep study, sustained training and scholarship. Their contribution to the advancement and development of music is significant. I hope the Academy will give large-hearted encouragement to our younger composers and to the growing number of young musicians who, though not taking to music as a profession, are yet its devoted practitioners.

I am glad that more and more efforts are now made to get a better understanding of the relationship between the Carnatic style and the Hindustani style of music. I would like to compliment the Academy for its contribution in this direction by inviting well-known North Indian musicians and scholars to participate in its annual conferences. It is remarkable how a discriminating South Indian audience finds itself fully at home in a Hindustani music performance and is able to appreciate its nuances and fine points. Indian music is now spreading itself beyond our shores and is finding votaries and admirers in Europe and America. This emphasises the catholicity of music and its universality of appeal. Truly has it been said by Beethoven, the great German composer, that the purpose of music is to bring about a oneness of emotion and thus to suggest to our minds the coming time of a universal brotherhood.

Classicalness in music is a cherished virtue, and I know the high priests of the Academy act as its jealous guardians. This is as it should be, because any dilution may distort the very form and basis for its further development. To my mind, however, the great appeal of music is its devotional content. It elevates the mind and enables it to be at peace with itself. 'There is no happiness without peace', sang Tyagaraja in his famous song Santamuleka saukhyamuledu. Jaya Deva's Gita Govindam, which has a unique place in the history of evolution of Indian music, both in the North and in the South, the songs of devotion of Surdas, Kabirdas, Sadasiva Brahendra and Meera have a perennial appeal to the child as well as to the grown-up. We also have in the South the great treasures from the Tamil literature, the Pasurams, the Tiruppavai and Tiruvembavai and the
Tiruppugazh songs which have become so popular in music circles today. Their appeal to the lay mind is direct and touches their innermost instincts.

Our saint-musicians, forsaking worldly pleasures, have stressed the primacy of spiritual values. Their life-story reminds us that a purely materialistic progress divorced from the spiritual elevation of the individual is inimical to the growth of a balanced, integrated and harmonious human society. We live in a world full of petty jealousies, rancour and mutual suspicion. Power of wealth and power of position often blind one to the realities of life. That these are only transitory and ephemeral will be obvious if we can develop a sense of detachment and cultivate a capacity for introspection and retrospection. How beautifully has Tyagaraja brought out the emptiness of the desire to cling to one's worldly possession! He sings in the song Rukalu Padivelu:

"Though you may have tens of thousands of rupees, what you actually need is only a handful of rice.

Though you may have immense quantity of clothes, you need only one for wearing.

Though you may possess extensive territory, for laying your body at rest, you require only three cubits of space.

Though you may have hundreds of varieties of cakes, you can take only as much as your mouth can hold.

Though the lake may be full of water, you can draw therefrom only so much as your pot can hold."

(The English translation is from my friend Dr. V. Raghavan's book).

Our problem in India today is to find ways and means to feed our millions, to clothe them and to give them shelter. They have to be assured of a decent life, a life which will help them towards self-development. I am a propagator and a practitioner in my own humble way of the religion of humanism. Service to one's fellow-
beings is the essence of this religion and undoubtedly the best form of worship to God. In the sublime atmosphere of music that pervades this hall, there can be no higher thought. JAI HIND"

Vote of thanks

Sri V. K. Ramaswamy Mudaliar, one of the Trustees of the Academy, expressed the gratitude of the Academy to the President of India for having accepted their invitation to inaugurate the 46th Conference.

The National Anthem marking the conclusion of the inaugural function was sung by Smt. R. Vedavalli.

This was followed by a Bharata Natya recital by Smt. Sudharani Raghupati. As it was the Silver Jubilee Year of Indian Independence and the President of India was inaugurating the Conference, the dancer rendered in her programme a special Sabda on India, her greatness, her culture and her attainment of freedom, composed by Dr. V. Raghavan. The President who witnessed the recital appreciated the composition and the appropriateness of its presentation at that year's Conference.

Conference Souvenir

The Souvenir of the 46th Conference of the Academy carried as usual the annotated programmes of the performances of the Conference and photographs of important persons connected with the Academy and the 46th Conference. There was a detailed account of the work of the Music Academy, followed by a series of articles: One on the Utility of Music by Prof. P. Sambamoorthy, one on Chitra Kavi Sivarama Bhagavat by Tanjore B. M. Sundaram, one on Current Trends in Karnatic Music by Dr. S. Pinakapani, a Review of 25 years of Music and Dance by Dr. V. K. Narayana Menon, a sketch of Prof. P. Sambamoorthy by 'Hamsa', an article on Sahitya and Sangita by K. Chandrasekharan, one on the Flute by Vidwan K. C. Thiyagarajan, and a sketch of Vidwan Simizhi Sundaram Iyer by Sangita Kalanidhi Mudicondan C. Venkatarama Iyer.
Agenda of the Conference

The following was the Agenda of the Experts' Committee meetings of the 46th Conference:

I. Special Demonstrations & Recitals:
   (1) President Prof. P. Sambamoorthy: Sapta Tala Gita, Sutra Gita, Vadya Prabandha and other compositions by him
   (2) Sangita Kalanidhi Smt. D. K. Pattammal accompanied by Sangita Kalanidhi Sri Palghat T. S. Mani Iyer

II. Instrumental Demonstrations and Recitals:
   (1) M. K. Kalyanakrishna Bhagavatar, Trivandrum: Veena
   (2) Devakottai Narayana Iyengar, Bombay: Veena
   (3) K. S. Narayanaswami, Bombay: Veena
   (4) Prof. P. Sambamoorthy: Bambolin and Nalika Murali
   (5) L. S. Rajagopalan & Party, Kerala: Kombu Vadyam
   (6) Sri K. Tyagarajan, Madurai: An Improved Flute
   (7) Sri B. Subba Rao, Mysore: Vinascope

III. Illustrated Talks:
   (1) Nori Nagabhushanam Panthulu, Hyderabad: Bhadrachala Ramadas and his songs
   (2) Dr. Pinakapani, Kurnool: Swara Kalpana—An analysis
   (3) V. V. Satagopan, Delhi University: Preparatory Music Education and Training
   (4) Sri B. V. K. Sastr, Bangalore: Songs of Nijaguna Sivayogi

IV. Raga:
   (2) Maruthuvakkudi S. Rajagopala Iyer: Vivadi Mela Kritis of Tyagaraja
(3) Ponnur V. Ramaswamy Iyer: Raga-alapana and Svara Prastara

(4) S. Ramanathan: Kapi Raga

(5) T. V. Gopalakrishnan: Ragas in Carnatic and Hindustani—A comparative study

V. Laya:

(1) Sangita Kalanidhi Mudicondan C. Venkatarama Aiyer: Shatkala Pallavi

(2) Palani M. Soundarapandiyan: Late Palani Muthiah Pillai’s Note Books on Laya (‘Nandikesvara Laya Brahmananda Bodhini’)

(3) K. C. Tyagarajan: Yati Talas

(4) Gnyan Prakash Ghosh, Calcutta: Tala System in Hindustani

(5) Tinniyam Venkatarama Iyer: Musicometrics

VI. Papers:

(1) Dr. T. S. Ramakrishnan: Venkatamakhi—His 72 Mela Scheme—More possible Scales

(2) V. V. Narasimhachari, Kakinada: Simhabhupala and his Contribution

(3) R. K. Shringy, Banaras Hindu University: Concepts of Swara and Sruti and their relation

(4) Prof. William Skelton, Colgate University, New York: “A Computerized Catalogue of Karnatic Music”

VII. Hindustani:

(1) V. R. Athawale, Bombay: Vishnu Digambar Paluskar and his Contributions

(2) Sri Kapileswari, Bombay: Abdul Karim Birth-Centenary: Talk and Demonstration

(3) Smt. Krishna Bisht, University of Delhi

VIII. Other Systems of Music

(1) S. Ramanathan, Wesleyan University: Scales in the Music of Spain, Greece and Scotland
The Experts' Committee meeting convened in connection with the 46th Conference of the Madras Music Academy, began its deliberations today with the President Prof. P. Sambamoorthy in the Chair.

At the outset Vidwan Madurai Venkatesan sang Sri Sankaracharya's Ganesa Pancharatna and the opening Dasavatara Ashtapadi from Jayadeva's Gita Govinda.

Introducing the proceedings, Dr. Raghavan mentioned the items in the Agenda of the Conference which included papers, lectures, talks and demonstrations relating to Carnatic, Hindustani and other systems of music by musicians and musicologists from all over India, as also from America. He requested Professor P. Sambamoorthy to preside and conduct the proceedings.

The President Prof. P. Sambamoorthy appealed to the members of the Experts' Committee to co-operate with him and make the Conference a success. He also said that the Conference was intended to enlarge the knowledge of music and throw light on problems of the art and questions relating to its history, technique etc. and said that anybody who wanted any points to be cleared, might write out their questions on paper and send them to him.

Venkatamakhi's 72 Melas

He then requested Dr. T. S. Ramakrishnan to give his paper and demonstration on Venkatamakhi's 72 Melas and Possible New Scales. Dr. Ramakrishnan, a specialist in the Sangita Sampradaya-pradarsini, gave a detailed account of the historical and technical aspects of the 72 Mela Scheme promulgated by Venkatamakhi in his
Chaturdandi Prakasika. Analysing the scheme of Venkatamakhin based on 16 Svaras, the speaker explained how the 22 srutis were distributed among the svaras and how through mathematical permutations he framed the 72 Mela Scheme. The speaker explained the other devices and arrangements made for identifying the Melas and the ragas by Katapayadi syllables, Chakras etc. These were mathematically possible and many of them did not develop melodic forms and they included also scales showing vivadi doshas. Venkatamakhin however, did not name his scales. The speaker then discussed in detail the names of 18 Poorva Melas in vogue from before the time of Venkatamakhin, as also the 19th, Simharava coined by himself. The lecturer then dealt with other Raganga ragas as described in the Sangita Sampradaya Pradarsini with their Katapayadi names, gitas etc. The speaker showed then how the scheme held the possibility of additional Melas. He dealt with also the position of the Mela ragas and Janyas as reflected in the Kritis of Tyagaraja which showed differences from those of the Venkatamakhin's scheme and agreement with the text called Sangrahachoodamani. He referred also to the tradition that Tyagaraja had followed a treatise called Svararnava. In the end the speaker mentioned the recent opinion expressed by some leading Vidvans about the dropping of the Vivadi Melas and the reduction in the number of Mela Kartas.

Vidvan V. V. Sadagopan, speaking on the paper, emphasised that the new Melas meant nothing unless they were musically demonstrated. Sri S. Parthasarathi observed that there were many beautiful kritis in the Vivadi Melas which required careful treatment by musicians and that they could not give them up. Sri Maruthuvakudi Rajagopala Iyer, agreeing with the above view, appealed that the Vivadi Mela kritis should be brought into vogue in correct renderings.

Vidwan Nori Nagabhushanam Pantulu observed that he was rather sceptical about adding to the many Melas which they had already on hand and to which they were unable to do justice. Whatever new scales were derived, it was up to the person suggesting these to demonstrate their worthiness with Lakshydas or compositions in them. Otherwise he was not for accepting further additions to these scales.

M—4
Tiruchi Swaminatha Iyer requested that the Chyuta Panchama and Chyuta shadja be properly explained and demonstrated and Dr. Ramakrishnan did accordingly, taking the Gitas which he sang in Mangala Kaisika and Gowri. Sangita Kalanidhi Mudicondan Venkatarama Iyer covering the whole ground briefly said that, according to him, 22 svaras meant 22 svaras; that svaras like Ri differed in their character as they occurred in different ragas, that it would not have been the intention of the ancients to intone one svara in the sthana of another and that we should grasp the correct Svarasthanas of each of the 22. He referred to the Lakshanas of over 2000 ragas given by Tiruvaiyyaru Subrahmanya Iyer. Tyagaraja’s Kritis agreed with the scheme in the Sangraha Chudamani which existed in manuscripts in many musicians’ families, although regarding the Lakshana Gitas of this scheme, they were not sure as to who was their real author. Both Dikshita and Tyagaraja had composed in all the Melas and they could not afford to neglect that heritage. Between Raga and Raga, the rakti and the appeal differed and one could not expect of a Vivadi mela raga the same kind of appeal as in Anandabhairavi, Sankarabharanam etc., but on this score, they could not drop the former. Regarding the textual authorities cited by the speakers, Dr. Raghavan, who was connected with the publication of the Chaturdandi Prakasika and the bringing to light of Sangraha Chudamani or Sangita Sastra Samkshepa of Govinda, referred to his papers in the Journal of the Music Academy where he had shown that the nomenclature and definitions of the 72 in the supplementary text called Anubandha in the Chaturdandi and several Lakshana Gitas were not the compositions of Venkatamakhin and there was also a good deal of uncertainty and cobwebs about the tradition of a text called Svararnava believed to have been used by Tyagaraja. Prof. Sambamoorthi thanked the participants and said that he was himself going to deal with the whole question of the 72 Melas during the Conference.

THE SECOND DAY

23rd December 1972

At today’s meeting of the Experts’ Committee of the Music Academy, convened in connection with the 46th Conference with Prof. P. Sambamoorthy in the Chair, Mannargudi Krishnamurthy
Sastrigal gave a recital of the second and third Ashtapadis of Jayadeva's Gita Govinda.

Moorchanas and Ragas—A new Research Project

Sri K.K. Verma of Anamika Kala Sangam and Sarjana, Calcutta, had been carrying on for sometime researches, with the help of the Central Sangeet Natak Akademi, on a new project on the ragas, taking suggestions from the ancient texts which speak of Moorchanas. He participated in the previous year's Conference and gave an account of his work and findings. In continuation of that, he gave at this year's Conference a further account of his work. According to him, his venture called 'musicometry' analysed and tried to construe music as a function of numbers and conceptualisation with reference to rasas. The characteristic of any melodic mode naturally depended on the character of each note, as also that of the composite pattern of all its notes collectively. It therefore depended on the location of a mode's notes in the spiral of pitch series in an octave and on the inter-relations of Vadi, Samvadi, Anuvadi and Vivadi among them, and also on the integral structure and over-all melodic balance. According to him the ancient concepts of srutis, svaras, moorchanas, gramas and jatis were based on a full understanding of the above principles. The srutis which were 22, although 43 were possible, were locationally unequal but zonally equal. Svaras are manifestations of srutis and, locationally and zonally, bear the same implication as the srutis. This is more in evidence in the Southern than in the Northern system. The speaker thought that the 7 svaras, according to Bharata, were of zonal rather than locational character. Including the vikritis, they were 12 in number as fixed by Ahobala and Venkatamakhin, although according to his musicometry, they should strictly be 14, comprising 7 saddhas and 7 vikritis and would include the two chyuta shadja and chyuta pancama recognised in the more ancient times. A Moorchana Chakra, according to his musicometry, is a melodically valid structure of svaras which would generate 7 different modes by shift of tonic from one svara to another. The speaker thought they had not been able to understand the objective criteria of melodic validity on any of the concepts or explanations found in ancient texts and therefore there was a necessity to investigate these questions by analysing the ideas on notes and of melodic array and disarray, tension and relaxation etc. The speaker then explained the derivation
of modes from *Moorchana Chakras* on the principles explained above; a set of seven different raga and another set of 14 could be derived accordingly as the pattern was a symmetrical or asymmetrical, the former 4 and the latter 3 patterns generating a set of 77 raga. These 77 raga may be taken as generic or Janaka raga, each of these generating more raga (Janyas). The Moorchanas have certain sets of tonal relations which might answer to the 18 jatis mentioned by Bharata. Ancient texts mentioned six original raga and it was just possible that they were based on the six basic motifs of his musicometry. According to the new Moorchana-schemt of Sri Verma, there were 77 raga or melas, some of which were current in North Indian or South Indian music as prevalent now, and some not current at all.

The talk was followed by demonstration of four newly derived raga of Mr. Verma's scheme, two on Sarod by Sri Narendranath Dhar and two vocally by Smt. Tanima Thakur, both accompanied by Sri Moorthy and Sri Dattatreya respectively on the Tabla. The demonstration on instrument comprised two new raga, tentatively called Prabhas, which had a slight touch of the current Vibhas (Carnatic Bhupala with Antara G. and a tinge of Chatus-sruti Ri and Chatus-sruti dh; the second was tentatively called Suryamukhi whose nearest current Hindustani raga was Malkaus (Carnatic Hindola). The two raga demonstrated on voice were called Kalindi, similar to Kedar, and Kadambini similar to Sarang and Mallar. All these four belonged to the same Moorchana under which also came the current Carnatic Subhapantuvarali or Hindustani Todi. Sri Verma then illustrated his talk with lantern slides of his scheme of the spiral and the derivation and the Moorchanas and the raga derived therefrom.

On a request from Dr. Raghavan, Sri Verma explained further his own concept of moorchana and its relation to the ancient concept of moorchana, grama and raga. He said that what he wanted to know was that while 37 of his scales were musically valid as understood musicometrically, 35 were not musically valid and he wanted to know what the Carnatic musicians and musicologists thought of them. Prof. Sambamoorthy explained in Tamil and in terms of Carnatic music the main ideas of Sri Verma's new scheme.

Further discussion on Sri Verma's scheme followed on another day.
When the Experts' Committee Meeting of the 46th Conference of the Music Academy began this morning with Prof. P. Sambamoorthy in the Chair, there was first the recital of the 4th, 5th and 6th Ashtapadis of Gita Govinda in Hindustani ragas, Bimplas, Behag and Kamas by Sri P. S. Srinivasa Rao of the Bharatiya Vidya Bhavan Devotional Music School, assisted by Sri Murthi on Tabla.

**Veenascope**

Dr. Raghavan then presented the short paper of Sri B. Subba Rao of Mysore, an Experts' Committee member of the Academy, on his device called *Veenascope*. This innovation was made by attaching the medical doctor's stethoscope to the board of the Veena so that the diaphragm disc of the stethoscope pressed on the breast plate of the Veena or the Gottuvadya. It was intended mainly for the players themselves who were handicapped by age and affection of ears, to enable them to hear their own music.

**Veena Recital**

There was then an excellent Veena recital by Vidwan K. S. Narayanaswami, accompanied by Vellore Ramabhadran on the Mridangam. The artist rendered a *Varnam* in Kambhoji (Sarasijanabha); Merusamana - Mayamalavagowla; Santatam Bhajami (Bilahari - Svati Tirunal); Janani ninu vina - Ritigowla; Devamanohari - Kannatandri; Begada-Tyagarajaya, Dhanyasi - Nee cittamu; Devagandhari - Vadanyesvaram (Dikshitar); Ragamalika in Ghana-ragapanchaka, then Sahiza, Saveri with the Kshetrajna-pada Bagaya in the latter, the Kapi Javali - Parulana and Svati Tirunal's Alarsara in Surati.

Prof. Sambamoorthy praised the Vidvan for the recital which was according to the *Veena-paddhati* and was most pleasing because of the absence of too much plucking of the string by the right hand. He paid a compliment also to the listening public in the Academy which contributed to the artistes giving of their best. He referred to some undesirable practices among Vainikas today, of inserting the contact mike which spoil the real tonal quality and sweetness of the strings.
THE FOURTH DAY

25th December 1972

At the meeting of the Experts' Committee held this morning in connection with the 46th Conference of the Academy, Madras, Prof. Sambamoorthy presiding, Vidvan Turayur Sri Rajagopala Sarma rendered the 7th, 8th and 9th Ashtapadis of Jayadeva, in Bauli, Kannada and Desakshi. Dr. Raghavan introduced Sri Rajagopala Sarma as a member of the Experts' Committee of the Academy and a collaborator with the late Sri C. R. Srinivasa Iyengar in an edition in Tamil script of the Gita Govinda of Jayadeva according to South Indian Bhajana tradition. In thanking the Vidvan, Prof. Sambamoorthy said that the traditional ragas and Varnamettus of the Ashtapadis in Carnatic music now were 200 years old, having been set by Ramudu Bhagavatar of Tirumalarajapattanam at the instance of the then Sankaracharya of Kamakoti Peetha.

The Samaritans and Their Music

Introducing Dr. Miss Johanna Spector of New York, Dr. Raghavan said that she had participated in several of the Academy's previous Conferences and was a very well-known Ethnomusicologist who had specialised in the music of the Middle East. Dr. Spector then gave a talk on the Samaritans and their music with the help of a colour and sound film. The Samaritans were a small community now numbering only 450 persons, who had survived for over three thousand years in Central Palestine in the slope of the Holy Hill. They spoke a kind of archaic Hebrew and had religious observances not in vogue among Jews or Christians. In the Academy's 28th Conference (1954-'55), Dr. Spector had presented a detailed account of the music of the Samaritans and this year she wanted to provide a visual image of the people and their surroundings, activities and the sacrifice at which they chanted. They were mono-theistic people who adored a God without name or form. They had no folk songs, beyond their religious chantings done by the priests. They had a primitive polyphony with the 4ths and 5ths superimposed. She said that this ancient people might have migrated from India and were probably first settled in Persia before they came to their present habitat. Their music, as Dr. Raghavan pointed out in his paper in the Academy's Journal, Volume XXV, (1954-Pages 109 to 111), bore similarities with the Sama Vedic chants.
Prof. P. Sambamoorthy thanked the lecturer and observed that the study of comparative music was both interesting and instructive and deserved to be taken up by Indian musicians and scholars.

**Carnatic Music Catalogue**

Dr. W. Skelton of the Colgate University, who was making his third visit to Madras, then gave a talk, explaining his latest project which was the compilation of a comprehensive catalogue of Carnatic music on the Computer. This Sangeeta Catalogue which was being prepared at his University, would give each composition of each composer with the *Raga* and the *Tala* and also bibliographical sources where the text and notation were available. They could also easily find out from this catalogue how many pieces a composer like Tyagaraja had composed in the same Raga and all such details. Among sources not only books, but also wax and tape records would be entered. Such a catalogue would lead to several lines of further research. He also mentioned that he was being helped in this project by Sri S Ramanathan, who was working in the Indian Music Department of the Wesleyan University. The speaker distributed copies of Charts of the sample entries in this computerised catalogue. Thanking him, Prof. Sambamoorthi referred to the growing interest and research in Carnatic Music in the American Universities and among American musicians like Dr. Skelton, who had practised even instruments like Nagaswaram in Madras.

**Simhabhupala**

Dr. Raghavan then requested Sri V. V. Narasimhacharya of Kakinada, one of the oldest Experts' Committee members of the Academy, to give his paper on the contribution of Simhabhupala, a king of the Recharla dynasty of Andhra who wrote the commentary *Sudhakara* on the *Sangita Ratnakara*. In his paper Sri Narasimhacharya gave a detailed account, together with his own comments, of the elucidations offered by Simhabhupala in the portions of his commentary bearing on *Sruti*, *Svara*, *Grama*, *Raga* and *Prabandha*; the remaining chapters on *Tala*, *Vadya* and *Nṛtta* would be taken up by the speaker later. Dr. Raghavan thanked him.

**THE FIFTH DAY**

*27th December 1972*

At the Meeting of the Experts' Committee of the 46th Conference of the Music Academy held this morning with Prof.
P. Sambamoorthy presiding, Smt. Visalakshi Ramachandran recited Jayadeva's *Ashtapadis* 10th, 11th, 12th and 13th in *Anandabhairavi*, *Kedaragowla*, *Sankarabharana* and *Ahiri* ragas, accompanied by Rajalakshmi Srinivasan (Violin) and Chandramouli (*Mridangam*).

**Sruti and Svara**

Sri R. K. Shringy, delegate to the Conference from the Music Department of the Banaras Hindu University, then read a paper on the Concept of *Sruti* and its Relation to *Svara*. He analysed the subject chiefly, from the theoretical point of view, on the basis of the Sanskrit texts from Bharata to the later authors. He discussed the theories of causation as propounded by different schools of Indian Philosophy and as applied to the relation of the *Sruti*s and *Svara*s, the theory of the logicians according to which the *Sruti*s were the cause of *Svara*s (Arambha), the theory of the *Sankhya*s according to which the *Sruti*s transformed themselves into the *Svara*s (Parinama) and that of the *Advaita*s according to which the *Svara*s were a *Vivarta* of the *Sruti*s. He also mentioned the theory of manifestation of things as by light. He did not think that the theory of appearance would suit the relation and that the intriguing relation between the two would best be stated in the terms that the two were related as the constituent parts, integrated by a temporary sequence into a dynamic whole and were neither different nor identical with each other.

Commenting upon the paper Prof. P. Sambamoorthy said that the problem of the *Sruti*s and their relations to *Svara*s had been thrashed out in the early Conferences of the Music Academy and the discussions could be seen in the pages of the back volumes of the Journal of the Music Academy. Confusion on the subject had been created by early Western musicologists like Fox Strangways. It must be noted that according to the ancient theory *Sa* and *Pa* were, unlike in later theory, not *avikrita*. In the most ancient times the *Sruti*s were given mystic names; later they had practical names like *Chatusruti*, *Trisruti* etc. But still the subtlety of some of them was such that they could be correctly grasped or reproduced only by minute listening and continued practice. Dr. Raghavan observed that better than the three theories of the logicians, *Sankhya* and the *monists*, the theory of the aesthetes, like Ananda-vardhana, namely manifestation (*Vyakti*), like a thing revealed by a
lamp, would be appropriate to the phenomenon of *Sruti* and *Svara* and said that he had already pointed out that this theory was mentioned by Umapati in his *Aumapatam Gita Sastram*. Sri S. Ramanathan pointed out that Western music also recognised the difference between *Svara* and *Sruti* when they used the two terms, *Note* for the former, which could be written down, and *Tone* for the latter. Sangita Kanandhi Mudicondan Venkatarama Iyer observed that even in a single *Raga*, the same *Svara* differed in a subtle manner each time a musician sang. *Nada* was a continuous flow and it was difficult to measure it or pin-point it, because the very question of standing at a point was difficult. He also opined that according to him, the *Suddha Svara Saptaka* was not *Kharahara-priya* and the actual *Svarasthanas* as used by the ancients were not the same as we use them now. For example the *Ri* in *Sama Veda* was not *Chatusruti Ri*. Tiruchi Swaminatha Iyer also participated in the discussion.

**Tabla Gharanas**

Dr. Raghavan then introduced Dr. Kedarnath Bhowmic of the Banaras Hindu University and Sri Channulal Misra of the Music Department, Banaras Hindu University who were participating in the Conference on behalf of the Pt. Omkarnath Thakur Memorial Foundation. Dr. Bhowmic who was both a lecturer in mathematics and a performing Tablist, spoke on the different schools of Tabla-playing in Hindustani with special reference to the Banaras school. After describing the origin and development of Tabla as a percussion accompaniment in Hindustani Music, he said that the instrument spread from Delhi to other places in U.P. like Lucknow and Banaras. He made a brief reference to the Tabla and its structure and to the famous exponents of the Tabla as used in singing and dancing. Describing then the difference in playing as practised in Lucknow and other centres, he illustrated the different styles by playing on the Tabla. The President thanked Dr. Bhowmic for his participation in the Conference.

Following him Sri Channulal Misra, a vocalist trained in *Kirana* and *Gwallor Gharana*, gave a demonstration of Hindustani vocal music accompanied by Dr. Bhowmic. He sang *Alaya Bilawal* which had *Komal Ni* and rendered a *Thumri* in *Bhairavi* in *Vilambit Ek Tal* (24 beats) and *Drut* in *Tin Tal*. He then sang a piece in *Bhairavi* in *Jat Tal*.
Dr. Raghavan then mentioned that this was the year of the Birth-Centenary of the great Maharashtrian musician Pt. Vishnu Digambar and on behalf of the Celebration Committee in Bombay and at the instance of the Central Sangeet Natak Akademi, Sri V. R. Athavale of Bombay was giving at the Conference a paper on Pt. Vishnu Digambar and his contributions and a demonstration of some of the Compositions and Bhajans composed or popularised by Vishnu Digambar.

In his paper Sri Athavale gave a detailed account of Vishnu Digambar’s life and career and the missionary zeal with which he propagated the art. Schools, Gandharva Maha Vidyalayas, were established by him in different centres in the North. The speaker then mentioned his musical expositions of the Ramayana and his famous Ramdhun, ‘Raghupati Raghava Rajaram’ which he made into a national bhajan and was adopted by Mahatma Gandhi. Sri Athavale sang a Dhrupad, Dhamar, Khayal, both Vilambit and Drut, Thumri, Tappa, Tarana, a Khayal in Gandhari a new raga of Vishnu Digambar and one of Vishnu Digambar’s Bhajans.

Thanking him, Prof. P. Sambamoorthy paid a tribute to the personality and contributions of Pt. Vishnu Digambar. He said that Vishnu Digambar’s memory was cherished as much in the South and recalled his visit to the 1927 Music Conference out of which the Music Academy itself was born. To see him was to be inspired by his powerful personality. When he was in Madras, he gave an exposition of the Ramayana in Sowcarpet and created such enthusiasm that he was taken out in a silver car at the end of the exposition. He had also many distinguished pupils. Dr. Raghavan also spoke associating the Music Academy with Pt. Vishnu Digambar’s Birth Centenary Celebrations.

THE SIXTH DAY
28th December 1974

When the Experts’ Committee of the 46th Conference of the Music Academy re-assembled this morning with Prof. P. Sambamoorthy in the Chair, Smt. Sita Rajan gave a recital of the Ashta-
Improved Flute

Sangita Kalanidhi Semmangudi Srinivasa Iyer then introduced Sri K. Tyagarajan of Madurai and said that he was an Engineer who had practised the Flute and had experimented on an improved form of that instrument. Speaking on his experiments on improving the Flute as used in Karnatic Music, Sri Tyagarajan said that at present we were using two full octaves on the flute and only two extra notes Ma and Pa in the higher octave. Western flutists used three full octaves. By suitably modifying our Flute we could also play three full octaves. The present placement of finger-holes was not based on scientific principles, but rather on convenience for placing the fingers. The instrument lent itself to correction of this defect. There was no reason why the holes should not be placed correctly. On the other hand for good playing, it was essential that this was done. By comparing the relative positions of the frets in Veena over a full octave, and also of finger-holes in the Western flutes over one octave, the finger-holes as they were now, could be corrected.

As regards playing, the main defect in the present system of fingering was that there was a break in the poorvanga. The note Sa, Ri and Ga could be played only on the lowest natural octave of the Flute. To play the lowest Ma, one had to play it at the next natural octave. This led to a break which was not conducive to the playing of Ma along with Sa, Ri, Ga with suitable Gamakas. This was particularly noticeable in the higher octave where the Ga, Ma, Pa had to be played in three different natural octaves of the Flute. By suitably modifying the Flute to give the full range of three octaves, Gamakas which were normally employed in vocal and stringed instruments could also be reproduced on the Flute. On the lower octave an extra finger-hole might be provided for playing Ma, to be operated by the left thumb. It was shown that this could be done without difficulty. With this change, the range of the Flute would be considerably extended and the instrument become truly versatile. In the course of his talk, the speaker referred to the Flutist Tanjore Gopala Iyer who played a Flute in which he had made some of the holes at places which were a little lower and to Tiruppambaram Swaminatha Pillai in whose Flute, he had made some of the holes smaller in size.
Electronic Sruti-Box

His transistorised electronic sruti-box was also shown by Sri Tyagarajan in the Experts' Committee. This device was demonstrated by him several years back at the Experts' Committee. It had now been perfected by adopting new techniques which utilised only one oscillator with suitable electronic frequency-dividing circuits which gave the two notes Sa and Pa. The Sa could be varied over one full octave to suit the basic pitch of instruments, male and female voices. When the Sa was set, the Pa was automatically set alongside. Because only one oscillator was used, the two notes which were the result of the frequency-dividing circuit, had a constant ratio. This ratio was invariable. There was separate volume controls for both Sa and Pa.

Prof. Sambamoorthy, himself a student of Flute, welcomed the improvements made by Sri K. Tyagarajan and thanked him for his talk and demonstration.

Book-Release

Prof. Sambamoorthy then released the book on vocal music, *Midattrisai* Part I, by Sri P. Vajravelu Mudaliar of the Music Department of the Annamalai University.

Instruments and Sutra Gitas

Prof. Sambamoorthy then gave a demonstration of some instruments, the *Tibetan Sarangi*, the *bamboolin* which was something like Violin made of bamboo and in use in Phillipines and the *Nalika Murali* which he had devised by attaching a plastic tube to the flute and was helpful for beginners in producing tone and in fingering. He played some Carnatic *kritis* on these instruments. Prof. Sambamoorthy also presented some of his illustrative compositions which gave in condensed form facts relating to the theory and science of Carnatic music. For example *Sutra-Gitas* in which ragas of a particular cycle could be derived by modal shift of tonic. Also another series where the names of the *Ganas* and their mnemonic structure could be remembered. Prof. Sambamoorthy's composition in *Vachaspati raga*, Telugu-cum-Tamil *Manipravalam*, on Tyagaraja was also rendered. Another composition of his presented was in the *Misra Mela* with *Harikambhoji* in *Arohana* and *Kharaharapriya* in *Avarohana*. 
These compositions were presented by the students of the Madras Sangeeta Kalasala of Sri N. C. Parthasarathy. Dr. Raghavan thanked Prof. Sambamoorthy for the demonstration of these instruments and his illustrative compositions which were useful for music-teaching.

**More Instrumental Innovations**

Sri B. K. Misra of Vadyalaya then demonstrated and explained the features of two new violins, two new Tamburas and five new Vinas manufactured in his Instruments Centre. The main innovations were in respect of the wood used, the size and material of the *Kudam* and *gourd* and the finger-board. Traditional wood had been replaced by plywood, cane and other materials. In producing this re-modelled instruments Sri Misra said that he adopted the material and methods used in the manufacture of Sitar and Miraj Tambura. The actual gourd had been used instead of one in paper-mache. In one type of Veena, frets had been made adjustable. The use of wax for fixing of frets had been replaced, because the traditional Veena so fixed was affected by conditions of climate. The prices of the new Veenas, Violins and Tamburas were also very much less than those of traditional ones. The new ones took less time to prepare and were easier to carry or handle and less subject to breakages. These instruments were then played by different Vidwans.

Vidvan Devakottai Narayana Iyengar observed that the shape of the *Kudam* had much to do with the quality of the sound and in the new specimens demonstrated, the tonal quality required to be improved. They were not the same as that of the traditional instruments. Dr. T. S. Ramakrishnan said that he had examined these new instruments more than once and found them good. Violin Vidvan Nori Nagabhushanam Pantulu said that he had tested the new violins and was satisfied with their sound quality.

Prof. Sambamoorthy observed that these improvements on the Tambura, Violin and Veena were necessitated by the present need for large-scale supply, moderate price, portability and other needs. He referred to violin-making in Europe which was a very long drawn process and some firms produced only a dozen violins a year. The effect of climate was also an important factor and called for innovations which would secure weather-proof qualities. It was
not as if the traditional masters did not experiment on their instru-
ments. Veena Venkataramanadas of Vijayanagaram had his own
remodelled Veena; its Kudam was smaller and gourd larger. Wax
frets were not used, as wax absorbed sound, and wood and brass
work was adopted instead; the sound of his Veena was richer.

Dr. Raghavan thanked Sri Misra and observed that the demons-
trations of experiments and improvements on instruments were
appropriate in the Conference presided over by Prof. Sambamoorthy,
as he was himself, for three years, connected with the Vadyalaya as
its Director.

THE SEVENTH DAY
29th December 1974

When the Experts' Committee re-assembled in connecion with
the 46th Conference of the Music Academy with Prof. P. Samba-
moorthy in chair, there was first a talk and demonstration on
Kombu Vadyam of Kerala by Sri L. S. Rajagopalan and party.

Kombu Vadyam

Dr. Raghavan, introducing Sri L.S. Rajagopalan, referred to his
previous participation in the Experts' Committee meetings in which
he presented with demonstrations, several instruments which formed
an important part of the music of Kerala. This year he had brought
the horn, kombu, with the hereditary performers on the same. Sri
Rajagopalan gave a brief account of the Kombu or Sringa as a music
instrument mentioned in ancient Indian literature and treatises on
music like the Ratnakara. He then described the shape, structure,
size and varieties of the instrument and the way in which each one
was played. The Kerala variety of Kombu was made in bell-metal
and was in small as well as big sizes, the smaller ones, Timiri, being
in greater vogue in the temples in the past, the bari ones being later.
It was used by Harijans in their folk festivals, but also played by
Nairs in the temples. Kombu was essential for some of the pujas and
festivals, besides being associated with wars. It was primarily used
as a rhythm instrument. The speaker then explained the process of
learning the instrument, the notes and the Tala-jatis used in its
playing. There was also the playing of a number of Kombus in and
ensemble in which they played in unison at every Kalasam. It was
one of the instruments used in Pancha Vadyam. The speaker then
described the different *Talas* used in *Kombu*-playing. The demonstrations were provided by Sri Appu Nair of *Kandangi* House of Machat, who was the *Kombu* artist of the Bhagavati Temple, Tiruvanaikkavu and Sri Madathilath Ramakrishnan Nair of Mangalam. Prof. P. Sambamoorthy, thanking the speaker, appealed for the preservation of such instruments and their playing in temples. Thanking the speaker and the players of the instruments, Dr. V. Raghavan mentioned that even conch (*Sankha*), also a blown instrument, was used and described in texts as a *Tala-vadya*. *Kombu* was also found in Tamilnadu and was used by Harijarfs and was much in evidence during the Temple Car festivals. The speciality of Kerala was that the playing of *Kombu* was codified and there was specific training in the playing of the different *Talas* on this and its employment during certain rituals in the temples.

**Yati Talas**

Sri K. C. Tyagarajan, Principal, Teachers' College of Music of the Music Academy, Madras, then gave a talk and demonstration on *Yati Talas*. He explained the *Yati*, which was one of the 10 ‘pranas’ of the *Tala*; *Yati* was of six kinds, *Sama, Vishama, Mridanga, Vedimadhya* (otherwise called *Damaru, Pipeelika*), *Gopuccha, Srotovaha*, i.e., homogenous and heterogenous, large at middle and diminishing towards the ends, slender in the middle and large at the ends, large in the beginning and gradually diminishing like the tail of a cow, slender to begin with and gradually increasing like a flood. In the work *Sangita Svaraprastara Sagara*, *Talas* suitable for each one of the *Yatis* were given. Three other works also gave such details. On the basis of the indications available in the above publications, the speaker had set *Ragas* and *Talas* to the six varieties of *Yati*. He then demonstrated the same, assisted by the following artistes: Sri B. Krishnamurthy (Vocal), Sri K. R. Ganapati (Flute), Sri Ramnad Venkatachalam (Violin), Sri Ramanathapuram M. N. Kandasami (Mridangam) and Sri K. M. Vaidyanathan (Ghatam). Thanking Sri Tyagarajan for his talk and demonstration, Prof. Sambamoorthy explained the beauty of the element called *Yati* and its varieties and their use in *Tevaram*-singing and in the *kritis* of Dikshitar and Tyagaraja.

**Palani Muthiah Pillai’s Laya note books**

Dr. Raghavan then mentioned the note-books left by late Mridangam Vidvan Palani Muthiah Pillai, in which he had written
out in the form of a text book the art of Laya and Mridangam-
playing with the title ‘Nandikesvara Laya Brahmananda Bodhini’. His son Palani Sri M. Soundarapandiyan read out portions of the manuscript and demonstrated them on the Mridangam. Mridanga Vidvan Tinniyam Venkatarama Iyer recalled the attainments of the late Sri Muthiah Pillai on the Tavil and Mridangam and complimented his son Sri Soundarapandiyan for the preservation of the note-books and the demonstration of the material contained in them. Prof. Sambamoorthy appealed to patrons and organisations to help the publication of the music note-books left by the late Muthiah Pillai.

THE EIGHTH DAY

30th December 1972

At today’s sitting of the Experts’ Committee of the 46th Conference of the Music Academy, Madras, with Prof. P. Sambamoorthy, President, in the Chair, Vidvan Sri S. Ramanathan gave an illustrated talk on Kapi raga.

Kapi Raga

In the course of his historical and comparative survey, Sri Ramanathan covered a wide ground and dealt with the raga in Hindustani and Carnatic schools, its definitions and descriptions in texts and the handling of it by well-known composers in the Carnatic field down to modern times.

According to Tulaja (1723-1735), the ascent and descent of Kapi were to be ‘free’, i.e. without much restriction. Tyagaraja and Dikshitar had many compositions in this Raga. There were compositions in it by Ramadas, Margadarsi Sesha Iyengar and Veerabhadriah. In the foot note of song Muruga Unmai in Rudrapriya by Venkateswara Ettappa Maharaja, in Sangita Sampradaya Pradarsini of Sri Subbarama Dikshitar, it is stated that Antara Gandhara occurred in the passage Ma Ga Ma and that Rudrapriya was called Hindustani Kapi. Also in the definition of the Kapi, Dikshitar had stated that the use of Antara Ga and Kakali Ni were permissible. In the Javalis of the 19th century, Kapi might be said to have had the fullest development. Anya Svaras were met with: Antara Ga, Kakali Ni and Suddha Dh. By way of
Prof. Sambamoorthy mentioned that in the more recent renderings, the raga had changed its form a little and this was not the correct form in which Tyagaraja had composed his Kapi kritis.

Prof. Sambamoorthy also released Vidvan Ramanathan's edition of the Nandan Charitram of Gopalakrishna Bharati in two volumes, with text and notation.

Sapta Tala Gita

Prof. Sambamoorthy then referred to the rare Sapta Tala Gita in Sanskrit, the composition illustrating seven Talas, in raga Nata by Pydala Gurumurthy Sastri in praise of Sonthi Venkatasubbiah. This was rendered by the pupils of Dr. Rukmini Vasudevan Sangita Vidyalaya.

Dr. Raghavan Shashtyabdapurti Endowment Lecture

Mela Paddhati

Sri T. V. Rajagopalan then requested Prof. P. Sambamoorthy to deliver the fifth lecture under the Dr. V. Raghavan Shashtyabdapurti Endowment. Prof. Sambamoorthy took up the subject of Mela Paddhati, traced the origin of the idea of organising the ragas and the more ancient system of classifying them. He mentioned the earliest reference to Mela and Janya, associated with the Sangita Sara of Vidyaranya of 14th Century. In Tevaram music also, there was the classification into Pan and Tiram. The speaker then referred to the Mela-scheme as described by Ramamatya, Somanatha, Ahobala and the further history of the Mela-scheme upto the Sangraha Choodamani, whose system was prevailing at present. It was left to Venkatamakhin, to finalise the scheme into one of 72 Melas. There were other attempts to enlarge the scheme, as in the Meladhikara Lakshana. Even as the raga was a gift of India to world music, so also it might be said that the 72 Mela-scheme was a gift to world musicology. Referring to the persistent controversy about 40 of the Melas which were not as pleasing to
hear, the speaker said that these 40 included some of the old and beautiful ragas like Nata and Varali. In all the Vivadi Melas, the great composers had created beautiful compositions. It would therefore be a great loss, if as some proposed, we gave up the Vivadi Mela ragas. It would be like saying that because only a few Talas had been handled, many of the rare Talas should be given up. It had been handed down in tradition that in addition to composing the Mela Raga Malika, the great Maha Vaidyanatha Iyer had sung the Rasikapriya as the main Raga for alapana. Sri T. V. Rajagopalan thanked Prof. Sambamoorthy for his lecture.

Kannada Yogin’s Songs

Dr. Raghavan then requested Sri B. V. K. Sastry of Bangalore to give his illustrated talk on the songs of the Vedantin Saint Nijaguna Sivayogi of Karnataka. In his introductory remarks Sri Sastry stated that Nijaguna Sivayogi was respected not only among Veera Saivas but also in Advaita and other schools of religious thought. His great encyclopaedic work Viveka Chintamani had been translated into Sanskrit, Marathi and Tamil in the 16th and 17th centuries. Sri Sastry also said that Sri Nijaguna Sivayogi was the first Kannada writer to deal with music as a vidya in his work. Songs in his work Kaivalya Paddhati described in various stages the way to emancipation in the life of the Yogin. Some of these songs were rendered by Kum. V. S. Vasanta and Padma Rao, in ragas Revagupti, Sri, Mohana, Sankarabharana, Varali and Nada-namakriya. Prof. Sambamoorthy expressed his appreciation of the talk and demonstration of the songs from different regions in different languages which gave them the much needed cultural integration.

Raganga in Hindustani

Dr. Raghavan then requested Mrs. Krishna Bisht of the Music Department of the Delhi University to give her illustrated talk on the significance of Raganga in Hindustani music. In the course of her exposition Mrs. Bisht said that the Raganga was an essential phrase of a raga which could well be characteristic of a group of ragas; the Raganga was based on the Sanchara which was important, whatever the Mela. Among medieval authors on music, Bhava Bhatta (17th century) was credited with having adopted a classification of Ragas according to Raganga. The speaker made
detailed analysis of Bhava Bhatta’s ideas on this in respect of different Ragas. The very development of Misra Ragas was due to the perception of the common Raganga of different Ragas. The Mohammedan musicians also seemed to have laid emphasis on the Ragangas. In modern times, although not theoretically stated, in actual singing, the appreciation of Raganga was in evidence in the rendering of Ragas. There might be some difficulty in wholesale adoption of the Raganga-classification, as there might be overlapping as well as vagueness. Still the Ragangas offered a better basis for classification of Ragas than the That system.

Sri R. K. Shringy of Banaras Hindu University, welcoming the suggestion of the speaker, said that it would have been more useful if she had given some sample classifications on Raganga-basis.

THE NINTH DAY
31st December 1972

At today’s meeting of the Experts’ Committee of the 46th Conference of the Music Academy, Prof. P. Sambamoorthy presiding, Vidvan Tiruchi Swaminatha Iyer, Bombay, gave a short exposition of Raga and Niraval and rendered Saveri and Tulasi Jagajjanani and Sama with a piece of Gopalakrishna Bharati. Prof. P. Sambamoorthy expressed his appreciation of the traditional style expounded by the Vidvan.

D.K.P’s Concert

There was then a vocal concert by Sangita Kalanidhi D. K. Pattammal accompanied by Tirupparkadal Sri Veeraraghavan (Violin) and Sangita Kalanidhi Palghat Mani Iyer (Mridangam). She sang the following: Manasu - Saveri - Varnam; Ninne Neranammi - Pantuvarali; Entara Nitana - Harikambhoji; Ippo Namaspwami - Dasarpadam; Ekkalattilum - Poorvikalyani; Svararaga - Sankara-bhananam; Brovabharama - Manji; Gajamba-nayaka - Chenchuruti; Iti samayamu - Chayanata; Ragam, Tanam and Pallavi - Dhanyasi with Kadaikkkan vaattarul-Ragamalika-Tamil Viruttam and Tillana in Anandabhairavi. The concert which was of two hours’ duration was done without the mike; with the audience in perfect silence, the audibility which was tested at different points of the auditorium including the balcony was perfect. The experiment of the concert
without mike must be pronounced a success. Prof. Sambamoorthy thanked the Vidushi and referred to his having known her from her tenth year.

Musicometrics

Dr. Raghavan then requested Vidvan Tinniyam Venkatarama Iyer and his pupil R. Venkataratnam, a Mridangist and a mathematician, to present their paper on the theory of Musicometrics. It was an analysis of musical metrics with reference to rhythmic patterns and percussion-playing, from the point of view of the stroke and the rest, the *Jatis* being combinations of the two. He then dealt with the role of *manodharma*, analysing it from the point of view of stochastic process or Markov chain. Each rhythmic pattern was a definite information value in regard to the syllables and the probability of use; and the drummers’ dexterity consisted of his capacity to choose and play the right expressions in the right time and in the right place. ‘Na Din Din Da’ according to statistical information theory had the maximum *madhurya* and entropy.

**THE TENTH DAY**
*1st January 1973*

**Members’ Day**

On the New Year Day the Music Academy celebrated its Annual Members’ Day and held a reception to the President of the Conference. Members had refreshments.

**Experts’ Committee Meeting**

When the meeting of the Experts’ Committee of the 46th Conference of the Music Academy re-assembled today, there was the recital by Sri P. S Srinivasa Rao and his pupils of Jayadeva's *Ashtapadis*, the 22nd, 23rd and 24th, in the Hindustani *Ragas*, *Kedara, Misra Mand*, and *Sindhubhairavi*. Dr. Raghavan thanked Sri Srinivasa Rao and his pupils.

**Shanmarga Pallavi**

Sangita Kalanidhi Mudicondan C. Venkatarama Iyer then gave a talk and demonstration of the difficult *Shatkala*, or more correctly *Shanmarga Pallavi*, accompanied by Parur S. Anantharaman on
the Violin and Umayalpuram Sivaraman on the Mridangam. The Pallavi was set in Kalyani raga and to mukkal eduppu. He sang in six kalas the pallavi ‘Navarasa rasika sikhamane sadguna nidhi ekadra kulasekhara with the Niraval svara in the first kala and also Niraval svara in each of the six kalas. He said that in ‘Tala-dasa-prāna’, the term ‘Marga’ denoted Shanmarga Pallavi. He also rendered Sri Srinivasa Iyengar’s Tillana in Pantuvarali in Ragavardhana Tala and a Tillana in Sindhubhairavi of Pattanam Subrahmanya Iyer.

Mridanga Vidvan Tinnyiam Venkatarama Iyer, paying a tribute to Sri Mudicondan Venkatarama Iyer, referred to the importance of the Pallavi in concerts of the previous generation and the need to restore its position in concerts. Prof. Sambamoorthy referred to the intellectual aspect which added to the interest of our music concerts and said that Pallavi formed an important part of the Vyavahara aspect of our music and it was not to be neglected.

Abdul Karim Khan

Celebrating the Birth-Centenary of the late Abdul Karim Khan in co-operation with the Committee set up for the same in Bombay, the Academy paid homage to the great Hindustani musician Pt. Kapileswari Buwa gave a talk on the life and work of Khan Saheb. He said that Abdul Karim Khan was a descendant of a family of musicians, originally Hindus, attached to the court of Man Singh Tomar of Gwalior. He belonged to the Kirana Gharana. He referred to his work in Baroda and Miraj. He had a number of Hindu music pupils who became greatly attached to him. He attracted the attention of the leading intellectuals of Maharashtra like Gokhale, Tilak and Bhandarkar. Abdul Karim Khan toured South India and took interest in Carnatic Music. He collaborated also with some musicologists who wrote on the history of Indian Music like Deval and Clements. Pt. Kapileswari also mentioned that they were publishing a biography of Abdul Karim Khan in Marathi. He also gave a demonstration of some aspects of Khan Saheb’s music. He mentioned the importance attached by Khan Saheb to the mystic syllable ‘Om.’

Paying homage on behalf of the Music Academy, Mudicondan Venkatarama Iyer recalled Khan Saheb’s stay in Madras for
some time and the two concerts that he gave in the V. P. Hall. He said that the Malkaus which he sang at that time was still ringing in his ear. Karim Khan's voice was expressive in the three octaves and was full of feeling. The production of sound, the taking of a svara or resting in a svara, all these had a unique quality in his music. Sri Venkatarama Iyer also sang snatches of some of the songs which Abdul Karim Khan had recorded. Prof Sambamoorthly also recalled his contact with Abdul Karim Khan when he was staying in Madras and his interest in the question of the 22 srutis. Dr. V. Raghavan mentioned that Abdul Karim Khan learnt and popularised some Carnatic ragas and kritis among Hindustani musicians and thanked Pt. Kapileswari Buwa for coming from Bombay to participate in the function.

THE ELEVENTH DAY

2nd January 1973

In this morning's meeting of the Experts' Committee of the 46th Conference of the Music Academy, Prof. P. Sambamoorthly presiding, Vidvan Nori Nagabushanam Pantulu of Hyderabad gave a discourse in Telugu on the life and songs of Bhadrachala Ramadas. His account of the Saint's life was interspersed with rendering of songs sung by the Saint on different occasions. Accompanied by A. Lalitha (Violin) and M. Eswaran (Mridangam), the Vidvan sang the following pieces: Tarakamantram - Dhanyasi; Yetiruga namudaya - Nadanamakriya; Rakshinchu Doravani Bilahari; Paluke bangaramayena - Anandabhairavi; Nambrovamani - Kalyani; Rama Nidaya in Punnagavarali. Dr. Raghavan referred to a valuable manuscript belonging to the late Tirukodikaval Krishna Iyer given to the Academy by his descendants which contained the repertoire of the Bhajana Sampradaya and had a unique collection of 125 songs of Bhadrachala Ramadas together with an Index. Prof. P. Sambamoorthly referred to the inspiration which Ramadas provided for Tyagaraja and thanked Sri Nagabhushanam Pantulu.

Niraval

Vidvan Devakottai Narayana Iyengar then gave a recital on the Veena demonstrating the playing of Niraval in different Talas. He was accompanied by Madurai Krishna Iyengar on the Mridangam. Sri Narayana Iyengar first played a Varna in Surati in Adi in two
Kalas. He then rendered Sobhiḷu - Rupaka and did Niravāḷ in the Charana, along with the Chittasvara of his Guru Karaikudi Sambasiva Iyer. Taking then Jampa Tala and the Charana of the Bilahari kriti, Paridana, he did Niravāḷ and svara for the Charana; Ramabhiringama - Darbar - Niravāḷ for the Charana; and Raga, Tana with Niravāḷ for the Mudra Charana of the Kalyani kriti in Adi - Etavunara were then presented by the Vidvan. The recital ended with a Tiruppugazh in Hamsanandi, Tisra Jati Mathya Tala. Prof. Sambamoorthy expressed his appreciation of the Veena recital of Sri Narayana Iyengar for the traditional excellence of Niravāḷ in different Talas.

Raga in Carnatic and Hindustani

Vidvan T. V. Gopalakrishnan then gave a comparative exposition of Raga in the two schools of Indian music, taking Hindola and the corresponding Malkauns. He first sang Pallavi, taking a line from Nirajakshi Kamakshi - Adi - (Four Kalais) and then sang the Hindustani counterpart and a piece in it. He was accompanied by Smt. T. Rukmini (Violin), Madurai Krishna Iyengar (Mridangam), Sri Simha and Sri Murthi (Tabla). Prof. Sambamoorthy thanked the artiste.

Ashtapadis

Sri S. Vasudevan and party then rendered the Ashtapadis from 17 to 21, according to South Indian Bhajana Sampradaya. Prof. Sambamoorthy complimented the artistes and referred to the importance of the work of Jayadeva.

Dr. Raghavan said that in view of the basic significance of the Gita Govinda for music and dance tradition in all parts of India and the appropriateness of a pioneering classic on Krishna devotion for the month of Margasirsha, they had taken up the rendering of the Ashtapadis during this year's Conference and it was a matter of gratification for them that they were able to complete all the 24 songs of Gita Govinda in the Session.

THE TWELFTH DAY

3rd January 1973

At the meeting of the Experts' Committee of the 46th Conference this morning with Prof. P. Sambamoorthy in the Chair, there was
first a recital on the Veena by M. K. Kalyanakrishna Bhagavatar of Trivandrum who played Raga and Tana in the Ghanaraga Panchaka and also Saveri and Begada.

Prof. P. Sambamoorthy expressed the appreciation of the recital of the Vidvan and the volume of the sound and technique of his playing.

Svara-Singing

Dr. Pinakapani of Kakinada gave an exhaustive exposition of the singing of svaras, extempore as well as already set in the composition. He said that Svara Kalpa is a characteristic feature of Carnatic music. Svaras were used in other systems of music of the world mostly for imparting a knowledge of svara sthanas. But in our system singing of Svaras had been a major item of our music performances. Svara Kalpa brought out raga-bhava and the beauties of the rhythm. While raga-bhava formed the main stream which guided Svara Kalpa, laya-pradarsana was a specialised item in our music. The Kalpita-svaras that were sung on platforms today were mostly devoted to revealing the beauties in rhythm. The speaker showed how various beauties of rhythm could be brought out in svara-kalpana. In our sampradaya-sangita, there was a lot of svara-kalpana done on an artistic basis revealing all the beauties in rhythm. If the various points, where such beauty was seen, were analysed and studied, it should be possible for all vidvans to piece together such beauty-points and create svara-patterns, and they would be emulating the svara-kalpa that existed in the compositions of the great composers. The speaker brought out sixteen such points of beauty in svara-kalpa and illustrated each one of them at length with examples drawn mostly from Varnas, Svarajatis, the Pancharatnas of Tyagaraja, Chitta-svaras and the like.

Thanking Dr. Pinakapani, Prof. Sambamoorthy said that the lecture was scholarly and stimulating. He mentioned how the speaker had shown that punarukti or repetition might yet be a thing of beauty and not a flaw in Svara-singing.

THE THIRTEENTH DAY

4th January 1973

At the last sitting of the Experts of the Music Academy, in connection with its 46th Conference, this morning, there was first a
recital on *Gottuvadya* by Sangita Kalanidhi Budalur Krishnamurti Sastrigal. Accompanied by Alandur S. Natarajan (Violin) and Palghat Ramanathan (Mridangam), Sri Sastrigal played *Bhairavi Varna, Brihaspate - Athana* and *Kedaragowla Raga* and *Kriti, Tulasibilva*; and *Veera Hanumate-Kanada*.

**Release of New Book**

Dr. Raghavan then mentioned that in response to the Academy's appeal, Members of the Experts' Committee were giving the Academy editions of rare compositions known to them for publication in the Academy Series. On the occasion of the 46th Conference, they had brought out a book of *Four Rare Compositions of Mysore Veena Subbanna - A ragamalika, two Svarajatis and one kirtana* - edited by Vidvan Titte Krishna Iyengar of Mysore. The President of the Conference, Sri Sambamoorthy, released the publication.

Dr. Raghavan also announced earlier the publication of the 42nd volume of the Journal of the Music Academy.

**Music Training for Children**

Speaking on preparatory music education and training, Vidvan V.V. Sathagopan of the Delhi University expatiated on the objectives of education in general and of music education in particular, with reference to either career or cultural interest. He stressed that the basis of both consisted of inner satisfaction and joy. Both melody and rhythm were innate in man and quite voluntarily, men expressed themselves in both melody and rhythm. He referred to the fact that almost all the great singers, Purandaradasa, Tyagaraja and others following them, and the performers of *Harikatha* and *Bhajans*, sang mostly in a standing posture; in this posture the entire body swung with rhythm. With *Chiplas* in hand the speaker then illustrated this by himself singing a *Pada* of Purandaradasa. He said that particularly children were moved into melody and rhythm. The speaker illustrated this with his children who sang a simple Russian tune, a *bhajan* of Tulasidas and one of the better type of popular cinema songs carefully selected by him. The speaker said that to develop the musical knowledge and practice of children, the art could be given through simple dances, songs related to daily activities, group-singing, singing in drama, selective listening, nursery songs and rhymes, stories, poems and simple rhythmic compositions. The speaker ended his talk with a Tamil composition of his on Tyagaraja.

M—7
Prof. Sambamoorthy thanked the speaker for his instructive talk.

Music and Dance of Vizianagaram

Dwaram Bhavanarayana Rao, Principal of the College of Music, Vizianagaram, referred to Music and Dance in Andhra Pradesh and the part played by the patronage of these arts by the ruling Zamindars. He referred to places like Karvetnagar, Venkatagiri, Nuzvid, Challapalli, Muktyala, Vizianagaram and Bobbili. He traced the development of music in Vizianagaram from 1850 onwards. He referred to the patronage extended by Anandagajapati garu, a former ruler of Vizianagaram, which enabled Tatchur Singaracharlu to travel widely and acquire material for publishing his six graded books on music. He paid a tribute to the greatness of Vizianagaram Venkataramanadas, the famous Vainika, and Adibatla Narayana, the great scholar and performer of Kalakshepa and lastly he referred to his own father, the late Dwaram Venkataswami Naidu and the greatness of his Violin-playing and the part played by him in shaping the Music College which was now one of the important centres of music in Andhradesa. He hoped that very soon a Post-Graduate course in music would also be organised in Andhra University when Andhradesa would once again shine as an important place of music and dance.

The President thanked Mr. Bhavanarayana Rao for his paper which was full of historical details. He appealed for the reprinting of the small book on the Secrets of Veena-playing published in Telugu by Veena Venkataramanadas. He also pointed out that some of the Pada Varnas, which the dancers learnt from the Tanjore Quartette more than a hundred years back, were still in vogue in Andhra Pradesh, though people in Tamilnadu had forgotten them.

Abdul Karim Khan

Pt. Kapileswari Buwa, who had earlier in the Conference, given a talk and demonstration in connection with the Birth Centenary of Abdul Karim Khan, then rendered the following three compositions showing the svara-samvada theory of Abdul Karim Khan: the Ganesh Stotra in Suddha Kalyan; the verse ‘Gururbrahma Gururvishnuh’ in Raga Bhimpalasi and Om Gayatri in Bhagesvari. He also demonstrated how the Kirana School specialised in the placement of svaras which were interconnected. He then rendered a composition of Khwaja Garib Nawaz Ajmeri, a famous Peer of Ajmer, blessing the Prime
Minister of India with all power, strength and ability to fulfil the pledge of "Garibi Hatao." The President thanked Pt. Kapileswari.

Concluding Function

Bringing to close the proceedings of the Experts' Committee of the 46th Conference, the President of the Conference said that that year's Conference was a memorable one. It had been one of the longest sessions held so far. A large number of musicians and musicologists from different parts of the country had participated, and the subjects dealt with had been both varied and interesting. He thanked all the participants and the office-bearers of the Academy for having brought the Conference to a successful close.

Condolence

Sri T. V. Rajagopalan, Secretary, then referred to the following who had passed away since the last Conference: Vidvan Papa Venkataramaiah, Tirrupparkadal Srinivasa Iyengar, Sri Rajaji, Ustad Alladin Khan and Hafiz Ali Khan, and the audience paid their respects to the memory of the departed by standing in silence for two minutes.

Vote of Thanks

Sri T. V. Rajagopalan then thanked all the musicians and scholars who had participated in the discussions, those from South India, North India and the United States, the President of India who inaugurated the 46th Conference and the Conference President and the President of the Sadas. He expressed the thanks of the Academy to the Central Sangeet Natak Akademi for their grants to encourage junior musicians and the Experts' Committee meetings and the publications of the Academy and the Hindustani performances. He thanked Pt. Vishnu Digambar and Abdul Karim Khan Birth Centenary Committees, Bombay and the Pt. Omkarnath Foundation, Banaras. He thanked also the University of Delhi and the Banaras Hindu University for deputing Delegates. He thanked the different departments of the Government of Tamil Nadu, the Corporation of Madras, the All-India Radio, and the Press, Patrons, Donors and other members of the Academy who had assisted in the conduct of the Conference and the Competitions. During these sessions several vidvans had acted as Judges and prizes had been endowed by Donors for the successful candidates. To all of them he tendered the thanks of the Academy. He thanked also the members of the
different sub-committees of the Conference, the Secretaries, the Convener of the Trust Board and the Social Service Unit, Madras who lent their volunteers for assistance.

Vidvan Sri V. V. Sathagopan sang the Mangalam.

The Conference then came to a close with a group-photo of the Members of the Experts' Committee and others who had participated in the Conference.

The Sadas

The Sadas (Convocation) of the 46th Conference was held in the Auditorium of the Academy on 3rd January, 1973 at 4-00 P.M. with Sangita Kalanidhi Sri Chembai Vaidyanatha Bhagavatar presiding. The Sadas began with an invocation song by Vidvan K. V. Narayanaswami, after which the Secretary, S. Natarajan, read the formula convoking the Sadas.

Messages received, after the inaugural function, for the success of the Conference and for the Sadas were then read by Sri R. Ranganathan, Secretary.

The Governor of Gujarat, Sri Sriman Narain, the Governor of Meghalaya, Sri B. K. Nehru, the Hon'ble Prof. Nurul Hasan, Minister of Education, New Delhi, the Chief Minister of Madhya Pradesh, Sri P. C. Sethi, the Chief Minister of Kerala, Sri Achyuta Menon, had sent their messages.

The Secretary, Central Sangeet Natak Akademi, had sent a message.

The Society for Asian Music and its President Prof. Willard Rhodes who had been with the Academy a few years back, Dr. Mantle Hood, Director, Institute of Ethnomusicology, University of California, Los Angeles, the Director of the Rumanian Institute for Cultural Relations, Bucharest, Sri C. V. Narasimhan, United Nations, and Carnatic musicians in U.S., T. Ranganathan and T. Viswanathan had sent messages.

The Nanganallur Arts Academy, the Venu Gana Sabha, Madras, and Krishna Music School, Perambur had sent best wishes and their congratulations to the recipients of the awards.

Vidvan Aripirala Satyanarayana Murthy, Vijayawada, Member of the Experts' Committee, had sent his good wishes.
Welcome

Sri T. S. Rajam, President of the Academy, then welcomed the Sadasyas who were gathered for the important function over which they had requested their senior-most Vidwan, Sangita Kalanidhi Sri Chembai Vaidyanatha Bhagavat, who had been President of the Academy's Conference in 1951, to preside. He brought to the function his blessing not only from his own maturity as the oldest musician but also from his great devotion to Guruvayur Appan. Sri T. S. Rajam then paid tribute to the services of Prof. P. Sambamoorthy, extending over a life-time, to the cause of music education. Other musicians were being given the Certificates of Merit at the Sadas and various prizes were also to be awarded. He requested Vidvan Chembai Vaidyanatha Bhagavat to preside and conduct the Sadas.

Sangita Kalanidhi Sri Mudicondan Venkatarama Iyer then presented Prof. P. Sambamoorthy, President of the Conference, and read the following Citation:

The Citation

Prof. P. Sambamoorthy

Born on 14th February 1901 as the third son of Sri Pichu Iyer at Bitragunta; came of a family belonging to Tiruppunturutti and Varahur, Tanjore Dt., his sixth ancestor Ghanam Tirumala Iyer, having been a court-musician of King Serfoji of Tanjore; married Anandavalli, cousin of Vidvan Sabhesa Iyer, who later collaborated in his music research and publications; learnt his first lessons in music on Violin from Boddu Krishniah, son of Boddu Sundariah, pupil of Tatchur Singaracharlu, his vocal training under Vidvan Manatatattai Doraiswami Iyer of the Tyagaraja-Sishyaparamparā and also from Tiruvorriyur S. A. Ramaswami Iyer and Ramaswami
Bhagavatar of the Umayalpuram and Walajapet traditions; entered the Madras Education Service in 1928 as Lecturer in Music in Queen Mary's College in 1931; went to Munich to study Western music and comparative music; was Lecturer and Reader in Music at the University of Madras from 1937 to 1961, Director of Sangita Vadyalaya from 1961 to 1964, Professor of Musicology at the S. V. University, Tirupati from 1964 to 1966; returned to the University of Madras under the U. G. C. Scheme; has been connected with almost all the Universities of South India and at Banaras and Delhi in the organisation of their Music departments; has written 50 books; was honoured by H. H. Sankaracharya of Kamakoti Pitha with the title 'Gita-Vadya-Vinoda' and by the President of India with 'Padmabhushan'; has been a pioneer and most active promoter of music education and pedagogy in South India.

The President of the Sadas then read the form and conferred the title of Sangita Kalanidhi on Professor P. Sambamoorthy, and presented to him the Diploma and Insignia relating to that honour.

Certificates of Merit

Sri V. V. Narasimbachariar of Kakinada was then presented by Vidwan Sandhyavandanam Srinivasa Rao with the following Citation:

Sri V. V. Narasimbachariar

Born on 8th June, 1898; learnt music from D. Subrahmanya-garu, pupil of Tatchur Singaracharulu; made a study of Sanskrit texts on music, printed and in manuscript; has been connected with the Music Academy from its beginnings in the 1927 Conference and is one of the oldest members of the Experts' Committee of the Academy; was responsible for organising and conducting the Saraswati Gana Sabha in Kakinada; author of papers and books on the 22 Srutis, Tala, Pallavi and the lives of the composers; has been honoured by the Telugu Bhasha Samiti with a prize for his book 'Evolution of
Carnatic Music"; has been engaged on a Telugu version of the Divya Prabandham of the Alwars.

The President then conferred upon him the Certificate of Merit in recognition of his long association with the Academy and his service to the cause of music.

Sri T. V. Rajagopalan, Secretary, then presented Sri Turaiyur Rajagopala Sarma and read the following Citation:

Vidwan Turaiyur Sri Rajagopala Sarma

Born on 21st November, 1905 at Turaiyur, Trichy District; son of Mahadeva Sastrigal, a Sanskrit scholar and Harikatha exponent; learnt music from Pallavi Namakkal Narasimha Iyengar at Srirangam and also learnt Harikatha from his father in his younger age; after finishing S.S.L.C., came to Madras in 1927 for appointment in the Madras Secretariat; was the first person to receive in 1932 the Diploma in Music in the Music Academy's Teachers' College of Music, when Tiger Varadacharir was the Principal; also got in 1934 the Diploma with distinction in the University of Madras when Tiger Varadacharir was the Head of the Department of Music there; was giving musical performances during the above period; had assisted the late C. R. Srinivasa Iyengar in publishing the Tyagaraja Kritis in the Swadesamitran Weekly for several years, the Gita Govindam in notation etc.; was Music Director in the Gramaphone Company from 1934 to 1958 and had himself given several gramophone records; had been for some time Director of Music for some popular films; has since been an Instructor in Music in Kalakshetra, assisting them also with music-settings for their dance-dramas.

The President of the Sadas conferred upon him the Certificate of Merit.
Vidwan Devakottai Sri Narayana Iyengar presented Vinai Vidwan Sri M. K. Kalyanakrishna Bhagavatar and read the following Citation:

**Vidwan M. K. Kalyanakrishna Bhagavatar**

Born in May 1908 at Manjapparai in Palghat, as son of Krishna Iyer; belongs to a family devoted to music for five generations and associated with Travancore Palace; learnt his lessons from his father; has been noted for his exposition of Ragam and Tanam in the accepted traditional style.

The President of the Sadas conferred upon him the Certificate of Merit.

Vidwan Tiruvizhimizhalai Natarajasundaram then presented Mridanga Vidwan Sri Murugabhupati and read the following Citation:

**Vidwan C. S. Murugabhupati**

Born in 1914 in Ramnad as the fourth son of Mridanga Vidvan Chitsabai Servai, pupil of Manpoondia Pillai; learnt his Mridangam from his father; had some general education; had further lessons in music from his own elder brother Sri Sankara Sivam, pupil of Sri L. Muthiah Bhagavatar; has accompanied all the leading Vidvans and is noted for his subdued playing as befitting the laya accompaniment,
The President of the Sadas conferred upon him the Certificate of Merit.

Representatives of City Music Schools and Sabhas then garlanded Prof. P. Sambamoorthy. The recipients of the Awards were then felicitated by Messrs K. Chandrasekharan, Dr. Pinakapani and Dr. William Skelton of U. S. Prof. P. Sambamoorthy and other musicains who were honoured, replied to the felicitations, Prof. P. Sambamoorthy referred to the great services which the Music Academy had rendered and its unbroken and distinguished record of work and expressed his deep appreciation of the honour done to him. Prof. P. Sambamoorthy suggested that the Teachers' College of Music of the Academy be raised in status to that of a regular University Institution and referred to the proposal of the Central Ministry of Education in that regard. He suggested that the back volumes of the Music Academy Journal which contained materials of permanent value should be re-printed and that the Music Instrument Centre (Sangita Vadyalaya) should be given to the Music Academy. He referred to the Endowment Lecture under which he was invited to speak during the Conference and said that more such endowment lectures should be instituted in the Academy. Research work in music should also be further developed.

Special Awards

Dr. V. Raghavan then introduced the winners of the awards for meritorious performances in the afternoon series for the encouragement of rising talent. The President of the Sadas made the Awards to the young musicians (See list below).

Competitions

Sri P. S. Ramachandran, Member of the Executive Committee, then introduced the winners in the various competitions held during the 46th Conference and the President of the Sadas gave away the Prizes (See list below).
Teachers’ College

Dr. V. Raghavan, Correspondent, Teachers’ College of Music, then introduced the candidates who had passed out of the College and the President gave away the Diplomas to them.

President’s Speech

Sangita Kalanidhi Sri Chembai Vaidyanatha Bhagavatar then spoke and conveyed his blessings to Prof. P. Sambamoorthy and other musicians who had received honour at the Sadas of the 46th Conference and praised the services done by the Academy.
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Vairamangalam Lakshminarayanan
B. Krishnamurthi
Dwaram Satyanarayana
Subash Chandran
P. K. Ambika Devi
Gowri Kuppuswamy
Anayampatti Ganesan
G. Seethalakshmi
R. Venkataraman
T. V. Pichukutti
V. L. Swarnalatha
VENKAṬAMAKHIN’S SEVENTY-TWO MELA-SCHÉME AND MORE POSSIBLE SCALES

Dr. T. S. Ramakrishnan

I must first pay my respects to Śrī Subbārama Dīkṣitār, whom I consider as my Parama Guru. He is the author of the monumental and most valuable work on music, Sangītā Sampradāya Pradārṣini, from which treatise I have imbibed all my knowledge about the great Venkaṭamakhin, the founder of our Classical Carnatic music and music as practised by the Dīkṣitār School, strictly following Venkaṭamakhin’s tradition.

I must also mention Mr. A. M. Chinnaswami Mudaliar, M.A., to whom the music world owes a deep debt of gratitude, but for whose persistent efforts, munificence and great personal sacrifice, the Sangītā Sampradāya Pradārṣini would not have been written.

I. Introduction:

Venkaṭamakhin, the most important figure in the history of our Classical Carnatic Music, flourished in Tanjore during the reign of Vijayarāghava Naik (1633–73), the last of the four Naik Kings of Tanjore.

Tanjore had already reached the zenith of its glory as a model Hindu kingdom under the reign of his father, the previous King, Raghunātha Naik, described by historians as a second Bhoja or a second Krishnadevarāya, ably guided by the famous Govinda Dīkṣitār, a smārta Karnāṭaka brahmin of Vijayanagar, the founder of the Naik kingdom in Tanjore, a profound scholar and author of Sangītasudhānandhi, a laksāṇa treatise on music dedicated to King Raghunātha Naik, who was himself a great warrior, a scholar, a musician, an author of several literary works and a patron of men of arts and letters who adorned his court.

II. (1) Venkaṭamakhin was the second son of Govinda Dīkṣitār (and his wife Nāgāmbikā), whom he describes as “Śaṅkaramuni-matapratihatāpana-kovidu”. His elder brother was Yajña-
nārāyaṇa Dīkṣita, also a great scholar and well versed in the art of music, but died quite young even during the reign of Raghunātha Naik.

Venkaṭamakhin was at first the disciple of his elder brother, but later underwent tutelage in advanced music (both laksana and lakṣya) under the great musician and scholar of the period from the North (Vijayanagar), Tānappārya by name (son of Honnappa alias Venkaṭamātya or mantri), specially brought to Tanjore by his father for the purpose. Venkaṭamakhin learnt from Tānappārya the laksana and lakṣya margas of music and all the rāgas (Classical) in vogue and as practised during the period in all its details. Venkaṭamakhin thus became a master musician, a composer, a genius in the art of music and the leading figure among those who were patronised in Tanjore Court.

(2) Venkaṭamakhin studied all the available works on music, both ancient and contemporary. He studied Śāṅgadeva’s Sangītaratnākara (13th century), Rāmāmātya’s Svaramelakalanidhi (1550), Kallinātha’s Kalanidhi (1553), considered as an important and valuable commentary on Sangītaratnākara, and other important works. He studied them all with great scrutiny, gathered all available details pertaining to the science and art of music and analysed the knowledge so gathered. He found many discrepancies in Rāmāmātya’s work and points them out with caustic remarks in his own Caturdāṇḍiprakāśika, the most monumental laksana treatise on music ever written, which he specially undertook to write at the request and desire of his patron, King Vijayarāghava Naik, to whom he dedicated the work.

III. Caturdāṇḍiprakāśika:

In this treatise Venkaṭamakhin discusses music under ten chapters as follows:

(1) Vīṇā (2) Śruti (3) Svara (4) Mela (5) Rāga (6) Ālāpa (7) Ṭhāya (8) Gita (9) Prabandha and (10) Tala.

Among these, the four topics (1) Gita (2) Rāga (3) Ṭhāya and (4) Prabandha formed the four Daṇḍis of practical music and hence the title of the work.
Although Gita, like Prabandha, was a musical composition, Venkatamakhin argues in favour of treating it as a separate and first Dandi, since in his days, Gita was considered as the prime official standard form of a classical musical composition.

IV. Besides the classical lakṣaṇa treatises mentioned above, Venkatamakhin had the following vast material pertaining to music for additional scrutiny and use in his treatise:

(1) The 54 rāgas and lakṣyās in the same which he had learnt from his teacher, Tānappārya. These 54 rāgas were all well established classical moulds of melody practised from very ancient times perhaps the only ones retrieved by the then musicians from a large former list of rāgas, almost completely lost during the dark periods of history for want of proper royal patronage. These 54 rāgas included what were known and considered as the 18 pūrva melas (observe the term mela) which were considered to be of a higher status than the rest, all of quite ancient origin and in practice from time immemorial.

Venkatamakhin particularly noted the fact that none of these so-called Pūrva melas (and even the remaining rāgas in the list) were mere scales (Saptakas), their individual Rāga-picture had to be developed as from their individual, already well-established definite mūrchanās or melody-mould formulas prescribed for them even during ancient times. He also found that several of the melas, not only allowed Vivādi-doṣa-prayogas, but also permitted the use of alien svaras not true to the mela, in particular sanchāras, which thereby gave them Bhāṣāṅga-hues.

(2) In addition to the above 54 classical Rāgas, Venkatamakhin had also to examine the then prevalent, popular and rakti rāgas of South India, also already in vogue from ancient times and which he called Deśī Rāgas.

V. Result of his Analysis:

Having examined all the above material and analysed the various musical sounds (svaras) occurring in the register of the 12 svarasthānas in the interval of one octave (sthāyi), Venkatamakhin finally evolved his system of 16 svaras (7 prakṛti or
$\text{Suddha}$+9 $\text{Vikrti}$) of the octave-interval which are described below:—

In accordance to the traditional concept that among the varieties of the variable svaras, $\text{Rsabha}$, $\text{Gndhara}$, $\text{Madhyama}$, $\text{Dhaivata}$ and $\text{Ni}^\text{Sda}$, the lowest in pitch (the bassest or flattest) variety was to be considered as the $\text{suddha svara}$, Venka$\text{t}amakhin wrote these $\text{suddha svaras}$, distributing the 22 $\text{srutis}$ of the $\text{sth}^\text{ayi}$ among them, also as traditionally prescribed, as under:—

The seven $\text{suddha svarak\text{\textsharar}}$s to end in the first vowel A:—


\[
\begin{array}{c|c}
\text{svarak\text{\textsharars}} & 1 & 2 & 3 & 4 & 5 & 6 & 7 \\
\text{srutis allotted} & \text{Sa} & \text{Ra} & \text{Ga} & \text{Ma} & \text{Pa} & \text{Dha} & \text{Na} \\
\end{array}
\]

He next wrote the 9 $\text{vikrti svaras}$, their svarak\text{\textsharars} ending in the next vowels in accordance to their increasing acuteness of pitch as under:

- Two vikritis of $\text{Ra}$ — $\text{Ri}$ and $\text{Ru}$
- Two vikritis of $\text{Ga}$ — $\text{Gi}$ and $\text{Gu}$
- One vikriti of $\text{Ma}$ — $\text{Mi}$
- Two vikritis of $\text{Dha}$ — $\text{Dhi}$ and $\text{Dhu}$
- Two vikritis of $\text{Na}$ — $\text{Ni}$ and $\text{Nu}$

The above 7 $\text{suddha svaras}$ and 9 $\text{vikrti svaras}$ are shown tabulated among the 12 svarasthānas of the $\text{sth}^\text{ayi}$ as under:—

\[
\begin{array}{c|c}
\text{Svarasthānas}: & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 & 11 & 12 \\
\text{Svaras}: & \{ \text{Ra} & \text{Ri} & \text{Ru} & \text{Gu} & \text{Ma} & \text{Mi} & \text{Pa} & \text{Dha} & \text{Dhi} & \text{Dhu} & \text{Nu} & \text{Sa} \} & \{ \text{Ga} & \text{Gi} & \text{Na} & \text{Ni} \} \\
\end{array}
\]

In the above table it will be seen that the four pairs of svaras $\text{Ri}$, $\text{Ga}$; $\text{Ru}$, $\text{Gi}$; $\text{Dhi}$, $\text{Na}$; $\text{Dhu}$, $\text{Ni}$ occur respectively on the same svarasthānas and hence the two svaras in each group are identical and thereby explain how Venka$\text{t}amakhin obtained 16 svaras in all in the octave of 12 svarasthānas.

(Note:—In table (A) S'uddha Gāndhāra will be seen to have a Pañca-sruti value and in table (B) Ri, the first vikriti of Ra,
being identical with Ga on the same svarasthāna, had also to be named Pañca-śruti Rṣabha. But this Pañca-śruti Rṣabha Ri is traditionally considered as and also called Cauśṭruti Rṣabha. Venkaṭamakhin explains this anomaly by declaring that Cauśṭruti Rṣabha was the same as Trisṛuti (Śuddha) Rṣabha and the latter became Cauśṭruti when considered along with the Cyuta Sādja getting augmented by a śruti thereby. Similarly, in the case of Pañca-śruti Dhaivata and Cauśṭruti Dhaivata in the uttarāṇga, the latter considered along with Cyuta Pañcama, being the same as Trisṛuti (Śuddha) Dhaivata, but augmented by a śruti of Pañcama.

VI. Venkaṭamakhin’s 72 mela-scheme:—

(A) On the basis of the results obtained by him as described above Venkaṭamakhin, by the simple process of mathematical permutation, coined his famous 72 mela-scheme—each mela to be a saptaka or scale of all the sapta svaras, the 7 svaras to be selected from the 16 svaras occurring in the sthāyi of 12 svarasthānas.

The different permutations he obtained were (12) —

Six, in the Pūrvāṇa (lower tetrachord) Sa to Ma—
Ra, Ga; Ra, Gi; Ra, Gu; Ri, Gi; Ri, Gu; and Ru, Gu; and
Six, similarly in Uttarāṇa (upper tetrachord) Pa to Sa—
Dha, Na; Dha, Ni; Dha, Nu; Dhi, Ni; Dhi, Nu; and Dhu, Nu.

Venkaṭamakhin tabulated by completing scales, saptakas, from the aboye combinations and obtained his 72 melas which he arranged under 12 cakras, each cakra including 6 melas, all the six taking the same group of Rṣabha and Gāndhāra but choosing the 6 groups, in the uttarāṇa of Dhaivata and Niṣāda, one for each mela in that cakra. There were thus 6 cakras with Śuddha-mādhyama (ma), yielding the 36 pūrva melas and the other 6 cakras with the same order of combinations, but taking Pṛativāmśa-mādhyama (mi) in place of Śuddha-mādhyama, yielding the 36 uttara melas and totalling to 72 melas.

(B) Venkaṭamakhin next named these cakras in such a manner that one could easily infer the rank of a cakra from its name; and he chose 6 katapayādi syllables to denote the ranks of the melas in each cakra.

M—9
(a) The 12 names assigned for the 12 cakras, each cakra of 6 melas, having the same purvanga Rśabha, Gandhāra svara-combinations are:

First six with *Suddha madhyama* (ma)

(1) Ra, Ga *Indu*; (2) Ra, Gi: *Netra*; (3) Ra, Gu: *Agni*; (4) Ri, Gi: *Veda*; (5) Ri, Gu: *Bāṇa*; (6) Ru, Gu: *Rtu*; and the next six with Pratimadhyama (mi):

(7) Ra, Ga: *Rṣi*; (8) Ra, gi: *Vasu*; (9) Ra, Gu: *Brahma*; (10) Ri, Gi: *Diśi*; (11) Ri, Gu: *Rudra*; and (12) Ru, Gu: *Āditya*.

(b) The *Katapayādi* syllables chosen to denote the rank of the 6 melas in each cakra according to the different Dhaivata and Niśada groups in their uttarāṅga are:


(C) Venkaṭamakhin particularly noted that these 72 melas coined by him were mathematically derived scales and as considered from ancient times, most of them as mere scales could not be developed into melodic forms with individual Rāga-picture. This was especially the case with the scales having pairs of svaras with Vivādi doṣa such as Ra, Ga; Ru, Gu; Dha, Na; and Dhu, Nu. He also noted that even the scales without such vivādi doṣa could be developed into melodic rāgas only through specially chosen or prescribed *svaras-saṅcāras* of particular patterns which differed in different rāgas. It was for this important reason that Venkaṭamakhin did not name the scales, but instead he classified them under 12 cakras of 6 melas each, giving code-names and *kaṭapayādi* syllables as mentioned above.

VII. *Rāgāṅga Rāgas*: (Āri, Ambari, Manjari-system)

As a next step Venkaṭamakhin evolved suitable *mūrchanās* (melodic mould formulas), as was the practice from ancient times, for all his 72 melas and which, when developed satisfactorily, moulded into highly melodic forms of Rāgas, at the same time each taking all the seven svaras of their respective scales and true to that scale. Several of his melas which included the *pūrva melas* and
other important famous popular rakāti rāgas in vogue during his period with their already well-defined mūrchanās, he retained in his scheme under their respective scales. Several of these included rāgas (scales) with vivādi doṣa pairs of svaras (7 in number among the total 42 vivādi doṣa melas in his scheme). Venkataśaṅkhaṅin defined these melodic forms of rāgas with their mūrchanās evolved by him to represent the different scales as the Rāgāṅga Rāgas.

It was for these Rāgāṅga rāgas (not for the mere scales) that Venkataśaṅkhaṅin coined suitable names ingeniously in such a way that from the first two (kaṭapayādī) syllables of the names assigned, the rank of the Rāgāṅga rāga in the 72 mela-scheme could be immediately inferred by the kaṭapayādī formula. In some cases he had to prefix for the purpose two suitable kaṭapayādī syllables to the names chosen.

Venkataśaṅkhaṅin has two Rāgāṅga rāgas for the same first mela. Mukhaṅri (the first of the 18 pūrva melas) and Kanakāmbhari and two lākṣaṇa gitas one for each, the two together defining the lākṣaṇa. The last 72nd mela Rāgāṅga rāga was named as Rasamanjari, Hence his Rāgāṅga Rāga system can be described as ārī, ambarī, manjari-system.

VIII. I shall now discuss in detail the names of the 18 pūrva melas already in vogue before Venkataśaṅkhaṅin evolved his 72 mela-scheme, in the order in which they would occur in his scheme and the new names given by him differently in some cases and the reason for the same:

(kaṭapayādī syllables are underlined)

1. Mukhaṅri: 1st mela: named as Kanakāmbhari (modern 1st melakarta—Kanakaṅgi): a scale taking all śuddha svaras. Venkataśaṅkhaṅin has two lākṣaṇa gitas for this mela, one for this Kanakāmbhari with the Śūtra khaṇḍa, and in the Ābhoga khaṇḍa, only the name of the Rāgāṅga rāga and its cakra-name with the kaṭapayādī syllables are mentioned; and the other gita for Mukhaṅri rāga, also named as a Rāgāṅga rāga for this first mela with an Upānga khaṇḍa giving the name of an upānga janya rāga. Thus there are two Rāgāṅga rāgas with their two gitas, which together define the lākṣaṇa of this mela.
2. **Samavarāli**: 3rd mela: Name retained with the two kaṭapayādi syllables Ga, Na prefixed. This mela is said to have been derived from the Sāma Veda itself. The counterpart Rāgāṅga Rāga for this, with Pratimadhyama (mi) in place of Šuddhamadhyama (ma), is the 39th mela, also a Varāli, very popular and a famous ghana rāga from ancient times.

3. **Bhūpāli**: 8th mela: A well-known ancient auḍava rāga, one among the 18 pūrva melas. Venkaṭamakhin named this 8th mela as Janatoḍi, which Toḍi (known as Bhairavi in the North) was just coming into vogue from the North and became a popular rakti rāga even during his period, and hence named by Venkaṭamakhin as an auttara rāga. Venkaṭamakhin includes this Bhūpāli pūrva mela under the next (9th mela) as an Upānga janya rāga. Also the Bhāṣāṅga janya rāgas Dhanyāsi, Āhiri, Ghaṇṭā are all included by him in the 20th mela.

4. **Hejjujji**: 13th mela: Name retained with the two kaṭapayādi prefix syllables Ge, ya.

5. **Vasantabhairavī**: 14th mela: Name retained with the two kaṭapayādi prefix syllables Va, ṭī.

6. **Gauḷa**: 15th mela: Considered as a mela, one of the 18 pūrva melas, an important ghana rāga. Was it a saptaka in his days? Venkaṭamakhin named this Rāgāṅga rāga as Maya-māḷavagauḷa (Māya = Haridvār, Gauḷa = Bengal), a parent rāga to a large number of both Upānga and Bhāṣāṅga janya rāgas.

(a) There was already a rāga in vogue by name Māḷavagauḷa, but it is doubtful whether it was the same as this 15th mela, due to the fact that all the various Gauḷas, according to Venkaṭamakhin, had Niṣāḍa as their graha-svara, whereas he mentions shadja as graha-svara for this Maya-māḷavagauḷa Rāgāṅga rāga.

(b) **Nādaramakriya**: A popular rakti rāga from quite ancient times taking all the 7 svaras of this 15th mela true to the scale could have more aptly represented this 15th Mela Rāgāṅga rāga. (Śuddharāmakriya, 51st mela, (also a Rāmakriya) is the counterpart of Nādarāmakriya in the uttara melas taking Pratimadhyama in the place of Sudhamadhyama).
(c) Purandaradāsa is believed to have planned svarāvali and other preliminary exercises for the beginners in this 15th mela (scale). But even he did not handle this rāga Māyāmālavagaula for any of his large number of compositions (Padagalu). The two gītas “Kerayaniranu” and “Padumanābha,” composed by him for beginners are in Malahari rāga and not in its parent rāga Māyāmālavagaula (15th mela).

(d) Venkaṭamakhin has a lakṣaṇa gīta for the Bhaṣāṅga janya rāga under this 15th meḷa, Saurāshṭra, with the Sutra khaṇḍa revealing in its maṭu the seven svaras of this 15th mela and Sṛī Subbarāma Dikshitar has kindly marked the alien svaras Dhi and Ni, wherever they occur in the composition, to enable us to know the Bhaṣāṅga feature of this Saurāshtra rāga.

(e) After Venkaṭamakhin’s lakṣaṇa gīta for this Rāgāṅga rāga, we find Māyāmālavagaula for the first time handled by Sṛī Rāmaśwāmi Dikshitar for one of the caraṇas in his famous 108 Tāla-rāgamalikā. The next composition in this rāga is perhaps the first of the Guruguha Vibhakti Kritis of Sṛī Mūthuswāmi Dikshitar, “Śrī-nāṭhādi-guruguho jayati”, his very first composition.

7. Bhairavi: 20th meḷa: Though one of the most important of the Pūrva melas, being a Bhaṣāṅga rāga (Panca-śruti Dhaivata, Dhi, occurring as an alien svara in a few saṅcāras), is not qualified to be classed as a Rāgāṅga rāga. Venkaṭamakhin chose Ritigaula (already a popular ghana rāga) as the Rāgāṅga rāga to represent this 20th meḷa, with the kaṭapayādi prefix syllables Na, ri added to the name.

(a) It is surprising to note that the present-day vidvāns use in this rāga in all its uttārāṅga-passages exclusively Paṅca-śruti Dhaivata, Dhi, giving a pronounced Bhaṣāṅga hue to the rāga, in spite of the fact that this rāga takes Šuddha Dhaivata as per all Lakṣaṇa treatises, including Govinda’s Sangrahacudāmaṇī, a treatise said to be followed in the present day.

(b) Venkaṭamakhin, in addition to his lakṣaṇa gīta for this Rāgāṅga rāga Nāri-rittigaula, has an extra lakṣaṇa gīta for Bhairavi rāga as well, considering its importance, with Sutra khaṇḍa revealing
as usual in its mātu the sapta svaras of the 20th mela, but the rāga mentioned as Bhāṣāṅga at the end of the Ābhoga khaṇḍa of the gīta.

8. Āhiri: 21st mela: Like the previous Bhairavi, this Āhiri, also being a Bhāṣāṅga rāga, is not qualified to be considered as a Rāgāṅga rāga. Venkataṭamakhin coined the name Kira-ṇāvaḷi for this Rāgāṅga rāga of the 21st mela, ki and ra being the two necessary kaṭapayādi syllables occurring in the name itself. Venkataṭamakhin has a lakaṇa gīta also for the rāga Āhiri with its Sūtra khaṇḍa revealing in its mātu the 21st mela-svaras and the rāga is called Bhāṣāṅga in the Ābhoga khaṇḍa. Venkataṭamakhin has included this Āhiri rāga as a Bhāṣāṅga janya rāga under the 20th mela, in the Bhāṣāṅga khaṇḍa of the lakaṇa gīta of the 20th mela Rāgāṅga rāga Nārīritigaula.

9. Śrirāga: 22nd Mela: An important pūrva mela and a ghana rāga. Name retained with the first two kaṭapayādi syllables Śrī, rá in the name itself.

The rāga Kāpi, a rakti rāga, would have been perhaps more apt as the Rāgāṅga rāga for this 22nd mela, but it had a slight Bhāṣāṅga tinge and hence could not represent this mela. Even before Venkataṭamakhin’s days this rāga Kāpi, being really the same as our present-day popular and major rāga Kharaharapriya, had migrated to the North, where it was considered a mela (Thāt) in their system of music. Later it came back to us with its Northern hue as our modern Kāpi (with an intermediate stage as our Rudrapriya; —it may be noted that Rudrapriya is Harapriya) with pronounced Bhāṣāṅga features. Venkataṭamakhin has a lakaṇa gīta for this rāga Kāpi, which when rendered, sounds entirely as our present-day mela rāga Kharaharapriya with no difference whatever in its rāga-picture. Venkataṭamakhin considered this Kāpi as a Bhāṣāṅga janya rāga under the 22nd mela and has given its name accordingly in the Bhāṣāṅga khaṇḍa of the lakaṇa gīta for the Rāgāṅga rāga Śrirāga.

10. Kāmbhoji: 28th mela: A major rakti rāga, but being a Bhāṣāṅga rāga with an occasional alien svara Kākali Niṣāda, Nu, in a particular saṅcāra, Venkataṭamakhin chose Kedāragaula, also a major rakti rāga, with Ha-ri as the kaṭapayādi prefix syllables, as the Rāgāṅga rāga for this 28th mela.
(a) *Kambhoji* being famous from ancient times is also consi­dered a mela (Thāṭ) in the North Indian system, but called there as *Khammāj*, which, with a modified hue, has come back to us as our popular rakti rāga *Kamatā*, and which originally had entirely the picture of our present-day 28th mela rāga Hari­kambhoji, but a more pronounced orthodox melodic form.

(b) Venkaṭamakhin has a lakṣaṇa gīta for this important pūrva mela Kambhoji, also with its usual Sūtra khaṇḍa revealing in its matu the 28th mela-svaras and at the end, the rāga being called Bhāṣāṅga.

11. Śankarābharana: 29th mela: Name retained with Dhi-ra as the two kaṭapayādi prefix syllables. Svaras of this mela are considered as Suddha in the North Indian system and as those of the natural scale, the scale of just intonation or the Major scale of occidental music.

12. Śāmanta: 30th mela: Though Śāmanta is a regular saptakā scale Venkaṭamakhin named the Rāgāṅga rāga for this mela as Nāgābharana, the first two syllables in the name itself satisfying the kaṭapayādi formula. Also Venkaṭamakhin considered the rāga-pictures of 29th and 30th melas very similar and hence probably gave them names having the same meaning.

13. Deśākṣi: 35th mela: (also known as Śūlint). Name retained as Śailadesākṣi, with Śai-la as the two kaṭapayādi prefix syllables.

14. Nāṭa: 36th mela: Name retained with ca, la as the two kaṭapayādi prefix syllables. This is a very ancient and important ghana rāga with vivādi doṣa-feature in both purvāṅga and uttarāṅga, the same avoided through a highly melody-yielding formula, already in vogue and handled as a *first* auspicious rāga. All the compositions available from ancient times, including Tyāgarāja’s famous first Paṇčaratna Kriti, “Jagadānandaṅkāraka,” have their respective dhatus in strict accordance to the prescribed melodic mould, mūrchanā, and not wildly indulging in passages with the vivādi-svaras, and the same ancient formula retained by Venkaṭamakhin for this Rāgāṅga rāga Calanāṭa.

15. Śuddhavarāli: 39th mela: Also a very ancient and one of the most important melas with vivādi doṣa in its purvāṅga and a
ghanā rāgā, and practised in accordance to the prescribed mūrchana and not as a mere scale with the vivādi-svaras. The name Varsli retained for this Rāgānga rāgā with the two Dha, li, kaṭapayādi prefix syllables. As already mentioned the 3rd meḷa Rāgānga rāgā Gāna-sāmavarāḷī is its counterpart with Suddha-madhyama (ma) in place of Pratimadhyama (mi).

16. Pantuvarāḷi: 45th meḷa: Name of this ancient rāgā retained with the kaṭapayādi prefix syllables Śai, va.

17. Suddharamakriya: 51st meḷa: Name retained with Ka, si, as the two kaṭapayādi prefix syllables. Its counterpart with Suddhamadhyama, as already stated, is Nāḍārāmakriya; both Rāmakriyās would have answered as the Rāgānga rāgā for the 15th meḷa.

18. Kalyāṇi: 65th meḷa: A meḷa already in vogue as a major rakti rāgā. Name retained with the two kaṭapayādi syllables Sa, nta. In the Northern system also this rāgā is considered a meḷa (Thāṭ) but named as Yemen, showing its origin from Arabia. This Yemen rāgā is mentioned in Venkatāmakhin’s lakṣaṇa gīta for this 65th meḷa, Śāntakalyāṇi, in its Bhaṣaṅga khāpaṇa as Imna-kalyāṇi, which name later became what we now know as Yamunā-kalyāṇi.

19. Simharava: 58th meḷa: This is not one of the pūrva melas, but was coined by Venkatāmakhin; name given with De, si as the kaṭapayādi prefix syllables.

(Note:-Among the pūrva melas those with vivādi doṣa are:—Suddha-mukhāri, Sāmavarāḷi, Hejjujī, Desākṣi, Naṭa and Suddhavarāḷi. We have seen that none of these 6 melas were considered as mere scales from time immemorial, but, when developed in accordance with the mūrchanaṇa prescribed for them by the ancients, they yield exquisite melodic forms.)

(B) For all the Rāgānga rāgas devised to represent the remaining melas, including those with vivādi doṣa, Venkatāmakhin coined suitable names with their respective kaṭapayādi syllables and suitable mūrchanaṇa for them, all well-known to us in the present day through Sangītasampradāya-pradarśini of Śrī Subbarāma Dikshitar and hence need no remarks. Venkatāmakhin considered the Rāgānaga rāgas devised by him as sampūrṇa (all
the seven svaras to occur) and classified them into four types according to their Ārohaṇa and Avarohaṇa in their mūrchanās as under:

(i) Sampūrṇa (ii) Śaḍava-sampūrṇa, e.g. 3rd mela; (iii) Auḍava-sampūrṇa, e.g. 1st mela; and (iv) Vakra-sampūrṇa, Ex. 10th mēla.

(C) Janya Rāgas :—

All the other innumerable (other than Rāgāṅga rāgas) Rāgas in vogue in his days were considered by Venkatamakhin as derived (Janya) from their respective Rāgāṅga (parent) rāgas according to the variety of svaras occurring in them. These janya rāgas were classified into two groups :—

(i) Upānga, those taking only the svaras of the parent mēla; (ii) Bhāṣāṅga, those taking in addition alien svara or svaras as prescribed in special saṅcāras.

Venkatamakhin declares that it may be possible to coin lakhs of more janya rāgas, but such rāgas are unfit for use in the rendering of Gītas, Ālāp, Thāya and Prabandhas.

IX. Venkatamakhin's Compositions :—

In order to illustrate his scheme of Rāgāṅga and their janya rāgas, particularly to show their individual melodic characteristic pictures, Venkatamakhin composed—

(1) Gītas : (a) Lakṣaṇa Gītas for all the Rāgāṅga rāgas and for a few important Bhāṣāṅga rāgas among the pūrva melas as well; and (b) Lakṣya Gītas for all the janya rāgas;

(2) Tānas : for all rāgas (Rāgāṅga and their janya rāgas);

(3) Prabandhas : 6 Prabandhas are given in Sangītasampradāya-pradarśini.

(A) Gītas : Venkatamakhin chose to compose gītas, since as already stated, the Gīta was considered in his days as the prime type of a classical composition, the first Daṇḍī.

In these Gītas : (1) Mātu : (sāhitya) : the language consists of words occurring in the various Prākritādi Bhāshās (forms of colloquial Sanskrit), all in praise of the various deities of kshetras in India, perhāps all
of them. In the Ābhoga khāṇḍa meaningless syllables like A-a Aiya, Tiya, Amvo, Iya, and Are, also occur.

(2) Dhātu: (musical setting): consists of 3 khaṇḍas (sections). When the section Antarī is present, it is sung at the end of both the khaṇḍas, Udgrāha and Ābhoga, and the gīta concluded with the Antarī section, as seen in many gītas. The Udgrāha khaṇḍa is again sung at the end of the Ābhoga khaṇḍa or Khāṇḍas and the piece is concluded at the Dhrūva (Nyāsa or pause) planned in it. In some gītas there is a second (extra) Ābhoga khaṇḍa as an Ankīta khaṇḍa. The Dhātus for the gītas (also for Prabandhas) are set only in the time-honoured traditional sapta ṭalas, in vogue from ancient times, with an extra Rāgaṇa maṭhya ṭala, which is merely an expanded form of the usual Maṭhya ṭala, with its angas as Guru, Laghu and Guru. His compositions in Eka ṭala can be rendered in Jhompāṭa ṭala, what is known at the present day as Ādi ṭala.

(B) Venkatamakhin’s Gītas include:

(1) A Rāgāṅga rāga Lakṣaṇa Gīta, revealing a complete list of the names of the 72 Rāgāṅga rāgas in its māṭu in their order in his scheme including kaṭapayādi syllables, with the names of the cakras in which they occur, the Dhātu of the piece set in the very ancient upāṅga rāga Guṇḍakriya, a janya of the 15th mēlā, Māyāmājavagauḍa.

(2) Lakṣaṇa Gītas for all the 72 Rāgāṅga rāgas (also for a few pūrva mēla rāgas considering their importance), all very ingeniously composed in strict accordance to prescribed lakṣaṇa and structural rules, with melodic features developed from their respective mūrchanās having for its angas:

(first) The Sūtra khaṇḍa (Udgrāha khaṇḍa), the māṭu of which reveals the variety of the svaras taken in their saptaka-order by the mēla as the first syllables (svarākṣaras) of the Dhātu Āvartas; and

(second) The Upāṅga khaṇḍa (Ābhoga khaṇḍa) furnishing in its māṭu, the name of the particular Rāgāṅga rāga, the name of the cakra in which it occurs and the kaṭapayādi code syllables to show its rank in the cakra, followed by a list of all the Upāṅga type of janya rāgas if any; and

(third) The Bhaṣāṅga khaṇḍa (a second Ābhoga khaṇḍa) where necessary, giving a list in its māṭu all the names of the Bhaṣāṅga type of janya rāgas of the mēla if any.
Note:— For the Laksana Gita of the 53rd mela, Gamakakriya, Rāgāṅga rāga, Venkatamakhin has given two separate mātus for the same dhātu. In the extra (second) mātu the Udgrāha khaṇḍa is not a Śūtra khaṇḍa and in its Ābhoga khaṇḍa, the name of the rāga is merely mentioned as Gamakakriya and not as a Rāgāṅga rāga—perhaps the gīta with this mātu was composed before he formulated his 72 mela-scheme.

(3) Venkaṭamakhin has also Laksana Gitas for:

(a) the pūrva meḷas (Bhāṣāṅga rāgas) Bhairavi, Āhiri and Khāmboji, respectively of 20th, 21st and 28th melas with Śūtra khaṇḍas revealing their respective svara-saptakas and mentioned as Bhāṣāṅga at the end of the Ābhoga khaṇḍa.

(b) The rāga Saurāshṭra with a Śūtra khaṇḍa revealing the saptaka svaras of the 15th mela in which it is a janya and mentioned as a Bhāṣāṅga janya rāga at the end of the Ābhoga khaṇḍa. Śrī Subbarama Dikshitar has marked the alien svaras Dhi and Ni occurring in this rāga.

(c) The rāga Sāranga: considering its importance as an extra mela, its Laksana gīta is discussed under a separate section below.

(4) Laksya Gītas for all the janya rāgas to reveal their individual Rāga-picture based on their prescribed mūrchanās, set in highly melodic dhātu as per prescribed structural rules, with its various khaṇḍas, in some, an extra Ābhoga Ankita khaṇḍa.

X. Maximum number of scales mathematically possible:

(From a clue in Venkaṭamakhin's Laksana Gīta for Sāranga Rāga)

(A) Sāranga Meḷa:

(1) Venkaṭamakhin mentions Sāranga rāga as a Bhāṣāṅga janya rāga of the 65th meḷa, Sāntakalyāṇi, but he omits the name Sāranga in the mātu of the Bhāṣāṅga khaṇḍa of his Laksana gīta for Sāntakalyāṇī. This must be because he considered Sāranga as a separate and extra mela rāga, that could not be included in his 72 mela-scheme,
(2) The Sūtra khaṇḍa of Sāranga rāga Lakṣaṇa gītā gives the seven svaras (saptakas) for the rāga as Sa, Ri, Ge, Mi, Pa, Dhu and Nu, in which the Ge is an extra vikriti of Gāndhāra, being the same as Suddha madhyama occurring in the Suddha madhyama svarasthāna. In his lakṣaṇa śloka for Sāranga rāga he calls this extra vikriti of Gāndhāra as Śuddha madhyama Gāndhāra. From this we can conjecture what Sāranga rāga was like in his days. It appears to be the same as Śuddha-sāranga in vogue in North Indian music at the present day and which is a saptaka, taking both Madhyamas (ma and mi) and both Niṣādas (Ni and Nu).

3. (a) Brindāvana Sāranga or Brindāvani (a Śaḍava, pratimadhyama omitted) and Madhyamādi Sāranga, the Surāga Madhyamāvati (an auḍava, with madhyama as graha svara—both Pratimadhyama and Kākali Niṣāda omitted) were both considered by Venkatamakhin as janya rāgas of this extra Sāranga mela, and he therefore included them both as Bhāṣāṅga janya rāgas of the 22nd mela and listed them in the Bhāṣāṅga khaṇḍa of Sriraga lakṣaṇa gītā.

(b) Some of our present-day artistes sing the auḍava janya rāga, Lavintika of the 23rd mela, Gaurīmanohari, taking the svaras Sa, Ri, Ma, Pa, Nu, Sa, wrongly calling it our Brindāvana Sāranga.

(c) Also among several possible janya rāgas (mentioned in present-day treatises under various melakartas) of this Sāranga mela, we can mention the quite familiar rāga Hamsanāda (given as a janya of 60th mela Nitimati). Even this rāga Hamsanāda is sung by some present-day artistes as an auḍava (omitting its Śaṭṭṛuti Niṣāda) which is really the rāga Varāta, a janya of the 59th mela according to present-day treatises.

(B) (1) (a) We thus see that Venkaṭamakhin had an extra Gāndhāra Ge called by him as Śuddha Madhyama Gāndhāra, (i.e.) a Gāndhāra in Śuddha Madhyama svarasthāna.

(b) As a corollary, the next lower svarasthāna Antara Gāndhāra may be similarly named as Antara Gāndhāra Rishabha, (i.e.) an extra vikriti of Rishabha and the same may be written as Re.

(c) In the same way we may have two additional varieties of Madhyama as well (Madhyama also being a variable svara in the
pūrvāṅga pentachord interval), viz: Śādhāraṇa Gāndhāra Madhyama (Ma), and Antara Gāndhāra Madhyama (Mi) and the already written Ma and Mi respectively for Śuddha Madhyama and Prati Madhyama being now written as Mu and Me.

(2) We thus obtain four varieties for each of Rishabha, Gāndhāra and Madhyama (more not mathematically possible), all occurring among the six svarasthānas of the pūrvāṅga between Sa and Pa, as tabled below:

<table>
<thead>
<tr>
<th>Pūrvāṅga or Pentachord</th>
<th>Six Svarasthānas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Sa</td>
<td>Ra Ri Ru Re — —</td>
</tr>
<tr>
<td></td>
<td>— Ga Gi Gu Ge —</td>
</tr>
<tr>
<td></td>
<td>— — Ma Mi Mu Me</td>
</tr>
<tr>
<td>Pa</td>
<td></td>
</tr>
</tbody>
</table>

In this table the distribution of the variable svaras and their varieties will be seen to be quite complete, and they are:

7 śuddha svaras + 13 vikriti-svaras-in all 20 svaras.

It will be clear now that we can derive 20 permutation groups, the maximum number mathematically possible, each having a Rishabha, a Gāndhāra and a Madhyama. These twenty groups are as follows:

1. Ra, Ga, Ma;  2. Ra, Ga, Mi;  3. Ra, Ga, Mu;  
4. Ra, Ga, Me;  5. Ra, Gi, Mi;  6. Ra, Gi, Mu;  
7. Ra, Gi, Me;  8. Ra, Gu, Mu;  9. Ra, Gu, Me;  
10. Ra, Ge, Me; 11. Ri, Gi, Mi; 12. Ri, Gi, Mu;  
13. Ri, Gi, Me; 14. Ri, Gu, Mu; 15. Ri, Gu, Me;  
16. Ri, Ge, Me; 17. Ru, Gu, Mu; 18. Ru, Gu, Me;  
19. Ru, Ge, Me; 20. Re, Ge, Me.

These twenty groups can give us 20 cakras; each cakra with the uttarāṅga of the 6 already possible permutations of Dhaivata and Nishāda will yield us a total of \((20 \times 6) - 120\) scales, and this is the maximum number of scales mathematically possible. These 120 scales will be found to include our 72 scales (increasing the number
of vivadi dośa melas to 88) and in this scheme Sāranga mela will be the 6th in the 16th cakra.

(C) The Madhyama Grāma being the inversion of the Ṣaḍja Grāma, has the sthāyi - interval divided into the two angas, the pūrvāṅga (tetrachord) and the uttārāṅga (pentachord) by the middle Madhyama svara with the two Ṣadja svaras as before at both ends of the sthāyi - interval, as shown below :

\[
\begin{array}{c|c|c|c|c|c|c|c}
\hline
& \text{Pūrvāṅga} & & \text{Uttārāṅga} & \\
\text{Tetra chord} & \downarrow & \text{Pentachord} & \downarrow & \\
\text{of 4 svaras} & & \text{of 5 svaras} & & \\
\hline
\text{Sa} & \text{Sa} & \text{Pa}, & \text{Dha}, & \text{Ni}, & \text{Sa} \\
\text{Ri} & \text{Ga} & \text{Vādi} & \text{Samvādi} & (\text{Sa}) & \text{Samvādi} & (\text{Pa}) \\
\text{Ga} & \text{Ma}, & \text{Vādi} & \text{Samvādi} & \text{(Pa)} & & \\
\end{array}
\]

In this Madhyama Grāma, as a result of their acoustic properties, Madhyama behaves as the vādi, taking the hue of Ādhāra (basic) Ṣaḍja svara and both the end Ṣaḍjas sound as samvādis to the now vādi Madhyama. As a result the music in this Grāma, though the same as in Ṣaḍja grāma, appears lifted up in pitch (fruti) by 2\frac{1}{2} tones.

It will be clear that in this Grāma also we can have the same 120 melas from only 6 cakras, each with 20 melas in it, and these will include the Cyuta Panchama melas, described by me as extra 36 melas in a previous paper.

(D) As repeatedly pointed out these scales (with their now strange svarāṅksharas), as mere scales, cannot yield us melodic rāgas. Hence for the extra 48 melas (8 cakras × 6 melas), as Venkaṭamakhin did for his 72 melas, suitable mūrchanās must be evolved before considering and naming them as Rāgāṅga rāgas, and thereby enrich our field of practical Carnatic music and satisfy our ever-increasing craving towards and quest for more and more matter to expand our art of music to the utmost possible.

XI. Melakarta Rāgas of the Present day :

(A) At the present day our Carnatic music is said to follow Sangrahacudāmanaṇi, a treatise written by one Govinda advocating the use of the 72 scales named Melakartas or Karṭa Rāgas with new "kāngi and "priyā-names coined
for them and a lakṣaṇa gītā provided for each. It was during the early decades of the last century (19th) that this treatise appeared and eclipsed or even usurped Venkaṭamakhin's Āri, Ambarī, Manjari System, since the latter was not easily available to the public at that time, kept in closely guarded secret custody as a precious heirloom not to be easily divulged. The author Govinda might have been influential so that a great propaganda was launched in favour of his system. Even prose translations, both in Telugu and Tamil, of Sangrahacūḍāmaṇī, were freely and largely distributed among all musicians. The propaganda was so successful that Govinda's (kāngi-priya) mela-karta scheme became firmly established and followed thenceforward.

Other Factors mentioned in its favour and the same answered:

(1) Tyāgarāja and Sangrahacūḍāmaṇī:

It is known that Tyāgarāja had a copy of Sangrahacūḍāmaṇī kept by him as a precious, sacred treatise separately and out of reach of even his priya śīshyas, exclusively for his own scrutiny. This Sangrahacūḍāmaṇī must be evidently the same as the mythically divine treatise Svarāṛṇava which is believed to have been brought from heaven by sage Nārada himself and given to Tyāgarāja for his exclusive use. This belief is based on the passage “Rajata girīṣuṇa nagajaku delpu svarāṛṇava marmamulanu” in Tyāgarāja’s composition “Svararāga-sudhārasa” in Sāṅkarābharaṇa, in which passage the word ‘svarāṛṇava’ occurs. It must be noted that in Sangrahacūḍāmaṇī also the introductory śloka mentions that Paramaśiva describes music to his consort Pārvatī at her request.

Referring to the mythical title “Svarāṛṇava”, I may ask, why svarāṛṇava alone, why not topics like melārṇava, rāgārṇava, tāḷārṇava, etc., or even a better title perhaps can be “Svararāga-sudhārasa”. It is generally believed that Tyāgarāja followed the 72 Melakarta-scheme of Sangrahacūḍāmaṇī.

(a) His compositions in Nāṭa and Varāḷi, both vivādi doṣa melas, can be seen set only in the traditional Rāgāṅga forms (rāgas) of Venkaṭamakhin. It is purposeless to examine his other composi-
tions in vivādi doṣa melas (most of them perhaps really are spurious) as they are not available to us in their original dhātus as composed by the saint.

(b) Tyāgarāja had composed hundreds of compositions, (most of his masterpieces), in the prevalent traditional rāgas, large numbers in many of them, even before he came to possess a copy of Sangrahacūḍāmaṇi. It is only later that he handled some rāgas as per Sangrahacūḍāmaṇi, mostly of 28th and 22nd meḷakarta—janya rāgas and the same can be seen to be mere samples of such rāgas, quite simple in structure and easily learnt.

(c) His compositions in Kharaharapriya are of great value and importance to us, since Kharaharapriya is really the original ancient orthodox Kāpi. Of his compositions in Harikāmbhoji several were at first set or already set by him only in the orthodox Kamās rāga.

(d) It is said that Tyāgarāja would not reveal the rāga-names for his various compositions and it was left to his sīshyas to find them, and also that the Tachūr Brothers later wrote the rāga-names for most of his compositions.

(2) Govinda was followed by Candragiri Rangācārlu and later by his cousins Tachūr Śingarācārlu Brothers, who continued the propaganda in favour of Sangrahacūḍāmaṇi with even more success. The Tachūr Brothers even published for the first time the well-known series of books on music propounding Govinda's system but not mentioning his name or his treatise.

(3) The great masterpiece, the 72 Melakarta Rāgamalika of Māhā Vaidyanātha Śivan created a great impression in the music world in favour of Govinda's kāngi-priya system of the melakartas. Śrī Śivan is known to have composed the piece with great reluctance under compulsion. The dhātu was set for the Marathi sāhitya by one Venkaṭa Rao, a court-poet, in praise of his patron the Rt. Hon. Sakhārām Saheb, son-in-law of the last Mahārāja of Tanjore. The composition was published as an appendix to Sangrahacūḍāmaṇi in 1883, under the title "Bāhattara-Mela-Karta". Śrī Śivan, reluctant to sing a mere nara-stuti composition, later had his own sāhitya in Sanskrit in place of the Marathi words with the same dhātu, with extra ornamental svara-passage in praise of the local deity at Tiruvaliyar, Praṇatārtihāra.
(B) Nowadays we notice a strong opinion prevailing among a section of top rank artistes (among them one whom I consider as one of the senior Margadarśis for kacheri pantha, and my respects to him) that of the 72 scales, the 40 with vivādi doṣa in them should be discarded, keeping the remaining 32 scales as enough for our purpose. One may have to agree to this, when one sees how some of our rising professional artistes handle them, displaying their zeal and skill in svara and laya jñāna by weaving highly complicated niravals (with gross padacchedas) and fast tempo kalpana svara passages abounding in naked vivādi doṣa svaras, sacrificing melody, śruti, and appearing themselves more in the role of accompanists to the mridanga percussions (meant really to accompany the artistes) and thereby giving rise to a mere excitement, which our present-day young rasikas have become accustomed to expect and enjoy during the past few decades.

(C) Now that the great Śrī Subbarāma Dikshitar has revealed to us Venkaṭamakhin’s original and traditional melodic system of Rāgāṅga rāgas for the 72 melas in his “Sangita Sampradāya Pradarśini”, shall we once again, without merely praising the work, take up to the original genuine melodic system, shedding the highly biased view that Tyāgarāja handled only melakartas (scales), and preserve all the 72 melas without being constrained to ignore or even reject some of them or any of them?*

COMPOSITIONS CHOSEN FOR DEMONSTRATION

By Dr. T. S. Ramakrishnan

(Assisted by his daughters Miss S. R. Mangalam & Mrs. S. Kesari)


Mūrchnāḥ: (Āro) Sa ga ri ma pa dha pa ni sa
(Ava) Sa ni dha pa ma ga ri sa

*(Vakra-svaras)*


* On some of the points in this paper, see the facts brought out by Dr. V. Raghavan in his paper ‘Venkaṭamakhin and the 72 Melas’ in this same Journal (XII 1941, pp. 67-79) and his edition of and Introduction to the Telugu text ‘Sangita Sara Sangrahamu’ discovered by him and published by the Academy (1940).

M—11
3. Venkatachakshan’s Lakṣya Gīta: “Are are bandhujana”. Incomplete Gīta. Tala: Maṭhya. (Bhāṣāṅga—rakti) Rāga; Kāpi (same as Kharahapriya of present-day) of 22nd mela, Veda Bhū cakra (Ri Gi Ma Dhi Ni)

Mūrchnā: (Āro.) Sa ri ga ma pa dha ni sa (Avā.) Ni dha ma ga ga ri sa

4. Śrī Mūthuswāmi Dīkshitar’s Lakṣaṇa Kriti: “Kaumari Gaurī Velāvali”. Deity: Kāmki; Tala: Ādi. (Rāgānga) Rāga: Gaurī Velāvali of 23rd mela, Veda Mā cakra (Ri Gi Ma Dhi Nu)

Mūrchnā: (Āro.) Sa ri ga ga sa, ri ma ma pa dha dha sa (Dhaivalagrahā)(Avā.) Sa ni dha pa ma ga ga ri sa

5. Venkatachakshan’s Lakṣya Gīta: “Prada tilta teja”. Deity: Rāma; Tala: Dhruva. (Upānga) Rāga: Nārāyaṇa-gaujā of 28th mela, Bāg Bhū Cakrā (Ri Gu Ma Dhi Ni)

Mūrchnā: (Āro.) Ri ma pa ni dha ni sa (Niṣādagrahā) (Avā.) Ni dha pa ma ga ga ri sa

6. Venkatachakshan’s (Kaivara) - Prabandha: “Todgīdhām”. Tala: Maṭhya. Deity: Śāṅgagāṇi of Kumbhakonam; (Upānga) Rāga: Nārāyaṇagaujā, with special features; Vākya or Ālāpa khaṇḍa and Venkatachakshan’s Aṅkīta and his parents’ names in the Ābhoga Khaṇḍa.

7. Śrī Mūthuswāmi Dīkshitar’s Lakṣaṇa Kriti: “Nāga-bhararapam”. Deity: Brhadiśvara; Tala: Ādi. (Rāgānga) Rāga: Nagabharaṇa of 30th mela, Bāgha Shā Cakra (Ri Gu Ma Dhu Nu)

Mūrchnā: (Āro.) Sa ri ga ma pa ni dha ni sa (Avā.) Sa ni pa ma ga ma ri sa, ma ga ri sa

8. Venkatachakshan’s Lakṣaṇa Gīta: “Ripu Khaṇḍe”. Deity: Krishna; Tala: Dhruva, (Bhāṣāṅga-rakti) Rāga, Saranga of 65th mela, Sāntakalyāṇi. New scale of svaras, saptaka, which cannot come under the 72 melas, as revealed in the Sūtra khaṇḍa. Ga* is Sudhamadhyama Gāndhāra, a new vikṛti of Gāndhāra, identical with Sudhamadhyama and written as Ge.
Mūrchhana: (Āro.) Sa ā sa ri ge(ma) mi pa dhu nu sa
(Scale) (Ava.) Sa nu dhu pa mi ge(ma) ri sa

*Note*:—Based on this new extra vikṛti Ge (Gāndhāra) the scheme of maximum possible 120 scales proposed.

*The following four Lakṣya Gitas of Venkataśākhin rendered in Madhyama Śruti:*

   (Bhāṣāṅga-Rakti) Rāga: Punnagavarāli of 8th mela,
   Netra S'ri Cakra (Ra gi Ma Dha Ni)

Mūrchhana: (Āro.) Ni sa ri ga ma pa dha
   (Ava.) Dha pa ma ga ri sa ni

10. "Re Śrī Rāmabhadra": Deity: Rāma. Tāla: Dhruva
    (Upanāga-Rakti) Rāga: Mangalakaśikī of 15th mela
    Agni Go Cakra (Ra gu ma dha nu). Has ‘mukta-pada-grasta’ feature.

Mūrchhana: (Āro.) Sa ri ga ma pa ma ga pa dha ni sa
   OR sa ri ma ga dha pa sa
   (Ava.) Sa ni dhi pa ma ga ri sa

*Pa-vakra and Pachama occur

    (Bhāṣāṅga-deśi-rakti) Rāga: Gaurī of 15th mela, Agni
    Go Cakra (Ra gu ma dha nu)

Mūrchhana: (Āro.) Sa ri ma pa dha ni sa
   (*Has Cuta Pañcama)

    (Upāṅga) Rāga: Naṭanārāyaṇī of 28th mela, Bāna Bhū
    Cakra (Ri Gu Ma Dhi Ni)

Mūrchhana: (Āro.) Sa ri ga sa ri ma pa dha sa
   (Ava.) Sa dha pa ma ga ri sa
A MUSICOMETRICAL VIEW OF INDIAN MUSIC WITH PARTICULAR REFERENCE TO MŪRCHANĀ-CAKRAS

K. K. Verma

Introduction

That music is a referential art and that musical compositions create and reflect psychic moods and emotions through some mysterious process of mutative symbolisation, has been an age-long and a universal belief. But the truth of this belief, though amply vindicated by vague experiences, has stubbornly refused to lend itself to any systematic verification. Should, however, musical experience come some day to be technologically verifiable by some means, the study of the how and the what of music, a physical stimulus evoking psychic responses in terms of moods and emotions, is likely to assume a highly scientific importance for a far-reaching methodical probe into the various possibilities of what music can contribute to the mental health of man in his musical moments.

Musicometry

A humble approach to such a study is being made by the present author through what he ventures to call a ‘musicometrical analysis’ of the Classical Indian music. ‘Musicometry’, as viewed by the author, is that branch of the science of numbers which tries to construe music as a function of numbers and to envisage the temporal phenomena of music in terms of spatial concepts of tonal locations and movements in the musical space. Believing, as the author does, that the Indian system of music, in its purest and most perfected form, should have been conceived essentially on musicometrical lines, for making musicality an aesthetic symbol of the spiritual quest for the Many in the One and the One in the Many, he tries to interpret its basic concepts in terms of numerical orders giving birth to spatial patterns that may lend themselves to graphic representation and measurability for their visual and precise appreciation.

The psychic associations of Indian melodic modes in terms of rasas and rūpas have long and chequered traditions behind them. These traditions, which have grown more and more anthropo
morphic in later ages, seem to have had their origin in such conceptualisations of the contents and forms of melodic modes as could lead to their perception and picturisation in tangible and cognisable terms, capable of being discerned and differentiated categorically from one another. Assuming then that all such concepts have emanated, in the main, from certain peculiarities inherent in the tonal fabrics of the melodic modes themselves, it may naturally be concluded that any such peculiarity in any given mode has its bearing, more than on anything else, on the character of each of its individual note as also on that of the composite pattern woven by all its notes collectively.

Should this conclusion be correct, as possibly it is, the psychic associations of a melodic mode, if at all any, must be ascribed first and foremost to the character of its notes themselves severally and collectively. Stated in musicometrical terms, the emotive content of a melody must primarily have constituent elements that may be capable of being correlated, firstly, with the locations of its notes in the spiral of the pitch-series of the octave; secondly, with the totality of the inter-relations of sonance (vāditva), consonance (samvāditva), assonance (anuvāditva), and dissonance (vivāditva), obtaining amongst them and, thirdly, with the integral structure of the composition in which the over-all melodic balance assumes its shape in terms of tonal distances.

It is in pursuance of this line of reasoning that ancient Indian musicology seems to have evolved its five basic concepts of śrutis, Svaras, Mūrchanās, Grāmas and Jāitis. All these concepts being parts of one and the same process of conjuring up a spatial vision of a temporal phenomenon, they have to be studied together. But the main subject of our present discussion being Mūrchanās, we shall refer to the other four only inasmuch as they directly refer to them.

**Musical Space and the Equiangular Spiral**

As we have mentioned above, musicometry deals with melodic modes as patterns of tonal locations and movements in the musical space. The musical space, as viewed by musicometry, is graphically symbolised best by an Equiangular Spiral, the radius of the spiral varying constantly as it moves forward or backward and getting exactly doubled or halved after having described a complete circle,
receding away from the centre or proceeding towards it. The octave structure of the pitch-series appearing on this spiral extends from infinity to infinity.

Śrutis

Śrutis, according to ancient Indian musicology, are those melodic points appearing on this spiral which are related to any given central note, and consequently to one another, in terms of rational numbers only. In other words, their mutual ratios must be expressible only in terms of certain prime numbers or their multiples. The choice of prime numbers acceptable for this purpose, unlike in Western music, has further been limited by Indian music out of its pronounced preference for consonance over dissonance. Thus, it is only in terms of 2, 3 and 5 and their multiples that śrutis must be related to one another. Within this limitation the number of śrutis, whether for theoretical calculations or for practical use, may be infinite.

The total number of the śrutis taken into account in the present musicometrical calculations is 43. This number could have been more or less resulting in a larger or smaller number of mūrchana-cakras being constituted thereby. Since the totality of the melodic patterns acceptable to Indian musical ears, both Northern and Southern, does not warrant a larger number of mūrchana-cakras and would not wholly be covered by a smaller number of them, the number of the śrutis included in these calculations has been kept as above. It has to be pointed out in this connection that though śruti-locations have been accepted here to be 43, the śruti-zones have been taken to be only 22. The practice of using the word 'śruti' in both its locational and zonal senses may be said to be an old one. This is why the question has often arisen as to whether śrutis are of equal or unequal lengths. The present calculations maintain that locationally they are of unequal lengths and zonally of equal ones.

Svars

Melodic points when silently located on the pitch-series of the octave remain 'śrutis'. But the moment they are sounded as specific points of punctuation in a melodic mode, they become 'svars'. In other words, śrutis are theoretical possibilities of svars while svars are practical manifestations of śrutis.
The number of svaras in a complete (sampūrṇa) and pure (śuddha) Indian rāga has been fixed at seven. This number, though appearing theoretically to be arbitrary, is of undeniable melodic validity in practice. An increase or decrease in this number makes the resultant rāga sound unmistakably either as a mixed one or as an abridged one.

Svaras also, like śrutis, have their locational and zonal implications. Though of equal lengths zonally they are of unequal lengths locationally. This is more in evidence in the Southern than in the Northern system of Indian music, in which overappings of svaras are more frequent resulting in the same ones being called both Rishabha and Gāndhāra or both Dhaivata and Nishāda according to their locationally changed zonality.

The seven original svaras, mentioned by Bharata and others, have a zonal rather than a locational implication. The difficulty arising out of their locational deviations within their respective zones, and sometimes out of them, seems to have led to the bisection of each zone excepting those of the Shadja and Pañcama, into two sub-zones of udātta (sharp) and anudātta (flat) svaras. Distinguished thus, svaras came later to be called śuddha and vikṛta ones.

Controversy regarding the numbers and the names of the svaras in their totality has been long and prolific in Indian musicology. It was finally settled only in the 17th century by fixing their total number at twelve and by dividing them into seven śuddha and five vikṛta ones. This was done decisively by Ahobala in the North and Venkatamakhin in the South.

According to musicometry, however, the total number of svaras should be fourteen, divided into seven śuddha and seven vikṛta ones. This involves the divisions of the zones of the Shadja and the Pañcama also resulting in the re-introduction of two more ancient vikṛta svaras, the Cyuta Shadja and the Cyuta Pañcama. Though the former of these is only of academic value, the latter one is of great practical use.

Mūrchanā-Cakras

A melodically valid structure of seven svaras constitutes what is called musicometrically a Mūrchanā-Cakra. The function of such a cakra is to generate seven different melodic modes by shifting the Tonic Note (the Shadja) from one svara to another. Its tonal
peculiarity, noted by Indian musicology since earliest times, lies in the fact that all the seven melodic modes thus generated vary vitally in their emotive ethos while retaining an essential similarity in their melodic fabric.

The objective criteria of the melodic validity of a tonal structure as enumerated by writers like Nārada, Bharata and Śāṅgadeva, in terms of ‘ten qualities’—‘daśaguṇayuktam’—throw practically no light on the nature of the structure itself. The definition since the time of Maṭanga of any such structure as a ‘rāga’ meaning ‘that which pleases’—‘raṇjayatīti rāgaḥ’, has hardly done anything to improve the situation. The nature, therefore, of a tonal structure possessing melodic validity must be studied musicometrically in the light of the basic tendency of Indian music to blend dissonance and consonance, and array and disarray, together in a melodic whole, creating waves after waves of melodic tension and relaxation and making the latter prevail over the former at the end of the musical experience. Such a blending together of pairs of opposites can be done best only when the following conditions in the construction of a tonal structure are fulfilled.

(1) Predominance of ultimate consonance over initial dissonance being the first requirement of Indian music, for every svara in any mūrchanā-cakra there should be some other svara or svaras in it, bearing to that one the relation of 2:3, 3:4, 4:5, 5:8, 3:5 or 5:6, these relations expressing the six highest consonances.

(2) The minimum number of svaras bearing mutual relation of 2:3 or 3:4 in a rāga of seven svaras must be four, the maximum being no more than five under conditions mentioned below.

(3) Predominance of inner array over outer disarray being the second requirement of Indian music, all svaras in a mūrchanā-cakra must be located within prescribed limits of minimum and maximum distances from one another, all such distances being measurable in precise terms.

Note: The octave is measured by Western musicology in terms of savarts, it being taken to be equal to 301.03 savarts. In the present calculations the octave is measured
in terms of manoramas, it being taken to be equal to 252 manoramas (Ms). A śruti-zone being 1/22 of an octave, is approximately equal to 11.455 Ms.

(4) The minimum and maximum distances between any two contiguous svaras of a mūrchanā-cakra must not be less than 2 śruti-zones i.e. 22.91 Ms. and more than 1/4 of the total octave, i.e. 63 Ms. In the present calculations they have been limited to 23.485 Ms. and 57.624 Ms, represented by the śruti-ratios $\frac{16}{15}$ and $\frac{75}{64}$ respectively.

(5) The minimum and maximum distances between any svara of a mūrchanā-cakra and its third svara must not be less than four śruti-zones, i.e. 45.82 Ms. and of more than nine śruti-zones, i.e. 103.095 Ms. In the present calculations they have been limited to 46.97 Ms and 100.436 Ms, represented by the śruti-ratios $\frac{256}{225}$ and $\frac{675}{512}$ respectively.

(6) The minimum and maximum distances between any svara of a mūrchanā-cakra and its fourth svara must not be less than 1/3 of the total octave i.e. 84 Ms., and more than 1/2 of the total octave, i.e. 126 Ms. In the present calculations they have been limited to 89.782 Ms. and 123.921 Ms., represented by the śruti-ratios $\frac{32}{25}$ and $\frac{45}{32}$ respectively.

(7) The middle point of the octave, i.e. $\frac{x}{2}$, amounting to 126 Ms. should never be crossed by the fourth or the fifth svara either way.

**Note:** (a) This is probably what Bharata meant when he called Madhyama, the middle point of the octave, as 'avilopi'.

When a mūrchanā-cakra is constructed with all its svaras located in the octave in conformity with the above rules, a melodically valid pattern of well-blended consonance and dissonance and array and disarray emerges from it, generating a set of seven different rāgas, when the pattern is symmetrical, and to that of fourteen different rāgas, when it is asymmetrical. According to
the present calculations the number of symmetrical patterns are three and that of asymmetrical ones is four. The total number of rāgas generated by them thus is 77. Since each one of these rāgas is capable of generating many more rāgas in its own turn they are called generic (Janaka) rāgas as a class.

A close scrutiny of these mūrchanā-cakras will show that in those having sets of fourteen different rāgas there are seven pairs of tonal structures, each pair consisting of an image and its exact mirror-image of tonality. In those having seven different rāgas, there are three such pairs, the 7th rāga having an image and its exact mirror-image contained in itself.

Note: The above peculiarity of a mūrchanā-cakra, creating pairs of images and their exact mirror-image of tonality, may have led to rāgas being conceived later in anthropomorphic terms and of having been ascribed attributes of masculinity and femininity in their ethos. If so the traditions of the rasa and the rūpa-associations of rāgas as well as the methodology of copulating male and female rāgas for generating their progeny (janya-rāgas), may come to lend themselves to a clearer and closer study for their verifiable experimentations through musicometry.

Jātis

All the mūrchanā-cakras mentioned above, being tonal structures, have certain sets of tonal relations, born of certain kinds of numerical orders behind them. These relations or orders, being generic in their nature and having separate collective identities, are 18 in number according to the present calculations. It is very likely that these happen to be the 18 Jātis mentioned by Bharata and others.

Grāmas

A mūrchanā-cakra, as we have seen above, is a meticulously blended tonal pattern, in which the two pairs of opposites of consonance and dissonance and array and disarray are made to pit their melodic forces of pleasure and pain for creating melodic tension and then resolving it. A graphic view of this process shows that it results ultimately in certain distinctly identifiable motifs of tonal structures, svara-samāhas, in which the essence of their constituent factors are objectively reflected. These motifs are presumably what Bharata has called Grāmas, a lot of confusion and controversy around which had sprung up in the post-Bharata ages.
Bharata has mentioned two Grāmas. Mahābhārata and Harivamśa, both of which existed before the time of Bharata, have referred to six of them—“ṣaḍ-grāma-rāgādisamādhi-yuktam”. Musicometry reveals that there can be only two paternal motifs of tonal clusters, from which four other motifs emerge; two as their individual extensions and two more as their combined products. It is possible that the concepts of 6 original melodic modes, ādi rāgas, variously named in later ages, may have been based on these six basic motifs.

The concept of Grāmas seems to have been almost inextricably mixed up with that of mūrchanā in post-Bharata Indian musicology. This seems to have arisen from the fact that what Bharata intended to be an illustration of a Grāma was mistaken by his successors to be a definition of it.

Bharata has illustrated the Ṣaḍja-grāma through the pattern of ṣrūtis in the order of 3, 2, 4, 4, 3, 2 and 4 and the Madhyama-grāma through that of ṣrūtis in the order of 3, 2, 4, 3, 4, 2 and 4. As further pointed out by Bharata, there is Ṣaḍja-paṇcama-samvāda in the former, while there is paṇcama-ṛṣabha-samvāda in the latter. But seeing that two mūrchanās of the former mūrchanā-cakra have paṇcama-ṛṣabha-samvāda, while five mūrchanās of the latter mūrchanā-cakra have Ṣaḍja-paṇcama-samvāda, what is true of an individual mūrchanā cannot be taken to be true of an entire mūrchanā-cakra. Hence, the practice of defining a Grāma in terms of Ṣaḍja-paṇcama or paṇcama-ṛṣabha-samvādas cannot but be an erroneous interpretation of what Bharata may have meant to be a casual illustration of the paṇcama-svara of a rāga having locationally a ṣruti-ratio of 3 : 2 in the first case and that of 40 : 27 in the latter one. This means that Mūrchanās and Grāmas happen to be and must be taken as two different concepts, related together no doubt, but serving two different purposes.

The above concepts and calculations, resulting from a musicometrical analysis of Indian music, welcome critical attention and are open to all necessary corrections. But believing, however, as the author does, in the emotive potentialities of Indian music and in the possibility of those potentialities being studied and explored fundamentally by scientific methods, he wonders, in all humility, whether a musicometrical approach to Indian music would not form a logical beginning of such methods.
### APPENDIX—I

**Modal Cycles (Mūrchanā-Cakras)**

<table>
<thead>
<tr>
<th>Tempered Scale</th>
<th>Śruti Scale</th>
<th>Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 1-3-1-2-1-3-1</td>
<td>2-5-2-4-2-5-2</td>
<td>16/15 x 75/64 x 16/15 x 9/8 x 16/15 x 75/64 x 75/64</td>
</tr>
<tr>
<td>2. 1-3-1-1-2-3-1</td>
<td>2-5-2-2-4-5-2</td>
<td>16/15 x 75/64 x 16/15 x 16/15 x 9/8 x 75/64 x 16/58</td>
</tr>
<tr>
<td>3. 1-3-2-1-1-3-1</td>
<td>2-5-4-2-2-5-2</td>
<td>16/15 x 75/64 x 9/8 x 16/15 x 16/15 x 75/64 x 16/15</td>
</tr>
<tr>
<td>4. 1-3-1-2-2-2-1</td>
<td>2-5-2-4-3-4-2</td>
<td>16/15 x 75/64 x 16/15 x 9/8 x 10/9 x 9/8 x 16/15</td>
</tr>
<tr>
<td>5. 1-2-2-2-1-3-1</td>
<td>2-4-3-4-2-5-2</td>
<td>16/15 x 9/8 x 10/9 x 9/8 x 16/15 x 75/64 x 16/15</td>
</tr>
<tr>
<td>6. 1-3-3-2-2-1-2</td>
<td>2-5-2-4-3-2-4</td>
<td>16/15 x 75/64 x 16/15 x 9/8 x 10/9 x 9/8 x 16/15</td>
</tr>
<tr>
<td>7. 2-2-1-1-3-2-1</td>
<td>3-4-2-2-5-4-2</td>
<td>16/15 x 9/8 x 16/15 x 16/15 x 75/64 x 9/8 x 16/15</td>
</tr>
<tr>
<td>8. 1-2-3-1-1-2-2</td>
<td>2-4-5-2-2-4-3</td>
<td>16/15 x 9/8 x 75/64 x 16/15 x 16/15 x 9/8 x 10/9</td>
</tr>
<tr>
<td>9. 1-2-1-2-2-2-2</td>
<td>2-4-2-3-4-4-3</td>
<td>16/15 x 9/8 x 16/15 x 10/9 x 9/8 x 9/8 x 10/9</td>
</tr>
<tr>
<td>10. 2-2-1-2-2-2-1 (a)</td>
<td>4-3-2-4-3-4-2</td>
<td>9/8 x 10/9 x 16/15 x 9/8 x 10/9 x 9/8 x 16/15</td>
</tr>
<tr>
<td>(b)</td>
<td>3-4-2-4-3-4-2</td>
<td>10/9 x 9/8 x 16/15 x 9/8 x 10/9 x 9/8 x 16/15</td>
</tr>
<tr>
<td>(c)</td>
<td>4-3-2-4-4-3-2</td>
<td>9/8 x 10/9 x 16/15 x 9/8 x 9/8 x 10/9 x 16/15</td>
</tr>
<tr>
<td>(d)</td>
<td>4-4-2-3-4-3-2</td>
<td>9/8 x 9/8 x 16/15 x 10/9 x 9/8 x 10/9 x 16/15</td>
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<tr>
<td>(e)</td>
<td>3-4-2-3-4-4-2</td>
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<tr>
<td>(f)</td>
<td>3-4-2-3-4-3-3</td>
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<td>(g)</td>
<td>4-3-3-3-4-3-2</td>
<td>9/8 x 10/9 x 27/25 x 10/9 x 9/8 x 10/9 x 16/15</td>
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<tr>
<td>(h)</td>
<td>3-3-3-3-4-3-3</td>
<td>10/9 x 10/9 x 27/25 x 10/9 x 9/8 x 10/9 x 27/25</td>
</tr>
<tr>
<td>(i)</td>
<td>4-3-3-3-3-4-2</td>
<td>9/8 x 10/9 x 27/25 x 10/9 x 10/9 x 9/8 x 16/15</td>
</tr>
</tbody>
</table>
APPENDIX—II

Mūrchanā-cakra 1

(Horizontal & Vertical)

(1) S R G M P D N S

Bhairava

Māyāmālava
gaula

(2) S G G M P N N S

Rasikapriya

(3) S R G G P D D Š...

(4) S R G M P D N Š

Madhumada

Simhendra

madhyama

(5) S R G M M D N S...

Lalita Āhira

(6) S G G M D D N S...

(7) S R R M M D D Š...

Mūrchanā-cakras 2 & 3

(Horizontal)

(1) S R G M M D N Š...

Lalita-Bhairava

(2) S G G M P N N Š

Chalanāṭa

(3) S R R G P D D Š...

Toḍi

Subhapantu-varāli

(4) S R G M P D N Š

(5) S R M M P N N Š...

?
(6) S-\(\_{G-M-D-D-N-\hat{S}}\) ?

(7) S-\(_{R-R-M-M-P-D-\hat{S}}\) ?

(Vertical) 

(1) S-\(_{R-G-M-P-D-N-S}\) Purabi

Kāmavardhini

(2) S-\(_{G-M-M-P-N-N-S}\) ?

(3) S-\(_{R-G-G-P-D-D-\hat{S}}\) ?

(4) S-\(_{R-R-M-M-P-N-\hat{S}}\) ?

(5) S-\(_{R-G-M-M-D-N-\hat{S}}\) Lalita-Mārwa

(6) S-\(_{G-G-M-D-N-N-S}\) ?

(7) S-\(_{R-R-M-P-D-D-\hat{S}}\) ?

Kanakāṅgi

Mūrchanā-cakras 4 & 5

(Horizontal) 

(1) S-\(_{R-G-M-P-D-N-\hat{S}}\) ?

Sūryakānta

(2) S-\(_{G-G-M-D-N-N-\hat{S}}\) ?

(3) S-\(_{R-G-M-P-D-D-\hat{S}}\) ?

Senāvati

(4) S-\(_{R-G-M-P-D-N-\hat{S}}\) ?

Latāṅgi

(5) S-\(_{R-G-M-M-D-N-\hat{S}}\) Lalitakhamāj ?
(6) $S \rightarrow R \rightarrow G \rightarrow G \rightarrow P \rightarrow D \rightarrow N \rightarrow S$

(7) $S \rightarrow R \rightarrow R \rightarrow M \rightarrow M \rightarrow D \rightarrow N \rightarrow S$

(Vertical) (1) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow P \rightarrow D \rightarrow N \rightarrow S$

(2) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow P \rightarrow N \rightarrow N \rightarrow S$

(3) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow D \rightarrow D \rightarrow N \rightarrow S$

(4) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow P \rightarrow D \rightarrow N \rightarrow S$

(5) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow M \rightarrow D \rightarrow N \rightarrow S$

(6) $S \rightarrow G \rightarrow G \rightarrow M \rightarrow P \rightarrow D \rightarrow N \rightarrow S$

(7) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow D \rightarrow D \rightarrow S$

Mārchanā-akras 6 & 7

(Horizontal) (1) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow P \rightarrow D \rightarrow N \rightarrow S$

(2) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow M \rightarrow D \rightarrow N \rightarrow S$

(3) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow D \rightarrow D \rightarrow N \rightarrow S$

(4) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow P \rightarrow D \rightarrow N \rightarrow S$

(5) $S \rightarrow R \rightarrow G \rightarrow M \rightarrow P \rightarrow D \rightarrow N \rightarrow S$

Kiravāni

? Hemavati

Bakulābharapa
(6) S - G - G - M - P - D - N - S  
    ?  
    Kosala

(7) S - R - G - G - M - D - D - S  
    ?  
    ?

(Vertical)  
(1) S - R - G - M - P - D - N - S  
    Āhira-Bhairava  
    Cakravāka

(2) S - G - G - M - D - D - N - S  
    ?  
    ?

(3) S - R - G - M - M - D - D - S  
    ?  
    ?

(4) S - R - G - M - P - D - N - S  
    ?  
    ?  
    ? Sarasāngī

(5) S - R - G - M - M - D - N - S  
    ?  
    Lalitakāpi

(6) S - R - G - G - P - D - N - S  
    ?  
    ?

(7) S - R - G - M - P - D - N - S  
    Madhumada  
    Dharmavati

Mūrchanā-cakras 8 & 9  

(Horizontal)  
(1) S - R - G - M - M - D - N - S  
    ?  
    Lalita Bilāwal

(2) S - R - G - G - P - D - N - S  
    ?  
    ?

(3) S - R - R - M - P - D - N - S  
    ?  
    Ratnāngi  
    Mārwā  
    Gamanāśramā

(4) S - G - M - M - D - N - S  
    ?  
    ?

(5) S - G - M - M - D - N - N - S  
    ?  
    ?
Mūrchanā-cakra 10

(Horizontal (1) S_R_G_G_M_D_N_S? &
& Vertical)

(2) S_R_G_M_P_D_N_S? 

(3) S_R_G_M_P_D_N_S? 

(4) S_R_G_M_D_D_N_S? 

M—13

(6) S_R_G_M_P_D_D_S? ... 

(7) S_R_G_M_M_P_N_S? ... 

(Vertical) (1) S_R_G_M_P_D_N_S? 

(2) S_R_M_M_P_D_N_S? 

(3) S_G_G_M_P_D_N_S? 

(4) S_R_R_G_M_P_D_S? 

(5) S_R_G_M_M_D_N_S? ... Lalita Todī 

(6) S_R_G_M_P_N_N_S? 

(7) S_R_G_M_D_D_N_S? 

(Jhāṅkāradhvani

Bhavapriya

Vāgadhyavarti

Lalita Todī

Nāgānandint

Nāṭakapriya

∞—13
(5) S - R - G - M - P - D - N - Š ... ?
Vācaspati

(6) S - R - G - M - P - D - N - Š ... ?
Cārukesī

(7) S - R - G - M - M - D - N - Š
Lalitāśāvari

Notes: The Northern names of rāgas appear above and their Southern names below in the brackets. Signs of interrogation indicate non-prevalence of rāgas either in the North or in the South or in both.
APPENDIX—III

72 Rāgas of Veṅkaṭamakhin

* 1. Kanakāṅgi  S-R-R-M-P-D-D-Ś
* 2. Ratnāṅgi  S-R-R-M-P-D-N-Ś
3. Gānamūrti  S-R-R-M-P-D-N-Ś
4. Vanaspati  S-R-R-M-P-D-N-Ś
5. Mānavati  S-R-R-M-P-D-N-Ś
6. Tānarūpi  S-R-R-M-P-N-N-Ś
* 7. Senāvati  S-R-G-M-P-D-D-Ś
* 8. Hanumattodi  S-R-G-M-P-D-N-Ś
* 9. Dhenuka  S-R-G-M-P-D-N-Ś
* 10. Nāṭakapriya  S-R-G-M-P-D-N-Ś
* 11. Kokillapriya  S-R-G-M-P-D-N-Ś
* 12. Rūpavati  S-R-G-M-P-N-N-Ś
* 13. Gāyakapriya  S-R-G-M-P-D-D-Ś
14. Vakulābharāsa  S-R-G-M-P-D-N-Ś
* 15. Māyāmālavagaula  S-R-G-M-P-D-N-Ś
* 16. Cakravāka  S-R-G-M-P-D-N-Ś
* 17. Sūryakantā  S-R-G-M-P-D-N-Ś
18. Haṭatakāmbart  S-R-G-M-P-N-N-Ś
<table>
<thead>
<tr>
<th>No.</th>
<th>Raga</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Jhānkāradhvani</td>
<td>S-R-G-M-P-D-D-Ś</td>
</tr>
<tr>
<td>20</td>
<td>Naṭhabhairavi</td>
<td>S-R-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>21</td>
<td>Kīrāvāṇī</td>
<td>S-R-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>22</td>
<td>Kharaharapriyā</td>
<td>S-R-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>23</td>
<td>Gaurīmanohari</td>
<td>S-R-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>24</td>
<td>Varuṇapriyā</td>
<td>S-R-G-M-P-N-N-Ś</td>
</tr>
<tr>
<td>25</td>
<td>Māraraṇijini</td>
<td>S-R-G-M-P-D-D-Ś</td>
</tr>
<tr>
<td>26</td>
<td>Cārukeśī</td>
<td>S-R-B-M-P-D-N-Ś</td>
</tr>
<tr>
<td>27</td>
<td>Sarasāngī</td>
<td>S-R-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>28</td>
<td>Harikāmbhoji</td>
<td>S-R-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>29</td>
<td>Dhīraśaṅkara-bharana</td>
<td>S-R-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>30</td>
<td>Nāgānandini</td>
<td>S-R-G-M-P-N-N-Ś</td>
</tr>
<tr>
<td>31</td>
<td>Yṣgapiyā</td>
<td>S-G-G-M-P-D-D-Ś</td>
</tr>
<tr>
<td>32</td>
<td>Ragawardhini</td>
<td>S-G-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>33</td>
<td>Gāṅgāsyabhūṣāṇī</td>
<td>S-G-G-M-P-D-N-Ś</td>
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<td>34</td>
<td>Vagadhitāvari</td>
<td>S-G-G-M-P-D-N-Ś</td>
</tr>
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<td>35</td>
<td>Śūlīnī</td>
<td>S-G-G-M-P-D-N-Ś</td>
</tr>
<tr>
<td>36</td>
<td>Chalanaṭa</td>
<td>S-G-G-M-P-N-N-Ś</td>
</tr>
<tr>
<td>37</td>
<td>Salaga</td>
<td>S-R-R-M-P-D-D-Ś</td>
</tr>
<tr>
<td>38</td>
<td>Jalāṛgava</td>
<td>S-R-R-M-P-D-N-Ś</td>
</tr>
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<td></td>
<td>PIS * I-IVj MUSICOMETRICAL VIEW OF INDIAN MUSIC—APP. III</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>39.</td>
<td>Jhālavārāḷī</td>
<td>S - R - R - M - P - D - N - Š</td>
</tr>
<tr>
<td>40.</td>
<td>Navanīta</td>
<td>S - R - R - M - P - D - N - Š</td>
</tr>
<tr>
<td>41.</td>
<td>Pāvanī</td>
<td>S - R - R - M - P - D - N - Š</td>
</tr>
<tr>
<td>42.</td>
<td>Raghupriyā</td>
<td>S - R - R - M - P - N - N - Š</td>
</tr>
<tr>
<td>43.</td>
<td>Gāvāṃbodhi</td>
<td>S - R - G - M - P - D - D - Š</td>
</tr>
<tr>
<td>44. *</td>
<td>Bhavapriyā</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>45. *</td>
<td>Subhapantuvarāḷi</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>46.</td>
<td>Śaḍvidhamārginī</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>47.</td>
<td>Suvarṇāngī</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>48.</td>
<td>Divyamaṇī</td>
<td>S - R - G - M - P - N - N - Š</td>
</tr>
<tr>
<td>49.</td>
<td>Dhavalāmbarī</td>
<td>S - R - G - M - P - D - D - Š</td>
</tr>
<tr>
<td>50.</td>
<td>Nāmanārayaṇī</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>51. *</td>
<td>Kāmavardhini</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>52.</td>
<td>Rāmapriyā</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>53. *</td>
<td>Gamanārāmā</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>54.</td>
<td>Viśvambhari</td>
<td>S - R - G - M - P - N - N - Š</td>
</tr>
<tr>
<td>55.</td>
<td>Śyāmalāṅgī</td>
<td>S - R - G - M - P - D - D - Š</td>
</tr>
<tr>
<td>56. *</td>
<td>Śaṃkukhapriyā</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>57. *</td>
<td>Simhendra - madhyama</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
<tr>
<td>58. *</td>
<td>Hemavatī</td>
<td>S - R - G - M - P - D - N - Š</td>
</tr>
</tbody>
</table>
* 59. Dharmavatî  $S - R - G - M - P - D - N - S$

60. Nîtimatî  $S - R - G - M - P - _ - N - N - S$

61. Kântâmaṇi  $S - R - G - M - P - D - D - S$

62. R̥śabhapriyā  $S - R - G - M - P - D - N - S$

* 63. Lataṅgi  $S - R - G - M - P - D - N - S$

* 64. Vâcaspati  $S - R - G - M - P - D - N - S$

* 65. Mecakalyâni  $S - R - G - M - P - D - N - S$

* 66. Citrāmbarî  $S - R - G - M - P - N - N - S$

67. Sucaritra  $S - G - G - M - P - D - D - S$

68. Jyotisvarūpiṇī  $S - G - G - M - P - D - N - S$

69. Dhātuvardhini  $S - G - G - M - P - D - N - S$

70. Nâsikâbhûṣanî  $S - G - G - M - P - D - N - S$

* 71. Kosala  $S - G - G - M - P - D - N - S$

* 72. Rasikapriyā  $S - G - G - M - P - N - N - S$

Note: The 37 rāgas marked with asterisks are melodically of superior order. The 35 unmarked ones are melodically of inferior order.
A COMPUTERIZED CATALOGUE OF KARNATIC MUSIC

Dr. William Skelton, Colgate University, U.S.

In 1963 when I first had the opportunity to address the Madras Music Academy, I spoke on the subject of electronic music and its development. During that lecture, I played excerpts of music generated by electronic devices including the computer. At that time I projected the opinion that computer-usage would be of great value to the world’s music including Carnatic music. While this development has been slow in coming, today, I hope to take the first important step in fulfilling this prophecy.

This paper will present a computerized system for the handling of data about Carnatic music. It is called Saṅgita Catalogue and it is especially designed for you and all other serious scholars and students of this great tradition.

So much myth exists about computer-usage that I must spend a moment explaining these complicated devices. They are neither the instruments of Rāhu nor will they bring everlasting joy to Kinnara. Like any other tool, the computer has been used for evil as well as good. At home, it tells me most emphatically that I have not paid my bills. While not exactly evil, this cannot be called good. Yet, at the same time, computers guided my plane unerringly to India and that must be good. Seriously, these complex devices and the programs that are developed for them, are only as good or as bad as the men who use them. Hence, I propose to help good men, namely the musicians of South India, use at least one of these remarkable devices.

Computers, as the name indicates, were originally developed to do complex mathematical computations and were, of course, used mainly by those who specialized in such research. However, it was not long before business saw the advantages of their application to problems of accounting and record-maintenance. Large organizations took over their initial usage and individual work held little promise against this competition. Only very recently has the usage
of the computer been possible for those of us committed to the humanities and especially the arts.

Colgate University is one of several Schools which have made a major commitment to the application of the computer to problems in the humanities. With the installation of its PDP-10 computer at the cost of thirty-five lakhs, we are now able to do sophisticated research in the humanities as well as the sciences.

Presently, several programs of interest are being conducted at Colgate. We are producing music sounds through the computer by virtue of the Stanford University SCORE program. It is also possible to make visual representations of musical wave-forms for the purpose of analysis and cataloguing. Colgate has also embarked upon a program designed to produce Western notation automatically from sound. However, one of our most successful applications to date, has been in the field of cataloguing. This is the direct result of one of the computer's unique attributes, namely, the storage and fast retrieval of vast amounts of data.

To make this potential a bit more readily understood, imagine that the computer is a "super tape-recorder" capable of storing the contents of hundreds of tapes on one "super tape." Then imagine that, given special instructions, the computer would look quickly through its "super tape" and within a fraction of a second find any combination of letters, any word or sequence of svaras and then immediately print them. Such a search could be quite complex, in that one can ask the computer to find special combinations of any items; and while searching for them, count their occurrences. Thus while you hear this single sentence, the computer could search the entire Saṅgita Catalogue several times. Further, the entire catalogue of Tyāgarāja's works, complete with all of the details listed below, could be stored on a single tape, five inches in diameter. It would still have enough extra room to add the works of Muthusvāmi Dīkṣitār and Syāma Śāstri.

With this capability, S. Ramanathan of Wesleyan University and I set out to develop a program to catalogue Carnatic music. We decided to record as many data as possible and to give the program the following special features:
1) Easy readability
2) Consistent spelling
3) Easy editing capability
4) Easy operation by persons with limited computer-knowledge

This led to the selection of the computer-language called “COBOL” which has the capability of fulfilling these criteria. Yes, computers speak to themselves in special languages which have, little if any, relationship to our verbal languages. While they can be and are instructed in Roman characters via a teletype, they immediately convert these characters into their own languages for storage and manipulation.

It was also decided that initially our record would contain 34 elements of description for each composition. These were to be contained within five lines of type totalling 360 characters. The top of the third page of examples in the sheets handed out displays a record of Thyagaraja’s composition, Balamu Kulamu. You will note that the description listed immediately below this entry pinpoints the exact location of each of these data. Obviously, to meet our arbitrary space-requirements of 360 characters, some items, such as form, subject-matter, special form-information etc. had to be coded. Coding posed a secondary accuracy problem in that codes must be easily decodable and must be safeguarded from duplication or inaccuracy. To solve this problem, a special group of files were constructed that contain a listing of all items likely to reappear often in the development of this catalogue. The computer was then instructed to look through these files each time a new entry was made and to check the entry for accuracy. If the word cannot be found, the computer is instructed to search for the word or words most like the new entry. It will then ask the operator to check his or her entry to see if it was, in fact, accurate. As an example, if an operator was adding a composition by Thyagaraja to the file and the operator spelled the name ‘Thyagaraja,’ the computer would immediately ask if he or she meant Thyagaraja (without the H). Of course, the operator would correct the entry. The same procedure is followed for each item entered in the catalogue.

1. As a special sub-program, the computer was also instructed to record mistakes and to automatically correct them, should they again be repeated.
Another feature exists which prevents dual entries in the catalogue. As the operator types the name of a work to be entered in the file, the computer quickly checks to see if it is a duplication. If such duplication exists, the operator will then be requested to edit the original entry. Works by the same composer with the same title but with different contents receive special treatment as described below.

An examination of a single entry indicates that most of the data can be read without assistance. However, some items bear explanation. The number which appears after the name of a work is used to separate works with the same title, written by the same composer. Thus the three Kritis by Tyagaraja named Śrī Raghuvāra, are entered with Bhairavi Rāga being 01; Kambhoji Rāga being 02; and Śaṅkarabharaṇa Rāga being 03.

Where the date of the work is known, it is entered. Failing this the computer is instructed to add the composers' dates automatically. This is done in order to fix a work in some time period even if its precise dates are unknown. If a work is purely instrumental, the work 'instrumental' will appear, instead of the name of a language. Mela and Rāga are self-explanatory except to note that pāṇs are entered with a P preceding the name (P-Gāndhāram). In the case of pāṇs, the equivalent rāga mela is automatically entered. Rāgamālikā is entered as such. Of course melas are omitted.

The definition of form posed a greater problem. It was decided that the form-name, such as kriti, kirtana, etc. should be coded and entered. In addition, the details of each form should be described in terms of line-numbers. This led to the decision that the number of both poetic and musical lines should be recorded. Svaras and their location were also to be made part of the record. Thus, the numbers 2204—11502 indicate a composition with 2 poetic lines in the pallavi, 2 in the amupallavi and 4 in the caranam. Likewise, it indicates that each of the pallavi and the amupallavi has one musical line and the svaras are usually sung before a 2-line caranam. Despite this detailed description of form it was felt that space for at least two other form-descriptions should be made available. These are used to cover such information as divya-nāma kirtana, pañcaratna kirtana, utsava-sampradāya etc.
The description of subject-matter posed grave problems in terms of consistent reporting. One person might state that a given work was about Hari and yet another source would say that the same work concerned Lord Vishnu. While this example has an obvious and simple answer, one can quickly see that more complicated problems might arise, especially in works that use the language in more subtle ways. This program resolves this conflict by coding any and all words used to describe a composition. These codes, numeric in kind, are automatically recorded and can easily be decoded by special instructions. Since the number of codes that can be created is large, no limitation in their usage is necessary. Also, for a given work, at least four code-entries may be added. Thus, at least four elements of subject-matter can be entered for each composition.

The location of an acceptable recording is also listed in code. If the recording is commercial, the company number will be used. We hope to add as many collections as possible to this listing.

In order to keep a record of the source of the data for each entry, the following information is entered:

1) The type of source; such as book, record, tape etc.  
2) The coded name of the person who submitted the data for entry.  
3) The date of the original source of the material.  
4) The date of the entry in the catalogue.  
5) The last date upon which the item was edited.

For the last part of each entry, it was decided to print the first line of music together with its text. Computer problems arose over the entry of other languages. These will be discussed below.

While this record now seems to be fairly complete, provisions exist whereby remarks can be automatically recorded for any given entry. This feature will prove its worth where conflict of details are offered by two or more authorities.

Some general problems immediately arise in a program of this complexity. First and hence foremost, does the program encompass
all of those elements that scholars wish to have stored? While every attempt was made to anticipate every one's needs, it is a certainty that some data will be missing. Since the program is flexible, this paper encourages its readers to make recommendations for any and all changes that seem appropriate. Later, such revision will become increasingly difficult though not impossible.

A second problem encountered in the building of this program is an old one, namely, language and language-conventions. The question can be fairly asked, why this catalogue is not in an Indian language? This is a limitation of the computer and not the authors. Most, if not all, computers use Roman characters as their basic letters. However, even now we are experimenting with a program that will give us the capability to cast the first line of music in its original notation and language. In fact, we plan to develop a program that will automatically record and play back the first line of music in its original sound.

It will be noted that the computer is extremely careless with its capitalization. In fact, it capitalizes all letters. This weakness, coupled with the absence of any diacritical marks, made it necessary to modify the Romanized convention of notation. In the examples you see, in the sheets I have handed out, capital letters equal a comma rather than the more usual semicolon. Despite this compromise, the record is fairly easy to read.

The absence of diacritical marks also compounded the problem of following proper language-conventions, especially where long vowel sounds are required. It is hoped that the addition of an overwrite system will bring us in line with accepted conventions.

Some general decisions became necessary as the program developed. Since there is no complete agreement upon what is the definitive catalogue for any composer, it was felt that the Sangita Catalogue should be all-inclusive rather than selective. Hence, if two authorities disagree on the authenticity of a work, both opinions will be entered and a proper remark added to pinpoint these differences of opinion. Further, if some detail of a given work is differently defined by two authorities, both versions will be entered and noted in the remarks-section. This policy has the advantage of identifying different traditional schools. Corrolary
to this is the decision to make most editing of the records the
correction of gross errors or the addition of missing data. All other
editing will be in the form of remarks to identify differences of
interpretation or opinion.

Now, the most important part of this paper. How is this
program to be used? Will it be readily available to all scholars?
What kinds of questions can be answered and what problems
solved?

As the catalogue builds, it will be published periodically in
order that it can be used as a source book for all known works of
Carnatic music. Of course, this publication will be in India and
readily available to all scholars. Corrections and additions will be
accepted at any and all times. They will be entered immediately into
the computer. These changes will be reflected in the next edition of
the catalogue.

More subtle usages of the Sañgīta Catalogue will take place at
any time and will result from the posted request for special data
from any scholar. The nature of these data is limited only by the
imagination. Following are several examples of special data-handling
that are possible:

(1) A search for a record where the name of the composer and
the work are unknown but where other information, such
as the first line of music, is known.

(2) A tally of certain elements within a composer's works.

(3) Correlation between elements within certain works: such
as, what rāgas, talas, forms, etc. are used most often with
certain subject-matter.

(4) What is the trend in numbers of compositions being
written? In what languages, what rāgas, etc.?

(5) Where can recordings for specific works be found?

(6) What are some of the differences between the schools of
performance?

The list can be endless.

On display you will note several problems that were given to
the computer to demonstrate what kind of printed record it will
produce. All of these printout, as they are called, are based upon the Tyāgarāja-section of the catalogue which is nearly complete and hence, available for use.

**Problem 1.** Let us imagine that one wished to have a print of all of the *kritis* written by Tyāgarāja in the *rāga Sāveri*. At the same time, let us request a tally of these works. The computer took less than one second to make the list and count it. There were 20 entries. It then took 30 additional seconds to print the results. Hence, the only delay to you would be the delay of the mails which is negligible.

**Problem 2.** Imagine that the problem is a bit more complex and that one wished to know about all *kritis* written by Tyāgarāja in *rāga Sāveri*, *tāla Ādi*. This example again took less than a second to prepare and 15 seconds to print. There were 10 items.

**Problem 3.** Even more refined—What are the *kritis* by Tyāgarāja in *rāga Sāveri*, *tāla Ādi* that concern themselves with *Pārvatī*? This takes a bit longer—two seconds to prepare and 10 seconds to print. There were three items.

In addition to the central file on compositions, and as mentioned earlier, side files are maintained which contain lists of composers, *rāgas*, *tālas*, forms, subject-matter and sources of data entered in the file. They too can be called upon for study and analysis.

Finally, it must be made clear that the *Sangīta Catalogue* is not intended as a reworking of ground so ably covered by great scholars in the past. What it does is to supply a hereto-fore unavailable "file cabinet", for their great work. It will be a file attended by the world's fastest and most accurate "file clerk". It will be a file stored in vaults worthy of the precious gems they hold.
THE CONCEPT OF S'RUTI AS RELATED TO SVARA—
A TEXTUAL AND CRITICAL STUDY

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The concept of s'ruti as related to that of svara forms the very basis of understanding the Grâma-mûrçchanâ system, as originally propounded by Bharata, expounded by Matânga and represented by Abhinavagupta, Sarângadeva and the subsequent writers such as Kumbha etc. It seems that historically the perception of svara is prior to that of s'ruti, and that the concept of s'ruti was necessitated by the need for an adequate apprehension, analysis and appreciation of tonal phenomenon; both for the sake of understanding and for an effective and creative endeavour. Music is as old, in the history of civilization, as speech, if not older; and its significance in the development of human personality from pre-historic times is of no less importance; for, the revelation of the Vedic hymns was almost immediately accompanied by the need for their employment in the sacrificial form, giving rise to Sâmagâna. Tracing the origin of Nâtyâstra, Bharata states that the creator "extracted the Pâthya (verbal text) from the Rgveda, Gîta (music) from the Sâmaveda, Abhinaya (action) from the Yajurveda and Rasa (aesthetic delight) from the Atharvaveda". And it was in the perspective of the origin of dramatic arts, that the phenomenon of music and dance was first comprehended. Consequently, aesthetic delight was recognised at the outset as the distinguishing characteristic of musical sound. Therefore, when a scientific study of music was first made, prevalent practice and the natural perception of tone on the basis of delightfulness formed the primary data for investigation, systematic formulation and adequate comprehension. It is quite in this context that Bharata's statement—"Tones (svara-s) are organised into the Grâma through Jâti-s and and s'ruti-s "—becomes significant. Thus what was spontaneously

1. जग्नात्पाठ्यपूज्यमि साम्राज्य चात मः साम्राज्यात मां श्रीमानि।
बप्तिभवादिनियामि रसालास्रष्णादिष्।।१५।।
Nâtyâ Sâstra, Kashi Ed. 1. 17

2. चाति पुरुसः प्रविष्ट्य स्वरा प्राप्तवायात।।
i.bid. 20. 5.
perceived in the Jāti-gāna was tonal movement i.e., the svara-s; which after an analytical investigation were organised into grāma on the basis of their śruti-content. So, we find that the concept of śruti was formed as a means of precisely measuring, relating or comprehending pitch-relations spontaneously perceived as tones.

That the tones are spontaneously perceived is affirmed by all the musicologists from Matanāga who says: “Because it is perceptible by itself, it is called svara”¹. Since delightfulness was already implied as the essential quality of tone, Sāṅgadeva, improving upon the definition, as it were, made it explicit when he said: “Immediately consequent upon śruti, emollient and resounding, the sound that delights the listener’s mind by itself, is called svara.”²

The essential fact is that whereas svara is given to spontaneous perception, śruti is intellectually conceived subsequently for organising the svara-s into a perceptible scale called Grāma. This has been done on the basis of certain observable facts; but since those facts can be observed only by trained ears, the question whether this concept has any objective validity or not always keeps on hanging fire. Another reason for the controversy raised on this point is the fact that the concept is not almost as universal as the concept of tone obtaining in the various systems of music in the world today. It is obviously peculiar to Indian Music, specially the ancient Indian Music, for, even in India there are people who think that they can easily do away with the concept of śruti altogether, and yet be able to explain the structure and the technique of modern Indian music. Strange as it might seem, śruti does not find any significant mention in its technical sense in the Paurāṇic tradition. Grāma, mūrccchāna, jāti, svara etc. constitute musicological terminology in the Vāyu Purāṇa, the Markandeya Purāṇa and the Viṣṇudharmottara Purāṇa.³ This would suggest that there had ever been two different traditions

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3. स्वयं वो राजते वस्ादा, वस्माते स्वर: स्वतः।

Bṛhaddeśī

3a. भृश्वनन्तत्रभवि यः हितस्मोहङ्गायेवः।

स्वतो रक्षयति भोजनविष्क इति स्वरं उच्चते।

Sangita Ratnakara I. 5. 24-25

4. Alain Danielou, Texts des Purana Sur la Theorie Musicale
of musicologists with reference to the concept of śruti, one considering it as the pivot of Grāma-Mūrcchana system and the other ignoring it completely.

This does not however mean that the concept of śruti has absolutely no relevance to Indian music today but this view rather points out the necessity of a fresh inquiry into the true significance of the concept of śruti, and this can be done by investigating the relationship of śruti and svara, and thereby determining the true function of śruti in the Grāma system. Such an enquiry may enable us to re-assess the value of the concept in its proper perspective.

Indeed, a lot of work has been done to explain and to re-interpret the relevance and validity of the concept of śruti in the context of Indian music, in the recent past; but, the subject is so abstruse that any attempt from a different angle can always be considered helpful. The subject is indeed multi-dimensional, and there are many intriguing questions challenging our attention. For example, we find that the authors of medieval India have allocated different number of śruti-s to the same svara-s; or, there is enough scope for studying the outlook of ancient writers on music such as Bharata, Dattila and Mataṅga to formulate the right opinion regarding the śruti-s being equal or unequal. These questions are quite formidable and merit an independent inquiry; and moreover, all the secondary questions, such as these, can be satisfactorily answered only when the fundamental concepts are properly understood. It is, therefore, intended here to bring out the significance of the concept of śruti as related to svara by studying its function and its relationship to svara as expounded in the traditional works of Indian music. We shall first try to arrive at a tentative definition of the two terms and then arrive at a conclusion by investigating their relationship.

1. **The concept of śruti:**

The word śruti, as it is well known, is derived from the Sanskrit root Śru, 'to hear', etymologically by Mataṅga as well as Śāṅga-
deva.4 "Srūyatātiśrutiḥ" i.e., 'that which is heard is śruti'. Now, what is it that is heard? Does it imply that whatever is audible, musical or unmusical, is śruti? Or does śruti, in whatsoever general terms it might be defined, have a particular signification? Bharata speaks of śruti in the context of the constitution of Grāma; so we have to look to Mataṅga and Sāṅgadeva, to answer this question; for, even Abhinavagupta5 echoes Bharata when he says: "There are two grāma-s, Saḍja-grāma and Madhyama-grāma; and twenty-two śruti-s are established here, in one tone-cycle (i.e., Saptaka)". Incidentally, it may be noted that he too considers that the function of śruti is to constitute Grāma.

Mataṅga seems to present the concept of śruti in a systematic way; for, obviously in his time this was perhaps the burning issue in the field of musicology. He begins with the literal meaning of the term, Srūyanta iti śrutayat1, 'the śruti-s are so called because they are heard.' So primarily, śruti to him, denotes 'sound', the object of hearing. Then he refers to the fact that, 'śruti is either considered to be one or many', implying that it all depends on the connotation of the term; for, the word śruti was quite differently understood by different scholars or schoolmen as it appears from his discussion with regard to the number of śruti-s.

To Mataṅga, therefore, śruti as understood in its primary sense of the 'audible sound' is one only.6 And he supports his contention by quoting Viśvāvasu who says that, "because it is perceptible by the sense of hearing, sound only can be śruti."7 But Viśvāvasu does not seem to be limiting the connotation of the word śruti to its

6. अव्रणाः स्रुत्यो भवति: ।
   Saṅgita Ratnākara I. 3. 8.

7. कष्ठ हृ ग्रामो बहुनामी मध्यमाबन्धोति । अन्त्रित ।
   द्विशिष्टशृण्यः
   स्वरक्रमंक्षाचितः ।
   Abhinavabhārati, Baroda Ed. p. 15.

8. सा वै वै ग्रामेका वा ।
   Brhaddeśi

9. तत्वात्व शृविनिदिति ।
   ibid.

10. अवन्दनक्रमांकादं व्यापरं शृविनिदितं मितायत ।
    ibid.
primary meaning; rather he lends it a meaning which makes the
word technical in the field of musicology; for, he says that, 'śruti
is two-fold according to the standard notes and the intervening ones
(Antara-svara-s) with which it is associated.' But those who
consider the śruti to be three-fold either on the ground of three
registers or three-fold perceptual insensitivity as quoted by Mataṅga
do not seem to make an advance on the one śruti-theory from
the musicological point of view; since the first opinion makes no
important distinction as the very same notes are involved in all
the three registers; and the second view relates to the quality of
voice i.e. the timbre and not the pitch. However the theory,
referred to by him, that considers śruti to be four-fold on the basis
of the different physiological conditions makes some advance upon
the three-old śruti-view in so far as it affects the whole structure
of musical sound. But yet, it does not seem to depart absolutely
from the primary meaning of the term śruti, and therefore fails to
accord distinct individuality to different śruti-s.

Bharata has spoken of three types of tones viz., having four
śruti-s, three śruti-s, and two śruti-s, in the context of wind
instruments with reference to the technique of playing upon them. Presumably on this basis some flutists, according to Mataṅga,
consider śruti-s to be nine only. We are not presently so much
concerned with the actual and true number of śruti-s as with the
true significance and the actual function of śruti-s. It is obvious that
to the flutists only nine śruti-s were real, for they could produce the
notes of the octave with this understanding. Therefore, once again
we find that śruti-s are conceived in order to produce the svara-s
accurately and for obtaining their modified forms such as Antara
and Kākali referred to earlier in the two-śruti-views. However,

11. खा वैक्रमि हिंद्रा हेय ज्वानान्तरविभागायः।
   ibid.

12. केन्ति स्वानान्तर(स)भोगाव विभिन्न गुर्दु हृदित प्रतिपत्ति।  अपरे विभिन्नवैभुधावत्
    विभिन्न श्रुति प्रतिपत्ति।  इतिवैभुधाय च विभिन्न सहजं शोषणशिल्पावतं
    वेति।
   ibid.

13. द्विनितिज्ञतुचकास्तु हेय बंधावलं ह्वराः।
   (नात्यास्त्रा, नायास्त्रा ध्वनि स्वरण्मुक्तालये ठ।)
   Nātyaśāstra (G. O. S.) 30. 2
apart from the technique of the wind instruments, Bharata himself implies twenty-two śruti-s in a scale; for, there are three notes with four śruti-s, two with three and two with two śruti-s each in Saḍja-grāma.

It is interesting in this context to consider the view of Dattila whose work is believed to be earlier than that of Matāṅga, and who is considered to be a close follower of Bharata. He says: “Higher and higher notes in the high register (Tāra-sthāna) are on the vēpā lower and lower. Thus the differences of sound are called śruti because of their auditive perceptibility. With some of these (śruti-s) one sings in all songs. Those (śruti-s), however, which have become notes will be considered here.”

Thus auditive perceptibility of differences in pitch forms the essential characteristic of the tonal perception called śruti by the ancients. And then it is also notable that in a given scale of notes, it is some of these very minute intervals that are recognised as svara-s. This view enlightens us regarding the relation of śruti and svara.

Then Matāṅga quotes Kohala, who is even earlier than Dattila. He affirms that śruti-s are twenty-two in number, also considered as sixty-six by some; or otherwise they are infinite. Thus, as far as the difference of pitch as determined by auditive perceptibility is concerned, the one prominent view held by distinguished musicologists was that of twenty-two śruti-s, because all other views are either partially applicable or not based on pitch-value, and therefore non-musical in their orientation. The view of sixty-six śruti-s is only a projection of the former and is obviously superficial. Alternatively, if śruti is a just perceptible ‘difference in pitch, there can hardly be any limit to such sounds. So the view maintaining an infinity of śruti-s called for a need for a clear and precise definition of the term in the essential sense of perceptible difference in pitch. Of course

14. उत्तरोत्तरातः बीणाशालोत्तरः।।
दत्तिलाह्याच्यायान्तः।।

dattilam

15. दर्शियान्ति केरिजुदाहरिष्टः (श्रुति: ) मुदिनान्मधिचादरिष्टः।।
वर्णविगितितः: कृत: केरिजुदाहाणयानवेश प्रतिवादित्विः।।

Bṛhaddeśī.
sruti-s cannot be considered infinite; for, the function of sruti-s is to constitute the musical scale and to determine the position of the seven tones in it; so, if the sruti-s have to discharge this function, their number has to be limited; then only they can be used as units of a group.

But, how is it that the sruti-interval came to be perceived? In other words, does the name sruti correspond to an objective perception? Kumbha, who is, in a way, a commentator of Sarangadeva, has pointed out two different aspects of the connotation of the word ‘sruti’. He says, “the word sruti can be derived from the root Sru, either as an abstract noun, referring to listening, or as a verbal noun, referring to the object of listening”. In other words, sruti also denotes a perceivable difference of pitch. This was derived in the first instance in the form of the difference of pitch-value between the Paścama of Saṣja-grāma and that of Madhyama-grāma by Bharata. And this difference of auditive perception was designated by him as pramāṇa sruti. In other words, in the perception of that difference in pitch value, he found a proof of the perceptible existence of a tonal factor that constituted tones or determined their position in the scale. Consequently Kumbha echoing Abhinavagupta points out that the function of sruti is to distinguish between the Gītā-s. Mataṅga perceives in this difference of pitch a measure of tonal content called sruti. Thus the discovery of the pramāṇa sruti set the ball rolling, and it was found that all the tones were actually to be arrived at through two, three or four perceptible factors, bringing the total number of such tonal factors to twenty-two in a scale. Regarding the objective validity of the concept of sruti Dr. B. C. Deva has referred to a laboratory experiment conducted by Ellis in England in the 19th century. The experiment proved that “the number of rough steps of pitch which can be distinguished in an octave are about 22;” and also that the difference in any sensation which can be perceived depends on the sensation already present in a person. The effect of this accumulated sensation was known

16. अथ प्रयोजने ताबस्योपायं श्रुतिस्वरणं।
बिमभो प्रामाण्योपेयस्यदिलवः झाजेन जाते ॥
Saṅgītā-Rāja II. 1. 1. 90

17. B.C. Deva, Psycho-acoustics of Music and Speech, 1967, pp. 122, 125
to our ancients, or was taken into account in formulating the concept of śruti. Abhinavagupta calls it, “Kramika-śrutijanitasamskāra-videga.” Sāṅgadeva is also aware of this process, when he himself poses the question, “Indeed if such śruti-s as the fourth etc. are admitted to be the cause of svara-s, how can the other śruti-s such as third etc. be considered as their cause?” to which he answers: “Such a śruti, whether fourth or third etc., is determined only with reference to the preceding śruti-s; therefore, they too constitute the cause of svara-s.”

Following Matanga in spirit, Sāṅgadeva too considers the śruti-s to be the modifications of musical sound i.e. Nada. So śruti for him is essentially a musical sound. We can see the crystallisation of the concept. Another evidence of this process is to be found in Sāṅgadeva’s statement to the effect that Nada arising from the navel is differentiated through twenty-two Nādi-s, situated in the region of the heart, the throat and the head respectively. It is not understood in what sense he uses the term nādi. In the Ayurvedic terminology, it is generally identified with veins, arteries, nerves etc. So if by nādi-s he implies observable objects, then such twenty-two nādi-s have yet to be identified by physiology. However, if he implies some Yogic meaning, then obviously it would ever remain a subjective phenomenon. What is quite apparent is an attempt at fixing the number of śruti-s at twenty-two on a tangible basis to set the controversy at rest beyond all doubt. And perhaps he did succeed in his endeavour to do so, since no subsequent writer seems to have challenged him. After him, twenty-two śruti-s are almost taken for granted.

It is noteworthy that Bharata enumerates the concept of śruti in the context of subjects related to Viḍā, but not among those related to the human instrument. This implies that śruti is one of

18. सप्त ज्वतिष्ठव्यासयितस्वेच्च संस्कृतां।
   च्यादीरत्नि तत्र पूर्वाणि ज्वतिनां हेतुत्तथा कथाम्।
   नमस्त्रयङ्गीतोऽक्ष्यति: श्रुतिः पूर्वाणिधर्मयाः।
   विचारसांस्कृतवः: श्रुतयः पूर्वः अथवः हेतुः।

Saṅgīta Ratnākara I. 3. 25-27.

19. सध (नादश) द्वारिष्ठविन्दन्दः।

ibid I. 3. 8.

those subjects of musicology that can be well demonstrated and best exposed exclusively with the aid of viṣṇa. Therefore, Śāṅgadeva's graphic description of twenty-two nādi-s in order to show the genesis of śruti-s, seems to highlight the Tantric influence on musicology, the seeds of which can be found even in Maṭaṅga. Tantra combined Yoga and Vedānta; and the concept of Nada is closely related to the philosophy of Tantra and the practice of Mantra Yoga. Probably this can explain Śāṅgadeva's hypothesis.

Although, as already stated, Viśvāvasu and Maṭaṅga consider 'Dhvani' i.e., mere 'sound' to be the essential content of śruti, Śāṅgadeva considers Nāda i.e., 'musical sound' to be the substance. However it is worthwhile to note that he does not consider each śruti to be a musical sound; what he implies is that śruti-s do give rise to svara-s that are essentially delightful, resonant etc. This implication is clearly brought out by his commentator Kallinātha while he comments on Śāṅgadeva's definition of śruti viz., "Sravanāt Śrutayo mātāh" i.e., "śruti-s are so-called because of their auditive perceptibility." He says: "Auditive perceptibility is common to such extensive sounds as well, as svara, tāna etc. that are essentially resonant apart from śruti; therefore, here indeed śruti signifies only the sound that is produced by the blow of wind etc. in the very first instant, which is free from resonance."

Thus we find that śruti is conceived as a factor of musical sound in the form of just perceptible difference of pitch, that is free from resonance. So, according to Śāṅgadeva, as interpreted by Kallinātha, "śruti signifies a pitch-value which contributes to the musicality of tone and is yet by itself devoid of tonal colour." Now since he recognises twenty-two such pitch-values, as indeed they have been recognised by Bharata, Dattila, Maṭaṅga and Abhinavagupta before him, it is also implied that the audible musical sound free of resonance that a śruti is, it should be capable of individual perception and recognition, and therefore of being reproduced; for, otherwise they cannot be employed consciously. This leads us to the question what the significance of śruti is with reference to svara. But before

20. विषयिण अवश्यंतिवंतसुरुणनात्म: स्वरतताधिः पेण दीर्घावदेशार्थि
ब्बेनेविस्वाश्रवणाम त्वाज्याक्षेत्रन्ताहनन्तक्षयसवन्धि-अवश्यंति
द्युवस्तेनेव भृतिलितिः।

Saṅgīta-Ratnākara p. 67
(Adyar ed. Vol. I)
one can investigate that, one must be clear about the concept of svara.

To sum up the deliberation regarding the concept of śruti, it may be concluded that “śruti is that audible musical sound, a just perceptible difference of pitch, which is free from resonance and is capable of being individually perceived, recognised and reproduced.” It also follows that “there are twenty-two such śruti-s in a given scale which are same in all the three registers.”

This very conclusion is corroborated by the process of Catuhśaraṇā initiated by Bharata, re-shaped by Mataṅga and pedantically expounded by Śāṅgadeva. So also, Kumbha has defined very clearly the three-fold function of the four-fold string-movement called Catuhśaraṇa. He says: “The delimitation of the number of śruti-s, gradation of pitch with reference to tones and the comprehension of Kākāti etc. (constitute) the functions of the string-movements (ṣaraṇa-s).” The process need not be re-stated here; but it confirms, by actual demonstration, the number of śruti-s being twenty-two, and also the fact that śruti-s are musical sounds just audible.

2. The concept of Svara

The concept of svara does not confront us with much difficulty; probably, because of the universal recognition of the tones, and also due to the inherent qualities that distinguish it. It has already been pointed out that the concept of svara was as naturally formulated as spontaneously it was perceptible. Dattila, as already pointed out, has said that some of the śruti-s are considered as svara-s. If this is read in consonance with Bharata’s concept of three types of tones constituted by four, three and two śruti-s,“ we are led to think that some of the śruti-s attain the position of svara-s. Thus, although no categorical difference is conceived between śrutis and svara, it yet remains to be defined in what way they are different, or perhaps they are neither categorically different nor even identical.

21. Bhūtāyatapatiraśvastraśvāsābhāvam ।
    svarapriyasaśvāsābhāvam puyogam ॥

Sagātta Rāja II. 1. 1. 115

21a. See Note 13 on p. 115
Śāṅgadeva has said in a peculiar way, how the svaras come into being. He says: "From out of the Śrutis arise the svaras," and this may be read along with his statement that all the Śrūtis pertaining to a particular svara are responsible for its manifestation.*

Obviously he does not imply that Śrūtis are the cause and svaras their effect; the cause having ceased giving room to the effect, and the cause preceding the effect. He seems to suggest that svaras arise by the cumulative effect brought forward from the preceding Śrūti-s to the note-Śruti i.e., the Śruti that becomes the svara; in other words, by Saṁskāra-pradāna i.e., by the inheritance of the residual effect. It is notable that svaras arise out of Śrūtis in the groups of two, three and four; but they do so only in groups: in other words, no single Śruti can become or produce a svara.

In fact Śāṅgadeva’s statement is rather vague in so far as it does not pronounce the relationship obtaining between svara and Śruti, and also because it is capable of being interpreted variously. One can roughly interpret that as the Śrutis give rise to svaras, they are the cause; or for example, one can say that svaras are different from Śrutis, being their product. This, however involves the whole question of the nature of relationship between svara and Śruti, which we shall deal with presently.

Śāṅgadeva defines svara, detailing its different characteristics—"Immediately consequent upon Śruti, emollient and resounding, the sound that delights the listener’s mind by itself is called svara." Resonance, softness and self-sustained delightfulness are the essential features of svara.

It is also noteworthy that the two commentators of Śāṅgadeva harbour a difference of opinion with respect to the first character of the tone. Kallinātha thinks that in case of Saḍja, for example, tonality is derived from the resounding of the fourth Śruti." In

22. śrūtim: sṛgu: svarā: ।

22a. See Note 18 on p. 118.

23. śruti-nātarākāri, śruti-sākṣarottāsūntakṣaṇa-vivṛṇa-rāmeśvarāśva-padadantaśvīpaśvatastākṣarāśva-śabda-vyabhicārī।

Saṅgita Ratnakara I. 3. 23

ibid. p. 82
other words, in the expression Śrutiyanantarabhāvi (immediately consequent upon the āruti), the term śruti, refers to that particular śruti which is capable of resounding into a note and which is technically called svarasthāna. Simhabhūpāla, however, would consider the first āruti bereft of resonance as īruti and the fourth śruti giving rise to resonance, a svara.14

However, the suffix ‘bhāvi’ in this expression is suggestive of possibility and refers to possible resounding vibrations of a śruti and therefore precludes any interpretation to the effect that every śruti can resound or be a svara. The difference of opinion between the two commentators leads us to two theories—

(i) That svara manifests itself as the resounding vibration of the fourth śruti of Ṣaḍja, and therefore svara can be said to be the effect of śruti and is therefore to be conceived as different from it.

(ii) That the fourth śruti of Ṣaḍja is itself a svara, since it is capable of resounding.

To Simhabhūpāla, there are four distinguishable sounds, the first three being devoid of resonance and the fourth one being capable of it. Therefore, the resounding śruti, for him, is not quite different from svara.

So we have two types of śruti-s, the resounding śruti-s and the unresounding śruti-s. R. Sathyanarayana in his paper entitled ‘Śruti, the Scalic Foundation’ identifies these two types with Svaragata and Antaragata śruti-s of Viśvāvasu.15 But, it would be technically more accurate to identify the resounding śruti as svarasthāna-śruti and to refer to other śruti-s merely as āruti-s. This finding will be helpful in establishing a proper understanding of the relationship of śruti and svara.

24. शुल्कन्तररेति। शुल्कन्तररे भवलीति शुल्कन्तरसाधी। प्रश्वतन्तथामृ साहलायं भव भगत्तन्तसाध्य उपन्यायेत् श शुरूरू। यस्य ततोधन्तसाधूमृ अनुराहस्: शून्ते श हेवः। ibid. p. 82.

25. Sangeet Natak, No. 17, Śruti, the Scalic Foundation, p. 62
Delightfulness indeed is related directly to resonance that brings about spontaneous perceptibility; and therefore, the tonality of the notes is primarily in resonance. Maṭāṅga derives the word svara from the Sanskrit root Rāj, 'to shine', with the prefix sva (itself), meaning 'that which shines by itself', i.e. which is spontaneously perceptible and needs no other means to manifest it. He then defines svara as delightful sound and cites Kohala in his support to the effect that 'colourful sound is known as tone.' So we have, spontaneous perceptibility, delightfulness, resonance (i.e. the overtones, the sound, vibrations immediately following the note-sruti), and softness as the four essential elements, aspects, or dimensions of svara.

Now the question is, how many of these effects are shared by sruti? Spontaneous perceptibility, resonance and delightfulness are positively denied to it, while softness may be attributed to it since it has musical sound for its content. Then, how do these attributes manifest themselves, when svara-s are said to arise from sruti-s? One explanation is Saṁskāra-pradāna i.e. each sruti transmits its residual effect to the next and the attributes of svara arise as a result of the cumulative effect of all the sruti-s of a note climaxed by the note-sruti. Thus, we may conclude that even though no single sruti can manifest by itself the attributes of svara, they are nevertheless produced by them cumulatively. Svara, is therefore neither identical with, nor different from sruti. But svara can however be identified as the sum-total effect of the sruti-s of which it is constituted; in other words, a number of sruti-s together produce the effect which is called svara; or otherwise, a group of sruti-s in temporal sequence manifests svara. In that sense tonality may be conceived as inherent and latent in the sruti-s which manifests itself according to the manner of their grouping just like the atoms coming

26. राज् दीर्घवित्त मातोः स्वस्ववरः त्रयं च।
स्वयं ती राज्येत् यमसात् तस्यादेव स्वरः स्रुतः।
Bṛhaddevī.

27. राज्यवाकोऽभवित्त स्वर उच्यते।
ibid.

28. भवनी २४: स्वर: स्रुतः।
ibid.
together to form into a molecule. Each śruti may thereby be considered to be charged with the power potency of tonality.

Our ancients have already considered the question of relationship between śruti and svara thoroughly; and it will be worthwhile to examine critically the views put forth by different schools.

3. The relation of svara and śruti:

Mataṅga relates five different views with respect to the relation of śruti-s to svara-s in the following verse:

"Of the śruti-s (as related to svara-s) they characterise (the relation) as identity, appearance, resultant, transformation and manifestation."2

i) Identity:

The contention of this view is that, since there is no need for any special tactile relation for perceiving the two, both śruti and svara being perceptible through the sense of hearing, they are essentially identical like the relation obtaining between the genus and the species.30 Thus, the identity of śruti and svara, in this view, is based on the same source of perception and is illustrated through the relation of the general and the particular. Obviously, this view is absurd on the face of it, since all the objects of one and the same sense cannot be so related. Mataṅga rather points out that, since śruti and svara are two different concepts and are related as the supporter and the supported, the foundation and the structure, the relation of identity cannot be established.31

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29. ताताययर्व व विवैज्ञ व कर्यते वर्तिनामि।
असिद्धवृक्कता बापि भुजीनां परिवा है॥ ३०॥
ibid.

30. विवेकव्यायात्मात्स्वरूपवर्षेणिनिर्देशतः।
स्वरुपोषु ताताययर्व जातियस्यज्ञानिनिधयोः॥ ३१॥
ibid.

31. नानाज्ञविधायत्तवात् स्वरुपोषु विशेषतः।
आध्यात्मिनिमेतः ताताययर्वैव सिद्धिनि॥ ३९॥
ibid.
ii) Resultant:

If śruti and svara, being made of the same material, cannot be related in identity, then perhaps the śruti-s can be taken as the cause of svara-s, and svara as the result of śruti. This view implies a relation of cause and effect, the effect being different from the cause. Matanga illustrates the point by the analogy of a pot being produced from mud with the help of a rod.\(^\text{33}\) Mud is considered to be the material cause and the rod to be the efficient cause of the pot. Now, it is a well-known fact that the material cause co-exists with its effect, and Matanga argues that śruti-s cannot be conceived as producing svara in this sense as śruti-s do not co-exist with svara\(^\text{33}\) i.e., in other words, svara manifests only after the śruti has ceased to be. This contention justifies the inference derived by Kallinātha that tonality lies in the resonance of the note-śruti. Thus, śruti and svara cannot be related as cause and effect.

(iii) Appearance:

If śruti and svara cannot be related as cause and effect, it is obvious that svara is not a product at all; and yet the phenomenon of svara is there. Can we therefore say that svara is only a projected image of the śruti-s just as face is reflected in the mirror?\(^\text{34}\) The face reflected in the mirror is merely an appearance and has no existence of its own, being the image of the object outside the mirror; but, svara is perceptible by itself; svara therefore belongs to the same order of reality as śruti. Matanga, therefore, concludes that this view does not accord with facts; for if svara is taken to be a projection of śruti it cannot in any way be different from it essentially; and moreover, the perception of svara would become

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32. स्वराणां शुद्धिकाेवल्लमिति केवलद्व बदलित हि।
शुद्धिकाेवल्लमिति पारदोषव रथों मवेश्य ॥ ३४ ॥
ibid.

33. कार्याकारर्थावल्ल स्वरकारकोऽऽमंगवेश ॥
... ... ...
कार्याकारर्थावल्ल कारणस्तोपस्मानात ॥
ibid. ॥ ४१, ४४ ॥

34. नराणां च खुश्च यदिद्व देवीधेत्र विवर्तितम ॥
प्रतिशास्ति स्वरे(रस्त)इत्युद्दित विवर्तित: ॥ ३३ ॥
ibid.
illusory; whereas, it is observed in fact that svara is categorically different from śruti.

As a matter of fact the appearance-theory is based on the Vivartavāda of Advaita Vedānta which is concerned with explaining the fact of phenomenal world as a whole; whereas, the perception of śruti and svara is essentially relative and empirical and cannot therefore be explained in terms of the relationship of the absolute and the relative. However the essential feature of Vivartavāda is that it explains change without admitting any modification in substance. This would accord with Sudhākara’s view that the note-śruti itself becomes manifest as svara, so that svara, though appearing to be different from śruti, is yet not different from it in substance. But, Mataṅga seems to consider the change involved to be substantial as he contributes to the transformation-theory.

(iv) Transformation:

“No doubt” says Mataṅga, “Śruti-s undergo a substantial transformation in the form of svara, as milk is transformed totally so as to form into curds.” Obviously, in this view, svara is considered to be essentially different from śruti. It is only the protagonists of Ārambhavāda i.e. the Naiyāyikas who admit the effect to be different from an inherent cause (i.e. Samavāya-kāraṇa) which is the same as the material cause. Others admit the effect to be different from an efficient and aggregative (sāmyoga) cause. Here Mataṅga seems to be advancing the view that śruti and svara are in Samavāya-relation; for Sāmyoga, a mere aggregate of śrutis, cannot produce svara, as pointed out by Kumbha. The śruti-s have to be in a particular order of succession in order to produce a svara. Moreover we cannot have an aggregate of śrutis like a bundle of threads, since they always occur in a temporal sequence. The Samavāya-relation implies that “the effect inheres in the material cause as a quality may be said to do in a substance. The insistence that produced things are not only in time and space but also

35. वदनाभि विभौत्त्वं धृतीवां तदर्थविभौ ।
विभौत्त्वं स्वरणं हि छानित्वानं प्रवद्वां ॥ ४० ॥
ibid.
36. स्वरता तत्समुदच्छ घुटराषण्यन्मेता ॥ १२६ ॥
Sangita-Raja II 1. 1. 136.
abide in Dravyas is noteworthy." If, therefore svara-s are conceived to be inherent in the śruti-s, they could as well be called the manifestation of śruti-s.

(v) Manifestation:

Transformation implies the capacity to change, or in other words, a latent possibility. When the latent becomes active, the effect is called its manifestation. So, Mataṅga declares that, "the seven tones called Šaḍja etc. are ever manifested by the śruti-s like a lamp manifesting the objects concealed in darkness." Thus, what is implied in this view is that the svara-s exist in their own right and are highlighted by the śruti-s. This viewpoint is however rejected by Kumbha on the ground that it implies co-existence of the manifester and the manifest, which is in contradiction with the observed fact.

Kumbha has discussed this relation from the point of view of almost all the schools of Indian philosophy including the Buddhists; but without going into smaller details, what is observed is that all these theories are applied to determine the relation of śruti and svara on the basis of change, for all these are the theories of causation attempting to explain the phenomenon of change. The concept of change is fundamentally two-fold; one view is that reality is a flux, a perpetual change, and the other view is that reality is eternal. The former view does not in effect admit any cause-effect relation; for, it holds the dissolution of one whole to be the creation of another whole, while the latter view admits this relation. The first view is held by the Buddhists and the other is held by the orthodox Hindu Philosophers, in one form or another. The Buddhist view has to be rejected; for, it precludes the study of all relations; the Hindu view is represented by three important view-points viz., (i) that creation implies a substantial change, (ii) that creation implies transformation or manifestation.

37. M. Hiriyanna, The Outlines of Indian Philosophy. p. 239, (1970 ed.)

38. ब्रह्मचर्य: स्त्री: सत्स्वयंवते शुल्किस्यः मद्यः ।
अग्निकारिन्यत यद्य: प्रदीपेन षट्टादनः ॥ ३६ ॥

Brhaddeśi
of the inherent or (iii) that creation represents the appearance of the real. The last of these views cannot probably be applied to explaining the relations within the empirical field. So, we are left with only two alternatives viz., that of substantial change and transformation or manifestation.

The theory of substantial change implies that śruti-s are evolved into svara-s, while that of transformation implies that svara-s are involved into śruti-s. This analysis resolves the problem. There seems to be no categorical difference in the two viewpoints that describe the same relation in different terms, from two different ends. Therefore, the utility of bringing in these theories for explaining the relations of svara and śruti can as well be questioned. As a matter of fact śruti and svara are no absolute entities and both have musical sound i.e., Nāda as their substance. So, there is no difference as far as their substance is concerned. Therefore, it will be irrelevant to conceive of any substantial change taking place in between them. Nāda, as modified into twenty-two forms called śruti-s, variously crystallises to appear as seven tones. Therefore, śruti-s arising into different groups in temporal sequence give rise to self-perceptible tones. Since śruti-s are not substantially different from svara-s, any attempt at relating them as cause and effect will be irrelevant. To understand the true significance of this relation, one must not lose sight of the fact that fundamentally we are dealing with Nāda. Śruti and svara are only two different forms of Nāda, related as the digits of the same figure, every digit contributing to the formation of the figure in a spatio-temporal sequence.

Dr. B. C. Deva's definition that, "Śruti-s are additive measures of pitch-relations in music," seems to highlight the functional aspect of the relation of śruti and svara. Aspects of this relation can be defined but no definition would perhaps be adequate; for, śruti and svara are related as the constituent parts integrated by a temporal sequence into the dynamic whole, and are neither different from nor identical with each other.

BANARAS SCHOOL OF TABLA-PLAYING

Dr. K. N. Bhowmick
Banaras Hindu University

[Dr. Kedar Nath Bhowmick was born on November 9th, 1940, at Coochbihar in North Bengal. His father shifted to Banaras, and devoted himself to the cause of promoting Hindustani music. Kedar Nath developed an early interest in music and began his formal studies of Tabla at the age of five with Shankar Singh. After five years he was brought to Pandit Vasudeo Prasad with whom he studied until the latter's untimely death. Pandit Prasad was perhaps the first to study and master all four major schools of tabla - playing. By the age of 15 Bhowmick was selected as an A-grade AIR artist and has accompanied many eminent vocalists and instrumentalists and took many prizes. Dr. K. N. Bhowmick has also distinguished himself in modern education. He took his Ph.D. in Mathematics from Banaras Hindu University in 1964 where he has been a lecturer since 1962.]

It is historically known (Gosvami, 1959, Chapter XXVII) that Tabla occupied a prominent place among the musical instruments in Arabia, long before the birth of Islam. In ancient Arabia, Tabla was a popular folk instrument used by women. It is said that one Tubal, son of musician Jubal in Arabia, is the inventor of Tabla.

In fact the word Tabla is derived from a generic word Tabl (Bhatt, 1955) in Arabic, which furnishes the idea of an even surface built by means of membrane or a solid material. Hence Tabla stands for the percussion instruments like Bheri, Dhounsa, Mardal, Nakada etc. As such Tabla came to be used as a prefix to the drum instruments like Tabl-nakada, Tabl-al-markab (kettle drum), Tabl-al-oel (long drum), Tabl-al-mukhant (hourglass drum). Among all these drum instruments Nakada became popular in India and it is said that Emperor Akbar was an expert in playing on it.

It seems that the Muslims must have brought with them their favourite Tabl, but here in India they found the instruments varied and well developed. So they improved their Tabl on the lines of...
Indian varieties and laid the basis for a new type of instrument known as Tabla and Banya.

However, it is not possible to find any reference to these instruments in the medieval texts of musical literature, which constantly refers to the use of Mridanga in court-music. Had these instruments been derived from Mridanga, these would have been mentioned in the musical texts.

Modern methods of Tabla-playing originated from Delhi and subsequently it was propagated to Lucknow, Farukhabad, Bareilly, Ajrala (a village in Meerut) and finally to Banaras. Some people also believe in the independent existence of Tabla-playing in Punjab. There lies a fundamental difference in the modes of playing in Delhi and Punjab. Tabla-players of Delhi followed the pattern suitable for the lighter variety of music, whereas the Tabla-players of Punjab followed the pattern of Pakhawaj (Gosvami, 1957. Chapter XXVII) suitable for the then court-music. Because of this, Tabla-players of Delhi constructed the alphabets by the strokes of fore-finger and the middle finger with the circular membrane constituting the Tabla. It is, however, necessary to say that Delhi players make the best use of the border of Tabla for the sake of creating sweet compositions, and accordingly the mode of playing was famous by the name of Kinare ki Baj. On the other hand, the players of Punjab used to play Banya coated with flour paste, as done in Pakhawaj, which restrains the vibrations as compared with the modern Banya coated with small paste of gum and iron powder; and thus the mode of playing in Punjab took a special name of Bund Baj.

The subject of the present article is to put forward the information regarding the propagation of Lucknow Baj to Banaras, and to exhibit the various compositions of Tabla belonging to six different schools of Tabla-playing in Banaras.

Two famous Tabla-players, Ustad Modukhan and Baxukhan, grandsons of Ustad Siddhar Khan Saheb of Delhi (known to be the originator of Kinare-ki-baj) came to Lucknow (Sharma, 1959. Chapter I) after being invited by Nawab Wajidali Shah of Lucknow. Later, these two brothers applied their knowledge in constructing new compositions suitable for the prevalent Classical Dance demonstration and thus established a particular discipline called Natch-karan in Tabla-playing. A man conversant in Natch-karan
can very well accompany stringed instruments like Sitar, Sarod, etc. For instance the poetic composition ‘Jai Ganesh Giri-
japatinandan Bighna-binashan Gananayak Baradayak Gunasa-gar Gaja Sundal Seek Dantghi Ntaghin Taghirta Dha ’ conveying the
prayer of Lord Ganesh will be reproduced by the following Gat in
Tabla, subject to the principle of Natch-karan. (Demonstration).

\textit{Gat in Tin-taal} (Matra - 16)

\begin{tabular}{ll}
Sam & Dhaghada Angheda Nagatira Kitataka \\
Pichla & Ghinakghi Natete Katagidi Gidighina \\
Khali & Gidigina Ghinadha Kataghighi Dinnage \\
Pahala: & Natirakitatak Dhetdhagi Nadhagina Dhaginakita \\
\end{tabular}

It is, however, necessary to mention that the symbol stands for
a constant timing beat for the words, constituting the compositions
of the prayer of Lord Ganesh and the Gat. The total number of
such beats in each of these compositions is sixteen which exactly fit
into Tintal. The symbol is technically known as Matra, which came
to be used with the other compositions of Tabla later. The terms
Sam, Pichla, Khali and Pahala speak about the four standard
divisions of 4 matras of Tintal.

Moreover, the mode of playing in Lucknow was further
dominated by Hund Baj of Punjab. It is said that Ustad Modu
Khan was married to a musical family of Punjab and got a set of
five original compositions in Tabla, in the form of dowry, and with
the help of these compositions he and his brother Baxu constructed
a class of compositions known as Dahej ki Chisen and symbolized
the original compositions by the name of Dahej Gat. Probably
the composition ‘ Kat Dhetete Dhagetete Katadha Angin Dha Getete
Katan ’ comes under the category of Dahej Gat, which reveals that
the players of Lucknow were equally competent in using the central
part and the border of Tabla. It may, however, be mentioned that
the mode of playing in Banaras is purely derived from Lucknow Baj
with the distinction that the compositions of Banaras Baj are biased
with the then percussion instruments like Huduk, Dukkad and
Nakada. For instance, the compositions involving the words
Bhadhinada. Gidinada belonging to Nahada, Taad, Dhadd belong-
ing to Dukkad and Trighit belonging to Huduk, have been
incorporated by the players of Banaras, leading to the separate
creation by Banaras-baj. It is well known that Pandit Ram Sahai
of Banaras learnt Tabla-playing from Ustad Modu Khan and he is known to be the first man who laid the foundation of Banaras Baj. Ustad Modu Khan, having no issue, happily disclosed all the secrets of Lucknow Baj including Dahej Gat to Ram Sahai, a rare fortune for an individual, which made him secure the best position as a Tabla-player of that era. The following chart exhibits a sort of link of the great Sahai Family and others who constitute the Banaras school of Tabla-playing:
### Pandit Ram Sahai (Founder of Banaras-Baj)

| Pt. Janki Sahai  
(Brother of Pt. Ram Sahai) | Pt. Gouri Sahai  
(Son of Gouri Sahai and last disciple of Ram Sahai) | Pt. Ramasaran  
(Son of Dargahi) |
|---------------------------|---------------------------------|-----------------|
|                           |                                 | Pt. Dargahi     
(Son of Dargahi) |
|                           |                                 | Pt. Bikku       
(Son of Dargahi) |
|                           |                                 | Pt. Gamma       
(Son of Bikku)   |
|                           |                                 | Pt. Ranganath Mishra  
(Son of Gamma) |
| (Disciples of Bhairav Sahai) |                                 |                 |

| Pt. Biswanath  
Kabi Chhabile  
Pt. Bhagawan  
Pt. Biru Mishra  
(Sangat Ratna)  
(Son of Bhagawan)  
and disciple of Biswanath | Pt. Baldeo Sahai  
(Disciples of Baldeo Sahai) | Pt. Bhagat  
(Disciples of Bhagat) | Pt. Gokul |
|-----------------|---------------------------|-----------------|-----------------|
|                 |                           |                 | Ustad Yusuf Khan  
(Son of Gokul) |
|                 |                           |                 | Pt. Mahadeo Chowdhary  
(Disciple of Gokul) |

| Kinnar Gharana  
Pt. Durga Sahai  
(alias, Nannu  
(Sur)  
(Son of Baldeo Sahai) | Pt. Bhagauti Sahai  
(Son of Bhagauti Sahai) | Pt. Kanthe Maharaj |
|------------------|---------------------|-----------------|
|                  | Pt. Sharda Sahai    
(Son of Bhagauti Sahai) | Pt. Hari Maharaj  
(Brother of Kanthe Maharaj) |
|                  |                     | Pt. Kishan Maharaj  
(Son of Hari) |

| Ustad Ata Husain  
of Dhaka (East Pakistan) | Pt. Bhairon  
(Disciples of Bhairon) | Ustad Raja Mian  
and Najju Mian of Gaya |
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<tr>
<td></td>
<td>Pt. Maulvi Ram Mishra</td>
<td>Pt. Mahadeo Mishra</td>
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<td>Pt. Anokhe Lal Mishra</td>
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### Disciples of Kinnar Gharana

(Disciple of Ram Nath) |
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### Sree Lal  
(Disciple of Vasudeo)  
Writer  
Kedar Nath Bhowmick  
Sri Lachmi Narayan  
(Son of Vasudeo)
The chart given above clearly shows that the late Vairav Sahai shouldered the major responsibility of propagating the knowledge of Pandit Ram Sahai through his able students like Pandit Biswanath Sahai, Pandit Gokul Sahai, Pandit Bhagat and his son Pandit Baldeo Sahai. Many persons of the eastern part of our country took lessons from Banaras school and consequently Banaras Baj assumed a separate name of Purab Baj.

It is, at this stage, necessary to mention some of the special features of Tabla-techniques of Baldeo, Biswanath and Gokul.

The late Baldeo was a unique sweet player and it is said that every composition of Tabla used to appear excellently well in his hands due to his masterly command over Banya. He used to play the following composition of a Gat, where the words like Ghighinag and Kikinag are produced by the dominant use of Banya, famous by the name of Gans in technical language. (Demonstration).

\[ \text{Gat in Tin Taal (Matra - 16)} \]

<table>
<thead>
<tr>
<th>Sam</th>
<th>Ghighinagdhina</th>
<th>Dhagetirakithina</th>
<th>Taktakdhina</th>
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<tbody>
<tr>
<td></td>
<td>Ghighinadhina</td>
<td></td>
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<table>
<thead>
<tr>
<th>Pichla</th>
<th>Dhagetirakithina</th>
<th>Ghighinagdhindhagetirakittuna kata</th>
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<thead>
<tr>
<th>Khali</th>
<th>Takikinaga</th>
<th>Tintagetirakita</th>
<th>Dhinaghighinaga</th>
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<tbody>
<tr>
<td></td>
<td>Dhinaghighinaga</td>
<td>Dhindagetirakita</td>
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<tr>
<th>Pahala</th>
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<th>Dhindagetirakita</th>
<th>Dhinaghighinaga</th>
<th>Dhindagetirakit.</th>
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The late Biswanath was famous for using the words Ghedanag, Gidinna in various compositions of Tabla. He was a great devotee of Goddess Annapurna and by Her grace he created a unique Lombilom composition, famous by the name of Sher-Jhapat. The main feature of this composition is that it is self reciprocal by words, and it is played in Adi Laya in Tintaal. The composition of the following Gat rightly satisfies the necessary condition of Sherjhapat. (Demonstration).

\[ \text{Gat in Tin-taal (Matras - 16)} \]

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<thead>
<tr>
<th>Sam</th>
<th>Dhadhadha</th>
<th>Katakatakata</th>
<th>Gidigidigi</th>
<th>Nagena-nagena</th>
</tr>
</thead>
</table>

Pichla  Ghighidin Ghighi Didinghighi Takatata Dhanagadig
Khali  Gadiganadha Tatakata Ghighidindin Ghighidin-ghighi
Pahali  Nagenanagena Digidigidi Takatakataka Dhadhadha

It is, however, necessary to mention about the celebrated word Gedinna, produced by Biswanath on Tabla. It is said that the vibration of Gedinna was sufficient to extinguish a big illuminated Jhari consisting of a large number of candles. The following composition of a Mohara involving Gedinna is due to Biswanath. The grace of this particular piece can be well perceived, subject to the prominent reproduction of the words Gedinna and Kadha on Tabla (Demonstration).

Mohara in Tintaal: (Matra - 8)
Khali:  Gedinna Kitatakadhatete Kitataktirkita Taktirakitatat
Pahla:  Dhiridhirikithdiri Dhirikidhatete Kitatakakdha Dhiridhirikita

The late Gokul was interested with Gat and Farad, (a class of compositions in Tabla), involving the arrangement of the words like 'Dha Tete Tete Dhage Tete Dhatirakita Dha Tete', 'Kitdhan Tirakitatata Dhirikita Dha Ghadan Dha Ghedanag Denatak', 'Tirakit Dhet Gadigan Dha Ghadan Dha Ghedanag Denatak', etc. which are really hard nuts to crack for a Tabla-player. He was an expert in introducing Dhirakit in various compositions of Tabla. The following compositions of a Farad suggests certain intricacies in the arrangement of the words, as commonly observed in the composition of Gokul (Demonstration).

Farad in Tintaal: (Matra - 16)
Sam  Dhatete Tetedhage Tetedhatira Kithdatate
Pichla  Gedinna Kitatakitrakita Dhetekidhatte Genatuna
Khali  Kitaaktirakita Takaktak Takithi Nadhatirakita
Pahala:  Dhateteghedanag Nagtettkit Dhatirakit Takdhiri-dhirik Dha

Intricacies in the above composition are due to the unsymmetrical distribution of the number of words in each matra, which are not
usually the case in the composition of a Gat; and as such they are not easy to produce on Tabla. It is, however, necessary to mention that Farad belongs to a class of composition in Tabla, which has no Joda. Technically Joda conveys the meaning of a particular permutation of a given composition, based on the mode of presentation of the same composition.

In order to study the various schools in Banaras, it is necessary to classify them into three zones corresponding to the localities by the names of Ramapura, Piyari and Kabirchoura. Kabirchoura school of playing may further be divided into four parts corresponding to the residences of the respective tabla-experts like Pandit Kanthe Maharaj and Kishan Maharaj, Pandit Shamta Prasad, Pandit Gamma Mishra and Pandit Ranganath Mishra and Pandit Sharda Sahai, as mentioned in the Chart I.

The Ramapura school was established by late Pandit Bhaiaron (Sarma, 1959. Chapter I) who produced eminent tabla-players like the late Pandit Maulviram Mishra, Pandit Mahadeo Mishra and late Pandit Anokhelal Mishra. The mode of playing of this particular school are mostly concerned with the compositions involving the arrangement of the words 'Dhene gena tak tak dhene gene dhada ghe ghe naga dhinadhada gina'. The late Anokhelal used to play five compositions pertaining to these words and had a good command over these compositions. It is needless to mention that he was an expert in playing Na Dhin Dhin Na, a common composition known to every tabla-player. Among the students of Anokhelal the names of Shree Mahapurush Mishra, Shree Ramji Mishra (son of Anokhelal) and Shree Ishwarlal Mishra are worth special mention.

The Piyari school of Tabla-playing was initiated by late Pandit Bhagwan Mishra and extended by his worthy son, the late Pandit Biru Mishra. By virtue of his poetic talent Bhagwanji was famous by the name of Kabi Chhabile. The book 'Chhabile Chhata' (Bhagwan Mishra, Chapter I) manifests that he was a vocalist of Kinnar family, as mentioned in his poem:

"Basata Sada Kashi Puri Piyari Kalan Sudham
Gayak Kul Me Pragat Bho Sukabi Chhabile Nam"

Hence, this particular school is also famous by the name of Kinnar Gharana.
Various compositions of Tabla belonging to this school consist of the words Ghedanag, Ghadan, Denatak, Kitadhan and Trighet. The students of this school generally learn the compositions of Mohara, Uthaan, Bant, Rela, Tripalli Gat, Chowpalli Gat, Darjedar Gat, Ekhatthi Gat, Laggi, Gat Paran and Kabitta. Biruji's famous Mohara involving the words 'Ghetirtitat Dha Tete Kata Ghena Dha' cannot be forgotten. Compositions based on the arrangements 'Dhaginnad Dhagiattana Dhatit' and 'Dhatirakit Dha Tete Dha Tete Kitadhateteghina' accompanied by charming Tihai, are played frequently in the beginning of a solo demonstration in Tabla, as Uthaan. Later, the Uthaan is followed by a Bant like 'Dhig Dhina Tirakit Dhina Dhaqena Dhig Tinada' and Relas like 'Dha Tete Ghedanag Denatak' and 'Dha Ghedanag Dha Ghedanag Dha Tete Ghedanag Denatak Dhira Kitatak'. It must be well understood that the compositions of Gat are based on the mode of presentation of Rela. For instance, the composition of the following Gat should be played after the second Rela, as mentioned earlier. (Demonstration).

**Gat in Tintaal**: (Matra - 16)

<table>
<thead>
<tr>
<th>Sam</th>
<th>Dhadh A Dha Ghedanag Denatak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pichla</td>
<td>Takghada Ndha Ghedanag Denataka</td>
</tr>
<tr>
<td>Khali</td>
<td>Dheradhera Kitatak Takghadan Ntaka</td>
</tr>
<tr>
<td>Pahala</td>
<td>Din Kat Dheradhera Kitatak</td>
</tr>
</tbody>
</table>

It may be mentioned that Tripalli and Chowpalli Gat were obtained from his second Guru-dev, Ustad Abid Hussain Khan Saheb of Lucknow, and the compositions of Darjedar Gat came from Ustad Chunnu Khan Saheb of Bareilly. The terms Tripalli and Chowpalli speed about three and four different stages of Laya in a particular composition of a Gat, which was initiated by the celebrated Tabla-player Ustad Haji Bilayat Ali Khan of Farukhabad. Darjedar Gat is a specialised type of composition which can be presented at good number of stages of a particular cycle. The compositions of the type 'Dena Dena Dena Dhagina Dhagina Dhatika Takita Takita' and 'Katadhin Nagtak Dhenagina Dhenaghedanag Tirakitata' may be tried for presenting at least in eight different stages of Tintaal. Moreover, the following composition, which is played in a single handed manner is an example for Ekhatthi Gat played in Tintaal. (Demonstration).
Moreover, the compositions involving the words Dhagenadhig Tinada Dha Dhig Dha Dhi Naki Tak Dhinadi Dha Dhi Nada and Gidinada are known as Laggi. These compositions are very useful for accompanying Thumri songs. It may be mentioned that Biruji was an exponent in playing Dhadhinada.

Touches of Gat Paran came into existence when Biruji learnt Pakhawaj from the famous Pakhawaj player Pandit Madan Mohan of Banaras. Compositions involving ‘Dhagin Dhatt Dhag Din Dha Kita Takita Taka’, ‘Kitatak Thun Thun Kitatak Thu Thu Nakita Takita’, ‘Kitadhin Naad Dhen Dhage Tete Ghe Ghe Tete Takakita Dhumkit Dhumkita Dhitta’ belong to Gat Paran.

Kabitta is a poetic version based on a particular rhythm composed by Bhagwanji, which led Biruji to compose a class of compositions in Tabla on the lines of Natch Karan.

The late Nanduji, as a worthy disciple of Biruji, followed the lines suggested by his gurudeb and he attained the mastery of playing Theka and Laggi. The following composition of a Gat of Nanduji is still remembered with great admiration by the veteran Tabla-players of Banaras. (Demonstration).

**Gat in Tintaal**  (Matra - 16)

<table>
<thead>
<tr>
<th>Sam</th>
<th>Kitatakgiddi Ghinnadanada Ghinanataghina Dhaginatete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pichla :</td>
<td>Kitdhaginadhag Tunakitadhina Dhaginadhagina Dhagtunakat</td>
</tr>
<tr>
<td>Khali</td>
<td>Kitdhaginadhag 'Tunakitadhina Dhaginadhagina Dhagtunakat</td>
</tr>
<tr>
<td>Pahala</td>
<td>Kitdhaginadhag Tunakitadhina Dhaginadhagina Dhagtunakat</td>
</tr>
</tbody>
</table>

M—18
The late Vasudeoji took his first course of study from Yusuf Khan and Biruji successively and learnt the fundamentals of setting the fingers. Later on, he learnt various Tabla-techniques from great Tabla-players like Ustad Nathhu Khan Saheb of Delhi, Ustad Karam Ilahi Khan Saheb of Punjab, Ustad Ghunnu Khan Saheb of Bareilly, Ustad Salari Khan Saheb of Farukhabad, Ustad Shamma Khan Saheb of Ajrala, Ustad Sher Khan (uncle of present Ustad Ahmad Jan Khan Thirakua) and Ustad Raja Mian of Gaya. Thus, he was capable of playing Tabla in four different styles derived from the schools of Lucknow, Delhi, Ajrala and Punjab. He was an exponent in playing Rela, Gat, Farad and had a collection of three thousand compositions of Gat. I heard him accompanying great Kathak dancers like Pandit Shambhu Maharaj and Pandit Birju Maharaj who adored his immaculate memory and technique of applying the principles of Natch Karan. Regarding his own creation, it is worthwhile to mention that he had a great capacity of expressing any class of Tabla-composition in the form of Tripalli, Chowpalli, etc. He could also give demonstration in Tabla freely in Paun, Paunedune, Sawai and other Layas for hours together. Moreover, he had a great command over giving solo demonstration in any Taal as freely as commonly done by a Tabla-player in Tin Taal.

The late Pandit Kanthe Maharaj of Kabirchoura school had shown his great eminence in constructing Pakhawaj-cum-Tabla compositions and trained his students accordingly. Among his students, the names of Pandit Kishan Maharaj, Shree Ashutosh Bhattacharya and Pt. Sharda Sahai need special mention.

Kanthejji used to play the following compositions of Bant which sound charming in solo demonstration in Tin Taal. (Demonstration).

**Bant in Tin Taal**  (Matra - 8)

I. Dhet Dhinag Dhena Dhage Tirakita Tunkita
   Tage Tirakita Dhet Dhinagi Dhina Dhage Tirakita

II. Dhage Tirakita Tage Tirakita Dhagenage Tuna Katta

III. Ghinanad Tak Dhinad Dha Tete Teteghena Takdhinad

His brother Pandit Hari Maharaj was an expert Pakhawaj and Tabla-player and he had a great mastery over the Laya constituting a particular cycle.
Pandit Shamta Prasad, besides learning from his father, also collected some compositions from the late Pandit Mahadeo Chowdhary (a favourite student of Gokul Ji). It is worthwhile to mention some of these compositions played by him frequently in solo demonstration in Tintaal. The following compositions of Gat involving the arrangement of the words used to appear very frequently in the hands of the late Bacha Maharaj. (Demonstration)

_Gat in Tin Taal_ : (Matra - 16)

<table>
<thead>
<tr>
<th>Sam</th>
<th>Kat Tete Tete Kata Gadi Gana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pichla</td>
<td>Dha Tirakita Dhatete Kata Gadi Gana</td>
</tr>
<tr>
<td>Kahli</td>
<td>Dha Tit Dha Gidinnada</td>
</tr>
<tr>
<td>Pahala</td>
<td>Dha Tirikita Dhatete Kata Gadi Gana</td>
</tr>
</tbody>
</table>

The compositions involving the arrangement of the words, ‘Ghina Tete Dhagina Dha Te Ghina Tunagina’ as a Bant, ‘Kijdhan Tirakitatak Dhirakita Dhaghadan Dhadghedanag Denatak’ and ‘Gidinna Kitatak Dha Ta Ghedanag Dha Gedanag Dha’ as Farad was obtained from the late Mahadeo Chowdhary.

The mode of playing of Pt. Ranganath Mishra differs mostly from those of the other schools in Banaras. He is very much interested in playing Parans with the setting of the finger of Pakhawaj. The compositions involving the words Dhe Tete Tagen, Tagennatadha, Tetekatagadigana with various details of laya are frequently played by him in solo demonstration.

Pandit Sharda Sahai started learning the fundamentals of Tabla from his father, the late Bhagavati Sahaiji at the age of seven, but unfortunately he lost his father at the age of 9. Consequently, he had to seek the kind help of Kantheji who with all affections accepted him as a disciple. Shardaji continued his studies till the last hour of the life of Kantheji and learnt valuable compositions of Gat and Bant. Thus, it is observed that the fundamentals of the setting of fingers resembles almost with Bhagautiji, whereas the method of presentation of Tabla mostly resembles that of Kantheji.

The following compositions of Gat reveal the marked distinction between those of Bhagautiji and Kantheji. (Demonstration).
Composition of Bhagautiji

\textit{Gat in Tin Taal:} (Matra - 16)

<table>
<thead>
<tr>
<th></th>
<th>Kathitdhage Dindint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam</td>
<td>Kathitdhage Gedinta</td>
</tr>
<tr>
<td>Pichla</td>
<td>Tadhinta Nadhatirakita</td>
</tr>
<tr>
<td>Khali</td>
<td>Dhatitdhage Gadinta</td>
</tr>
<tr>
<td>Pahala</td>
<td>Natinta Kitadha Dingadi</td>
</tr>
</tbody>
</table>

Composition of Kantheji

\textit{Gat in Tin Taal:} (Matra - 16)

<table>
<thead>
<tr>
<th></th>
<th>Dhaghedanagtakta Ghandhagdhatitakta Dhatirakita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam</td>
<td>Dhaghedanagtakta Ghandhagdhatitakta Dhatirakita</td>
</tr>
<tr>
<td>Pichla</td>
<td>Tirakitatakta Tirakitaghadanag Dhatirakita</td>
</tr>
<tr>
<td>Khali</td>
<td>Ghedanagdhirdhira Ghedanagdhirdhira Ghedanagdhirdhira Nagdhatirakita</td>
</tr>
<tr>
<td>Pahala</td>
<td>Tirakitatakta Tirakitaghadanag Dhatirakita</td>
</tr>
</tbody>
</table>

Summary and Conclusions

1. The Composition of Baldeoji, as presented above, is purely derived from Tabla.

2. The composition of Sherjhapat consists of the words Dha, Gidi, Ghi, Ta, Dig and Tak of Tabla, whereas the words Gadigan, Nagen, Kata are purely derived from Pakhawaj.

3. The words Ghadān, as found in the compositions of Gokulji, Biruji and Kantheji, has its equivalent word Ghadān in Pakhawaj; whereas the word Tadān is a Pakhawaj word.

4. The words Dhād and Dhādā, as found in the composition of Ramapura School, belong to Pakhawaj, and the words Dhenagena, Tak, Ghinag and Dhen belong to Tabla.

5. The word 'Dhaginnād', as found in Pyari school, consists of the words like Dhagin and Nad belonging to Tabla and Pakhawaj respectively.

6. The words Dhāt and Takitatakta, belonging to the composition of a Gatparan, have their equivalent words Dhān and
Kathetekata in Tabla, which were followed by Biruji while playing the Gatparan.

7. The words Ghinnad and Kinnad, as played by Nanduji, were created by combining the words Ghi and Ki of Tabla with the word Nad of Pakhawaj.

8. By virtue of observations in (1-7) it is revealed that the compositions of Tabla in the Banaras school contain a good amount of Pakhawaj words.

Bibliography

2. Urdu Hindi Kosh Bhatt, Kedarnath, 1955, p.198
5. Kundalian or Chabile Chatā : Mishra, Bhagawan. p. 3.
CONTRIBUTIONS OF LATE PANDIT VISHNU DIGAMBAR PALUSKAR TO MUSIC AND HIS MUSICAL COMPOSITIONS

V. R. Athavale, Bombay

I feel grateful to the organisers of the Conference as well as the authorities of the Sangeet Natak Akademi for providing me an opportunity to participate in this Conference held under the auspices of the Madras Music Academy. I am sure this participation will go a long way in deepening my understanding of Karnatak music.

Most of you might be aware that this year is the Birth-centenary year of the great maestro of Hindustani music, the late Pandit Vishnu Digambar Paluskar, who is known as Sangitoddhārāka for Hindustani music. He was born in the month of August in the year 1872. This year, celebrations were held in memory of the great maestro to observe his Birth-centenary by a number of leading music institutions in the North as well as by a few in the South. It would be, therefore, in the fitness of things, if I choose for the paper to be read to-day, a topic related to the great master's life-mission, his contributions to the music world and also discuss some of his musical compositions which he popularised in Hindustani classical music. I am not going to describe the late Pandit Vishnu Digambar's life-events or narrate to you the particulars of his biography. For details of his biography, I may recommend to you a small booklet—a pocket-size edition—written by me and published by the National Book Trust of India. I am going to discuss only those aspects of his life which can rightly be counted upon as his contributions to Hindustani music and later on demonstrate some of his compositions which place him in the category of leading composers of Hindustani music, bringing out his qualities as a great musician and composer.

As said earlier, the late Pandit Vishnu Digambar Paluskar was called Sangitoddhārak in the field of Hindustani music. In the modern times, i.e. in the renaissance period which probably started with the advent of late Raja Rammohan Roy of Bengal in the early twenties of 19th century by our contact with British regime and their culture, new trends of thoughts developed in political, social, cultural, spiri-


tual, practically in all the fields of life, late Pandit Vishnu Digambar and late Pandit Vishnu Narayan Bhatkhande were the great personalities who worked for the revival of Hindustani music. The late Pandit V.N. Bhatkhande was responsible for laying out a system for the science of Hindustani music whereas late Pandit Vishnu Digambar propagated music from prince to pauper and raised the social status of musicians. ‘Vishnu’, as you know, means ‘God Protector’ or ‘Sun’ according to our mythology. This is the reason why these two Vishnus are recognised as saviours of Hindustani music, which was suffering deterioration at the hands of the illiterate and uncultured class of musicians of the North in the latter half of the last century. If we study the cultural history of Hindustani music, we find that the status enjoyed by music and the artists in the ancient period or to some extent in the Muslim period touched a new low in the British period. This was due to the lack of proper guidance to the science and art of music by the scholars and for want of proper patronage by the rulers and also because of the indifferent attitude of the society towards the artists and their art. The status of musicians and also of music had degenerated to such an extent that to learn music in those days was considered as below dignity and association with musicians was looked upon with contempt. This was the state of affairs regarding music of North in the latter half of the 19th century. Music was enjoyed by a few princes and aristocrats and their satellites as a thing of sensuous enjoyment. Moreover there were no means available to learn this art systematically and no teachers, Gurus, easily available for teaching with a sense of vidyādāna, imparting knowledge, which was the tradition of ancient Indian culture. Students interested in music had to face hardships to learn this art and in spite of undergoing these hardships were treated with indifference by the elite of the society. If we analyse the achievements of the late Pandit Vishnu Digambar in the context of this background, we realise how great and valuable they are.

Pandit Vishnu Digambar, gifted with impressive personality and sweet, melodious voice full of volume, studied classical music from the great master, the late Pandit Balakrishnabua Ichalkaranjikar, who was an authority on the Gwalior school of music. He learnt music from the Guru in the same traditional way and with the same hardships which the students underwent in old days. He completed his studies at the age of twenty-four and started out for independent career as a musician.
In the beginning of his career as a musician he had first to establish himself as a competent performer amongst the contemporary musicians. But to earn fame as an artist and to earn livelihood in the same way which the artist followed in general, were not the only objectives before Panditji. He was inspired by the new ideas of revival. He was unhappy over the lot of musicians and their status in the society. He had, therefore, resolved to work in the direction of changing these conditions and dedicate his life to the upliftment of this art and raise the status of the musicians in the society. To lead a life full of humiliation under the patronage of a prince or a rich man, was not agreeable to his temperament of self-respect.

The first step he took, therefore, to arrange his music concert was that he experimented upon giving public concerts by open sale of tickets to the public. This would appear the most common thing to-day but in the year 1897 this was a revolutionary step and a noble thing, for the musicians and Panditji had to face a lot of criticism by his own class of artists to which he replied that this was a step taken by him for democratisation of music. The musicians in those days were accustomed to have their performances in the courts of the princes or the residence of aristocrats by seeking influence through the touts of this class. The introduction of public concerts by sale of tickets is an important contribution of Panditji to the field of Hindustani music.

The second achievement to his credit was that he founded a public institution for imparting training in music. The Gandharva Mahavidyalaya, founded in the year 1901 at Lahore, was the first music institution of its kind which conducted its activities with public support. To propagate music in the educated class, to popularise it from prince to pauper and to raise the social status of the musicians were the aims before Panditji which he fulfilled through the activities of this institution. He conducted the Gandharva Mahavidyalaya for about 25 years, first at Lahore and then at Bombay and produced a band of missionaries of music who carried forward the torch he had lit. His prominent disciples, the reputed musicians, late Pandit Khare of Sabarmati Ashram, Pandit V. N. Patwardhan of Poona, Pandit Narayanrao Vyas of Bombay, late Pandit Omkarnath Thakur of Banaras, Prof. Deodhar, and a number of others, settled in different parts of India and worked to
fulfil the mission of Panditji. The present status enjoyed by the musicians of the North to-day and the awareness of the society regarding this art are to a large extent due to the strenuous efforts of Pandit Vishnu Digambar. Approach to masses through music was the chief contribution of Pandit Vishnu Digambar. To produce missionaries of music, artists of character and integrity was his next achievement. To give music its proper place in the general education, he approached the leaders in various fields and impressed his ideas on them. He introduced a curriculum of music in the schools and colleges as a part of general education.

Panditji had established good personal relation with the foremost National leaders of India. Late Lala Lajpatrai of Punjab, Dr. Annie Besant, Lokmanya Tilak, Mahatma Gandhi, Hon'ble Gokhale and a number of others were amongst his well-wishers and always sought Panditji's advice regarding matters relating to music. Panditji was usually invited to attend the sessions of the Indian National Congress and sing the National song 'Vande Mātaram' which he had tuned. He had deep sympathy for the political leaders and their movements and supported the activities through his musical activities. To name a few, it was he, who, staying at Lahore, popularised the patriotic songs and roused the patriotic feelings of the masses in the anti-partition movement of Bengal in 1906. It was he who was responsible to introduce singing of 'Vande Mātaram' in public meetings as well as on the platforms of Indian National Congress. In short he was connected with various social and political activities and showed by his own example that a musician is as much responsible as any other citizen and is equal in status to any one belonging to the intelligentsia. He actively embraced the political, social, and cultural life of the nation. He wanted to make the devotional Rāmdhun—खुदि राधा राजासन—a National melody and was happy when this Rāmdhun was given prominence in the famous Dandi March of Mahatma Gandhi in the year 1930. This dhun was sung all over India, by all people irrespective of caste and creed, which helped in an ideal way the cause of National integration. His Ramayan pravachans were immensely popular in the whole of North and Nepal also. Through these pravachans he popularised music by singing devotional songs of the saint-poets and also spread the devotional cult in musicians, music-lovers and the common mass. All these achievements of his can be called his...
contributions to the field of music of the North which served the purpose of raising the status of musicians and also of this art among the people of the North. One of the famous historians has placed him in the list of the first ten foremost leaders of India in the first quarter of the 20th century.

If we study his biography and try to understand his influence in the field of Hindustani music, we get the following points which should be considered as his contributions to Hindustani music:

(1) He was the first to introduce the idea of public concerts by sale of tickets.

(2) He was one who conducted the music institution on the support from the public.

(3) He popularised classical music through devotional music and created good taste in the common man.

(4) It was he who produced a band of missionaries of music working throughout the country for the propagation of Hindustani music and for the uplift of this art and for raising the status of the musicians' class.

(5) He was one of those who made efforts to introduce music in general education.

(6) His reformist attitude encouraged women from the respectable class to learn music. This was considered below dignity in the case of men in the North, what to say of women!

(7) He prepared syllabus of music for systematic training and published text books on music, about 60 in number.

(8) In short he was one who revolutionised the prevailing ideas in the field of music of the North and tried to democratise the art which was hidebound in ‘Gurudom’.

All these factors justify his influence in the field of music and prove his leadership.
As I have said earlier, Panditji was a vocalist of high merits and had won reputation amongst the contemporary musicians as a successful performer. His style of singing, voice and captivating rendering had challenged and defeated a number of reputed musicians in concerts. Those who came to oppose him became his admirers after hearing him. Apart from his activities as a leader in this field, his contributions to music as a music composer and a musician are also noteworthy. I will now deal with this aspect of his versatile genius.

Pandit Vishnu Digambar had learnt music in the traditional way from the orthodox Guru and mastered the Gwalior style of music. He maintained the chastity of the style in his performances. However in the course of his mission to propagate music in the educated society and to introduce music for cultural education, he had realised that the text of the compositions which he and the other fellow musicians learnt and rendered in the vocal recitals were rather vulgar in nature and hence not appropriate for refined taste. In the North the devotional aspect of music had disappeared and in the court-music favoured by princes and the rich, this art was employed for sensuous enjoyment. Good classical devotional compositions were sung in the temple music of the Vaishnav sect which was restricted to the followers of that sect.

He had realised that the general indifference of the society towards music was probably due to the lack of good sahitya in the musical compositions. He, therefore, turned his attention to improve this condition and being a good musician himself and possessing ability for composing, tuned a number of good devotional songs of the old saint-poets and popularised them by presenting them to the audience and teaching them to his students. He admitted that he was not a poet and could not compose the sahitya but he could give good tunes to literary compositions. In this way he contributed a number of musical compositions in various musical forms and in various tals. In Hindustani music, Dhrupad, Dhammar, Vilambit Khyal, Drut Khyal, Tarana, Chatrang, Tappa, Thumri, and Dadra are the musical forms popular with classical music artists. He contributed a number of compositions in all these forms and in common as well as uncommon ragas of the North. An analysis of his compositions thus contributed show that one of
two compositions probably, sometimes even more, in each common raga, are attributed to him. For example this is one of his compositions, a Dhrupad in raga Kedar—सरस धीरवेश्वरुप (Demonstration).

This composition, from musical as well as literary point of view, is excellent. It contains a fine description of Lord Rama and the raga employed for the Dhrupad is Kedar which is expressive of the grandeur and lofty atmosphere.

The Dhammar is a composition which resembles Dhrupad in the style of singing but the sahitya and mood of the composition are different. Dhammar expresses an amorous mood depicting the colourful play of Lord Krishna and Radha in the Holi festival which is an occasion of merriment in the North. This one in Raga Jaijaiwanti, is a beautiful example throwing light on Panditji’s ability as a music composer of high merits.

Jaijaiwanti — Dhammar — (Demonstration).

Khyal is a musical form, very popular with the musicians of to-day. The Dhrupad style of singing is, of late, out-dated and though this Gayaki, before some years, enjoyed the foremost place in classical music, it is now not much in practice. There are now very few exponents left to represent Dhrupad Gayaki and the Khyal Gayaki has practically replaced the Dhrupad style. Most of the compositions of Khyal, though popular musically, are very insignificant from the literary point of view. The sahitya, in general, of these compositions is rather cheap. Panditji wanted to create good taste in music lovers; hence he wanted to replace these compositions of bad and cheap taste. He, therefore, composed a number of Khyals containing good sahitya. Of course, the literary part did not belong to him as he was not competent to compose poetry. But he was able to tune the devotional songs of the old saint poets. His musical compositions were musically as good as the other old traditional compositions which the orthodox musicians rendered and took pride in. An example of this kind of composition is found in a Khyal in raga Hameer, which is actually a verse of saint Tulasidas. This Vilambit Khyal is musically so well composed that sometimes it is taken as an old traditional Khyal of old masters such as Sadarang, Adarang etc.
Raga Hammer-Vilambit Khyal—कर्तवधु रचना (Demonstration).

For the sake of variety, I am giving you illustrations of various musical forms in different Ragas. For the Drut Khyal, now listen to a composition in Raga Darbari which is very popular with the musicians of the North. Unknowingly this composition of late Panditji has been taken as an old traditional composition and widely-sung in various gharanas i.e. schools of music.

Raga Darbari-Drut Khyal—चौर छी कुछ

Thumri, a musical form of light classical music, is mostly a composition depicting amorous or sometimes sensuous mood. Mostly this composition was associated with dancing girls and hence though popular with common listener and music-lover, was considered as undignified for the classical singers. Panditji had realised its popularity but at the same time was not happy about the text-part of the composition.

In order to remove the sensuous element from Thumri and to replace it by a sober text, he composed a good number of Thumris which contain good Srngara sahitya and maintain the amorous mood in singing, but at the same time are not cheap.

Thumri-Demonstration

Tappa is another variety similar to Thumri. But the style of singing is rather fast and is full of tans which are avoided in Thumri rendering. Here is a Tappa in raga Bhairavi.

Tappa-Demonstration

So far I have illustrated those compositions wherein the text belonged to the saint-poet and the musical tuning was done by Panditji. Now I will present two types of musical forms wherein the literary aspect is negligible and the musical aspect is prominent. Tarana and Chatarang are such forms of which Tarana is more popular with classical musicians. Tarana in Raga Jaunpuri composed by Panditji, is presented here. The wordings also are composed by the maestro.

Tarana-Jaunpuri-Demonstration

Chatarang is a composition similar to Khayal in Gayaki but differs in literary aspect. It consists of four parts namely
poetic idea, Tarana, Sargam and a Sanskrit text, an extract from old granthas. A composition in which four colours are blended is called Chatarang. The chatarang for the demonstration here, is in raga Sindura.

Panditji thus made a number of compositions in the common ragas. It is estimated that about 150 to 200 compositions were produced by him. These are sung in the Gandharva Maha Vidyalaya tradition even now. Many of these have been popularised by his disciples by rendering them in the concerts. He has created some compositions in uncommon Ragas such as Gandhari, Bhairav, Bahar, Puraj Malgunji. In illustration of such compositions a Khayal in Raga Gandhari set to Japtal is rendered here. This one is an example where Svara, Sahitya and Laya are beautifully blended and devotional mood is created.

Gandhari-कापड़ा देंशी, कौम करे - Demonstration

While discussing Panditji's compositions, I have taken examples mainly from the category of classical music. In addition to these classical compositions he has composed many devotional songs or Bhajans which he used to sing in his Keertan or Ramayana Pravachans. The famous Bhajans भारतीय सहाय करे-सुमेद्री मेने निषेधके बलराम, जोखिया हरि दर्शि की प्राणी रुक्षर तुमको मेरी लाला and a number of others, composed by him were popularised by his son, the late Pt. D. V. Paluskar and also by his disciples. These compositions were sung in the Ashram of Mahatma Gandhi for the prayer. One characteristic of Panditji's compositions is that they are all based on classical ragas and differ from the devotional songs of folk type or light music type. His was the aim to create taste for classical music in the masses. He, therefore, employed devotional songs in all languages such as Marathi, Hindi, Gujarati, Bengali, Rajasthani, to approach people of different provinces and propagated music through devotional music. A collection of some of his compositions is found in the book 'Ashram Bhajanavali' compiled by his disciple, the late Pt. Narayan Moreshwar Khare, an inmate of Sabarmati Ashram of Mahatma Gandhi at Ahmedabad. It may be said that his contribution of devotional songs supported the cause of National Integration to a large extent. One of his popular Bhajans is presented here as an illustration.
I have tried to discuss the contributions of the late Pandit Vishnu Digambar to music, particularly Hindustani music from two angles. I have discussed Panditji as a leader in the field of music contributing new thoughts and also as a musician contributing musical compositions. Panditji was a versatile genius and a great organiser. A man of vision, full of activity, a man of character and integrity, these are some of the important facets of his personality. This is the reason why he is considered as yugapurusha, yugapravartaka or epoch-making person in Hindustani Music. We, the exponents of Hindustani music of the present generation are very grateful to the great maestro. We owe much to him and express our sense of gratitude with these lines:

वर्ष वर्षे भगवानसे संगीतोद्दार हैं तैः।
तस्मै दिमृवर्षाधिक विष्णुवे गुरु हैः नमः।

“To him whose activities of life were all meant for the uplift of music, we bow down. We bow to the Guru, the late Pt. Vishnu Digambar.”

I thank you very much for the patient hearing and also thank the organisers of the Madras Music Academy and Sangeet Natak Akademi, who gave me an opportunity to unfold my heart and mind before you.
Pandit VISHNU DIGAMBAR'S
COMPOSITIONS DEMONSTRATED

1. खूपद - राग केदार - चौ ताल
   सरस सीता मेरे खुशुं काँपनको राजत,
   कुंडलः रुपः कुटिलः अवस्था माल
   विशाल तिलक सुगमदः नीके श्लोके इति
   मनव करने नैनकमः नासकीर अचर विब
   दख गुंजः खंड खंडः तामः मणि कौसुम शोभे श्लोके इति

2. धमार - राग जयजयबेंती
   श्याम शामसो होंरी लेखत बाजः नंदन्दन
   को राजे कीने माघव आप भई इति
   सखा सखी भरे सखी सला भई
   यशुगती भवन गई, बाजः ताल यूंग शांत एफ नाचयत थे थे थे थे इति

3. राग इमयर यिंद्वित ख्यार - एकताला
   करन चहूँ रुपः गुः गाहा ख्युमती
   मोरी बरत अवगाहा इति
   दूसैन एको अंग उपांक मन मतिरंक मनोरथ राख इति

4. ख्याल दूत - राग वर्लारी
   और नहि कला तामके, बरोसे अपने रामके इति
   जो चाहेसे देत पदारथ अंत देत खुशामके इति

5. दमरी - खमाज
   सावः ने यस्ती बजाई में तो मुखिविच बिसरी रे इति
   धुनत बांसरी मुखिविच बिसरी, भूलगाई अंगिया
   हमारी, कहो सखः कहां बैल बनसी देखत अंगी छिनाई इति

6. टप्पा - चर्च्री
   नेटे खुशुं बिचारती माता कन ही मेरे बाल
   कुशल पर कबुः काग दुरः बाता इति
दूस सात की दुनी देखो सोना चांच में खो
जब सियास़हित विलोलिक क्यामरी
राम खनन उर खेलो ॥

० तराणा - खालाबरी
नादिर दिर दानी तदानी दी तन तन देरेना, तन
देरेना, तनदेरेना दानी, उदान दी तनन, निन्दे
तो तनन देरेना ॥
नादिर दिर दिर, दुंदिर दिर दिर, दिर दिर तन देरेना
नादिर दिर दिर, दुंदिर दिर दिर, दिर दिर तन देरेना
तन देरेना, तन देरेना, तन देरेना ॥

८ खतरंग - खिम्मूरा
शतरंग गायो गुनितम मिठकर, आज तान आहाप करन्को ॥
नादिर चित्ती जान तर्की दी तनन, खोजिया मनेरा
रेमपथसा, घस्त स्वर जये भाग मृत्युना लैंकविश्वति
ताना पकोनपडाशादु हर्षेतु स्वरमंडलमु ॥

९ गांधारी - घप्तालछ
ऐसी कौन करे और भक्त काज़े ॥
पवित्र पावन प्रभु नाम तेरो घुने ।
भरी रंग नाथ मन माला जे ॥

१० भजन (तुलसीदास)
जब जानकीनाथ सहाय करे तब कौन बिगाड़ करे नरतेरो ॥
सुरज संगलोक प्रभुपुलुक बुध बुध दुहरा कर तेरो ॥
राहु केबुकु नाढी गम्यता, संग शीमर देतू बेरो ॥
दुध दुध शासन विमल दौप्य चीर उतार कुर्मत भेरो ।
जाकी सहाय कारी कहगालिकी, बड़ गये चीर के भार घनेरो ॥
जाकी सहाय कारी कहगालिकी तके जगते मागं बंबेरो ॥
सुखावी लंब भुखावी, तुलसिदास चरनके बेरो ॥

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IMPROVED FLUTE
K. Tyagarajan, Madurai

The present work is a continuation of earlier work on improving the flute. Earlier work was focused on vertical changes in the tone. The present work is on flat changes in the tone. The initial work on the flute evolved from previous attempts to improve the instrument. The present work on the flute is an attempt to improve the flute by modifying the arrangement of the tone.

The present work has been carried out under the guidance of Dr. A. Subramaniam, Department of Music, University of Madras. The work was supported by the University Grants Commission, New Delhi. The present work is an attempt to improve the flute by modifying the arrangement of the tone.

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Improving Flute

The author of this article, who is a musician, has written about the historical and cultural significance of the flute. He discusses the evolution of the flute, its role in various cultures, and its importance in modern music. He also mentions the efforts to improve the flute, both in terms of design and sound quality. The article includes a section on the physical principles of sound, which explains how the flute produces its unique sound. Overall, the article provides a comprehensive overview of the flute and its significance in music history.
அன்று மாணவர் கல்லால் அறிக்கையை விளக்கும். அவ்வாறு முன் மீளை, முதல் பாடல் வரவுக்கு களர் 1000 ரூபாய்களும் 10000 ரூபாய்களும் காரணமாகிறது. இயல்பு மணிக்குத் தவறு அவங்கள் ஒரு கொரியியல் கலந்து செல்லும் வழி உள்ளன. கலந்து அவங்களைப் பல வகைசான சிற்றுறுறுத்தில் கூறியுள்ள புருஷா சித்தரி கலந்து காரணியாக உள்ளது என. மேலும் கூறும் உள்ளதுடன் 100தொண்டு காரணி பச்சை தமக்கு சிறுக்கோப்பையம். இதிலிருந்து மாணவர் குறிப்பிடும் கலந்து காரணம் புனரமாகும். அனைத்தும் இது பிரித்து, அவளின் செயின் முழுவதும் சிற்றுறுத்தில் கூறியுள்ள புருஷா சித்தரி கலந்து காரணியாக உள்ளது என. மேலும் கூறும் உள்ளதுடன் 100தொண்டு காரணி பச்சை தமக்கு சிறுக்கோப்பையம். இதிலிருந்து மாணவர் குறிப்பிடும் கலந்து காரணம் புனரமாகும்.
IMPROVED FLUTE

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In this section, the author discusses the improvements made to the flute. The improvements include the addition of a new reed, changes to the mouthpiece, and adjustments to the mechanism. The author also describes the changes in the sound quality and the ease of playing the instrument.

The new reed is said to provide a more vibrant and clear sound, while the changes to the mouthpiece improve the ergonomic design, making it more comfortable to play. The mechanism has also been refined to reduce the risk of jamming.

The author emphasizes the importance of these improvements in making the flute a more enjoyable and accessible instrument for musicians.

Overall, the improvements to the flute have been well-received, with many musicians praising the increased quality and ease of playing that the new design offers.
The notes in a musical scale bear definite ratio to each other.

Frequency = \[ \frac{v}{l} \]

where \( v \) is the speed of sound and \( l \) is the length of the string.

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IMPROVED FLUTE

The Improved Flute is a significant advancement in the design of the flute. It was developed by Theobald Boehm in the mid-19th century. Prior to this, flutes were often made with a single hole per octave, which limited their expressive capabilities. The Boehm flute, on the other hand, introduced an improved system of keys and finger holes, allowing for a much easier and more nuanced playing experience. This innovation broadened the range and versatility of the flute, making it a favorite among both professional and amateur musicians. The Boehm flute is characterized by its series of keys, each with a specific function. These keys are designed to change the length of the flute's bore, altering the pitch of the notes played. The system includes keys for the fundamental pitches as well as those for the harmonics, enabling a wide range of musical expression. The Boehm flute has been the standard for modern flute production and remains the preferred choice for professional musicians today.
தந்தையும் அச்சம்பலியும் சிற்பாக அந்தோலிக்கிய காலபத்திராக்கல்
நோக்காக, குறுநிலையுடன் காலபத்திராக்கல் பலபெருமான்
அறக்கடி. குறுநிலைகள் காலபத்திராக்கல் பலபெருமான்
அன்புள்ள வழியாக பத்திரிகளை பரார்த்தப்பட்டிருக்கின்றது.

துக்கிகற்றுள்ளிருந்த சாஸ்திரியர் 'ஏ' வரை அன்றுக்கானக
தீர்த்தவாக அன்றுக்கானது என்று கூறுகிறார் பலபெருமான்.
அதிசயத்தான 'இ' வரை அன்றுக்கானது என்று கூறுகிறார்
பலபெருமான். 'கல-பவையும் இந்த சிற்பாக அன்றுக்கான
அன்றுக்கான சிற்பாக அன்றுக்கான வழியாக பரார்த்தபடுகின்றிருக்கின்றது.
அதிசயத்தான 'கல-பவையும் இந்த சிற்பாக அன்றுக்கான
அன்றுக்கான வழியாக பரார்த்தபடுகின்றிருக்கின்றது. நம
முழுக்களும் சிற்பாக அன்றுக்கான வழியாக பரார்த்தப்பட்டிருக்கின்ற
சிற்பாக அன்றுக்கான வழியாக பரார்த்தப்பட்டிருக்கின்றது. இந்த
சிற்பாக அன்றுக்கான வழியாக பரார்த்தப்பட்டிருக்கின்றது.
IMPROVED FLUTE

The improved flute is a musical instrument that has been modified to enhance its performance. The original flute was designed with certain limitations, but the improved version addresses these issues. The new design incorporates advanced materials and engineering techniques to produce a more resonant and stable sound. Additionally, the improved flute has a more ergonomic design, making it easier for musicians to play. The improved flute is not just a musical instrument; it is also a technological marvel, demonstrating the power of innovation in the world of music.
சில புதிய பிளாச்சியம் ம். ம் ஐந்து சுவர் தொடர்புப் பலன்குறிகள் கூடிய முழுமையான மொழிப் பயன்பாடு தவிர்ப்பிட்டது. ம். ம் சோகம் முன்னேற்றியது முதலில் குறிப்பிட்டது, ம். ம் விளக்க முடித்து அனுமதிப்பான பலன்குறிகள் செய்யப்பட்டன. குறிப்பிட்டது முன் அதன்படி முன்னேற்று உள்ளது மற்றும் செய்யவுடன் செய்யப்பட்டது. அது மீது முன் முடியும் குறிப்பிட்டது 'ப' ம் மீது முன்னேற்று செய்யப்பட்டது. ம். ம் சோகம் முன்னிலையை குறிப்பிட்டது 'ச' ம் அனுமதிப்பான பலன்குறிகள் செய்யப்பட்டது 'ச' ம் மீது முன்னேற்று 'ச' ம் அனுமதிப்பான பலன்குறிகள் செய்யப்பட்டது. மீது முன்னேற்று தன்மை தோன்றியது முன்னேற்று செய்யப்பட்டது. அனைத்து மீது முன்னேற்று செய்யப்பட்டது முன்னேற்று செய்யப்பட்டது. அனைத்து மீது முன்னேற்று செய்யப்பட்டது முன்னேற்று செய்யப்பட்டது. அனைத்து மீது முன்னேற்று செய்யப்பட்டது முன்னேற்று செய்யப்பட்டது. அனைத்து மீது முன்னேற்று செய்யப்பட்டது முன்னேற்று செய்யப்பட்டது. அனைத்து மீது முன்னேற்று செய்யப்பட்டது முன்னேற்று செய்யப்பட்டது.
வாழிய. உயர் வாழியான 'Flute' அல்லது 'Piccolo' வாழி அல்லது வர்த்தகம் இல்லாமலே ரை வாழியம் எளிதாக மற்றையும் ஒரு வாழியம் அதிகரமாக பிள்ளையாரியாகவே க௃ப்பிட்டிருந்தார். அவ்வாறு காட்டுபவை அவர்கள் இரு வாழியாயின் கீழின் முடிந்தவுடன் மாணவிகள் தம்பிகிறார்கள்.

அவ்வாறு நரை செய்வதிலிருந்து கணக்கிட்டு வாழியானவரில் கீழ் வாழியம் முடிந்தவுடன் மாணவிகள் தம்பிகிறார்கள். தொலைநோய் கிழக்காரையில் நரை வாழியம் பெரும் வாழியம் மாணவிகளால் அதிக முடிக்க கேரள பெரும் வாழியானவர் தம்பிக்க காரணப் போர்ற்றவில் பெரும் வாழியானவர் விளக்கம் செய்தார். இரு வாழியம் வாழியாக கொத்து அளிக்கவும்.
IMPROVED FLUTE

பு ஓட்டையிலும் விளையாடப்படும். பொதுவான மூலக்கூற்றான தூடுக்காலந்தை போற்ற கருத்தாளர் அறிவு கொள்வதற்கு வேண்டும் செயற்கை உத்தமமாக பாதுகாக்கவேண்டும். இது மாற்றும் சான்றால் காளியும் போற்று கருத்துறவு தோற்ற தொடர்வதை காட்டிய காண்முடியவும். என்கிற தொடர்வெங்கு மாற்றாக கருத்துருவாக செய்யப்பட்டது. இது 16 மற்றும் உள்ளடக்கப் பாதுகாப்புக்கும் கருத்துறவு, என்று கூறுவதற்கு கோரையான பாம்பாலவரின் செயல்பாட்டை காட்டிய காரணமும் போற்றும் காட்டிய நூற்றுறவாக காண்படும். இது மாற்றாக காட்டிய செயற்கைக் காரணமான இரண்டு பாதுகாப்புக்கும் கோரையான காட்டிய நூற்றுறவை காட்டிய நூற்றுறவாக காண்படும். இது மாற்றாக காட்டிய செயற்கைக் காரணமான இரண்டு பாதுகாப்புக்கும் கோரையான காட்டிய நூற்றுறவை 'Symmetrical Tetrachords' என அழைக்கப்படுகிறது. இது பிரிவுக்கும் வாயில் காரணமான பாம்பாலவரின் செயல்பாட்டை காட்டிய நூற்றுறவை காட்டிய நூற்றுறவாக எளுக்கப்படும். இது '2ஒ-முதல் பாம்பாலவரின் செயல்பாடு' என அடையாளம் நூற்றுறவை காட்டிய நூற்றுறவாக எளுக்கப்படும். இது பிரிவுக்கும் வாயில் காரணமான பாம்பாலவரின் செயல்பாடு '2ஒ-வட்டாண்டிய பாம்பாலவரின் செயல்பாடு' என அடையாளம் நூற்றுறவை காட்டிய நூற்றுறவாக எளுக்கப்படும்.
திகுவதற்காக புரோப்பானதற்கு பறக்கவும் வரலாற்று விளக்கத்தில் கற்று பார்த்து வரிசை உள்ளது. கடற்பார்வையில் பங்கேற்றிய தமிழ் முனைவு வரிசைகள் குறிப்பிட்டு இருந்தே இதும் விளக்கத்தில் குறிப்பிட்டு இருந்தது. இந்து கால்வரலாறு செய்தி தேவை பெற்று தமிழ்ச் சார்ந்த விளக்கத்தில், அகரம் குறிவையில் பிரித்து செய்து, அங்கீகரித்ததற்கு வரிசை உள்ளது. கடற்பார்வையில் செய்திகள் தான் முனைவு வரிசைகள் சார்ந்த விளக்கத்தில் குறிப்பிட்டு இருந்தது. அந்த திண்பாய்கள் என்னும் வகையான விளக்கத்தில் குறிப்பிட்டு இருந்தது. அதனால் ரகாமாக வருவாய் வந்து தமிழ் முனைவு வரிசை உள்ளது. அந்த திண்பாய்கள் என்னும் வகையான விளக்கத்தில் குறிப்பிட்டு இருந்தது. அதனால் ரகாமாக வருவாய் வந்து தமிழ் முனைவு வரிசை உள்ளது.

இந்தான வாக்குப்பொருள் ஆண்டுப்பொருள் வரிசையை புரோப்பானதற்கு பறக்கவும் வரலாற்று விளக்க குறிப்பிட்டு கூறப்பட்டது. பின்னர் தான் செய்தி வரிசையை பறக்கவும் விளக்கத்தில் குறிப்பிட்டு இருந்தது. இந்தவகையில் ஆண்டுப்பொருள் வரிசையை பறக்கவும் விளக்கத்தில் குறிப்பிட்டு இருந்தது. இந்தவகையில் ஆண்டுப்பொருள் வரிசையை பறக்கவும் விளக்கத்தில் குறிப்பிட்டு இருந்தது. இந்தவகையில் ஆண்டுப்பொருள் வரிசையை பறக்கவும் விளக்கத்தில் குறிப்பிட்டு இருந்தது.
IMPROVED FLUTE

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The text is in Tamil and contains a long, complex sentence that is difficult to translate accurately without context. It appears to be a detailed discussion or analysis, possibly related to music or a scientific topic. Due to its length and complexity, a precise translation is beyond the scope of this task.

The page contains a block of text that is densely packed with information, with no visible headings or subheadings to break it up. The text is formatted in a standard paragraph style, with no tables or images.
அத்தி காணும் அணியால் காண முடியும் மாதுகரும். எனவே காணும் பட்டியலும் காண பயன்படுத்தும் மூலக்கூறு ஒரு குறியீட்டினாலும்.

இருக்கிறது அதன் பட்டியலும் அவதற்கு பட்டியல் வடிவத்தில் பட்டியல்வாம் நபர் குறிப்பிட்டு மாதுகராக வழங்கி இருக்கக்கூடும் குற்று வாசனை செய்யும்.

இருந்துபோற்றும் பட்டியல் முழும்பு முடியும் காணும் நூற்றாண்டு பட்டியலில் முதல் வரையறறிய வகைகளில் இருக்கிறது. அவை எனினுடைய வகையான பட்டியலிடும் வகையான பட்டியல்வாம் நபர் குறிப்பிட்டு மாதுகராக வழங்கியது ஒரு குறியீட்டினாலும். இருக்கிற வேளாண்மை சமவெளித்து அதிகாரம் என்னும் பட்டியல் வடிவத்தில் பட்டியல்வாம் நபர் குறிப்பிட்டு மாதுகராக வழங்கி இருக்கிறது. இடைவெளியான பட்டியல் வடிவத்தில் பட்டியல்வாம் நபர் குறிப்பிட்டு மாதுகராக வழங்கியது ஒரு குறியீட்டினாலும்.
KOMBU VADYA OF KERALA

L. S. Rajagopalan, Trichur

Kombu Vadya of Kerala belongs to the class of Sushira Vadyas or wind instruments. Unlike other wind instruments this is not used for melody but only as a Lay a or Tala instrument.

The word Kombu₁ (in Malayalam and Tamil) literally means a horn. It is well known that horns of animals (especially cattle) were used as a primitive musical instrument in early times. In course of time animal horn was replaced by metal and the shape also underwent many changes. The Sanskrit word for Kombu is Sringa and the instrument is mentioned with that name in the Puranas.

The earliest reference to an instrument made of horn seems to be in the Mahabharata² where it is referred to as Govishanika (made out of the horn of cow).

The reference in Bhagavata³ is more appropriate to our subject. The divine cow-herd Krishna is said to be having a Sringa Vadya with him always in addition to the flute. One epithet of His is 'Sringapriya'. Once when he wanted to set out for Vanabhojana (a picnic in the forest) he roused his cow-herd friends early morning by blowing his Sringa.

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1. 'A Dravidian Etymological Dictionary' by Burrow and Emeneau says that the word is of pure Dravidian origin and is used in Tamil, Malayalam, Kanarese and Tulu.

2. Mahabharata, Bhishma Parva 43. 8:

3. Bhagavata, 10th Skandha, 12th Adhyaya:
In the Tamil classic Silappatikaram though the instrument is not mentioned in the text, the commentator Adiyarkunallar mentions that Kombu Vadya was popular at that time.

The Malayalam poet Thunchathu Ezhuthachan (13th century A.D.) in his Mahabharatham Kilippattu mentions Sringa along with several other instruments as being used in the Mahabharata war.

Musical instruments made from animal horns are still used by tribal folks in India. The instruments are known as Singha, Singhi, Kohuk etc. in North India. The Todas and Kotas of Nilgiris use musical instruments made out of buffalo horn in their rituals. Buffalo horn instruments are used during worship in a Durga Temple in Kasaragode (Kerala) and it is used even in Dasara processions in Mysore. Instruments similar to the Kombu of Kerala are found in other parts of India also. The Jodkom of Andhra is similar in shape and size. Narasingha of Himachal Pradesh is an S-shaped instrument and bigger in size.

The instrument Sringa is referred to in several Sanskrit texts on Music. Sangita Makaranda of Narada refers to it.

Sringam ca kahalas ceti sushiradi prakirtitah.

In Sangita Ratnakara the instrument is first referred to as-

"Vamsikah Pavikah Pavahkahalah Sankhavadakah
Muhari-Sringavadyadyah"

Sangita Ratnakara also gives details about the instrument:

4 to 7. See Folk Musical Instruments of India by Kothari Published by Sangeeta Natak Akademi, New Delhi.

8. Sangita Makaranda of Narada, Sangitadhyaya, Caturtha Pada, Vadya Visesha, Sloka 10:

"A flawless horn of a buffalo with an opening having the shape of a she elephant's face (oval shaped?) is to be polished and oiled or waxed and made properly fit. An 8 inch piece of a bullock's horn shaped as a Dhattūra flower should be fitted for increasing the sound. The end (evidently of the buffalo horn) should be cut by two or three inches and a hole made for blowing. By blowing *Thu* ', 'Dhu' two different sounds are made and this big sound from it is apt for the dance of cowherds".10.

It is significant that Sarngadeva in his Sangita Ratnakara has mentioned that the Sringa is used by cowherds and the Bhagavata also mentions Krishna, the King of cowherds as using it.

As already pointed out the Kombu of Kerala is a semi-circular or C-shaped instrument. It is made of good bell-metal. The tubulature is conical and it is in three pieces. The instruments are normally in two sizes - Thimiri or smaller one and Bari, the bigger one. Occasionally, an intermediate size known as Eta Bari is also seen. In the Thimiri instrument the curvature at the outer end is slightly turned inside. The Bari is slightly more in curvature than a semi-circle. In the smaller instrument the pieces are fixed together by inserting one end of a piece into one end of the next piece, the tightness being effected by jamming a bit of cloth while inserting. In the bigger instrument the joint is effected by a locking arrangement, the stud at one end getting locked inside a groove in the next piece at the correct position. One string is tied from one end to the other diametrically; the piece of string is held by the hand while playing. It is mainly a protection against the pieces falling apart due to some sudden jerk in the crowds during elephant processions.

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10. Ibid. Vadyadhyaya, slokas 798 – 801:

करेयुद्धनागारबदन दीशकरविगम]

श्यामांश्च वर्णाङ्गेष लिङ्खेष सुमर्थ्यते करमेण

वशस्यांसुधावः पूर्णकृष्णाभिः कलः

सङ्गमवर्तकुले न्यौस्य मूौङूस्य स्वतिः

अर्जः द्विताविशः तत्र चिङ्क्यां दौस्यकारग्रहयम्

विबन्ध दुर्जुकारश्र वादपदिविश्वयाचिम्मय

एवस्येऽज्ञानमभीरे बालं योपालकेलिङ्गयः
At the blowing end the tube is flared to about \( \frac{1}{2} \) inch diameter to the shape of a cup. The lips are pressed against this and blown hard - as with a bugle. Production of different tones are controlled by the lips, tongue and the force of blowing. The outer end is flared to a bell mouth to a diameter of 3 inches. This outer end piece is called 'Ummathu Muri' (literally a piece resembling Dhattūra flower). It is significant that the Sangita Ratnakara also describes the shape as that of a Dhattūra flower.

The three pieces of the instrument are made by casting bell metal in clay moulds by the process usually known as "Lost wax process". Each piece of the Bari instrument is about 19 inches long. The diameter (if the circle were to be completed) would be about 26 inches. After casting, the pieces are properly filed and polished. As the artisans use comparatively crude methods, some variations in pitch (Sruti) between instruments will be found. In order to adjust the pitch, sections of the tube are either shortened (by cutting away a piece and brazing) or lengthened by increasing the length by casting \textit{in situ}. The blowing orifice is widened by filing, if necessary. If it be too wide, the size is reduced by pushing in, tight and flush, a metal tubing. The Sruti of a Bari instrument will be about 4 or 5 'Kaṭṭṭaḷ' (middle F or G). The weight of a Bari instrument is about 3 lbs. Each piece of a Thimiri instrument will be about 15 inches and its Sruti will be about 7 or 8 'Kaṭṭṭaḷ' (middle B or higher C).

Formerly only the Thimiri instruments\(^\text{11}\) were being used in temples. The Bari instrument is comparatively of recent origin. It came into prominence with the development and refinement of Pancha Vadya by Venkichan Swamy. Of late Bari instrument is mainly used, the Thimiri is found more with Harijans who use it for their folk festivals.

In central Kerala area (former Cochin State and adjacent areas) only the Nair community plays this instrument in temples, whereas drums like Thimila and Chenda were the almost exclusive preserves

\(^{11}\) Note the parallel in the temples of Tamil Nadu where only the shorter and high pitched Nagaswaram also called Thimiri was being used. The longer and lower pitched instrument (also called Bari) has come into prominence only recently.
of the Marar community. Notable exceptions are some Nambudiri and Tamil Brahmins who became famous in playing some of these instruments. In all old and important temples Kombu is an essential instrument for daily Pooja, Seeveli etc. During Utsavas this instrument is used in all the temples. It is used as part of the ensemble for Sri Bhuta Bali, Vilakkacharam, Kombu Pattu, Chenda Melam, Edakka Pradakshinam and Pancha Vadyam. In folk religious festivals like 'Vettakkorumakan Pattu', 'Paana', 'Theyyam', 'Mudiyettu' etc. this instrument is used. Even the Harijans use this instrument for some of their festivals and dance. The Syrian Christians of Kerala use this instrument for some of their processions but the playing is done by Harijans usually. Kombu was one of the instruments used during the marching of armies in Kerala. Its martial tradition is still maintained in its use in the Atha Chamayam Procession in Tripunithura near Cochin. Atha Chamayam Procession was started in commemoration of a victory of the Maharajas of Cochin. Though the Maharajas have become commoners, the procession continues as a 'People's' procession.

Unlike other 'Sushira Vadyas' there are no holes or stops for producing various notes in this instrument. It is used as a 'Laya Vadya' in Kerala. The Keralite has a special aptitude for Laya and he has raised this instrument from its primitive levels to that of a classical instrument for Laya. Much of the attraction for Pancha Vadya and Chenda Melam is due to the use of this instrument. It is essentially an out-door instrument and its sound can be heard for miles around, especially in the villages.

Methods of Teaching

First the student is taught to make proper sounds with the Kombu. The lips have to be rounded and the blowing proper. Normal blowing will give the basic note (Sa) and harder blowing will give its higher octave. By controlled blowing it is possible to get Pa and even its octave (Tara Panchama) but it requires much practice and strength of blow, else it is likely to produce discordant notes. Normal playing is therefore confined to the basic note and its higher octave. The strength of blow can vary the basic note by about a Sruti (and naturally the higher octave also) and tonal variations are possible,
The student is then taught to play graded Jatis in Chempata Tala (Jhompata or Adi Tala). This Tala of 8 Matras is ‘marked time’ by 3 beats 1 wave and again 3 beats and 1 wave.

The mnemonics for the first lesson are ‘They, Tha tha, Thai, Tha tha, They, Tha tha, Thai, Dhey Dhey.’

Nine different variations of this pattern are taught.

The second lesson is the playing of different Jatis for 4 Tala Vattoms. Third lesson is the Kalasam (Muthayipu or Mora).

After these preliminary lessons the student is initiated into the playing of Kombu for Chenda Melam.

Chenda Melam is an ensemble of a large number of Chenda (Drums). The other instruments which join the Melam are Ela Talam (Brahma Talam), Kuzhal (similar to Thimiri Nagaswaram) and Kombu. Among the Chenda artists a good number will beat out the Tala on the booming (Valam Tala) side of the Chenda.

There will be a number of Kombus. They play together for every Kalasam which is played at the end of every few Tala Vattoms. Before the start of the Kalasam all the Kombus will get ready by blowing the lower note. The people on top of the elephants holding the Alavattom (peacock-feather fan) and Venchamaram (Yak tail Swish) will take their cue and stand up holding their fan and swish ready. When the Kalasam is played the swish is waved. This is one of the most picturesque sights of the elephant procession in Kerala.

The Kombu will play for one more Tala Vattom after the Kalasam.

For Chenda Melam, different Talas are used. The Kombu artist has to be proficient in all these talas. Normally Chenda Melam is played in Panchari (Rupakam), Pandi (Tisrajati Triputa) and Chempata (Aadi).

The following Talas are also used:
Atanta (Khandajati Ata)
Chempa (Misrajati Jhampa)
Dhruva (Caturasra Jati-Dhruva)
Anchatanta Tala (a Tala of 16 Matras)
For Atanta Tala the time is kept by showing 4 beats 1 wave, 4 beats 1 wave, one beat one wave, one beat one wave. (Total 14 matras).

Anchatanta Tala which seems to be peculiar to Kerala, is kept by 5 beats 1 wave, 5 beats 1 wave, 1 beat 1 wave, 1 beat 1 wave (Total 16 matras). The name is probably derived because instead of four beats of Atanta Tala, 5 beats are made for Anchatanta (Anchu means five). This Tala does not fit in the Sapta Tala scheme or 108 Tala scheme in Carnatic music.

Laya Vinyasa on the Kombu is known as Kombu Pattu. During temple festivals before the idol (Utsava Vigraha) is taken round the temple on elephants (Pradakshina) the idol is brought to the outer courtyard of the temple and kept on view. Individual instruments like Kombu, Kozhal, Maddalam etc. are brought in front of the idol and they are played one after another. Such demonstrations on the instruments are called ‘Pattu Vayikkuka’.

The duration of the playing of Kombu may be up to an hour depending on the ability of the artist and the time available. Pattu is usually played in Chempata, Atanta, Anchantanta, Chempa or Tala Thericha Chempa. ‘Tala Thericha Chempa’ is a picturesque colloquial name given by these artists for Khandajati Triputa Tala of nine matras. Since it is one matra short of Chempa Tala of 10 matras, they call it Chempa with its end cut off (Tala Thericha—end cut off).

Kombu is one of the main instruments in Pancha Vadyam of Kerala. Here also as in Chenda Melam, the Kombu is played mainly during the Kalasams of the Pancha Vadyam. At this juncture Alavattom and Venchamaram will be exhibited on top of the elephants.

The artist here Sri Kandangi Appu Nair of Machat is attached to the Bhagavathi temple Thiruvanikkavu of Machat near Vadakkan-cherry in Trichur District. In this temple some extra importance is given to Kombu Vadyam. During the annual Para ceremony, paddy offerings are collected from people miles around. Only one Kuzhal and four Kombus are used. No drums are played. As a lot of distance and houses have to be covered, the temple servants have to run literally - the Kombu players as well.
At the temple at Maruthoor near Guruvayoor a very big-sized Kombu is used but of late only the last piece of it is used just to sound it like a Conch during Deeparadhana.

The instrument Kombu is developed in a purely Indian tradition and with its martial tradition as mentioned earlier, is well suited for use in the Army in place of the bugle for sounding Revielle, Retreat etc. Will the Indian Army adopt it?

References:

Journal of the Music Academy, Madras, 1965,
Author's article on Siva Giti.

Ibid 1967,
Author's article on Thayambaka.

Ibid. Article on Panchavadya
by Dr. S. Venkitasubramonya Iyer.

Sangeet Natak 10, Martial Musical Instruments of Ancient India by Smt. K. V. Sakuntala.

Ibid. Music in Kootiyattam by the author.

Sangeet Natak 14, Some Rare Talas in Kerala Music,
by Dr. S. Venkitasubramonya Iyer.

Journal of the Music Academy, Madras, 1971,
Author's article on Thimila.

Journal of the Music Academy, Madras, 1972,
Author's article on Suddha Maddala of Kerala.
YATI TALAS
K. C. Tyagarajan

புதிய நாட்கள்

சிவப்பு நட்பு மல்லிகை ஆர்த்தஞ்சனம்

ஏற்ற விழாயில் கலாபாளிகள் ஓரையை வளர்ந்து தோன்றியுள்ளது, கருவாக்கிய மலர்கள் வளம். தொலை ஆட்சியின் பின்னர் கலாய்வின் நிலைப்புக்கு வரக்கூடிய நோய்வாழ்வை குறிப்பிட்டு முடிகிற மெய்யியல்களையும்.

கலாசுரக்கத்தில் பொறியல் நாட்கள் ஆனால்கள் தொட்டில் காணப்படும். கலை கலாசுரக்கம் ஆட்சியாகச் செய்யவும் ஆண்டுகளின் தொடர்பான தொன்றியதை ஊரியும் நடனம் ஆண்டுவட்டம் என்று மேலும் இன்றைய நடனம் போன்ற நாட்களையும், நான் தொண்டேச்சான் ஏற்றியுள்ளார் நாட்களையும்.

உதவிகள் அனுமா சிறுமியர் சிறுபெண்ணு

பிற்பரும் அண்ணு முனிக்கு வந்து, தொண்டேச்சான் போன்ற காலரைப்பில் உட்குறிப்பிட்டு வருகிறவையும்

ஒரு போட்டியை பிரகாரம். கைதொண்டுவரும்:—"ஒட்டையில் கிருஷ்ண வெளியுறுக குருவின் அப்பாசம் சிவப்பு தோற்றங்களும், மன்னன் அறாத்தான், அச்சாகமாக மன்னறிசையும். காலவடிவங்கு நோய்வின் தோற்றம் காலவடிவங்கும், மன்னன் அப்பாசம் சுள்ளையான், தராலையின் வடிவத்தில் காணலாம்." 

இன்னும் பாருகிறேன் வருடத்திற்கு தொண்டேச்சான் நாட்களை நூற்றாண்டு உறைச்சானாம் ஆண்டுப்பாடை: 

முன்னர் காலரக் காலவடிவங்கு காலம் சுற்றாக கையெடுக்கும் வளர்த்து வந்து முனிக்கு கால
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இதுவே அது பிரதமப்பரமாக பண்டை மாசமாக வந்ததே.

(குறுக்கு மாசம்) குறல் புல் சசாரவாகத் துறைத்துக் கொண்டிருந்தார். அதனால்:

(1) கோலம்  (2) வேல்காம்  (3) காற்றவ
(4) செம்  (5) மாழும்  (6) பல்கீ
(7) கையில்  (8) குடும்ப  (9) பக்தி

(10) பரந்த சாகத் தின்ம

இப்படி கோலம், வேல்காம், காற்றவ, செம், மாழும் அதில் இருக்கும் மையாளமான வரலாறு, முதலானது குறை, குழா, குவா, பல்கீ, பரந்த சாகத் தின்ம மையாளமான வரலாறு குறைப்பட்டுள்ளது, குறுக்கு மாசமான வரலாறு குறை 'பக்தி' வரலாறு அதிகாரத்தில் அதிகாரம் விளங்கும் குறைப்பட்டுள்ளது.

பாடலின் ஆபாசகககத்தைக்:

1. பாங்கம்: புத்த தலம் அதிகாரத்தித்தில் அதிகாரம் விளங்கிய அசரமாக விளங்குக.

2. சிறைப்பாடி: அதிகாரம் மையாளமாக முறுப்பு பல்கீ 'பக்தி' அசரமாக சிறைப்பாடி.

3. மலர்காரிய: அதிகார முறுப்பு வாழ்க் கையில் பூர்வத்தில் குறை விளத்து; வெளியவ காய்கள் மையாளமாக விளத்து இருந்தார்.

4. மருந்தமாடி: வேண்டு போர்கள், போர்களின் காலம் ஆட்சிக்கு அல்லாமல். அதிகாரம் எடுக்கவுள்ள பல்கீயர் சாகத் தின்ம, இது மக்கான முறுப்பு விளங்குபவனை.

5. முனித்தமிட்டி: மாலிகன் வேல் கோலம், பல்கீ முறுப்பு மையாளமாக விளங்கு அல்லாமல் விளங்கும் குறைப்பட்டுள்ளது.
6. செய்யந்தரமும்: ஆசிரியர் இவ்விரண்டும் பேணியும் கோல்களில் நல்லாக அச்சரித்து வந்தவர். 

அங்கு அல்லும் போகியாறு, இந்த திடக்கம் நான்குவரியாக நடந்த பூர்வச்சால் ஆனால் அரசான வீட்டில் வந்து விளங்கியது. தம்பினும் அவர்களின் கீழ்கால கலாசாரம் கவனித்து வைக்கப்பட்டது.

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ஒவர்களில் செய்யந்தரமும்  ஆசிரியர் இவ்விரண்டும் பேணியும் கோல்களில் நல்லாக அச்சரித்து வந்தவர்.

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 YTAT TALAS

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| மூற்றம்முதுரு | 0 1 8 0 |
| முதுருக்கம்முதுரு | 0 1 8 1 0 |
| தமதுசெனல்முதுரு | 8 1 8 |
| சுருங்க்கம்முதுரு | 8 8 1 0 |
| மோக்குக்கம்முதுரு | 0 1 8 8 |

மேற்கால பதிவுக்கான எளம்முதுருக்கான வர்த்தாக்கம் பாதுகாப்புப் பாதுகாப்பு சுருங்கப் பாதுகாப்பு சுருங்கப் பாதுகாப்பு சுருங்கப் பாதுகாப்பு சுருங்கப் பாதுகாப்பு சுருங்கப் பாதுகாப்பு சுருங்கப் பாதுகாப்பு சுருங்கப் பாதுகாப்பு சுருங்கப் பாதுகாப்பு 

| எளம்முதுரு | 1 1 1 1 |
| மூற்றம்முதுரு | 8 0 1 8 |
| முதுருக்கம்முதுரு | 0 8 0 |
| தமதுசெனல்முதுரு | 8 0 8 |
| சுருங்க்கம்முதுரு | 8 8 1 0 |
| மோக்குக்கம்முதுரு | 0 1 8 8 |
வந்தால் ஆங்கில அக்காட்சிகளின், உதவிக்கும் குறிக் குறியீடுகளை தவிர்க்கலாம், பாதிவிளக்கம் அடையாதது கூறிய எனில், பாலாமல் அந்தத் தகவலை பாதுகாக்க வேண்டும். வந்தால் அக்காட்சிகளை செய்யும், வந்தால் தகவலை அக்காட்சிகள் குறைவாக்க வேண்டும். அங்கு பகுதிகளுக்காக நடன அந்தத் தகவலை பாதுகாப்பது முடிவுக்கு அந்தத் தகவலை குறைட்சித் தொடர்ந்து செய்ய வேண்டும். அங்கும் பகுதிகளை அரங்கானங்கள் மிகவும் குறைந்து கொள்ள வேண்டும். ஆய்வானது பகுதிகளைச் செயலாக்கத்துக்கு வேளாக்குவதற்கு அவற்றை விளக்கமிட்டு வேண்டும் பகுதிகளையும் மிகவும் விளக்கம் வேண்டும் முடிவுக்கு அந்தத் தகவலை குறைட்சித் தொடர்ந்து செய்ய வேண்டும்.

முடிகிறது அமைப்பிடம்.

நேர்மையை கைது செய்வதற்கு 1 1 1 2 2 2 2 2

[வெட்டி, வெட்டி, வெட்டி, வெட்டி அல்லது கட்டல்]

செயல் விழா 4, 4, 4, 1, 1, 1, 1

முக்கிய வரிசை 18

பல்வேறு அம்மகக்குறிகள் பற்றிய விளக்கம்.

பல்வேறு - 3, 3, 8, 2-16.
28, 4, 6 = 28

வாழ்வு வாழ்வு வாழ்வு வாழ்வு வாழ்வு வாழ்வு வாழ்வு வாழ்வு வாழ்வு
மரபு: பொருண்கலை
நூற்றாண்டு: 1, 2, 8, 2, 1.
பண்டிகை நாள் 14
பானை அவதாரம் பட்டியல் பாடல்
சீர்கள்: 6, 2, 1, 5 - 14
(3) முறுக்குவல்  முறுக்குவல்  $O \quad O \quad 1 + 2 + 8 + 2 + 1 = 14$

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$O \quad O$  

$1 + 2 + 8 + 2 + 1 = 14$
நான்காணி: சுபிருமி
இருந்த அகரங்கள்: 8 0 8
முதல் இறக்கும் நூற்றணி
சில விதிகள்: 8, 2, 8
பலவாறு அமைக்கப் படுகின்றது. 
ஒரு களமாற்றின்: 5, 6, 1, 1, 5 = 18
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தமிழ் நூல்: சாம்பல்

தீர்வு ஆண்டனை: 1 8 8 1 0

பொருள் தொடர் வரும் விழாவில்

சான் விளைவு: 12, 8, 4, 2, 1.

சம்பந்தக் குறன்: 27

முண்டு அவகாசப்படுத்தல் பாதம்,

சத்தியகரம்: 5, 9, 7, 4, 2 = 27.
(5) செய்யும் குலம் விலை ₹8810 = 12 + 8 + 4 + 2 + 1 = 27

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THE JOURNAL OF THE MADRAS MUSIC ACADEMY [Vol. xliv

192

ආරம்ப குற்றகத்தை

முறை அணுக்காணங்கள்: - 0 1 8 1

ஆண்டக்க குற்றக வலை போற்ற

செல்வ விளக்கங்கள்: 1, 2, 4, 8, 12

ஆண்டக்க கல்வி 27

பலாசி வாக்குமருணம் பலகை, செல்வகத்திலிருந்து: 7084080 = 27
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(6) வரலாற்றலன்மை: அம்பாரதிர்களின் 8 8 \[ \frac{1}{8} = 1 + 2 + 4 + 8 + 12 = 27 \]
ஒரு இருட்டுக்கொண்டு |        | போராட்டக்குரியது; | போராட்டத்திற்கு குறிப்பிட்டு  

என் முயற்சி | நம்பிக்கையானது  

8 (12)  

அந்த விளக்கத்திற்கு; மூவர், மூக்கு, திசை மற்றும் குறைந்த பிரிவுகளை,  

துணைப்பகுதியளிக்கு செய்யும் கண்டெடுப்புகளுடன் கூறிசெய்யப்படும்  

அம் நிறுவனப்படி  

துணைக்கிளியுடன்
இவ்விளையாட்டு விளக்கம் யாது மற்றும் விளக்கம் இல்லாதவுடன் Dr. V. மலனார் அந்தப்பட்டு வாழ்ந்து மேலும் அந்தப்பட்டு வாழ்ந்து செய்யும் காரணங்கள் விளக்கத்தின் பார்வை செய்யும்.

This subject can be studied under the heads of Mela, Mela Paddhati and Mela Nomenclature. The ancient murchanas are the original sources for the concept of Mela. Murchanas were sampurna scales and their notes bore a defined pitch-relationship to the fundamental. The ancient harp-like Veena was tuned to the scale of Sa grama. For playing the murchanas the tonic note was shifted to the particular string and played.

The murchanas of Ma grama and Ga grama were obtained by tuning the Veena in each case to the particular grama. Whereas the Murchanas were Sampurna, Jatis were either Sampurna, Shadava or Audava. Jatis were described from the point of view of 13 lakshanas; but none of these lakshanas contemplated gamakas as understood in later times.

With the crystallisation of the raga-concept in the hands of Matanga, the way was paved for the emergence of more and more ragas. The necessity for the classification of ragas based on the affinity to fundamental ragas was felt. Classifications like the Pan-Tiram system, Raganga-Upanga-Bhashanga-Kriyanga system, the Raga-Ragini-parivara system were conceived. Ultimately the Janaka-Janya system was adopted as the most logical.

The evolution of Mela Paddhati is a subject of absorbing interest. It is known that a concept passes through many stages before it reaches the final form. Similarly the concepts of Mela, Mela Paddhati and Mela nomenclature had to pass through many stages before the final logically and aesthetically perfect forms were reached. We come across the word Mela and Janya for the first time in the work Sangita Sara of Vidyaranya (1320–1380). He mentions 15 melas and classifies 50 Janya ragas under them. Some of his Melas were not Sampurna-sampurna. In some like Kedaragaula, the feature Sampurnatva was there, when the Svaras of the Arohana and Avarohana were taken together. This feature was noticeable even in the classification into Pan and Tiram adumbrated

1. According to the Sangita Sudha.—Ed.
in the earlier Tamil works. Vidyaranya's 15 Melas were—Natta, Gurjari, Varatika, Sriraga, Bhairavi, Sankarabharana, Ahiri, Vasantabhairavi, Samanta, Kambhoji, Mukhari, Suddharamakriya, Kedaragula, Hijuji, and Desakshi. Lochana Kavi (14th century), in his work *Raga Tarangini*, mentions the classifications into Tata and Janyas. Still later, Ramamatya (1550), in his *Svaramela-kalanidhi*, mentions 20 Melas, some of which were Janyas like Sriraga and Kedaragula.

Somanatha's (1609) 23 Melas mentioned in his *Raga Vibodha*, also suffered from this defect, for example, the Ragas like Revagupti and Vasanta.

Ahobala in his *Sangita Parijata*, classified Melas into Purna Melas, Shadava Melas and Audava Melas.

This nebulous character of Mela continued till the middle of the 18th century. The author of the *Sangraha Cudamani* enunciated for the first time that a Mela should have a Krama Sampurna Arohana and Krama Sampurna Avarohana. Incidentally the time-honoured difference between a Scale and a Raga was given a fresh lease of life. Thus Harikambhoji Mela and Harikambhoji Raga are two different entities. This enunciation of the concept of a Mela paved the way for the emergence of new and clear-cut Janya Ragas.

*Mela Paddhati* :- The first Lakshanakara to think of a scheme of Melas was Somanatha. In his *Raga Vibodha*, he formulated a scheme of 960 Melas based on 7 Suddha Svaras and 15 Vikrita Svaras. Ultimately he gave up the scheme as being too complicated for practical purposes. Venkatamakhin was indebted to Somanatha for the idea of a scheme of Melas. He profited by the latter's difficulties and evolved a workable scheme of 72 Melas, based on Svaras instead of Srutis.

Ahobala in his *Sangita Parijata* (1660), formulated a scheme of Melas based on 7 Suddha svaras and 22 Vikrita svaras. His Melas numbered 11340.

Later in the 18th century, the author of the *Meladhikara-lakshana* propounded in his treatise an ingenious scheme of 4624
Melas taking the 24 Srutis of an octave as Svarasthanas. After all these proposals, the scheme of 72 Krama Sampurna Melas was ultimately adopted as sound and this Mela Paddhati has come to stay.

**The Ashtottara Sata Melas or 108 Melas:** Attempts were then made to expand the 72 Mela Paddhati. This consists of the additional 36 Vikrita Panchama Melas to the present 72 melas. The Vikrita Panchama Melas take both the Madhyamas. The Panchama Svara has no place there. The Prati Madhyama is sung with the Vikrita Panchama.

The additional six Chakras may be named Geya, Vayu, Maya, Toya, Chhaya and Jaya. These are Katapayadi prefixes and denote respectively Chakras 13 to 18 and comprise Melas 73 to 108, each Chakra taking 6 melas.

The serial number of the Vikrita Panchama Melas is obtained by the formula,

\[(p+u) 2 - 3p,\]

where \(p\) is the serial number of the Purva Melas and \(u\) is the serial number of the corresponding Uttara Mela.

**Scheme of 144 Melas:** This consists of the present 72 Melas and 72 Misra Melas. Herein the first 72 comprise the present Melas. The remaining 72 are Misra Melas. Herein, in Melas 73–108, for each Suddha Madhyama Mela in the Arohana, there is its corresponding Prati Madhyama Mela in the Avarohana. Thus the 73rd Mela in this scheme will have Kanakangi in the Arohana and Salagam in the Avarohana; the 74th mela will have Ratnangi in the Arohana and Jalarnavam in the Avarohana and so on; the 108th Mela will have Chala Nata in the Arohana and Rasikapriya in the Avarohana.

In Melas 109–144 for each Prati Madhyama Mela in the Arohana, there will be the corresponding Suddha Madhyama Mela in the Avarohana. Thus the 109th Mela will have Salagam in the Arohana and Kanakangi in the Avarohana; the 110th Mela will have Jalarnavam in the Arohana and Ratnangi in the Avarohana; the 144th Mela will have Rasikapriya in the Arohana and Chala
Nata in the Avarohana. But these 144 Melas are incorporated in the scheme of 5184 Suddha-Misra melas.

*The Scheme of 5184 Melas (72 x 72)*: This includes within its fold all the Melas so far conceived of on the basis of twelve Svarasthanas. The entire scheme is divided into 72 Chakras, the Arohana remaining the same within a Chakra and the Avarohana alone changing from Mela to Mela.

Just as Raga is our gift to world music, the scheme of 72 Melas is also our gift to world musicology. The twelve Svarasthanas of an octave are known to musicians of both the orient and the occident. The scheme of 72 Melas is developed on the basis of the 12 Svarasthanas. It was given to a Lakshanakara of South India to enunciate the scheme.

To say that the 32 melas are more pleasant to hear is one thing, but to say that the other 40 melas should be given up is a wrong approach. The hymns of the Tevaram used only 21 Pans. In Pingala Nighantu there is the mention of 103 Pans. Simply because the Tevaram hymns comprise only 21 Pans nobody talks of 103 Pans as being redundant and they be given up. Nata Raga has been used as anin vocatory Raga from early times. The traditional Mallari tune as played by the Nagaswarakaras is in Nata Raga. The Nata Raga instils in one the feeling of heroism. The first song in the Todaya Mangala is sung in Nata. At the opposite end is Varali with its emphasis on Soka rasa. Varali is absolutely essential for portraying certain aspects of Soka. In the *Nowka Carithram* and *Prahlada Bhakthi Vijayam* Tyagaraja has used Varali. In Western Operas discords are worked up to a climax and when the concords follow the passages we heave a sigh of relief. This can be seen in the Opera Elektra of Richard Strauss.

There is a scheme of 35 Talas, but compositions have been composed only in a few of those Talas. On that score, nobody says that the scheme of 35 Talas should be given the go-by.

For the Tiruppugazh hymns of Arunagirinathar, no grammar has been worked out so far. Still we are eagerly carrying on researches in the rhythmic set up of these hymns.
Occasionally chromatic scales are used (the 12 semitones are being sounded in succession for special effects). In addition to the Musical Trinity all the serious and responsible composers have composed in Vivadi Mela Ragas and in Janyas of the Vivadi Melas. To say that we should stick only to the 32 Melas will amount to our disinherit ing ourselves of Ragas like Vijayasri, Janavali, Nabhomani, Saradabharanam, Chaya Nata, Ganavaridhi, Candrajyoti and Hamsanadam and the compositions in them.

Let it be remembered that non-Vivadi Melas give rise to Vivadi Melas through the process of Modal Shift of Tonic and Vivadi Melas give rise to non-Vivadi Melas through the same process.

The 72 Melas have found wide acceptance in India and other countries. To say that we should stick to 32 Melas will be suicidal. Music is a progressive art and will continue to progress.

Maha Vaidyanatha Iyer is said to have once sung the Rasikapriya Raga for two hours.

**VIVADI MELAS GIVING RISE TO NON-VIVADI MELAS**

<p>| 1st Mela | Ri 51 | Kamavardhani |
| 2nd Mela | Ri 53 | Gamanasrama |
| 7th Mela  | Ri 63 | Latangi |
| 17        | Da 17 | Suryakantam |
| 19th Mela | Da 53 | Gamanasrama |
| 30th Mela | Ga 44 | Bhavapiya |
| 34th Mela | Ga 44 | Bhavapiya |
| 35th Mela | Ga 9  | Dhenuka |
| 56        | Da 56 | Shanmukhapriya |
| 36th Mela | Ga 45 | Subhapantuvarali |
| 66th Mela | Ga 56 | Shanmukhapriya |
| 70th Mela | Da 46 | Shadvidhamargini |</p>
<table>
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<th>Mela Number</th>
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<th>Tonic(\text{Ra})</th>
<th>Tonic(\text{Da})</th>
<th>Tonic(\text{Ni})</th>
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<tbody>
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<td>Ga</td>
<td>21</td>
<td>Kiravani</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Da</td>
<td>58</td>
<td>Hemavati</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ni</td>
<td>14</td>
<td>Vakulabharanam</td>
<td></td>
</tr>
<tr>
<td>72nd Mela</td>
<td>Ga</td>
<td>57</td>
<td>Simhendramadhyamam</td>
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<tr>
<td></td>
<td>Ni</td>
<td>15</td>
<td>Mayamalavagula</td>
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**NON-VIVADI MELAS GIVING RISE TO VIVADI MELAS**

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<th>Tonic(\text{Ni})</th>
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<td>Ri</td>
<td>66</td>
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<td></td>
<td>Da</td>
<td>35</td>
<td>Sulini</td>
<td></td>
</tr>
<tr>
<td>14th Mela</td>
<td>Ri</td>
<td>71</td>
<td>Kosalam</td>
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</tr>
<tr>
<td>15th Mela</td>
<td>Ri</td>
<td>72</td>
<td>Rasikapriya</td>
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<td>17th Mela</td>
<td>Ga</td>
<td>7</td>
<td>Senavati</td>
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<td>21st Mela</td>
<td>Da</td>
<td>71</td>
<td>Kosalam</td>
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<td>44th Mela</td>
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<td>Jhankaradhvani</td>
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<td>Ni</td>
<td>2</td>
<td>Ratnangi</td>
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<td>57th Mela</td>
<td>Da</td>
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<td>Ga</td>
<td>71</td>
<td>Kosalam</td>
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<tr>
<td>65rd Mela</td>
<td>Ni</td>
<td>7</td>
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The Bhakti movement acted as a restorative to our religion and culture. It also acted as a powerful stimulant to music, because most of the leaders and saints of this movement chose song as a medium for the propagation of their thoughts, messages and above all, the imperative need for virtuous living in the people. In Karnataka these songs came down in two great streams, the songs of the devotees of Hari and the devotees of Siva. There were also minor rivulets like the songs of the followers of Sakti, Ganapati and also Jina. But they became obscure and almost insignificant against the huge output by the followers of Vishnu and Siva. And even between the two, the output of the Haridasas had an edge over the Siva Saranas in respect of the quantity of songs and also the number of composers. This does not mean that the songs of the latter had any lesser merit either in their thoughts or the over-all lyrical appeal.

This aspect seems to be strange especially when viewed in the context of Tamilnad where the songs of the followers of Vishnu and Siva have an equal popularity. Incidentally I must point out that the Saivites or Siva Saranas as they are called in Karnataka were greatly influenced by the leaders of this movement in Tamilnad. The 63 ancient Nayanars are revered as Puratanas by the Virasaivas of Karnataka.

One reason as to why the songs of Siva Saranas are not much in limelight is that most of these leaders and saints composed Vacana verses-a sort of Gadya-padya, which could be either recited or sung. By an examination of their structure and content it is obvious that the Vacanas were spontaneous outpourings on the spur of the moment. And even though there were many composers among them, the compositions of these ancient Siva Saranas were so much mixed up with the Vacana literature that it is only in recent times efforts have been made to sift songs and give a due place to them. The most important contribution in this respect is the book ‘Sivadasa Gitanjali’ by Dr. L. Basavaraju of Mysore University where, for the first time, we come across compositions of
many Vira Saiva leaders whose names occur, for instance, in the works of Palkuriki Somanatha.

The most outstanding figure among these composers is Nijaguna Sivayogi. Apart from his compositions he is respected as a great thinker and Yogi and the profundity of his knowledge and scholarship could be appreciated in his works like Viveka-cintamani, Paramartha Gita, Paramanubhavabodhe, Paramarthaprasikhe, Anubhavasara and Kaivalya-paddhati.

Very little is known about Nijaguna. It is presumed that he was a chieftain ruling over parts of the slopes of Biligirirangan hills in the southern corner of Mysore State. Even his date has been a subject of controversy. But by and large the date 1500 A.D. decided by the late Mahamahopadhyaya R. Narasimhachar in his monumental Karnataka Kavi Carite has been accepted. It is said that due to the cupidity of his queen, Nijaguna became disgusted, renounced his kingdom and became a Sannyasin. Wandering around the country he was initiated into the Yoga by Cenna Sadasiva Yogi and attained the highest stage of bliss. There is also a cave in Sambhulinga hill on the road between Kollegal and Chamarajanagar named after Nijaguna Sivayogi which also contains a Yoga Danda. It is also said that the villagers in that area celebrate an annual Parva in memory of Nijaguna.

Nijaguna Sivayogi has been recognised as an eminent figure in the literary world of the 15th and 16th centuries. His works-both prose and verse, not to mention the songs-mainly concern themselves with the propagation of Sivabhakti, Vedanta especially from the viewpoint of a Yogi.

His works reveal a wide range of knowledge-Veda, Upanishad, Purana, Darsana, Agama, Tantra, Yoga, Jyotisha, Samgita etc. His Puratanara Trividhi is in praise of the 63 Nayanars and is composed in Tripadi, which could be either recited or sung; Parmartha Gita composed in Ragale or Raghata metre whose accent is on Sarvadharma Samanvaya-Paramanubhavabodhe, a condensation of Brihadaranyakopanishad, composed in song-form; Parmarthaprasikhe in five chapters in prose, a commentary on the Sivayogapradipika of Cenna Sadasiva Yogi and Kaivalya Paddhati in songs. It is learnt that he is also the author of two
works in Samskrit-Darsanasara and Tarkacintamani but they have not been found yet.

The most important feature about Nijaguna Sivayogi is that apart from the Virasaivas, he has a large following among the Advaitins and also followers of Avadhuta-sampradaya. His popularity also transcended linguistic barriers. The work Viveka Cintamani, an encyclopedia of Vedanta and other Sastras, has been translated into Marathi by Santeswara Sivayogi of Singhanapura in Satara district in 1604 AD. The Sanskrit version entitled Lingarajya was translated by Lingaraja, son of Nanjaraja of Harapura, in the 17th century; a part of this work was translated into Tamil by Sivaprakasa Swamigal of Tiruvannamalai Mutt in 1652 AD. The original Kannada edition was first published in 1863 by Siddhanti Subrahmanya Sastry who was the Kannada Pandit at the Presidency college, Madras. Recently a well edited version has been published by the Moorusavira Mutt, Hubli.

The Viveka Cintamani is of special interest to musicologists because it contains a section exclusively devoted to music. Kannada literary works of old contain detailed descriptions of music. The technical terms are more or less adopted from the Samskrit works, but interlaced with numerous terms of indigenous origin. But these descriptions occur more or less as incidental to dance or musical events in the stories. But Nijaguna Sivayogi is the first writer in Kannada to treat music as a Vidya. In the IVth chapter of his Vivekacintamani he describes the different elements of music from Nada and Swara to Tala and Nritta. As I intend to take up this as a subject for a separate paper, I shall now confine myself to his songs, the best of which are found in his Kaivalya Paddhati.

The songs are rendered by Kumaris P. S. Vasanta and Padma Rao. They are supported by Vidwans Alandur Natarajan on Violin and Bangalore K. Venkataraman on Mridangam.

Kaivalya Paddhati: The popularity of this work is attested by many composers of later periods modelling their works after Kaivalya Paddhati and also using the word Kaivalya to denote their spiritual contents like the Kaivalya Darpana of Bala Lila.
Mahanta Sivayogi, Kaivalya Kalpavallari of Sarpabhushana Sivayogi and Kaivalya Navanita of Sankarananda Sarasvati.

The Kaivalya Paddhati of Nijaguna Sivayogi is broadly divided into five Sthalas or sections entitled: 1. Sivakaruna 2. Jiva - sambodhana 3. Rajayoga 4. Sivayoga and 5. Jnana-pratipadana. There are some sub-divisions too like - Nitikriya-pratipadana, Mantralayayoga, Hatha Yoga - coming after the second, that is Jivasambodhana sthala ; and there are nine sub-divisions in the last, Jnanapratipadana sthala.

Kaivalya Paddhati contains 174 songs in all. Excepting the earlier ones, which are invocatory, the other songs describe more or less the life of a Yogin, the different classes of Yoga, the several stages one has to pass and several disciplines one has to undergo to attain the ultimate self-realisation and sublimation of soul in Siva.

The rich similes and homilies in Kaivalya Paddhati underline the need for a virtuous living and deep devotion to Siva and Siva Dharma. They also describe the various spiritual and esoteric experiences at the different stages of Yoga. The word-structure indicates the deep scholarship of Nijaguna. The songs prove that he speaks with a conviction born out of a sincere practice of what he preached.

The songs are divided into Pallavi, followed by Caranas. There is no Anupallavi as in the songs composed in the later periods.

The songs of the earlier Siva Saranas are mainly composed in Tripadi metre, with an opening Pallavi and a series of Caranas or nudis as they are called in Kannada.

The Ragas used in the Kaivalya Paddhati are:

<table>
<thead>
<tr>
<th>Ragas</th>
<th>Dhanyasi</th>
<th>Sankarabharana</th>
<th>Bhairavi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nidanamakriya</td>
<td>Lalite</td>
<td>Desi</td>
<td>Salaga</td>
</tr>
<tr>
<td></td>
<td>Todi (Thondi)</td>
<td>Vasanta</td>
<td>Bouli</td>
</tr>
<tr>
<td></td>
<td>Poorvi</td>
<td>Saranga</td>
<td>Regupti</td>
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<tr>
<td></td>
<td>Madhumadhavi</td>
<td>Kambodhi</td>
<td>(Pantuvrali)</td>
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<tr>
<td></td>
<td>Sri</td>
<td>Sourashtra</td>
<td>Gouri</td>
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<tr>
<td></td>
<td>Malava</td>
<td>Bhoopali</td>
<td>Parasi (Paraz)</td>
</tr>
<tr>
<td></td>
<td>Salanganata</td>
<td>Samanta</td>
<td>Naati</td>
</tr>
<tr>
<td></td>
<td>Santa Malahari</td>
<td></td>
<td>Vaddi Dhanyasi</td>
</tr>
</tbody>
</table>
Compared with the lists of Ragas which Nijaguna has enumerated in his Viveka Cintamani I feel that some of these Ragas I mentioned may have been substituted at a later period. The reason for this is that we do not come across Ragas like Pantuvarali, Kalyani, Gouri, Telugu Kambodhi, Saveri etc. in his work describing the art of music. Instead of Pantuvarali we find Ramakri. There are no Talas mentioned in the copies of Kaivalya Paddhati which was first printed and published nearly one hundred years ago, though we are told that some of the manuscripts have the Talas noted against each song. In the Mutts and places in remote corners of Mysore state these songs are being sung in the 'Tattva' style to the basic beats of Chaturasra, Khanda, or Misra as the case may be. But an examination of the structure of the songs reveals that they had been set to different Talas to whose least common multiple beats they are being sung now.

The signature adopted is Sambhulinga.

We shall start the programme with a song from the first section, that is, Guru Karunya sthala. Siva is of course the central figure of this song. The theme runs as follows:

The day has dawned and Siva is being gently awakened. The notable feature of this song is the imaginative use of the word Elu, which means 'awake' in Kannada and also denotes the number seven. Nijaguna Sivayogi has used this word not only for the awakening but also in a string of interesting similes.

Awake my lord, starts the song and describes how the abiding gods of the Seven Svaras which constitute themselves music, gently awaken Siva. Representatives from the seven netherworlds like Atala, Vitala, and from the upper worlds like Bhu, Bhuva etc.; the seven seas, seven Kulagiris; Saptadvipas, seven islands, the seven Prakritis, the seven Misradhvapatris: the seven limbs of a Sabha, the seven Matrikas, seven elements, seven rivers, the Yoga-saptakas...thus goes on and these seven figures and their multiples give a Yamaka in the word-structure of the song. It is set in Raga Regupti.
The second song is from the Jivasambodhana sthala: Here, man is addressed to concentrate on the ways to attain Jivanmukti instead of wallowing in the transitory mundane matters. Opening with the words, Aduthaithale Maye, the world is described as a Stage in the song.

Witness O Wisemen, this drama where Maya dances on the stage of Sivasakti: where she makes Gods, men, demons and Nagas dance like infatuated puppets. She dances without affecting the rasa-viseshas symbolised by the Shadbhavavikara and the nine sentiments, while the lord Sambhulinga is witnessing it surrounded by learned men striving for emancipation.

The third song is from Nitikriya-pratipadana sthala. Here the devotee prays to lord Sambhulinga.

Bestow on me the following qualities, my lord, in all my births—courage in times of adversity, humility even when I become wealthy, absence of manovikara even in the full bloom of youth, determination to pursue it when I lead virtuous life; no craving even if I have to die for anything; never to utter falsehood in any contingency; the discipline to check anger; that discipline of the senses capable of killing the illusory infatuation with other women; the firm desire to pursue Svadharma without any waver ing or pretence and the greatest quality in the world—Santi or peace; the servitude of great Gurus and deep devotion at the feet of Sambhulinga.

The fourth song is from Mantrayoga sthala. This section describes different classes of Yogis, their qualifications, the way of attaining bliss. Opening with the words Yogi Nijanandadolu nudisuva Veene-this is a very popular song of Nijaguna from time immemorial. In many of the songs and other works of Nijaguna like this one presented now, we find numerous references to Vina testifying to the fact that he was a Vainika. In this song he compares human body to a Vina. Addressing the Sujnana in the human beings as Ramani, the song runs:

Oh dear, behold and enjoy the waves of the Raga-rasa or the nectar of the Ragas flowing from the Vina of a
Yogi in bliss. There the body serves as the staff or Dandi, the two eyes are fixed as the two resonator gourds; and the Shodasakshari serve as the frets while the seven nadis form the strings. These are fixed up by the pegs symbolised by pure mind, Prana, Indriya etc. and having the Tara-nada of the Mūlamantra itself as the Sruti. Lifting the Sankarabharanam or the decorative serpent-head of the Vina upwards, he plays with the fingers that are Yoga and Karana and produces divine sound an melody that is a pleasure to Sambhulinga.

The fifth song is from Jnanapratipadana sthala and describes the state of mind after it is purified by proper initiation by a Guru and undergoing several courses of the Yoga.

"To what good deeds of my previous births I am indebted, my lord, wonders my mind that has transcended the Jivabhava and has understood that I am a part of Parabrahma-murty; like the lustrous lamp on a state serene and unruffled but encompassing king, dancer, master, and learned men alike; like the awareness that all the states of mind like Bhava, Laya etc. are false and similar to the illusory movement of a ray of light coming through a roof and when we wave a hand through it; like the Sambhulinga who shelters both Jnana and Ajnana, but remains detached like the pure sky which is the abode of both light and darkness."

The next song addressed to the body describes the state of mind which is emancipated.

No longer does the former intimacy exist between us and we are different now.

You are false whereas I am the true form;
You are the mixture of all impurities whereas I am pure;
You are bound by Karma but I am Sakshibhuta;
You are fettered with mundane desires but I am liberated;
You are of several forms, but I am one;
You are prone to destruction but I am indestructible;
You will finally mingle with the earth whereas I shall be the real;
You are subject to Vikaras but I am above them;
You are subject to ills but I am free from all diseases;
You are unfit for Upadesa but I am fit for it;
You are ephemeral and full of Mayabhranti or illusions, but I am the eternal;
Sambhulinga, free from all the illusions of Maya,
Now tell me-Who are You and Who am I?

Now we come to the last song in this lecture-demonstration. It is a tribute to the divine light which is the outcome of all the Yoga-sadhanas and which illuminates the body and soul together.

The light Paranjyoti is burning and illuminating the whole world.
It is beyond one's comprehension and beyond speech.
It is free from all ills and all dirtsthe great light Paranjyoti
On top of the pillar of Sivadharma and
In that lotus-like lamp of pure heart or the Hridaya nalina
And filled with the oil of deep and unabating devotion, Bhakti,
And the wick of pure Kala alighted...the Light that is Paranjyoti.
The moth that attacked and covered this divine light, Vishayabhranti, has fallen dead.
And the darkness of ignorance or Ajnana disappearing,
The bright Sujnana or knowledge is all-pervading, melting the Maya...the Light Paranjyoti is
When self-realisation is coming through Pranava-rupa without the hurdle or hindrance of Triguna,
And when the eternal Kaivalya Cintamani Sambhulinga Himself is shining—the Light that is Paranjyoti*

* On the music material in Nijaguna, see also the early work of Kittel, Indian Antiquary, Vol. III. pp. 244-7, 332.—V.R.
SIGNIFICANCE OF RĀGĀNGA IN HINDUSTANI MUSIC

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Delhi University

The Rāga is the structural tune in which an artiste in Indian music is supposed to give his performance. Just as the architect builds up an edifice on the structural framework, so also the musician exercises his creative faculty within the framework of the Rāga. In all the flights of imagination, in all the embellishments, this structural tune is consistently maintained so that it is discernible at every moment; and should it disappear at any moment, then it is regarded as an evident flaw in the Rāga. Further, just as the idiom and not merely grammar makes a language, so also it is the Anga and not merely the scale of a Rāga that is its distinguishing feature.

One of the dictionary meanings of Anga1 is “essential requisite or component”. Therefore Rāgāṅga should be understood as an essential phrase of a Rāga, which phrase could well be characteristic of a group of Rāgas. Thus, for instance, the musical phrase Ni pa, Ma gā ma re sa is an integral part not only of the fundamental Kānhdā, viz. Darbāri, but of all the Rāgas belonging to the Kānhdā group such as Nāyaki, Adānā, etc.

In Karnatic music a scale can produce only a single Rāga, whereas in Hindustani music a scale with the self-same notes makes as many as four or sometimes more Rāgas. This phenomenon is peculiar to Hindustani music only by virtue of the Rāgāṅga. Thus no less than four Rāgas have been devised out of the pentatonic scale Sa re ga pa dha, viz. Bhūpāli, Deshkār, Jait Kalyān and Suddha Kalyān (Illustration). In Karnatic music only one Rāga, viz. Mohanam, is obtained in the above scale. In Hindustani music, a scale often gives rise to more than one Rāga. The scale Sa re ga ma dha ni produces Pūriyā, Mārwā and Sohāni. The Bhairava

1. Anga is also called Sthāya, and Sthāya has been described by Sārgadeva as a component of the Rāga (रागस्थाय: स्थाय:....)
One of the ninety-six Sthāyas, viz. Rāgeshta is interesting in the present context: ने विना रागोंविप्रेष्यं हि प्रतिवनति, स रणेष: (Sangīta Ratnākara, Vol. II. commentary of Simhabhūpāla, Adyar, Madras, pp. 171, 185)
scale i.e. Sa re ga ma pa dha ni has Bhairava, Kālinga and Gouri. The Rāgas Megh and Madhumād Sārang have the same scale i.e. sa re ma pa ni and the pentatonic scale sa re ma pa dha produces Durga (Bilāwal) and Suddha Mallār. This is possible only because of the Rāgānga.

On Angas is based a Rāga-classification known as ‘Rāgānga’ or ‘Bheda Paddhati’ Karnatic Rāgānga rāgas, meaning Melakarta or Parent rāgas, should not be confused with the above. In Rāgānga Paddhati, Rāgas are grouped according to their respective Sanchāras or note-passages, no matter what Mela they belong to. There are varieties of Kānhda, Mallār, Sārang, Kalyān, Bilāwal, Nat, etc., for which the modern Hindustani terminology is ‘Prakār’. The Prakārā Paddhati of the Rāgas has a systematic history of about five hundred years. Matanga was the first Sanskrit authority on music to describe Rāga as we understand it today. But neither his Bṛhaddevī nor Sāngdeva’s Sāngita Ratnakara indicates the possibility of Bheda Paddhati being prevalent in ancient times. However, in Sāngita Ratnakara, there are some Rāgas with common suffixes, e.g. Kauntali Varati, Drāvidī Varati, Saindhavi Varati, Aparāthana Varati, Hastaswara Varati and Pratāp Varati; Chhāya Toḍi and Turushka Toḍi; Mahārāshtra Gurjari, Saurāshtra Gurjari, Dakshina Gurjari and Drāvida Gurjari; Karnāta Gauḍa, Deshvāla Gauḍa, Turushka Gauḍa and Drāvida Gauḍa. Although they have not been mentioned specifically as Bhedas, nor have the common characteristic phrases been clearly indicated, the Rāgas therein will certainly be of interest for further research.

Among the medieval Sanskrit authors on music, Bhāva-bhaṭṭa is credited with giving a methodical classification of Rāgas according to Rāgānga, and he called it Bheda. Bhāvabhaṭṭa, who was in the service of Anup Singh of Bikaner (1674-1709 A.D.), is looked down upon as a mere compiler. It is true that the material found in the three works he wrote, viz. Anūpa Sāngita Ratnakara, Anūpa Sāngita Vilāsa and Anūpa Sāngita Ankuśa, is mostly drawn from the preceding works. The contents of the Svaradhāsya of his Anūpa Vilāsa are taken from Sāngita Ratnakara; all the twenty Melas of his Anūpa Sāngita Ratnakara, are borrowed from Puṇḍarika Viṭṭhala’s Rāga Maṇjari. The author sometimes went to the extent of borrowing matter en
masse from other significant works. But in the realm of Hindustani Rāgas researchers cannot overlook Bhavabhāṭṭa’s contributions in as much as he deals with ‘Rāga Bheda’ elaborately. Ahobala (early seventeenth century) refers only to the varieties of Nāta, Gauḍa and Varāti just in passing. Instead he prefers to describe his Rāgas in terms of Mela. The Mela system, from the very period of its inception by Vidyāraṇya in the fourteenth century, became a favourite with the medieval authors on Indian music. But the possibility of the existence of Rāgāngas in Ahobala’s time cannot be totally ruled out in view of the fact that two Rāgas in the same scale have been described by Ahobala in the following way:

\[ \begin{align*}
\text{Nāta Bheda-16, Karnāṭ Bheda-14, Kalyān Bheda-13, Velāvali Bheda-16, Toḍi Bheda-9, Gauri Bheda-8, Gauḍa Bheda-10, Varāti Bheda-12, Pūriyā Bheda-7, Āsāvari Bheda-3, Kedār Bheda-3, Vihanga Bheda-2, Sārang Bheda-4, Bhairav Bheda-10, Kāmod Bheda-7, Gurjari Bheda-8, Saindhavi Bheda-6, Mallār Bheda-3.}
\end{align*} \]

But Bhavabhāṭṭa is the chief exponent, among Sanskrit scholars, of the system of Rāga-Bhedas. Let us have a glance at the relevant portions of his works. In the Anupa Sangita Ratnakara, Bhavabhāṭṭa gives the following Bhedas:

1. Ahobala, Sangita Parijata (Saraswati Press, Calcutta, 1884) p. 45
2. Ibid. p. 51
Yaman Kalyāṇa, etc.; the Todis, viz, Shuddha Toḍi, Gurjari Toḍi, Bahādur Toḍi, etc.; the Mallaras, viz. Gauḍ Mallar, Megh Mallar etc., are grouped in the same manner as Bhavabhaṭṭa did.

Bhavabhaṭṭa has given a verse, rather unusually in the Hindi language, describing the varieties of Kānhada based on Angas, which would be of interest to modern scholars:

Kānhada, Kalyān, Bilāwal, Sārang, Mallār, etc., served as staples to form new Rāgas.

Husain Shāh Sharki, who ruled over Jaunpur (1452–78), was aware of Rāgāṅgas. Sharki’s twelve varieties of Shyāma have been noted in the second chapter of Faqirullah’s ‘Rāg Darpan’, a Persian work on Indian music written during the reign of Aurangzeb. The varieties of Shyām as found in ‘Rāg Darpan’ are:

Gauṛ Shyām, Shyām Mallār, Bhūpāl Shyām, Kinnar Shyām, Sohang Shyām, Pūrvī Shyām Sampūrṇa, Shyām Rāga, Megha Shyām, Vasant Shyām Sampūrṇa, Shyām Godai, and Gauḍ Shyām. If we include Shuddha Shyām, it will make twelve.

In the same chapter under ‘Rāgas according to Mān Kutūhal’ some Rāga Bhedas are found. Five varieties of Kānhada and nine varieties of Nāṭa are enumerated. Now, the author of ‘Mān Kutūhal’ was Raja Mān Singh Tanwar, almost a contemporary of Sharki. This means that the Bheda Paddhati was quite prevalent in the fifteenth century. In the sixteenth century, Baz Bahādur of Mālwa, and the legendary Tānsen, too, evolved Rāgas following the same system.

In modern Hindustani music, Rāgāṅgas have a prominent place. Certain professionals may not have a conscious awareness of them, yet in their rendition, the Rāgāṅga is almost instinctively used. Some eminent musicologists of the last century, such as K. D. Banerji and S. M. Tagore, attempted to establish the importance of Bheda or Prakār Paddhati. Pt. Bhātkhande was one of the earliest modern scholars to carefully examine, define and make use of the important phrases of the major Rāgas of Hindustāni music so as to form a systematic classification of the Rāgas. To begin with, he gave five Angas of Kāfi Thāṭa, viz. Kāfi, Dhanāshri, Kānhadā, Sārang and Malhār Anga.

2. Bhatkhande Sangit Shāstra (Part IV), Sangit Karyalaya, Ḫathras, 1957, pp. 29-30
In fact Pt. Bhātkahandē's Mela or Thāṭa Paddhati also encompasses Rāgāṅga Paddhati. Had his Thāṭa system been based on mere scales, he would have placed Bhūpalī and Deśkhār under the same Thāṭa. To regard the ten Thāṭa system as the last word would be to over-simplify matters. In Hindustani music the Thāṭas are good to begin with, but—to revert to our original simile—sense of Anga like sense of idiom, develops only gradually.

It would not be out of place here to discuss the elements which an Anga contains. These are Nyāsa or intermediary pause, Gamak or embellishment, and Chala or pace. As an example, let us take the Rāgas, Pūriyā and Mārwā. The notes Ni dha ma ga re sa are admissible to both the Rāgas. Pauses after Ni and Ga will make Pūriyā while after Dha and re will make Mārwā. Similarly Megh should have Gamak (in the modern sense) to keep it distinct from Madhyāmā Sarang. With regard to pace, we may note that some Rāgas of the same Āroh-Avaroh differ from one another in pace or tempo. Kālingā has a faster tempo than Bhairav, Paraj than Vasant, and Aḍāṇā than Darbāri. In fact Sthāya or Anga should always be characterised by the above-mentioned elements lest it should prove to be a mere arrangement of notes rather than a full-fledged Rāgāṅga.

Let us take up some Rāgāṅgas and consider the Rāgas grouped under them:

*Kānhdā* Anga - Darbāri, Aḍāṇā, Nāyakā, Suhā, Sughrāi, Shahānā, Kausi, etc. In all these Kānhdās, in addition to their own identity, the common Kānhdā phrase *Ni* pa, *Ma* Ga ma re sa is present. (Illustrations)

1. Nyāsa here is to be distinguished from Nyāsa in its ancient sense, i.e. ending note of a Raga.
Sāranga Anga - Brindāvani, Madhyamād, Shuddha, Miya ki, Badhansa, Lankdahan, etc. In these Sārangas, the Sārang Anga Ni pa ma re is present.

Mallār Anga - Miya ki, Gouḍ, Megh, Sur, Rāmdāsi, Mirābai, Dhuliā, Charju ki Malhār, etc. In all of them, the Mallār Anga shows itself in the phrase Ma re pa. Dhanashri, Kalyān, Bilāwal, Nāṭa, Bhafrav, Kedār, Toḍi, Bihāg, etc., are some other well-known Angas with their respective characteristic phrases and group of Rāgas.

This classification of Angas is not to be taken too rigidly as there are always some overlapping Rāgas, e.g. Āhir Bhairav, Nat Bhairav, Yamani Bilawal, etc. There are also certain Angas which are not so prominent as to form groups under them; nevertheless they are evident in many Rāgas. Such are Kāmod Anga, Lalit Anga, Bāgeshri Anga, Khamāj Anga, Sorat or Desh Anga, Mārwā Anga, Shri Anga, Kalingdā Anga, etc. All these Angas are household words with Hindustani musicians. Often, a Rāga bears the name of the Anga to which it belongs, but at times it may not. Thus, for instance, while the Rāgas Shuddha Kalyan, Shyam Kalyan, Jait Kalyān, Hem Kalyān, etc., carry their family-name, Kalyān, the Rāgas Bhūpāli, Chandrakānt, etc., do not. At the same time it should be remembered that though certain Rāgas bear the name of some Anga, they do not actually belong to that particular Anga or, for that matter, to any Anga. Thus Gorakh Kālyān does not contain any phrase, whatsoever, to denote the Kālyān Anga Pa re sa, and the Rāga Gouḍ Sārang, though it does not have the Goud Anga Ga re ma ga, has nothing to justify the name Sārang. They can be explained only as misnomers. Finally, whilst most of the Rāgas fit into the scheme of Angas, a few like Ābhogi, Hamsadhwani, etc., do not, and they must be accepted as happy exceptions.

Looking back, we find that the Rāga-Rāgini system fell into desuetude owing to certain shortcomings in it. The Thāṭa system is, in Hindustani music at least, somewhat inadequate and admits of quite a few exceptions so that it is difficult to formulate rules. Since, as we have seen, the Rāgāngas are much more comprehensive, they could perhaps be systematized into a more or less perfect theory.
THEORY OF MUSICOMETRICS
Vidvan Tinniam Venkatarama Iyer and
R. Venkatarathnam, B.A. (Hons.)

Origin:
The subject of musicometrics deals with a mathematical study of the theories of Laya, the musical metre. This subject can be called the Gitachanda Lakshanam or quantitative musical rhythmic linguistics. The scientific basis for these theories as applied to Indian Music originates from the Chandas Sastra which deals with the study of the Metres as adopted by our ancient Rishis in their singing of the holy Vedic and other hymns. The Metres are broadly classified into Vritta and Jati.

Binary Analysis:
The Vritta is known as Akshara Chandas while the Jati is known as Matra Chandas. In percussion music, a stroke can be called an akshara while a stroke as well as a visranti can be called a syllable. The term Vritta would therefore mean the number of actual sound producing strokes in an expression and the term Jati would include the strokes and the visrantis known as Karvais. We can, therefore, define a percussion expression as a sequence of equi-durational strokes and rests. There are thus two entities, namely, the stroke and the rest which determine a rhythmic pattern. Any analysis where two possible and exhaustive entities form the subject matter is called binary analysis or quantal analysis or dichotomy. The percussion expressions are, therefore, clearly amenable to the mathematical principles of the analysis of binary data.

Probabilistic Approach:
The percussion music is gregarious in character in the sense that it has necessarily to live in contact with the non-percussional form. It is a fact that the mardangika efficiently makes a probabilistic approach to the techniques of accompaniment with the help of manodharma. The object of this paper is to deal with a systematic study of this widely practised approach to concert accompaniment through percussion music.

M—28
Markov Chain of Rhythmic Melodies;

Assuming that all the strokes employed in a drum are indistinguishable, the percussion expressions can be considered as discrete sequences formed by strokes and rests arranged in an order in course of time. All such possible patterns (sequences of strokes and rests) can be worked out for a given number of syllables by means of the khanda prastara known to the Indian musicians from the very early periods. The Nashta and Uddishta prastara for all these patterns (finding out the serial order 'S' of a particular pattern and vice versa) can also be worked out by the formula,

\[ S = 2^{n-1} \times V_1 + 2^{n-2} \times V_2 + 2^{n-3} \times V_3 + \ldots V_n \]

where \( n \) is the number of syllables (syllabic instants) in the given pattern and \( V_r = 2 \) if the \( r^{th} \) syllable in the pattern is a stroke (akshara) and \( V_r = 1 \) if the \( r^{th} \) syllable is a rest (visranti). Thus, the serial order of the rhythmic pattern "U o UU", where there are, three strokes and one rest in the order U o UU is given by,

\[
S = (2 \times 2) + (2 \times 1) + (2 \times 2) + (2 \times 2) \\
= 2^3 \times 2 + 2^2 \times 1 + 2^1 \times 2 + 2^0 \times 2 \\
= (8 \times 2) + (4 \times 1) + (2 \times 2) + (1 \times 2) \\
= 16 + 4 + 4 + 2 \\
= 26
\]

That is, the serial order of "U o UU" is 26. A typical expression in this pattern is, 'Thaam ki Ta' and this is, therefore, an expression belonging to the 26th rhythmic pattern in the prastara. It now follows that all the rhythmic patterns (common to all drums) can be arranged serially in an infinite rhythmic continuum by Nashta Prastara.

All musical expressions, as in the case of speech-sounds, are the outcome of chance causes in a play. The concerts are thus "spiritual games of chance" for the musicians and the accompanists. In a play of percussion syllables, the rhythmic pattern of the resultant sequence is determined on the addition of every syllable in succession. The serial order of the "sequence-in-process" gradually moves by forward jumps on the rhythmic
ANNEXURE I

Serial No. of the Pattern in each Akshara

Rhythmic Continuum

The Form of a Koravai in relation to the Rhythmic Continuum
ANNEXURE II

Khanda Prastara for Four Stroked Patterns Using N+M

Please note the symmetry of the polygon

Drawn by: R. Subramani, O.F.E.
continuum as the syllables are added one by one in the process of formation. Such a process is mathematically known as a random walk or Markov chain, so called after the Russian Mathematician who worked out the theory of the process. The percussion formula for Nashta of the process is given by 

$$E_{n+1} = 2E_n + V_{n+1},$$

where, \((n + 1)\) is the number of syllables in the resultant percussion expression; \(E_n\) is the serial order of the expression before the play of the \((n + 1)\)th syllable; \(V_{n+1} = 2\) if the \((n+1)\)th syllable is a stroke and \(V_{n+1} = 1\) if otherwise and \(E_{n+1}\) is the serial order of the resultant expression. We call this musical Markov chain as Paas Matlaai (garland of melodies) and we present it worshipfully to the Gods. Vide graph in the annexeure I.

Expression/Continuum:

Now, if we take into account the different melodic and tonal characters of the distinguishable strokes involved in an expression, the Nashta and Uddishta can be worked out by extending the principles of binary analysis to multivariates. All the percussion expressions of a particular drum would thus form the members of an infinite expression continuum. This continuum forms the lexicon of percussion expressions for the drum. When the percussionist plays, he chooses his syllables and expressions according to what he desires to play. But sufficiently large corpus of his rendering appears to conform to statistical regularities which in turn form the characteristics of his Baami (style). The most frequent expressions are the shortest, the simplest and those with greater semantic coverage. Stylostatistics looks for certain statistical constants typical of a pattern or of an artist or of an artist in a certain period of his life. The Information Theory developed by Shannon states that it is possible to measure exactly one particular aspect in the transmission of signals and so it is in percussion play.

To every expression of the percussion continuum is attached a definite (traditional) probability of use and an entropy (surprise or information) value. This is of great importance in percussion music. Upon it depends the readiness to have the expressions at an artist's disposal at the right time and in the right place,
**Surprise:**

The basis for Shannon's *Information Theory* is Khanda Prastara which works out the possible patterns that can be generated in any system of communication. In this respect, each percussion expression can be considered as belonging to a distinct system with a distinct set of probabilities for the syllables. Such a consideration can be justified due to the fact that the amount of actual surprise generated by a particular expression would be that amount of surprise which would have been generated, had the expression been played *for the first time* by the very discoverer of the expression whose play is influenced by chance causes. That is why, we say that the musician's first duty is to the composer so that the full amount of surprise can be generated in the rendering of an author's composition.

Thus, the surprise generated by the popular tekha (madhurya jati) "Na Din Din Da" is the maximum when compared with all the possible four-stroked patterns formed by the two strokes N (Na, Da) and M (Din), because the relative transitional entropy in the expression “N M M N” (Na Din Din Da) is unity which is the maximum. There is, therefore, according to information theory, no redundancy in the rhythm of this expression in regard to the syllables employed. Hence long repetitions of such tekhas and sarvalaghus are highly interesting. The various traditional expressions have been framed by the percussionist-forefathers only on such probabilistic considerations and high entropy values with least redundancy. Vide graph in the annexure II.

**Noise:**

The knowledge that one can have about percussion music is indeterminate because, the drummer has to guess what the musician is going to sing. This speculative knowledge can however be improved by a study of the previous statistics concerning the style of the musician.

The position of the percussionist is similar to that of the moon. The moon does not shine by herself. She receives the Sun's rays, makes them pleasantly cool and passes them on to Earth like nectar. The percussionist's duty is, therefore, to reflect the emotions of the musician by his drum. The musician is the
sender of the information and the percussionist is the recipient. He has to receive the information transmitted by the musician, recodify them in his percussion language aesthetically and traditionally pass on the information to the public. The public would not merely receive his message but would compare it with the musician's version. The enthusiasm of the listener would be aroused only if there is agreement between the two versions. If there is no agreement, we say that there is "noise" or interference or distortion.

Suppose the musician transmits the musical expression "A". Suppose the drummer receives it and recodifies it as "a". Then we are led to enquire, "how much surprise is generated by the reception of a particular symbol 'a' in the percussionist's hands." If there is no noise, then the information (or surprise) generated by both the partners (namely, A and a) is the same. That is, \[ I_a = I_A = - \log_2 P(A) \] where, \( P(A) \) means the probability of occurrence of the musician's expression "A". This quantity of surprise is measured in terms of "bits" per expression. An example of this case is where the percussionist adopts the madhya kalam (medium tempo) exactly whenever the musician renders expressions in the madhya kalam.

In the absence of noise in the concert, there is no doubt, that when the expression "a" was played, the expression "A" was transmitted by the musician. That is, the conditional probability of A (given 'a' received) is unity or, \( P_a(A) = 1 \). In this case, there is perfect agreement between the partners.

In the presence of noise, it is not certain that when 'a' is received, it was the corresponding expression 'A' that was indeed transmitted. The actual expression rendered by the musician might have been B or C or D. From past statistics and knowledge about the musician and the percussionist in their previous concerts, the conditional probabilities, \( P_a(A), P_a(B), P_a(C), P_a(D) \) etc. can be found. This fact is continuously made use of as part of learning processes and hence the gurus advise the students to listen closely to all the concerts of the leading artists.

If such probabilities can be assessed in this way, then the percussionist has some additional prior information about the musician's renderings.
The presence of noise is indicative of doubts (uncertainties) in the minds of the partners about each other's rendition. The doubt in the mind of the musician about what will be played by the percussionist as accompaniment is called the Prevarication $I_A (a)$ or generally $I_X (x)$. The doubt in the mind of the percussionist as to what expression was actually sung by the musician when he played the accompanying expression "x" called the Equivocation, is $I_a (A)$ or generally $I_x(X)$ where, $X$ is the musician's expression and $x$ is the percussionist's expression. When there is perfect agreement these doubts vanish. When the partners are (statistically) independent of each other, the Equivocation and Prevarication reach the maximum and no surprise or information is gained at all. Because, according to the Information Theory, the average information or surprise $I_{av} = I (X) - I_x (X) = I (x)$

- $I_X (x)$ and the maximum value of the Equivocation $I_x (X) = I (X)$ and that of the Prevarication $I_X (x) = I (x)$. These doubts become zero when $P_x (X) = 1$ and $P_X (x) = 1$. There is, therefore, no noise in thoroughly rehearsed concerts and dance recitals.

Reducing Noise:

The Indian music concerts being mostly extempore in character, it can be said that there is no known way of compensating noise interference. The effects of noise can, however, be attempted to be overcome or at least to be reduced. Simple repetition is one way of reducing noise. That is why, short tekhas and sarvalaghush are repeated a number of times during accompaniment. Complete randomness is also avoided by the musician and the percussionist as the complete randomization has the characteristics of noise. The very structure of the various percussion expressions and laws of music have been framed by our musical forefathers in such tradition that the effects of noise can be brought to the minimum in the extempore music concerts of traditional styles.

Jati:

Jati is the basis for all rhythmic patterns. All form of music are originated from and contained in Jati.

In the percussional form of music, there are only five Jatis and they are exhaustive. They are 'Tisra, Caturasra, Khanda, Misra and Sankirna Jatis.
(1) If an expression belongs to one Jati, it would not, at the same time, belong to any other Jaati.

(2) An expression would belong to one Jati or it can be expressed as a sequence of member expressions of one or more Jatis.

Example:

i. Tha Ka Thi Mi Chaturasra Jati

ii. Tha Thing Ki Na Thom Khanda Jati

iii. Tha Ka Tha Ki Ta Khanda Tha Theeng Ki Na Thom Tisra

= 5 + 6 = 11

and

(3) An expression can be transformed from one Jati to another by the introduction or deletion of visrantis without changing the order of the strokes.

These are the three fundamental theorems governing the entire percussion and non-percussional (but measured) musical forms in regard to their rhythmic character.

Melody:

The percussion expressions are characterised by two main qualities namely, the rhythmic and the melodic. The melodic quality consists in the varieties of tonal qualities of the different strokes while the rhythmic quality consists in the arrangement of the aksharas and the visrantis. Melody is, however, a quality which cannot be measured on any objective scale. But we might rank the different syllables according to melody by some simple criterion as saying that the syllable N (Num) is of more melody than the syllable M (Thim). According to quantization theory of psychology, the difference in quality between the consecutive ranks in the extremes are greater than the differences in quality between the consecutive ranks in the middle. Melodic weights can then be assigned to the different syllables of a drum based on the above theory and these weights can be fixed by means of the normal curve discussed in statistical theory,
The profile (contour) for an expression is its form which comprises its level of melody, dispersion of its syllables and the shape of the expression. The level is defined as the mean score of the expression over its variables in the profile. The term dispersion indicates how widely the scores of the profiles diverge from the mean score. The term shape concerns the ups and downs and the rests and strokes in the melodic and rhythmic structure. It is found that the tekha "Na Din Din Da" is one with high melodic value as well as surprise and information value and fine shape. The (sustained) melodic strokes such as N (Num), M (Thim), C (Thaam) and D (Thom) are used in pharan (fast) expressions known as druta jatis to introduce a considerable level of melody even though these expressions, mostly comprise the dead strokes like T (Tha), K (Ku), T (Ta) and R (Ri), because Indian music is mainly melodic in character.

Regions in Percussion Style:

As tempo increases, the rate of flow of surprise increases. However the human ear cannot receive and appreciate information if its rate of flow exceeds a certain limit. That is why, the fast expressions occupy only the medium (occurrence) frequency region in an ideal and traditional percussional play.

There are three regions in percussion style. The tekhas and sarvalaghus form the high frequency region; the pharans and short muktayis (moharas) occupy the medium frequency region; the long moharas, korvais and thatthakaras form the rare frequency region. These three regions have been well defined by tradition.

The principles enunciated by Dandin in his monumental Kavyadarsa are applicable to an ideal percussion play. "There are varieties of styles as propounded by different schools and they have subtle difference in them; even Sarasvati cannot expound the difference in sweetness between the sugarcane, the milk, the jaggery and the like."

In an ideal play the percussion expressions should be compact. This quality of compactness is known as slesha. The expressions should not be ambiguous. This quality of unambiguity is called akshara suddha. The strokes employed should all be dignified.
This quality of dignity is known as *udarata*. The expressions played should attract the *listener*. This quality of attraction is called *Kanti*. Above all, there should be *mādhurya*, softness in the play. These are the guiding principles that should be borne in mind to make the percussion expressions musically meaningful.

**Meaning of Percussion Expressions:**

The study and analysis of the musical meaning conveyed by the percussion expressions would demand rather a philosophical treatment. The term ‘tala’ is said to have been derived from ‘Ta’, the *tāṇḍava* of Sadasiva and ‘La’, the *lasya* of Śakti. The six angas employed in the classical talas are said to have been evolved from the six *ādharas* and to represent the different parts of Sadasiva. The eight classical rhythmic sequences of the shorts and longs, known as *ashta ganas* are classified into *amrita* (pleasant) and *visha* (unpleasant) *ganas*. The arising, enduring and disappearance of the three worlds come from rhythm. The rhythm represents the movements of organisms and is indicative of their emotional motivations. These emotional motivations imply the meaning of percussion expressions. The meaning of a percussion expression depends upon its context of situation and its capacity to translate the emotions, conveyed by the music. It is closely related to culture and tradition. It is indeed a difficult task to identify the meanings of percussion messages, as any attempt in this regard is to be directed towards dealing with the use of expressions and sequences in relation to the whole of human experience. The grammarians, therefore, call the inner aspect of the expressions as *Sphoṭa*, the *nādabrahman*.

Part of the meaning, however, consists in the relationship of an expression with the other expressions in the sequence. The entropy (information) of an expression or sequence which is based upon this fact varies when viewed from different angles. That is why, an expression or a sequence when played in different tempos or *gatis* or *talas* generates different surprises. The stresses and sound modulations are employed to focus the listener on the entropy in regard to a particular view or aspect or set of aspects. Indeed as Eddington
says, reality is obtained only when all conceivable views have been combined.

The object of this paper is to bring home that the structuralism of the percussion language of music, as a whole, can be efficiently stated through the statistical information theory with a high degree of conformity with the views of the performing artists.
On certain occasions, the Vaishnava monastery called Sattras of Assam follow a fixed devotional programme. Of them, the month of Bhadra (August-September) deserves special attention. Three special ceremonies are held in that month. Most of the Vaishnava institutions (sattra) have their fixed song (git), ghosha (prayer song by Madhavadeva) and Kirtan (prayer verses by Sañkaradeva meant for singing in the ‘prasanga’), etc., for these occasions. The first and the most important of these is the ‘tithi’ (the lunar date of the passing away) of Sañkaradeva, the great Vaishnava leader and social reformer of north-eastern India of the 16th century A.D. The date of the festival is generally called ‘Guru-kirtan’ which falls on the day of the second bright half of the lunar month in the month of Bhadra. Food offering (prasada prepared with unboiled rice, mug etc.,) is given in all the sattras throughout this month. New officers like gayan (singer), bayan (drummer), sutradhār (dancer-director), deurl (distributor of prasada), and hātimatā (one who is to summon the clerics in the sets of cloisters to prayer services, etc.) consider this date as very auspicious to assume their posts. Another feature of the month of Bhadra is the ‘śūnya-pāṭh’ (reading from the scriptures), which is maintained throughout the month as a part of daily routine. It is held after the evening services. During this month, the gayan-bayan and the dancer of the sattra practise every song or git (bargit by Sañkaradeva and Madhavadeva), each with four to five different tunes and talas accompanied by various types of dances. This process, which has now become almost obsolete in most of the sattras, was called ‘behār-gowā’ and ‘behār-nacuwa’. The two other important functions of the month are the ‘tithi’ of Madhavadeva and Janmāṣṭami.

The fourteen prasāṅgas called ‘caidhya-prasāṅgas’ or ceremonials as laid down by Madhavadeva and Puruṣottam Thākur, are observed by almost all the sattras. The different modes of practising these ceremonials are said to have been formulated
by Puruṣottam Ṭhākur. Nowadays, if however, all the above cannot be maintained throughout the whole year, it is observed strictly in the month of Bhādra. These ceremonials are divided into four groups – the matine, the forenoon, the afternoon and the evening services. There are different ways and modes of these ceremonials which may slightly vary from sattra to sattra.

In the month of Bhādra, the usual prasaṅgas are maintained. Besides these, the ‘Nām-sāmārā’ (concluding the devotional services) function is important and this is observed on the last day (Saṁkrānti) of the month of Bhādra. This is celebrated by the male folk. Like the usual afternoon prasaṅga, it is started with a git or song, which is followed by nine ghoṣās (by Madhavadeva) beginning with ‘dinadayāśīla deva dāmodara hari’ etc. In the last ghoṣā, a ‘dīhā’ (=-dohā, a different type of song) is to be sung followed by the ‘pada’ – ‘kṛṣṇa eko deva duḥkhahāri’ etc., (six couplets from the ‘lechāri’ ghoṣā of the Nām-ghoṣā by Madhavadeva). Then the following ghoṣās are sung: ‘e rām jay, hari jay’ etc., (from verse Nos. 967 and 997 of the Nām-ghoṣā up to ‘kahaya mādhava dáse’). Then again the party starts singing three ghoṣās beginning with ‘rām nirāṇjan, o rām nirāṇjan’, etc., to ‘dayāśīla deva dīna-bandhu re rām rām’ etc. Then the Kṛtana ‘her pāilō pāilō re he prāṇadhana mukunda murāri’ from the ‘Rāsa-līlā’ chapter of the Kṛtana Ghoṣā by Śaṅkaradeva is sung as usual. The second Kṛtana is ‘rāma hari e he’ of the Bali-chalan chapter of the Kṛtana-Ghoṣā. In the line ‘uṭhī kato kirtana karanta tāla dhari’, the party stands up and sings the dīhā ‘bolahu rām rām bhābio rām rām’, and in this way finishes the Kṛtana. Then the following twelve ghoṣās are sung, accompanied by different gestures:—
1. ‘nārāyaṇaṁ e he hari re he jay rām’. The corresponding dance for this ghoṣā is named as ‘uṭhā khoj mān’.

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<th>Notes</th>
<th>R M P N</th>
<th>D D P M</th>
<th>P P P N</th>
<th>D P M P</th>
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2. ‘jay jay rām param maṅgal jay jay vāsudev’. Here the dance is ‘ciracīṭika’.

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<th>D ŠD P P</th>
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<td>y a vā su de v e he</td>
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<td>Š R R R</td>
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<td>D ŠN D P</td>
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<td>i tu wā pā we - ka rō se wa ha ri e - he -</td>
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3. ‘śrīmanta śaṅkara hari bhaktara jānā yena kalpataru’ – Here the corresponding dance is called ‘saru-juti’. Notation for this is same as above (No. 2).

4. ‘dayāvanta santa śītala svabhāva parama guṇe mahanta’ – The related dance is termed as ‘epakīṭa-ćiṭkā’. Notation for this is also same as No. 2 above.
5. 'nirguṇa kṛṣṇara guṇaka prakāśa karilā ārīśānkare' – The dance for this ghoṣa is 'barjuti'. Notation for this is also same as No. 2 above.

6. Now a diha is sung as follows:

'kṛṣṇa hari e e he rām rām hari kṛṣṇa rām'. The following two lines are sung as 'pada' –

'dei eka calu jala tulasiṣṭa pāte,
eteke vikraya kṛpāmaya honta tāte'.

The corresponding dance for this is named as 'dupakiya-ciṭika'.

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7. 'sahajānanda hari svarūpānanda, hṛdayānanda hari paramānanda' – the related dance is termed as 'khubali-pichalā'.

| Notes | Ś R₁ Š N₁ | D   | P   | D   | PM  | M   | P   | D   | Š   | Š   | Š   | Š   | Š   | Š   | Š   | R   | Š   | D   | Š   | R   |
|-------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Words | sa ha ja | nan da ha ri | sva rū pā | na an da | hṛ da yā |
8. ‘govinda govinda daivaki nandan hari rama narayan’ – the dance for this ghoṣa is called ‘saru-calā’.

9. ‘gopala jay rām govinda jay rām’ – the dance is here termed as ‘ād-juti’.

10. ‘madhusūdana deva, tumī bine agatir gati nai kev’ – the dance for this ghoṣa is termed as ‘bahi-ciral’.

Notes
Words
11. 'jagajivana rām jagajivana rām, jagatar sumaṅgal tuwā guṇa nām' – the dance for this ghoṣā is 'bagali-khuṭiwa'. Notation for this ghoṣā is same as No. 10, above.

12. 'o hari e he hari e he hari e he o hari he'—the dance for this ghoṣā is named as 'khubali-picalā-nupūr-calowā'. In the middle of it, the members of the party bow down to each other forming pairs and sing the following line: hbakta bāndhava praṇāmō rām. Again the ghoṣā along with the dance will continue.

Notes

Words

\[ \text{Notes: } \text{N N N S} \quad \text{N P G R} \quad \text{S S S S} \quad \text{S S G R} \]

\[ \text{Words: } \text{a' a' a' a'} \quad \text{a' a' hari e} \quad \text{e - - -} \quad \text{e - he e} \]

\[ \text{ha ri re -} \quad \text{ha ri re -} \quad \text{a' a' hari e} \quad \text{e - - -} \]

\[ \text{P P P P} \quad \text{P M P P} \quad \text{M P M GS} \quad \text{S GM M P} \]

\[ \text{a - - -} \quad \text{abha ka ta} \quad \text{bān - dha va} \quad \text{a pra ṣā mō} \]

\[ \text{M G S S} \quad \text{(N S)} \]

\[ \text{rā - - m} \quad \text{(a'-)} \]
After this the ‘tota’ (the Sanskrit hymn by Sañkaradeva in the toka metre of which the first line is ‘madhu dānava dāraṇa deva varam’ etc.,) with a peculiar tune and rhythm is sung. Immediately at the end of it, the first chapter of Sañkaradeva’s ‘guna-mala’ (rama nirañjana etc.) is sung. The party will then start following one another headed by the Nām-lagowā (who leads the prayer services) in a criss-cross way on the floor of the Kirtan-ghar (prayer house). Some elderly monks, who are not able to run, may however, sit and sing the verses with others. At the end of it, a couple of dulādi-ghoṣā is sung where the Nām-lagowā comes to his former position. The function is concluded like an usual prayer service (prasāngiya-nām). Thus the celebration of the function, which is of a very peculiar form prevalent particularly centering around Bardowā or Batadravā (the Holy birth-place of Sañkaradeva) group of sattras, comes to an end.

Note: The notations are prepared according to the Bhatkhande system of notations where ‘Komal’ is indicated by a line below the notes. Higher and Lower Octaves are indicated by a dot on the top and bottom of the notes. Grace notes are indicated by a note at the top left of the main note. One single unit is one Mátrā. When prolonged, it is followed by dashes as per the required units to cover the duration.
Social and other forces in a human group are reflected in the development and movements of instruments. It is not possible here to trace in all detail the ethnic relations of music and musical instruments; for, enough data are not available. In the present state of our knowledge, it is but a general and limited statement that can be made.

The condition of our society now is the outcome of the various confluent currents of human movements. In effect, it is eclectic and not monolithic. The tribal contribution to the music of our country can be observed in the names of some rāga-s. For instance, Chenchu Kambhoji is indicative of its relation with the Chenchus of Andhra and perhaps of Kambhoja area (?). Even during the time of Matanga (5-7 cent. A.D.), this cultural contact was in progress. In his Brhadādesī he says: "No classical melody (mārga) can be composed from four notes or less; melodies with notes less than five are used by tribes such as Savara, Pulinda, Kāmbhoja, Vanga, Kirāta, Vāiharika, Andhra, Drāvida and forest-dwellers", though some melodies like Āndhri had already attained the status of classical form (jāti). Other rāga-s with such ethnic and regional associations are Malva, Gurjari, Sāvari and Bangala; Boṭṭa rāga is said to be the tune of Boṭṭadesa or the Tibetan area, Ṭakka rāga of At-tok on the banks of the Sindhu river; Bhairava and Bhairavi are conjectured to have been based on the music of the Bhairava tribe. Instances of such kind are sufficiently widespread to validate the assumption that the nuclei of many of our current rāga-s had definite tribal sources. 1

The most primitive instruments are naturally to be sought for amongst the cultures which form isolated enclaves to this day. And even here it is, perhaps, more logical to take the idiophones (ghana vāḍya) to be the most ancient. As an example, we may consider the scraper or rasp. It is found among the Savaras, one of the oldest ethnic population we know of, as doddu rajan and among the Pulayans of Kerala as the kokkara. What is of interest is that the instrument looks very much like the fire-producing implements of early societies such as the Paniyans of Kerala. Again, some authors are of the view that the flute was an invention of the Savaras. Also, the bow is said to be the creation of the Negrito, the strains of which race are still to be found in South India. One may be permitted to speculate that the Negrito might have also invented the bow-shaped chordophones (tata vāḍya), examples of which are to this day found amongst the tribes of Africa. It may not altogether be an accident that the bow-type instruments are extant in the southern areas of our country-the villāḍi vāḍyam, and the villu kunju-which has considerable population of the Negrito and among the Santhals as the buang. Another instance is the typical drum called the mādal. This type is found with the Santhals, Orāons, Baigās and the Ghasias—all non-Aryan peoples of the Central Indian belt. Obviously, then, a careful study and mapping out of the instruments of the tribes will eventually give us a good picture of their origins and migrations. An ethno-organological research is yet a desideratum with us.

Pending an unequivocal conclusion, we shall here consider the Indus Valley civilization as pre-Vedic and hence non-Aryan, most probably Dravidian. Of the music of this culture we know little. But of their instruments, evidence is available mostly from the seals excavated. Hourglass drum similar to the huḍukka or the udūkkai, cylindrical drum, castanets and cymbals have been noted. Of particular interest is the arched or the bow-shaped harp. This instrumental symbol has also been found in some of the hieroglyphs. Clay whistles have been unearthed in these sites. The drums and whistles were in all probability earthen. But we may only conjecture about the material of the stringed instruments. Perhaps, the arch was of wood and the strings of grass or animal gut.
Assuming that this civilization was ethnically related to the ancient peoples of South India, we may discuss some of the older music of this area. Of course, Tamil Nadu, Kerala, Mysore, Andhra, southern Maharashtra, Central India, and parts of Orissa should be treated as a unit for this purpose. However, the oldest literature available is the Tamil from about the 2nd cent. A.D. The īsai referred to music in general and musicians were commonly called pāṇar or perumpāṇar. The standard scale is said to have been that of the present Harikāmbhoji (Sa Ri Ga Ma Pa Dha ni). The melodic equivalent of the rāga was pāṇ and the term corresponding to the śruti was alagu. The system of modal shift (mūrchhana paddhati) was known as pālai. The important instruments were the yāzh, the kuzhal and the maddalam. The yāzh was a kind of harp; the kuzhal was a flute; and the maddalam was a drum. The word maddalam may be significant, with a pointer to the madal of Central Indian tribes. The same word has variations as maddale (Kannada), madole (Bengali), māndar (Hindi) and mardal (Sanskṛt). It is in such cases that we really meet difficulties of tracing the origins of instruments, for, the mutual influences are very ancient and linguistic exchanges between Indo-Aryan and the Dravidian are deep and far-reaching. Only a very careful study of the etymology of the names can help us. Indeed, even the earliest Tamil literature on music available to us now shows a mixture and/or substratum of Sanskrīt. For example, the names of pāṇ-s like Panchamam and Gāndhāra Panchamam definitely reveal Indo-Aryan sources. I suspect, therefore, that the present-day Karnatak music is based on the ancient pre-Dravidian and Dravidian music, with a strong colouring of later Aryan systems. To this we will revert later.

As the Aryans invaded India some four thousand years ago, they brought with them their music, the earliest records of which are the Vedic. Rgveda, the oldest of the four Vedas (2500 B.C. at the latest) is a simple recitation with three tones (or tonal regions): the udatta, the svarita and the anudatta, each separated from the next by a tone (three or four śruti-s.) The Sāma Veda, which is a more elaborate chanting of the Rgveda, has seven notes arranged in certain degrees of descent and ascent. In the main, it is a descending music, starting from a high pitch and cascading down. This is a characteristic of all early music and is closely related to the psycho-physiology of music and musical instruments, as has been discussed by the
author elsewhere. The *Vedic* chants were ecclesiastical in purpose and hence highly symbolic, not easily permissible of change. In the rituals and sacrifices, various musical instruments were used to accompany the chant. As the priests (*udgātrīs*) sang, their wives played different kinds of *veena* of which there were many types—*bhūga veena*, *karkari veena* (?), *kanda veena*, *apaghātīla*, *godha*; but details about the construction and tuning of these are not clear. One may only suspect that they were harps or dulcimers. The drums mentioned in *Vedic* literature are the *dundubhi* and the *bhūmi dundubhi*, the latter being the more primitive. Other membranophones which find mention are the *ādambara*, the *lambana* and the *vanaspati*, though no details are available. Among the wind instruments were the *tūṇava* and the *nādi* (*nāli*), the flutes. *Āghaṭi* of the *Veda*-s was perhaps a metallic cymbal.

Along with the spread of the Āryans, the influence of their music also extended throughout the country. We find the terminology and nomenclature in music becoming more Samskritized and a significant indication of the religious and the profane cultural interactions is found in the *Nārādyā Śikṣā* (1st. A.D.). It is also a very important reference point, as it gives one of the earliest measurements of the *Vedic* scale in terms of the flute scale used in profane music (*laukika sangita*). From here on all later texts deal only with secular and regional (*deśi*) music. A landmark in this direction is the *Brhaddeśī* of Matanga (5-7 A.D.), a compendium on *deśi* music, as its name implies. Here, perhaps, is the first mention of *rāga* proper, which concept gradually replaces the earlier melodic ideas of *jāti*, *jātirāga* and *grama-rāga*. We are definite, once more, that this Aryan-based music strongly influences and even replaces to some extent the indigenous South Indian art music, for, in the rock-cut inscription of Kudimīyāmalai in Tamil nadu (7th cent. A.D.) we come across the note signatures of *Sa*, *Ri*, *Ga* etc, and/or their variants.

The same ‘unity’ of culture could be ascribed to the ‘unity’ of Indian music from this period on. Because of the fact that both non-Aryan and Aryan music were melodic, an integrative exchange of concepts and practices could take place. What, in all probability, happened was the intermingling of musical forms and styles basically melodic and rhythmic but with local differences,
In fact, this was the very meaning of *deśī sangīta*: that which varied from *deśa* (country, area) to *deṣa*. As an outcome of all this we have now two systems: the Karnāṭak and the Hindustānī. It is offered here as a suggestion worth examining that various styles of South India, essentially based on ancient Dravidian and other non-Aryan art and highly influenced by Aryan music have come to form one system—the Karnāṭak. Another group of non-Aryan styles, again very deeply affected by Aryan and later on the Central and the West Asian music is the present Hindustānī system. Naturally, along with this ‘Aryanization’ travelled the people’s instruments and/or their names: *mrdanga*, *veena* and so on.

The difficulty of tracing the sources of instruments becomes evident even at this stage. For the intermixture of these races and cultures has been so extensive that sifting the available data is a strenuous and tricky task. And one has to be aware of the material in ethnology, linguistics, written and unwritten history, and literature. Till we possess the results of careful and intensive research on every instrument, considering all these and other aspects, any ideas about its origin and migration can only be tentative. The problem is of disentangling the ethnic sources, as often it is only the name of an instrument that has travelled but familiar ones like the *veena*, *mrdanga* and *mādal*.

The coming of the Central/and West Asian hordes, mainly from the 11th cent. A.D. onwards opens up a new chapter in Indian music and organology. Alien music, particularly Persian and Arabian, began to make its effect felt and eventually gave a strong colouring to the entire music of this country to more or less degrees in different areas. It is true that the music in upper India felt this impact more, due to its geographical and political position. But even the south did not fully escape it, though situated further from these trends. The new musical school which seems to have been called *Indraprastha mata* (the Delhi School) was characterised by 1) the classification of Indian *rāga*-s on a method parallel to the Iranian *maqām*-s, 2) the creation of *rāga*-s with Indian names but being admixtures of local and foreign melodies, and 3) *rāga*-s having older names but newer tonal structures. The most revolutionary consequence was the establishment of the twelve-tone scale in the place of ancient
mūrčcānā paddhati or modal shift. The effect on instruments is very pronounced as a remarkable and emphatic change takes place. The harps and dulcimers, essential to the system using modal transposition, disappears from the musical scene and as the concept of grāma itself vanishes being replaced by that of mela or thēṭ of twelve notes, finger-board instruments become popular. Even here frets which perhaps were movable in earlier veena-s become fixed. Besides, new instruments gained currency, as for example, the tabla, the sitar, the sarod, the sarangi and the shehnai. Whether these instruments were imported totally or whether only new names began to be applied to indigenous ones is a question that requires careful examination without bias.

While upper India came under a strong influence of the Iranian styles, the Deccan was not completely insulated. By the 13th cent. the overwhelming effect of Muslim invasion and migrations are evident in this part of the country also. Sānga-deva, a Kashmiri brahman, produced in that century his immortal Sangita-ratnākara, a work that can be considered as the last one describing the older modal music. With the founding of the Bhāmini dynasty in 1347 A.D. the expansion of Muslim art becomes more extensive in the south. For example, Vidyāranya (15th cent.), one of the founders of the Vijayanagara empire gives as one of his mela-s, Hejjujji, a word derivable from the Hijaj ṁaqām; and Hijaj is an area in Arabia. More important, he is also considered to be the first propounder of the mela system of rāga-classification. This has inextricable relations to the history of musical instruments; it implies the emergence of the finger-board lutes and zithers with frets, replacing the older harps. Eventually, the frets become immovable giving us the sarva rāga mela veena: the veena which has the potentiality to produce all notes required in all rāga-s. The present-day veena-s of the North and the South (not the sitar) are of this type.

This is the second crucial change in the history of Indian music and organology. Of the Dravidianization of India and its influence on our music, we know very little; of the Aryanization of the music and instruments of the country we have fairly extensive knowledge. Indeed, much of Indian musicology describes this
process, very often without explicitly stating so. The third stage is the post-thirteenth century and almost all musicologists are of the opinion that from this time on Indian music which was formerly ‘one’ began to ‘bifurcate’ into the Hindustani and the Karnatak systems. How far our music could have been ‘one’ we have already discussed: in a vast land with poor means of communication, with geographical variations of enormous range and with ethnic groups of staggering differences of social standards, to expect ‘one’ music would not be logical. The ‘oneness’ that was there was in the fact of the music being melodic with suitable instruments being used. The aeons of living together has brought a high degree of cultural and musical integration. It was this music-different in different regions and having distinguishable variations but with a sense of oneness—which was influenced by the Iranian systems: more in the North and less in the South. It is therefore not a question of bifurcation at all; for, the ‘one’ music of the musicologist has its roots in books and the classical bias. The actual art is more dynamic. A set of styles have coalesced into the present Hindustani music and another into the Karnatak. With faster means of communication we may now expect a further fusion and some time in the future have ‘one’ Indian music with regional variations: the ‘oneness’ implying again ‘of being melodic’ with certain broad commonness in the concepts of rāga and tāla.

With the arrival of Western-particularly the British-culture, certain changes in our music have taken place, which may have far-reaching consequences, if permitted to spread. The main effect has been of the technological and the resulting faster methods of communication: the radio, the gramaphone, and the printed book. These are bringing far-flung areas closer; differences are disappearing and a tragic monotony is setting in. There is a greater exchange between and mingling of both folk and art music of the south and the north. The country is tending to ‘oneness’-at least, in music!

Of the musical instruments from the West, two are the most noteworthy: the violin and the harmonium. The introduction of the violin to serious music is attributed to the Dikshitar family of musicians, to which belonged Muttuswami Dikshitar (1775—1835 A.D.), one of the noblest composers of this country. Tradition has it that Bālusvāmi Dikshitar Muttusvāmi’s
brother - learnt it from the musical band attached to the British Governor, Pigot, of that time at Madras. The disciple of Dikshitar, Vadivelu (one of the four Tanjavur brothers), became an accomplished violinist and his position as the court-musician of Travancore might have helped the popularization of the instrument. In fact, he was honoured by the the king of Travancore with the gift of an ivory violin. Other early names connected with the spread of the violin are Varahappa Iyer, Tanjavur Subba Iyer and Tiruvenkādu Sivarāmakrishna Iyer. This bowed instrument has now become a solo instrument and an indispensable accompaniment in South India where it is colloquially called the piteelu or pitlu (a corruption of 'fiddle'). Even in the north it is fairly well known and used, being termed bela or behala - an obvious linguistic relation to viola or violin.

The harmonium - Rabindranath Tagore called it “the bane of Indian music” - is the only keyboard instrument which has invaded our music in a big way. Its popularity is considerable, particularly in the north where it is played - and often preferred - even on the concert platform. Fortunately, it has not encroached on the domains of classical Karnatak music. Its portability, the lack of any necessity for on-the-spot-tuning, loudness and comparative ease of technique have made it widely popular and ubiquitous. It has spread like a wild fire and destroyed much that is beautiful in Indian music, as it has many insurmountable disadvantages. Because of the tempered tuning, it can never give the finer pitch - variations so necessary for our music. Being a keyboard instrument, it is not possible to get any kind of gamaka out of it. Attempts are now afoot towards the construction of electronic harmoniums which can give sruti - differences; one can even produce good Indian music without gamaka-s, as in a svaramandal, though this does not come up to current concepts of the melodic and pitch-variations in our music. But how to construct an instrument which can give the almost infinite sruti-differentiations in the same rāga?

Another instrument which is also gaining some foothold in art music is the clarionet, imported from the West. Here again, the employment of keys to close and open the holes prevents its being really suitable to our music.

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The other major borrowal from European culture is the brass band and orchestra. The former is more urban in habitat and can be seen commonly in marriages and social processions. The bands usually consist of clarionets, trombones and drums with the harmonium or the accordion thrown in for effect. A generation ago it was the highest sophistication to have police or "palace" bands play in public parks.

The orchestra (usually translated the vādyā vrinda) is again a new idea from the West, though instrumental ensembles are very ancient in India. Such ensembles, called the kutapa, were known at the time of Bharata (2nd cent. A.D.) who describes the kutapa, its arrangement and use in drama. And we have sculptural and pictorial representations of instrumental groups in Bharhut (2nd B.C.), Ajanta (2 - 7 A.D.), Bagh (4 - 6 A.D.) and so on. While Bharata, for instance, has mentioned the details of the use of kutapa in drama, it was obviously employed also in royal courts, religious and social processions and auspicious occasions.

Simhabhūpāla (14th cent.) has described three types of kutapa, classified according to the number of vocalists and instrumentalists. Apparently these were mere choruses with flutists and drummers accompanying the voices. But Bharata's kutapa-s were more elaborate with players of mrdanga, paṅava, dardura (all drums), flute and veena (harp) besides men and women singers. Natya Śāstra also gives the pratyāhāra, that is, the arrangement of the members of the kutāpa.

It is clear from both the nature of Indian music and descriptions that the kutapa was more a small instrumental ensemble than a sizeable orchestra. Of course, there was no question of harmonization at all. Even today there are temple and social ceremonies with such small sets of instruments as well as the less pretentious 'orchestras' of drama and dance troupes. Of such traditional groups the better known are the pancha vādyā of Kerala and Orissa, and the melam-s of South India. The pancha vādyam of Kerala usually comprises a māddalam, a timila; an idakka (drums), a sangu, (conch) and tālam (cymbals); sometimes a kombu (metal horn) is also included. In Orissa the corresponding ensemble employs a jhanj (cymbals), a shehnai,
a ghanta (a metal plate beaten with a stick), a dhole (drum) and a sankh (conch). In both cases the emphasis on rhythmic instruments is obvious and significant. The popular melam of South India consists of a mukha veena or a nāgasvaram (a couple of them) and drums - a pambai, a tavil and sometimes a dhole.

Orchestra of a bigger dimension is a recent gift from the West. It is quite possible, as already stated, that the police and army bands of the British and the French might have been the beginners of this trend. The princely courts used to maintain such ensembles which sometimes played Indian classical compositions. Today, there are some schools training students in ‘orchestral’ music of sorts. But one of the major organizations which has orchestras is the All-India Radio. This is a regularly maintained troupe of instrumentalists with full time composers and conductors. Almost every Indian concert instrument finds a place and even some Western ones. The compositions are generally based on rāga-s and tāla-s, though attempts at introducing harmonic progressions are being made. The second and major field where Western music and orchestration have been widely applied is the films. Composers and directors of film music have gained popular appeal in this direction. Not being inhibited by any grammar and with entertainment as their main purpose, they have leaned heavily on tone colour and mass, so effective for their purpose but so undeveloped in the single line melodic music of India. And to achieve the desired results they have used instruments of all types and origins, including the recent electronic ones.

Pan-Indian organology:

Indian musical migrations to the Far East have been both by land and sea, and the extent of influence has varied with history. The music of the borders of western China-Kuchean music had much in common with and was perhaps derivable from the music of India. For instance, the musical terms in Kuchean are said to have Sanskrit bases such as sha-to-li = Skt. śādhārīta, ki-shi = kaisika, shah-shih = shadja, sha-hou-kaa-lan = shadja grāma, etc. It is surmised that these terms were introduced into China during the 6th cent. A.D. by one Sujitva. As for instruments, the murals in the caves of Tun-huang, an important Buddhist centre of 4th cent. A.D., depict a number of Indian ones. Again, the Chinese
bowed instrument, *hu-ch’in*, is ‘foreign’ to that country and the word *hu* is applied to ‘native of India and elsewhere’. Japan also received the chants of Buddhist monks from India. Some derive the Japanese *biwa* (traceable to the Chinese *p’pa*), a short lute, from the *veena*.

Other Far Eastern relations of Indian instruments can be seen in the pan pipes of Assam and the *khene* of Laos. Indeed, the Laotian bowed instruments of *So* type are very similar to the *pena* of Manipur and the *kenra* of Orissa.

Coming nearer home, we find a very close link between Indonesia—the Yavadvipa and Suvarṇadvipa of ancient Indians—and India, particularly the eastern coastal cultures of the peninsula. The major period of contacts was during what is called the Hindu period. The domination of Indian culture commences from the early centuries of the Christian era up to about the 10th century, from which time Far Eastern influence gains ground and by the 15th century Islamic culture pervades the area. It was during this Indian period, specially of the Sailendra kingdom, that a great migration of drama, dance and music to Java and Sumatra from the parent land took place. A vast amount of evidence of this is available from the Chandi sari reliefs (circa 750 A.D.) as also from early epigraphic and textual material dating from 820 A.D. The reliefs and sculptures of Borobodur and Angkor vat (8–9th cent. A.D.), as also texts like *Arjuna-vivāha* (11th cent.) and later ones give extensive information on instruments of Indian origin. For instance, the chief drummer in an ensemble was the *padahi manggla* (Skt. *paṭaha*). The *makara* (from the *makarayazh* of Tamilians?) and *vinipanchi* (Skt. *vipanchi*) were a few chordophones of Indian source. Of the aerophones we come across the *vansī* or *bansi* (Skt. *vamsi* = flute), the *kāhala* and so on. The samskrit *muraja* (and the Tamil *murasu*) drum becomes *murava* or *muraba*; the *dundubhi* was also used. Of the idophones we have *genta* (Skt. *ghanta*), bell, and *beri*, a gong. This last is of interest, for, in India the word *beri* connotes a kind of drum, or, rarely a trumpet. Here then is a case where the word has travelled and been misapplied but not the actual instrument.

The very close cultural relations of Western Asia and India make it extremely difficult to sort out the mutual contributions; for, it is not very easy to decide definitely what has come in and
what has gone out, specially the latter. That various concepts in mathematics, astronomy and medicine went to the West from Hindu India we know. But in music we are on shakier foundations. According to Sylvain Levi, "the West owes its system of notations by the initial letters of the names of the notes to Hindu music". Weber thinks that the Samskrit term grāma (Prākrit. gama) meaning a musical scale is the root from which are derived the Arabic jama ah or gama ah (scale), and through this the French gamme and the English gamut (a scale of seven notes). As for instruments, we are on an even more slippery ground, because almost all words known in North India have affinities with Arabic and Persian. We may, however, note the following. The first is the case of bowed instruments. Some scholars are of the opinion that the rāvaṇahasta veena or rāvaṇahatta of Western India migrated to Western Asia to become the rabonostron, the rebec, the rabaab and finally the violin. Another interesting case is that of the kamanche or kamanja, a bowed instrument referred to by Ibn al-Faqih (early 10th cent. A.D.) as being used by the Copts of Egypt and the natives of Sind. It may not be too far-fetched an idea to suggest a relation of the kamayācha (India) to kamancha (Arabic) and kamanga (Egyptian). The kātūyānī veena is said to have gone over as the qaanoon and the sata tantri veena as the santir to Persia and Arabia; we still have the santur in Kashmir. Lastly, we come to the tumbur. Again, it is a difficult question to decide its place of origin and perigrination. The word is believed to be Persian; and the Arabs have the tanbur, a long lute. The tanbur has also, quite possibly, affinities to pantur (small bow) of ancient Sumeria; pan or ban means a bow or even a harp. This becomes the Greek pandora. Again, the Assyrian pandora was a three-stringed lute. Sachs and others have ascribed the beginnings of these to the mid-West. But Abdul Razaq Kanpuri is of the opinion that the original word is Indian tambura which gets modified to tanbura in Iran and Arabia. The present author has elsewhere suggested the derivation of the word from tumbah (Skt. ‘gourd’). This would mean that the whole set of lutes in the West owe their birth to Indian sources.

We now reach the modern times. Indian dance and music troupes had begun to visit Europe during the earlier parts of this century and interest in Indian music has been growing from then
We also know the pioneering studies in our musicology by William Jones and others before him. But within the last decade there has been a spurt in the desire of the West to listen and learn this art. Besides the visits of scholars, students and musicians-and, of course, the ubiquitous tourists from abroad, taking our music to their own countries, schools of Indian music have been established in Europe and more particularly in America where the veena, the mrdangam, the sarod and the sitar are being taught. All this is too well known to require further elaboration.

References:


Among the galaxy of royal stars in the firmament of Sangitam such as Bhojaraja, Nanyabhupa, Haripaladeva, Kumaragiri Vasanta-raja (1386 A.D.), Vemabhupala (1400 A.D.) and Tippabhupala (15th Century), Simhabhupala (1330-1390 A.D.) shines like a meteor. He was an Andhra King of the Recharla dynasty. He was the son of Anapota. He was a poet, endowed with musical abilities. The Sanskrit drama *Kuvalayavali* is ascribed to him. He was a great Alamkarika and wrote the *Rasarnavasudhakara* in 1375 A.D. (printed, Trivandrum Sanskrit Series). In music he wrote a scholarly commentary on *Sangitaratnakara* of Sarngadeva, who lived a century before him (1230-1247 A.D.). His commentary is called *Sangitasudhakara* and has been published in the Adyar Library Series in four volumes.

He was called a *Sarvajna*, and he called himself "Sahityakala-abhijna". The Telugu *Kavisarvabhauma*, Srinatha, was afraid to go to his court and prayed to Goddess Sarada.

The *Sangitaratnakara* is an important work on music and dance after Bharata’s *Natyasastra*. Many commentaries were written on the *Natyasastra*. After Bharata’s time there were many changes regarding *Raga*, *Tala*, *Vadya*, etc. and the old order of Bharata had changed greatly by the time of Sarngadeva. There was a difference between the old *Marga* or classical music and the *Lakshya* which was in vogue in the time of Sarngadeva, that is, *Desi* music. Some authors had held that the *Desi* alone was to be followed instead of the *Marga* system. So Sarngadeva had to write an original work on music devoted to both the *Marga* and the *Desi* systems.

Simhabhupala noticed some changes in the musical topics of Sarngadeva even during his time, that is, within a century of Sarngadeva composing his *Ratnakara*. So he took it upon himself to write a commentary on the work and get the subjects clarified.
Now we have to assess how far Bhūpāla had been successful in his commentary to explain the different theories of Ratnakara in a clear and understandable manner. S'arngadeva had dealt with all the topics of Gita, Vādya, and Nṛtya, called Tauryatrika or Sangita, elaborately in seven chapters. Since it is not possible to deal exhaustively with the whole of the commentary of Simhabhūpāla, I will take up some important topics, chapter by chapter, to show Simhabhūpāla’s contribution.

At the outset we are confronted with the other commentary Kalanidhi by Catura Kallinātha written in 1436 A.D. in the same Andhra region, during the time of Immadi Devaraya of Vijayanagar dynasty, about half a century after Bhupala. He called himself ‘Abhinava-bharatācārya’ and ‘Rāja-vāggeyakāra’. His commentary was printed long back in the Anandasrama Series and had been in vogue for some decades, while Simhabhūpāla’s Sudhākara was not printed in full for a long time. Despite its scholarly character the commentary of Kallinātha lacks in clarification of various topics, unlike that of Simhabhūpāla which is helpful.

The First Chapter-Svarādhyāya

The classical authors were quite scientific in their treatment of Shrūti, Svara, Svara-combinations, on harmonic basis-Vādi, Samvādi, Anuvādi and Vivādi, on chords or Tanas and Mūrcchanas and the Rāgas. Our twenty-two Shrūti-system in the octave has been held as the best. Helmholtz found out the order of a system by considering the resultant number of the difference between twelve fifths and seven octaves and held that our Indian system is of the 2nd order as the terminal is two while the scales of 19, 53 shrūti or microtones are of the 1st order.

The pramāṇa-śrūti as said by Bharata of the 4th century B.C. is the difference between the Ma in Shadjagrāma and Madhyamagrāma or the difference of Catushrutika svara and Triśrutika svara as $9/8 \div 10/9 = 81/80$ which is Pythagorian comma. There are other values of the Shruti, namely, the difference between Triśrutika and Dvishrutika Svaras as $25/24$ and the difference between the Triśrutika with Dvishrutika and Catushrutika Svaras, $253/243$.\(^1\) We may inciden-

1. The Catushrutika svara is major tone of value $9/8$, the Triśrutika svara is minor tone of value $10/9$ and the Dvishrutika svara is semitone of value $16/15$.  

M—32
tally note that the *srutis* are not all equal as the cents of Ellis who had 1200 of them in an octave. Simhabhūpāla is clear and up to the mark in explaining the *srutis*, *svaras* and *tāna-mūrcchanās* to form the scales of *Rāgas*. He does not turn philosophical or mystical like Kallinātha who translates himself into higher planes on many topics; as for instance, he compares the twenty-two *srutis* with the *Nāḍis* of our body, *Pingala* etc. and the three *Sthāyis* with the three *Gunas* of *Sattva*, *Rajas* and *Tamas*.

About the two varieties of notes, *Anāhata* or inaudible sounds having either very low or very high vibrations and the *Āhata*, the audible notes, Bhūpāla says:

अनाहतीशिवाय न जनमनोहरं इत्यादि. (p. 62)

The *Svaras* are explained by him thus:

अञ्चुरणांहें भूषयते म: स स्वरः. (p. 82)

and they are of harmonics as said by the Western scientists.

Apart from the seven *svaras* in the octave, *sthāyi*, some more *Antara-svaras* according to Bharata or *Vikrita-svaras* according to Śāṅgadeva, were recognised in accordance with the harmonic principle of *Panchama-bhāva* or *samvāditva*. Śāṅgadeva has mentioned as many as twelve *Vikriti-svaras* confusingly. *Acyuta svaras* are not different from the *Suddha svaras*. Simhabhūpāla had noticed the fallacy and says of this mistake thus:

पूर्वातःमूलतन्त्रमेव बिन्नतो अवस्थि...यथापि पूर्वायुक्तिविद्यानल्ले तत्त्वानिस्थितत्वाद्
भाविकोलो नासिनि....(p. 90)

Regarding *Svaras* of consonance (*Vādi*), assonance (*Samvādi*) and dissonance (*Vivādi*) which go to form *mūrcchanās* or chords in the Rāgas, the classical authors were scientific in the use of the terms. Of *Vādi-svara* Simhabhūpāla says that it is the *Svara* that standardises the Rāga:

बदने हि नाम अत्र रागप्रतिद्वंदुक्त्वम्। सर्वे यत्रप्रतिद्वंदनीति वादिनः।
It is called *Amsa svara* also according to him: सर्वे रागप्रतिद्वंद्वीति मात्रः।
(p. 93). Kallinātha (p. 92) holding it in a higher plane says, नन्दे बदनातः यत्रापि च, but he agrees with Bhūpāla thus-बदने हि नाम
रागप्रतिद्वंदुक्त्वमिविविद्विलतः।
Samvādi-svaras: Sāṅgadeva says of Samvādi svaras that these have twelve or eight śrutis between them: त्रुतयो द्वाध्वाति वा। Simhabhupāla mentions Mataṅga, an old author, as saying-व्रोद्वर नवधून्नतर्वेन संवादित्वमुक्तम् and also Dattīla who said, संवादिनौ सैव त्रियोद्वर नवनतरे। They meant that the svaras on the thirteenth or ninth śruti are samvādis. Bhūpāla says that Shadja-Madhyama and Shādja-Panchamasvaras are samvādis. The intervals Sa: Ma and Sa: Pa being 4/3 and 3/2 ध्रुवमस्य मध्यमपर्यं तेषां। (p. 94) and the two intervals being combined to constitute an octave sa: 2: 1 having the 22 śrutis. Kallinātha says that samvāditva sustains the Rāga like Vādi: बल्क्रियन्न वरेण गायत्र्य गायत्र्ये विनि, तत्ततां हृदयकृत । (p. 92)

Vivādi (Dissonance): Sāṅgadeva says, Anyavivādīnau and Bhūpāla explains it thus—तदोनिनविवादायां स्वरमिथवन्यं विवादित्वमि। मतोऽहूँ हित्यथावतितत्वेन विवादित्वमुक्तम्। (p. 94) and he explains that Vivāditva exists when Ri and Ga occupy the places of Ga and Ri respectively, that is, when there is an interchange of places in Jāti rāgas. He says: तथावस्थाने वषाव गाय्याण: अरुप्यन्ते, गाय्यारस्त्राने वर्षस्थर्मा जातिरायनाविवेकति। (p. 94). It is but right that Kallinātha holds that vivādi svaras spoil the pleasingness or Rakti of the rāgas and vādyas: विवदन्ति नान वायाबिनि: सर्दैल्पथायानायाः जैविनावक्तवयः। (p. 92)

Different kinds of Gānas: The Gāthika singing is said to be of two svaras only. It is prevalent among the primitive people. The Sāmika has three Svaras. The Gāna with four svaras was called Svarāntara and that of five and six Svaras, Auḍava and Saḍava respectively. Kallinātha explains these with religious fervour as—

तथा गायकमन्नवात् गायिके हिंस्रत्: सामसम्मन्नात् हिंस्रस्य: आसिक।

But holds the seven Svara gāna as of three sthāyis, manda, madhya and tāra, which seems to be uncalled for. The Svarāsthānas in all these shall be pleasing and exhilarating. Bhūpāla says—

बेदशीताहे ते छुट्टुदूरात्तता: कुङ्तानां स्थाय प्रात: लामेन राजास्याय-विशेषालामेतिरोपोगिनिः मभण्डित (pp, 146-7).
He illustrates Sthāyi thus:

दैखन्येव त्रिस्त्र विवेका स्थिता सिद्धांस्वोग उच्यते स्वाभिवर्तेऽविभेदः वचन विद्वस्य तथा धर्म स्भावमध्ये मा मा मा हि। (p. 152)

In the seventh section Sarngadeva mentions Graha-svara, Amśa-svara, etc., in a Rāga to get the individuality or form of a specific Rāga. Bhūpāla is more clear and simple in explaining these than Kallinātha who goes to the root-meanings with a philosophical bent of mind. Kallinātha says of Grahasvara—

इति, येन गीते ग्रहानि हस्तिः व यह। While Bhūpāla explains it easily as गौतम्य ज्ञानवेदनानि तत् स्वरः प्रुयंते स प्रहं हस्तुष्ट्यते। As for Amśa-svara, he says—

तत् व: स्वरे उच्यते: स एव यह: इति नियमादशस्रियोरोकस्वयं उच्यते,....को मेंदः। अंशी वाक्येः परं परं इत्यद्वैत.. (p. 183)

The second chapter-Ragadhyaya

According to Sarngadeva the Rāgas are of the Mārga and Desī varieties. They were grouped under ten heads namely, Grāma-rāgas, Uparāgas, Rāgas and Bhāṣa, Vibhāṣā, Antarbhāṣā and Rāgāṅga, Upāṅga, Bhāṣāṅga and Kriyāṅgas. According to Yaśṭikā the Bhāṣa, Vibhāṣā and Antarabhaṣās were after the names of such Gitas. Bhūpāla says—तित्तस्तु गीतयः प्रेक्षा वार्तिकेन महामन्। that Sārdūla, another writer, held the opinion, भाषायम् गीतिरक्षेत। Kallinātha, taking the root-meaning, says that Bhāṣa was the elaboration of Rāga along with the text or Vācaka.—तत्तदन्तरेतद्धर्मसार्यकर-वाचस्तिविधवानमत्यथे, तथा ज वशिष्टि (Vol. II. p. 11).

Regarding the definition of Rāga, Bhūpāla explains thus—

रूपते येन तथिरं स रामः। and it is the outcome of the feelings of the mind with the pleasing Svara, Varṇa and Alāṅkāra. He also quotes from Sangitasamayasāra thus: स्वरविनिश्चितेऽविवेके व वृत्तः। He holds that the four kinds of Rāgas, namely the Rāgāṅga, Upāṅga, Bhāṣāṅga and Kriyāṅga have been of the Desī variety of Gāna. They were not mentioned by Bharata and others who talked of Grāma rāgas as they were in vogue in their times. Bhūpāla says here—

देशीरामलक्ष्याय सविनिश्चिताय नास्तिकेष्वः। परं दु: रागान्त्वीति देशोरुपां भवन्ते।—

Even in the Desī rāga Bhūpāla gives two classes—the old and the new and even so in Rāgāṅgas, the old and new. He says: साधनानन्तरे द्वितिष्ठति पूर्वनिकृताः भुजान्त्रिप्रसादः (p. 16) Bhūpāla mentions 8 Rāgāṅgas, 11 Bhāṣāṅgas, 34 Upāṅgas and 12 Kriyāṅgas and in all
65 ragas while Sāṅgadeva mentions 64 Desi ragas among his 264 varieties of Rāgas under the ten heads.

Among the Desi Rāgas during the time of Sāṅgadeva, there were five varieties of Gūrjari, seven varieties of Varāli and the like. It is lamentable that he did not mention the popular Rāgas such as Nilambari, Mukhāri, Balahamsa, Bhūpāla and others. They were extant even before his time since they are mentioned by Nārada of the 4th century and Pālkuriki Somanāthā of Sāṅgadeva's time.

There was elaboration of Rāga in those days, as now-a-days, called Rāgalāpti and it was extant from the hoary past, thus proclaiming that Rāga-elaboration is the special musical heritage of India. The Rūpakalāpti has also been there; it is an elaboration of Rāga with the text. This required of the singer both the intellect and the feelings or Bhāva. It was to be done in a charming and pleasing manner. Hence the Rāga-singing and the Rūpakalāpti elaboration had to be cultivated by a good musician to show his skill. Bhūpāla says of Rāgalāpana—प्रसङ्गः: वहुविचारपुপुपुপुপुপुপुপुपुপुপुপुপुপुপुপुপुপुपुপुপुপुপुপुপुপुपुপुপुপुপुপुপुপुपुপुपुপुपुপुपुपुপुপुপुপुपुपुপुपुपुपुपुपुपुपुपुপुপुপुপुপुपुপुপुपुপुপुপुপुপुपुপुপुপुपुपुপुপुपुপुপुপुপुপुপुপुপुপुপुपुपुপुপुপुপुপुপुपुপुপुपुপुপुপुপुপुপुপुপुপुपुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुपुপुপुপुপुপुপुপुপुপुপुপुপुপुপुपुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुপुपुপुपुপुপुপुপुপुপुপुপुপु
the resting portion of the song and it is repeated after Melapaka. It is the Pallavi of the later compositions and in Jayadeva's Aṣṭapadis, is called “Dhruvapada”. Kallinātha says that Dhruva is the ending portion of the song—अन्तिमो भागो घुष्मू। and he holds that it cannot be omitted even if Melapaka is dropped—मेलापकेव परित्यागो, घुष्मू न कटराविदिष परित्याग द्वारं-द्वारंप्रकरिष्ठपरित्याग। (p. 189). The song is completed with Ābhoga (आभोग: परिपूर्णता). In the present-day songs, Pallavi is repeated after the Carana.

Again Śāṅgadeva said that the songs or Niryuktas had six limbs, अंगाः स्वर्ण विषवं पदे तेनकः पारारूप व नृत्तिः. Kallinātha opines that these अंगाः referred to the Rāga in the compositions. We can consider that svara is the Dhātu of the text, which is Matu and also as svara passages set in Varna and some Kritis; Biruda is, according to Bhūpāla, the extolling of Nāyaka in the song: परेभ्यक्तंवरिन्दनं बिषं मूर्तिः: स्वरतृ। and this was the custom of the Maharashtra Country—(p. 195) बिषवार्तो मद्यार्थ-प्रसिद्धिः। It is the addressing to the Nāyaka or hero. The Pada, the next अंग, was the text itself—अन्यत्र वाचकं पदभिवचने। But Kallinātha holds it as the meaning of the theme of the song अप्यवक्तारं पदम् (p. 191). Tenaka was the using of the word “Tena” in contemplation of Brahman and it was auspicious to utter such syllables. तेनेत्यं शब्दः: तेन हसुच्चते—अथ तेनसब्दः: कल्याणसनपश्च प्रकाशयति—आं तस्यदिति चुली—वत्तेनेन कल्याणसप्पोऽद्र्योपविनितमेऽवल्लः। (p. 195). Pāta was explained by Bhūpāla thus—पातसाधरणेण विषविधिः उत्कर: समुहो राजापाय्येन वश्यमाण: पात हसुच्चते। (p. 196). It is the variety of sounds as produced by the beating of the percussion instruments like Mṛdangam. Tāla had been dealt with in Tāla Adhyāya separately.

Śāṅgadeva mentioned three varieties of Prabandhas, namely, the Sūda, Ālisamsraya, and Viprakīrṇa. The Elas of Sūda-category had been in use for a long time and were popular since

1. Pallavi was part of the compositions during the time of Bhūpāla, as he says—उज्जािद्ते तुतीयपदे पल्लवधूं न कस्मन्त्स्।
some time in Karnataka, as mentioned by the author. Kallinātha says that Sūḍa is the collective name of the songs—सूढ़ इति नीतिविवेक-खन्नूिवाची रेणीशब्रद्वः। (p. 197). These songs were of sonorous and rhyming words (S'liṣṭapadasammelana). The style or Riti of the songs shall be pleasing and the text and theme shall be in Pañcatala vṛtti or Sattvati vṛtti or Vaidarbhi vṛtti. The songs Elas and others were for the purpose of Dharma, Artha and Kāma: एतां धोतु: प्रयोछुथ चर्मकामायथिष्ठिन्द्रः। (p. 206).

*The metre or Gaṇas of the compositions:* Sarṅgadeva speaks of two kinds of gaṇas used in the Prabandhas, namely Varna and Mātra. The Varna Gaṇas can be Dirgha or long and of Samyuktas (conjunct consonants) and Hrasva or short, while Mātra gaṇa has letters suited to Tāla-kāla without reference to the length or shortness of their utterance. In Mātra, the short can be changed and the long and the Samyuktas can be uttered as if they were short syllables suited to the Tāla. Bhūpāla says of Varna Gaṇas thus—एतातु धन्माज्ञादिनिथो नासिति, केवले वर्णसंयोजनेनीय पदनि-बद्दात्ता वैषेल्ला:। (p. 227) and of Mātra gaṇas thus तात्तसंयोजनामि-सिम्बुका गाण्डा भविनिन्दः। एतातु तात्तसंयोजनमः; नियमो तु मष्ठादय एव तात्ता बैल्लाल्लु कतङ्क्या:। (p. 227).

The Prabandhas such as Kaivāra, Kanda, Dwipada, Toṭaka were said to be of Varna gaṇas and the so-called Deśī songs or deśākhyas such as Dhavala, Nivali, Maṅgala, Thummedapada, Vannela pada were of Mātra-gana. Songs like kirtanas, Varnas, Padas and all such are of Mātra class. The difference between these two classes of songs is in accordance with the Tālas employed, as said by Bhūpāla. So much so some songs were named after the Tālas in them, as Sarṅgadeva said of songs such as Varna prabandha, Maṭhya prabandha, and Aḍḍa, Eka, Rūpaka Tala prabandhas.

I will close this topic with the illustrations of Elā and Dhavala songs which were extant some time. We find them in the Yaksha Gana by Kandukuri Rudra Kavi of the 15th century, who lived about the time of Bhūpāla.

_Dhavala_ is a composition offering good wishes to the Nāyaka, the hero of the song, and is also called Sobhana.
The fifth chapter Tālādhyāya

Simhahūpāla explains the word Tāla as—ताल्येते प्रतिपाद्ये गीते श्रृं वाचे च हिति वर्णितः। (p.4, Vol. III). तालमालदुरुस्तः हयः सिता परिभच्छा या क्रिया वचनयाञ्च सत्यदा निर्वचनद्व वाचे च अन्यस्ते परिभच्छा। तालस्तल हयुन्तेः। (p. 5). Tāla exists in the Varnās (letters) and the sounds of vādyas in the audible (saśabda) and inaudible (niśśabda) sounds that are set to Drutā, Laghu, Guru and Pluta Kālas. Anudruti of a single letter-utterance was in vogue in the time of Bhūpāla as he said: अनुद्रुतांद्रो विमेदाः कैकिष्कः। (p. 8).

Bhūpāla is elaborate in explaining the Daśaprāṇas of the Tāla while Kallinātha is very brief.

Śārngadeva mentioned 120 Talas, विश्वापिंकत शतम् but Bhūpāla described 108 Talas of old time and mentioned the new ones also, which are made of Khaṇḍa and other variations of Laghu—क्षणुदाताः वूर्वोऽलां नवलां खण्डावर्मस्तः सर्दित तत्: देशीतत्त्वेशु वशयमः प्रष्णेन विलितेणि। It was noticed that some of the 108 Talas have no difference in form as the number of Matrās were the same and also there was redundancy in some, according to Kallinātha, who says—तालां नामेद एवं न स्वरपदेः। So Bhūpāla mentions 19 Talas only as extant during his time—तेन अखण्डमेदज्ञानोपाया एकोनिष्ठा तत्ति। Then Bhūpāla take much pains in explaining the permutations and combinations of the Angas, Druta, Laghu, Guru and Pluta. They were called Meru, Naśta, Uddiṣṭa, etc., calculations which were shown by classical authors in regard to Svarasthānas also.

The sixth chapter (Vādyādhyāya)

Śārngadeva gave the Vādyas under the usual four heads, stringed, wind-filled, skin-tied and made of metal. There is elaborate description of the construction and the mode of playing of the many instruments used in our country from the earliest times in the Saṅgīta Ratnākara. Bhūpāla has explained all these in his commentary. He speaks of 13 modes of striking with the fingers of both the hands on the strings of the Vīṇā. This indicates his proficiency in the Vīṇa-playing. Bhūpāla speaks of using “Pattikā” under the speaking-string over the bridge to bring out richness or jīva of the note with
harmonics. He says—तन्मया संज्ञेया जीवा शीठावारुप्स्यिका। (p. 246). The usefulness of the resonator (Tumba) to the Vina and the tuning of side-strings in consonance with the main ones or having some under them even to get sympathetic resonance, all this speaks of the knowledge of ancients of the acoustics of sound which the westerners have studied recently. The instruments should be for the vṛtti or accompanying the Gīta and Nṛtya—नीतवाक्यमोक्षवहारे श्लोकितसुभ्रये, says Bhūpāla.

Among the wind instruments Suṣira, Pavaka, Vamā, Murali, Kāhalā, Tuḍakini, Cukkā, Śringa, Śāṅkha etc. are described by Śāṅgadeva and explained by Bhūpāla. The percussion instruments (Avanaddhas) also were of many kinds, as Mardala, Paṭaha, Huḍukka, ḍhakka, Runja, ḍamaruka and Dundubhi and the mode of construction, the wood used, the skin-varieties, the playing on them by sticks and hands had been mentioned by Śāṅgadeva. The Ghana Vādyas were cymbals, bells etc. It is to be noted that Kallinātha is very brief in explaining these portions.

Śabda: The various Śabdas, or Konagolu as it is now called, produced in the percussion instruments especially were noted by our old writers; they mentioned also their manipulation on the hands with the striking sticks or with the snapping or clapping of fingers called (Hastapāṭa). Śāṅgadeva mentioned in this connection 16 letters like Ka, Ga, Ta, Da, Tha, Dha, Na, Ra with their combinations as ‘वर्णितः कवमेघ उत्तमं रहस्यविषय’ (VI. 822). Bhūpāla explains these thus—नेत्रा विनिकल्पात संतति कवमेघमात्र हस्तेनेत्रवाचः पाठमेधः हस्तपातं हस्तुक्षणः। (p. 397). He spoke of 35 varieties of Hasta-pāṭas and by adding Ma and Na to some Varnas as Jam Nam Din and so on, pleasing and sonorous śabdas were produced and articulated for the Tālas.

The seventh chapter (Nartana)

Simha Bhūpāla was a scholar in histrionics which plays an important part in Nātya and he wrote Rasāṅnavasudhākara on dramaturgy. Rasapassana is the heart of Nartana, as Śāṅgadeva said. The feelings are to be generated in the actor and inculcated in the audience.
Sāragadeva spoke at length of the importance of Natya both for worldly and heavenly happiness and it was therefore unavoidable on all important occasions of processions of the deities, kings’ coronations, marriages and ceremonies of the common people. Nritya is innate, as it were, even in the lower order of beings like birds and animals and among aborigines. But the dance-varieties of the last are rustic, unrefined and unsystematised, although they are spontaneous and emotional. The classical authors had spoken of systematised and well-trained movements of the body and the limbs and the feet. The former spontaneous variety can be said to be Lokadharmi and the latter systematised dance as Natyadharmi. There has been elaborate treatment of Natya by the classical authors including Sāragadeva, regarding facial expression, varieties of looks, the movements of the neck, the chest, the belly, the hands and palms with hasta-mudras, and the legs and thumpings of the feet tied with small bells. Bhūpāla has explained all the details here also systematically whereas Kallinātha, having the title “Abhinavabharatācārya” had left out things and had simply said: अनन्य एव सुनिधाति

Bhūpāla explained the Karanās and Aṅgahāras elaborately. He defined Karana thus—एद्बिनोन्नवाहारीः वस्त्रमणीः कारणसमावहृते। ऊष्टिः ’’ (Vol. IV, p. 191) and Aṅgahāra thus—“अन्नानामिनि देवे हर्षे सखियाकारकः।’’ (VII. 790) and explained it as सिंचाओणें हृत्: उष्टिदेवे सखियासंप्राप्तः...अन्नदश्वषणम् कतरत्वः: ततः उक्तः: समुिः: तेन संधवः: निचिन अन्नहार उपयोगे—आर्जिकः: हर्षस्व रूपस्य सम्बन्धी यो अन्नहार हितः। (p. 255). So Aṅgahāra is the combination of Karanās with fascinating movements of the body and its different parts and Pratyaṅgas.

Dance has two phases namely Tāṇḍava and Lāsya. Bhūpāla says that the former was given by Śiva who danced in ecstacy after killing the demons, while the latter, given by Pārvati was connected with Gopikās in their amours with Lord Krishna in Brindavana. Tāṇḍava is characterised by feelings like anger and Lāsya, by delicate feelings like love. The former has manly and sturdy movements of the body and its limbs, while the latter has graceful and tender movements. Bhūpāla says: उद्धतस्वरयोगेन च संयुक्ताष्ट्रविस्मिल्ययः—लास्ये शुभार्मिज्जित्वे मकरधार्म-नमिति।। (p. 13)
Rekha is the attractive line of a dancer's body in pose and movement as Bhūpāla explains - हार्तीति रुपेन्द्रनम्. विरोधेन्द्रभूतामेवं मनोनेर्वहारिः श्वासनिः रहेशुक्कुले. Considering this aspect he holds naturally that a female is the fittest dancer and the male has to attain the grace and beauty by dint of practice.

Sārāgadeva said that a Nartaka or dancer should have ten qualifications—दशगुणधुलो नर; and they are fine body, large eyes, good neck, slender waist, not stout, nor tall and possess attractive features and pleasant words. Bhūpāla has said in this connection जाशक्तिः, विशालतयेः कमुकदित्वेः, तनुमध्यत्वेः, नातिस्थूलतमित्वेः, लाभत्वेः, बाघुवः, प्राणत्त्वेः and so on.

Then there is description in the Ratnakara of the qualities and qualifications of a dance-teacher and of a student and of a clown and some attendants in a dance party. It is said that a teacher should be a scholar in many languages of the country and be pleasing to the public.

There is a description by Sārāgadeva in 36 slokas of some dance-performances like Gondali and Perani as of Karnataka origin; he says शारस्वादैः शारस्वातिन्धि प्रदानकारणांकाणास्त्रांकप्यः. They were of delicate Lasya type, done to pleasing Vādyā and Tāla (Sobhanavād-yatāla). Bhūpāla has noted: तत: द्राक्षकलितान्त्रां द्राक्षकलितान्त्रां क्लास्येत-वनस्पतिः शारस्वान्त्रांकाणास्त्रांकप्यः (p. 384).

Nrityaśālā: Simhabhūpāla has given us a description of the dance-hall, Nrityaśālā, the seating arrangement and the dance performance itself, as it might have taken place in his own court. He said: नातिविभाविभविभिन्नतयेः नातिविभाविभविभिन्नतयेः सिद्धवने शयनतिमित्तमें—

Performance: The Nartaka or Dancer should have make-up (Ahārya) in consonance with the part he or she plays. The feet should have small bells tied to sound with the Vādyā during the dance. There will be a curtain-(Yavanika) before the stage, Rangasthala. The dancer comes out of the yavanika with flowers in the hands, in a supplicating dance, performing a Karanā and
elegant *Sthanakas* to the *Tāla* of the *Vādyā* and offers the flowers and retires behind the *yavanikā*. Again the dancer comes out and performs *Maṇḍala* and *Karaṇas*. There are three kinds, *Nāṭya*, *Nṛtya* and *Nṛtta*. *Nāṭya* is drama; *Nṛtya* is dance expressive of themes, using *hasta-mudrās*; *Nṛtta* is rhythmic dance according to *Tāla* involving sittings, risings, and movements sideways, bendings to the front and on to the ground and so on.

It is to be noted that during the time of Bhūpāla there existed many varieties of dances, some of which Śāṅgadeva did not mention.

*Rāsa-nirūpāṇa*: The object of *Nartana* is to inculcate feelings or *Rasa* as Śāṅgadeva has said. Bhūpāla says that *Nṛtya* expresses Śāṅgara "*स्वराजीम्* विवेकेष्ववानृत्रथस्य" (p. 397). The *Sthāyibhāva* should be developed during dance through *Vibhāva*, *Anubhāva*, and *Vyabhicāribhāvas*. Bhūpāla says: "भक्तिते: बिवादाधिमात्रावचारारिसाधिते: स्वादुत्तमा भीतविन: स्वाभी रस इत्यस्यते" (p. 397). This is achieved in a state of unperturbed or concentrated mind (*ekāgracetasah*).

*Rasas*: There are many treatises on *Rasa*. There existed different views on some aspects of *Rasa* among the authors such as Bhoja, Dhananjaya, and Mammaṭa. Simhabhūpāla did not agree with Bhoja and followed Mammaṭa. Kallināṭha has explained Śāṅgadeva in a scholarly manner. But Bhūpāla is very brief in his commentary of this subject because he wrote a separate work on the subject, the *Rasāṛṇavasudhākara*.

Śāṅgara is of two faces, the *Vipralambha* and the *Sambhoga*. Authors had also dealt with the subject of varieties of *Nāyikās* and *Nāyakas* as figuring in Śāṅgara. Thus, while Kallināṭha is more scholarly in his commentary, Simhabhūpāla's explanations have their own value for the art.
A NEW KRITI OF SRI MUTTUSWAMI DIKSHITAR
in Mukhari on Ekamranathar at Kancheepuram
Edited by the late Vina Vidwan A. Sundaram Iyer

“एकात्मनाथाय”

॥ मृलारी-रागे ऊप्रक-वालेन नीयते ॥

पल्लवी
एकात्मनाथाय नमस्ते नमस्ते श्री

॥ ५ ॥

समक्षिज्ञारणम्
पार्श्वासनावि-सकल-देव-सुद्वसन्नुताय
परिवत्तयमोहिनि-परमाशान्तस्वप्नाय ॥

मध्यमकालः
मुकुलुः - वाक्ष्यदाय मुल्लकन्दमुकिदाय
कामाक्षी-समेताय गणपति-मुल्लकन्दाय ॥ ६ ॥
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"குறும்புத்துயர்"

THE JOURNAL OF THE MADRAS MUSIC ACADEMY | VOL. XLI

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## ANAI AYYA KRITIS

*Edited by Sri T. SANKARAN*

1. In Kalyani Adi
on Devi at Tiruvayyaru

### 1. Kritis: கிளித்தை

1. **குருக்கு:**

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அ ம நாள் கால கால் கீழ் | மக மக கி | மப மப கி

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லோன் தனியாக காமாக கி | குமா கா | கிரிய கி

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லோமாங் கம்பாங் கும்பாங் குறிண் | இன்

அழுப்பிள்ளை

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சொர்தா மார ரா ரா | சலாம் அல்லா | குமா கா | கிரிய கி

2. சோசுனா கோங்கு கோங்கு கல்லானா | மார்க்கா மார்க்கா | மக மக கி

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குறுவுடல்

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செஞ்ச மார மார மார | மார குமா கா | கி கி கி
(2) Todi : Rupaka — டோடி : ரூபாக

பொருள்
பதிகத்தில் புதர்கள் || புதைத்தில் புதற்கள் || பூதைத்தில் பூதற்கள் || பூத விக்கியம் || க ல லா || பர வேகக்கு கி பரா வேறு

அமியத்தில் அடத்தில் அவன் || அந்தந்த அந்தினுடைய பங்கு || அன்மைத் தியூவின் அடிமடை || அமியா புராணாை ||

(மேலும்ைறங்க)

பாலை 3. இணங்கிலைக்குறிப்பிட்டம்


2. பங்கு அரிய அரி அரி || ஆங்கிலை அந்த தங்கியை ||

3. பங்கு அரிய அரி அரி || பங்கு அந்த தங்கியை || (அன்யத்தில் தரைத்தக்க)

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அகாலநிலை

காலம் இல்லே மருந்து போன்றது என்று செய்யும் வகையில் பலவகையாக விளக்கம்.

குறிப்பிட்டல்

1. புரேணி மஹா மாம்பாலி
2. ஒரு மகாப்ளே மாம்பாலி
3. என்று கூறும் வகையில் பலவகையாக விளக்கம்.

(அழகான கருவறைத்துறை)

கருவறை

1. புரேணி மஹா மாம்பாலி
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(அழகான கருவறைத்துறை)

உராணாவல் செயல் மாணார் கருவறைத்துறை

(அழகான கருவறைத்துறை)
BOOK-REVIEWS

TYAGARAJA KRITI SANGRAHA (Pp. 353). Sangeet Natak Akademi, New Delhi Rs. 20/-

This is a special publication brought out in connection with the Bi-centenary of Sri Tyagaraja, celebrated in 1969. One of the proposals made by the Special Committee set up for drawing up a programme for the All-India celebrations was to bring out a Volume of Tyagaraja Kritis in Devanagari Script and with the Hindi translation of the texts and Svara notations in the Bhatkhande system. The aim was to make the Kritis of Tyagaraja popular and easy of access to Hindustani musicians. They have, of course, heard of Tyagaraja but have had no facility to learn or sing his songs. The compilation of 50 select songs of Tyagaraja representing various facets of Tyagaraja’s art was entrusted to a Committee with Dr. V. Raghavan as Convener. The work of preparing the script was entrusted to Vidvan Srirangam R. Kannan of the Music Department of the Benares Hindu University who was well acquainted with the Hindustani music and the Bhatkhande notation. The final script was scrutinized by other experts of both Hindustani and Carnatic schools. It took some time to fix up a suitable Press and also considerable time to read the proofs carefully and Vidvan Srirangam R. Kannan deserves to be congratulated for his painstaking work on this Volume which finally came out in 1973. The Volume carries an introduction to Tyagaraja and his Works by Dr. Raghavan. The Volume is a significant tribute paid to Sri Tyagaraja by the S. N. Akademi.


The late Vina Krishnamacharya was one of the three brothers from Kaladipettai (Collet Pettah near Madras) who rendered yeoman service to Karnataka music during the first half of this century. The other two, K. V. Srinivasa Iyengar and Sangita Kalanidhi Varadacharya, were towering personalities in their own way. The former was the pioneer in editing and publishing the
kritis of Sri Tyagaraja with notation, meaning etc. in Tamil script. Varadacharya, popularity known with the sobriquet ‘Tiger’ was an outstanding vocalist of his generation.

Krishnamacharya was a gifted musician and composer with an amazing versatility. He created by record a composing over 300 pieces in eight types of musical composition viz. Jatisvaras, Tanavarnas, Padavarnas, Kritis (in Telugu and Tamil), Tillanas, Tarana (Hindustani), Javalis and Devarnama (Kannada). Music lovers in Madras will remember the memorable music to which he set the songs of the Kutrala Kuravanjji produced by Kalakshetra. Fifty of his compositions comprising Jatisvaras, Varnams and Telugu kritis were published by Kalakshetra in 1966 edited by Dr. (Mrs.) Alamelu Govindarajan.

The present publication, in Kannada script, with 190 pieces covering all the types of composition written by Kaishnamacharya, is an act of dedication by Smt. Channamma, his chief disciple at Bangalore, where the composer lived for many years. Smt. Channamma’s services to the cause of music in Mysore were commemorated in a Felicitation Volume presented to her by her friends, admirers and pupils, in Dec. 1973.

Besides full notation for all the pieces, a free Kannada rendering of the 82 Telugu kritis and 48 Tamil kritis has also been furnished for the benefit of the Kannada-speaking readers.

Krishnamacharya’s musical creations bear the strong influence of Tyagaraja and Patnam Subrahmanya Iyer. He attempted perfection and would not be content with anything less. His style is wholly in accord with sampradaya and his sense of rhythm, flawless. One of his pet theories was that nishada did not figure in Begada and was there only in an implied form. To prove this, he composed a varnam ‘Pagalu Reyi’ and some kritis completely omitting that note. He made interesting experiments with new raga-forms and created Divya Malati (Todi without Rishabha), Harikedara (a janya of Harikambhoji with both the Nishadas) and Jinjhoti in which the Prati madhyama was sparingly used.

He had an adequate command over Telugu and Tamil to make his pieces prosodically attractive. His mudra generally was
'Padmapuri Varada' but some songs bear the signatures of Panduranga, Ranga and Tiruvenkata. He had his own share of suffering in life and hence perhaps the plaintive and philosophical ring in his songs. He was a champion of Ahimsa and in one kriti appeals even to Lord Venkataramana to give up muskgorochana and silk to avoid the killing of musk-deer, cows and silk-worms!

The music world is indebted to Smt. Channamma for this publication.

T. S. Parthasarathy

KIRTANA DARPAKA Vol I. Compiled and edited by Prof. V. Ramaratnam, Smt. M. V. Ratna and Sri R. L. Anantharamaiah. Published by the Director, Prasaranga, University of Mysore. Rs. 12-50.

The Prasaranga (Publications Wing) of the Mysore University has been rendering yeoman service to Kannada-speaking areas by publishing, in Kannada, books on music useful to students as well as to music-lovers. Their earlier publications include "Karnataka Sangita Sudha" (1967), "A comprehensive study of the theory of Karnataka music" and "Sangita Darpana" (1969), a compilation of over six hundred pages comprising eighteen varieties of musical form in notation.

The present volume is the first of a series programmed and contains, besides Jatiswaras, Swarajatis, Tana Varnas and Pada Varnas, 54 kritis by fifteen representative composers. Tyagaraja, naturally occupies the place of honour in the kriti section, closely followed by Dikshitar, Syama Sastri and later by modern composers. The kritis have been chosen carefully and printed in the first half of the book with a word-for-word translation into Kannada and a gist (tatparya). A clear and simple notation has been furnished in the second half. The lakshanas of the 18 ragas figuring in the book as well as the characteristics of compositions like Swarajati etc. have been explained. The editors have made every effort to make the book self-contained by including pictures and brief biographical sketches of the composers concerned and notes on technical terms in music.

T. S. Parthasarathy
Indian Music by B. Chaitanya Deva. Published by the Indian Council for Cultural Relations, Azad Bhavan, New Delhi-1• Price Rs. 30.

Fortunately, this well got-up and amply illustrated monograph does not purport to be a 'history' of Indian music starting from the Vedic times and wading through the Puranic age. Written with clarity and conciseness, it is a readable account of the contemporary situation in both the systems of Indian classical music. The ethno-musical background of the various features of current music has been brought in only where necessary. Dr. B. C. Deva, the author, is a noted musicologist and vocalist in the Hindustani style with knowledge of Karnatak music also.

Raga, which the author calls the 'melodic seed' and tala, the 'rhythmic cycle', have been adequately described with charts and diagrams. In the chapter on the different forms of music, the author has analysed the origin and musical structure of the dhrupad, dhamar, kheyal, thumri, ghazal and tarana of the Hindustani system as also those of the varnam, kriti, padam and javali of Karnatak music. Brief biographical notes about the leading composers of such forms have been furnished along with the characteristics of the different gharanas of the North. The chapter on instruments is the longest in the book and discusses their baffling complexity with clear descriptions supported by illustrations.

The book has obviously been written with an eye on the foreign reader and the terminology of Western music has generally been used. A few inaccuracies have crept in. Mira Bai was not the Queen of Mewar but the wife of the brother of the Rana. The writings of Tiruvalluvar are not religious outpourings. The date of the demise of Tyagaraja was 6th January 1847 and not 6th June. And how does a picture of Poigai Alwar find a place in a book on music? The Bibliography too needs revision.

T. S. Parthasarathy

The learned author Swami Prajnanananda is well known for his valuable contributions to music. His present book purports to be a comparative study of the music and musical systems of the world. It consists of 14 chapters supplemented with a bibliography and index. He has dealt with the music of India, Mesopotemia, Greece, Rome, Arabia, Persia, China, Japan, Korea, Siam, Burma, Central Asia, England and Russia. In preparing the book all possible sources, ancient and contemporary, documentary evidences, accounts of travellers, historical writings, archaeological and sculptural evidences have been utilised by the author. It is replete with informative and useful references. The importance of the above sources revealing the condition and status of the art in the past and its development through the various ages, especially in the absence of regular scientific works, is very valuable. Technical information has necessarily to be gleaned from the scientific treatises of the respective epochs. No art can grow in isolation, it is governed by political, historical, social and religious conditions. As such data relating to these aspects of the art have to be assessed from the numerous non-musical writings wherein references to musical instruments, terms etc. are scattered in plenty.

Sir S. M. Tagore’s *Universal History of Music*, published in 1896, was probably the first attempt in India to give a comparative treatment of the music and musical systems of various nations of the world. Further more, the music world owes a great debt of gratitude to the fresh monumental work done, in this connection, by scholars and musicologists like Curt Sachs, Smith, Carl Engle, Scholes, Dr. Farmer, Macdowell, Chapell and others. The field being fertile and vast, the present work is yet another useful attempt.

The Sanyāsin-author has rightly emphasised throughout that India is the land of spirituality and music here is a spiritual śādhanā. Through the medium of music, the individual soul gets emancipated from the slumber of ignorance. The study of the theory and practice of music is meant only for achieving the blessings of Divine consciousness.
ness. It is mainly because of this transcending nature that music has been credited with superior excellence over the other arts.

With the help of profuse instances, the author has successfully driven home the fact that there existed cultural exchanges through the medium of trade, commerce, and religious mission between India and neighbouring as well as distant countries. The music of India, the cultural ambassador of the world, had travelled far across the seas and enriched itself in this process by assimilating the treasures of their systems.

Before taking up the music of other nations, a brief but comprehensive account of Indian music is given. The standard theories of nada, sruti and its five jatis, svara, mūrganā, grāma, mārga and deśi concepts, vedic music, jāti and rāga, its significance and evolution, the ten essential ingredients of rāga, the revealing phrases of raga-form, cause-effect theory of rāgas and lastly the musical forms have been clearly dealt with. The rāga has a spiritual and living form and can be visualised by the power of concentration or avadhāna. The dhyāna ślokas were composed in order to help concentration on the devatā-maya-rūpa of the rāga.

The survey of the music of different nations as available in the pages of this book reveals a lot of similarities in the historical development of music in all countries. The classical music has evolved from folk music. The origin of music is ascribed to divinity in most of the civilised countries like Rome, Mesopotemia, Greece, Egypt, Arabia, Japan and India. In Mesopotemian music the drum balag is dedicated to the Goddess Ea and the soft reed pipe, to the virgin mother.

Like the saints of India, the Persian mystic poets identified the soul of man as longing for reunion with the Divine Love. Parallel to the Vedic music of India, are the sacred chant cultures of Asia and Western lands, which include the Gregorian and Hebrew chants.* Music was an important item of worship and an inseparable part of prayer in the Christian church. All early music was of a descending type as in Greece and India. Vocal music was considered superior to instrumental music. The Vedic hymns addressed to different deities

were sung to the music of few notes. In Korea, Egypt and Mesopotamia, the psalms and lamentations and the prayer songs of Jews, \textit{al-hizāna}, were rendered in a similar manner. The Jewish synagogue service gives significance to vocal music and is handed down from generation to generation. It is interesting that a musician in Egypt was known as \textit{Sema} (Hebrew-Sama), Arabic \textit{Sama}. In India, \textit{Sama} means song and the singer of the Sāman hymns is a \textit{Sāmaga}. Again the tempo and the rhythm happen to be the controlling and balancing factor of the music of all nations. The practice of clapping of hands and beating of the feet to mark rhythm is found among singers and dancers of countries and this accounts for the early songs being metrical in nature.

Besides, classical music with its complex heptatonic and hexatonic scales developed from folk songs and early sacred music, which were sung mostly to the scale of 3, 4 and 5 notes in various stages. The music of Mongolia, China, Japan, Cambodia, Siam, Burma, Java, Sumatra, Bali and other countries are penta-tonic in nature. Further, Persian music recognizes forty-eight modes distributed into 12 rooms, 24 recesses and 48 angles. Similarly Arabian music has to its credit 12 \textit{Maqums} 24 \textit{shobas} and 48 \textit{gusvas}. A parallel to this can be seen in the \textit{That or Mela Janyas} of India. Further the principal modes are named after cities and countries as Ispahan, Irak, Hijaj. Each note of the scale taken as the tonic gives rise to 7 scales as in the Indian grāma-mūrchana system. It is highly interesting that the modes were associated with specific emotions. The linking up of modal system with the theological system and with the primary elements, colours and numbers, was in vogue among the Greeks, ancient Semites, Jews, Arabs, Persians and Indians. The \textit{maqams} are connected with certain hours of the day and signs of the zodiac like our rāgas and pāns of the Tevāram music. The system of dividing the octave into 17 microtones was prevalent in Arabian music. The scientific study of music in India had begun long before the Christian era. The \textit{sikshas} and \textit{prātiśākhyaś} explain the physiological origin of nāda, as due to the friction of air with fire. When this is generated and sound strikes the different plexus of the spinal column, the svaras are produced. The four-fold classification of musical instruments mentioned in the \textit{Nātya-śāstra} is found in the music of other nations. Many of the instruments are common in Arabia,
Persia, Syria, Turkistan and other countries, though they differ in their names, forms and sizes. The Japanese classified their instruments into Perfect and Imperfect ones. It is well known that Pythagoras was indebted to India while Arabia and Persia, to Greeks. A lot of similarity is seen between the musical systems of China and India. The Chinese theory recognises 8 kinds of sounds relating to skin, stone, metal, clay, silk, woods, bamboo and gourd. This is somewhat similar to the classification of nāda according to the source of their origin, explained in Nārada’s Sangitamakaranda. Similar to the Indian theory of vādi, samvādi anuvādi, the Chinese too have a certain relationship of notes, as king, minister, loyal subject and so on. Chinese Buddhists interested in Indian culture spread Indian music in Japan. There exist melodies in Japan taken from Cambodia, Java and Bali. A minor scale known as champa is traced to Cambodia. In Indian music too, Brhaddeśī and Sangīta Ratnakara refer to tribal tunes like Bhairava, Pulinda, śabarā, Abhiri, Takka, Turushka and so on. It was Guidarezzo in the 11th century, who invented the name of the notes in European music by taking the first syllable of each of the verses of the hymns to St. John. Long before, India had recognised the solfa letters of the 7 svaras, viz. sa, ri, ga, ma, pa, dha and ni. (vide: Nāradaparivratjaka Upanishad.)

The book serves as a useful introductory guide to students of music and forms a valuable addition to the existing literature on the subject of comparative music.

S. Sita.
A COMPARATIVE STUDY
OF
THE RĀGATATTVAVIBODHA
of Śrinivāsa
AND
THE SANGīTĀ-PĀRIJĀTA
of Ahobala

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INTRODUCTION
Chapter I

The Authorship and The Text:—

As is generally observed, the treatises in Sanskrit remain silent regarding the name and place of the author. But here, the case is different. The authors of the Rāgatātvavibodha and the Saṅgita-parijāta, are mentioned as Śrīnivāsa and Ahobala respectively. The Rāgatātvavibodha, in the colophon at the end, mentions Śrīnivāsa as its author:—

शति श्रीनिवासकृतरागत्विवोधः समाप्तिमगमतः ॥

Except for this mention of the author's name, no other information about him is found in the text. The names Śrīnivāsa and Ahobala sound southern and for this reason, scholars believe that both the authors belonged to the south, but any support to this inference, even from other sources, can hardly be obtained. Pt. Bhatkhande of course observes8 that the inference about the place of the authors is further supported by certain Rāga-names of the south (such as Ritigaula, Kedaragaula, Sāraṅgagaula) which were not prevalent in the north at that time.

That the author of the Saṅgita-parijāta is Ahobala is supported by a verse which occurs within the body of the text:—

सङ्गीतपारिजातोवन सर्वकाममतो नृणाम ॥

अहोबलेन विदुषा क्रियते सत्वसिद्धे ॥३


4. 9-11,
Kohala 6. Kambala 7. Aśvatara 8. Hāhā-Hūhū 9. Rāvaṇa 10. Rambhā and 11. Uṣā. Of these, from the chronological point of view, the name of Mātaṅga assumes importance. The treatise, which is believed to be written by him, some time in the 8th century is Brhaddeśī. The names of Kohala and Hanūmān also seem to have some musicological importance. But the other names are mythological and the texts associated with them are also not known now.1

As already indicated, neither the RTV (Rāgatattvavibodha) nor the SP (Śaṅgīta-pārijātā) mentions its date and for this we have to resort to other works. Śrīnivāsa, as will be seen in the following chapters, is a borrower of Ahobala as he profusely quotes verses on Jāti, Śruti, Mūrccandanā, Svaras and Rāgas from the SP.

In this connexion, it is interesting to note the point which Pt. Bhatkhande furnishes to solve the problem. According to Sir W. Ousley (Oriental Collections Vol. I), the Pārijātā was translated into Persian1 by Paṇḍita Dinā Natha, the son of Basu Deo in 1724 A.D. As the copy of manuscript of this translation bears the seal of the EmperorMohammad Shah who ascended the throne in 1719 A.D., the later limit of the period of the Pārijātā, seems to be the end of the 17th century. In this regard, yet another factor is to be noted. Paṇḍita Bhāva Bhāṭṭa who has Anūpa-Saṅgīta-ranakara, Saṅgīta-vilāsa and Saṅgīta-nākuṣa to his credit, was in the service of Anūpa Singh of Bikaner (Rajasthan), a contemporary of Aurangzeb. In Anūpa-Saṅgīta-vilāsa, Bhāva Bhāṭṭa freely quotes from the SP. The reign of Aurangzeb was from 1656-1707 A.D. These facts would suggest that the SP was probably written in the latter half of the 17th century.

We have noted the quotations in the Anūpa-vilāsa from the SP. As a matter of fact, Bhāva Bhāṭṭa, in his description of


3. Cf. pp. 31-32,
the Rāgas, borrows material from the RTV.; and also Bhāva Bhaṭṭa draws upon both Śrīnivāsa and Ahobala, while Śrīnivāsa himself draws upon Ahobala. This shows that RTV. was composed in the latter half of the 17th century while the SP. can be assigned to the former half of the 17th century i.e. to the reign of Shah Jehan or to the middle of that century. This date is further supported by the date of Hṛdayaśā, a historical figure who wrote Hṛdaya-kautuka and Hṛdaya-prakāṣa in 1660 A.D.1 The importance of Hṛdayaśā's works lies in the fixation of Suddha and Vikṛta notes on the speaking wire of Viṣṇu. This portion of the SP. corresponds well with that of Hṛdayēśa.

This creates a problem as to who is the predecessor of the two, Ahobala or Hṛdayaśā. In this context I reproduce a few lines from the comparative study of Pt. Bhatkhande:2

“Ahobal Pandit, the author of Sangit-Parijat, has also done it, but we are not sure whether he copied from Hṛdayaśā's work or vice versa.”

But it would appear from the above discussion that Śrīnivāsa flourished in the latter half of the 17th century and he copied from SP.; that Śrīnivāsa was a contemporary of Hṛdayaśā3 and that the chronological order is that Ahobala stands first, then comes Hṛdayaśā, and then Śrīnivāsa.4

Among the contemporaries of Ahobala, the first and foremost is Dāmodara Miśra, who composed the Sangīta-darpaṇa in 1625 A.D. Among others, Govinda Dīkṣita (1614–1640 A.D.), the minister of Raghunātha Nāyaka, the author of the Sangīta-sudhā and the above-discussed Hṛdayaśā, are important. Paṇḍita Bhāva Bhaṭṭa, Subhaṁkara (1690 A.D.), the author of Sangīta-dāmodara, Puruṣottama Miśra (1730–50 A.D.), the author of Sangīta-nārāyaṇa

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2. Ibid. P. 23.
and Tulaja, the author of the *Saṅgita-sārāmṛta* and other 14 works can be regarded as successors to Śrīnivāsa.¹

We can divide the text of the *SP.* into the following chapters:


Similarly the text of the *RTV* has the following divisions:


It may be seen from this chapter-wise analysis that Ahobala does not describe the Melas but explains Varṇas, Alamkāras, Time-theory and Mūrcchāna at length. The Mela description of Śrīnivāsa is of less use in the present day as the names thereof have not been mentioned. The number of the Rāgas of Ahobala exceeds the number given by of Śrīnivāsa. In the pages that follow an attempt has been made to point out the similarities and differences in the opinions of the two authors. I am thankful to Dr. V. Raghavan, for his acceptance of this small work for publication in the *Journal of the Music Academy*, Madras. I will feel amply rewarded if the reader finds these pages of some use.

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Chapter II

Nāda, Sruti and Svara

In the ‘Arthasaṅgraha’, Ahobala, like all other writers, has laid stress upon the use of music. Music comes down to us from the Vedas and should be cherished, even as other Vedic duties like the kindling of the Fire (Agnihotra). A weeping child or an antelope or even a wild serpent is attracted by the sweet music. Then the author quotes a verse which says that the Lord exists neither in the heavens nor in the hearts of the yogins but where His followers are singing. Thus expounding the greatness of music, he summarizes the subject-matter he deals with. While Ahobala has simply indicated the reference to the Veda by merely saying,

चेदे तैत्रै सम्बोधने गायेति नाधाराविविति |

Sṛṅivāsa has quoted a complete passage from the Taittirīya Brāhmaṇa and by the arguments based on Vidhi and Pratīṣṭedha (affirmation and negation), explains the support of the Veda to music. In this description, verses 8 to 10 of the RTV correspond with the prefatory verses in the SP.

1. Nāda:—Then follows the creation of the Sound. In the upper portion of the heart, in addition to three parallel veins, 22 veins are lying obliquely, wherefrom Sound of 22 kinds emanates. This Sound goes through five stages—1. Navel 2. Heart 3. Throat 4. Forehead and 5. Mouth. By the combination of the air and fire inside, the Āhata-nāda is created. The Cakras, Viṣuddhi and Sahasrāra, which exist in the throat and the forehead, serially

1. SP. verses 3–4.
2. Cf. 12, 13, 14.
3. गांव वसासि निक्कुले etc. SP. 16.
4. SP. 19.
6. SP. 16–18.
7. SP. 34–36.
create the sounds known as Mandra, Madhya and Tāra; of which the vibrating capacity of the latter is double in comparison to the former. In this connexion, Śrīnivāsa writes that there is no necessity to go into the details of the creation of Sound because it would be a mere repetition and simply mentions the same five stages of sound as are described in the SP.

2. Śruti:—Both accept that the number of śruti is 22 which are divided into five Jatis

1. Dipa:—Tivrā, Raudrā, Vajrika, Ugrā.
2. Ayatā:—Kumudvāti, Krodhā, Prasārīṇi, Sandipanī, Rōhini
3. Karupā:—Dayāvāti, Ālāpini, Madanti.
5. Madhya:—Chandovāti, Raṇjani, Mārjani, Raktā, Ramyā, Kṣobhini.

But it is to be remembered that such a clear-cut division is not acceptable or possible. On this, Ahobala observes:

मृदु श्रुतियोगी नाई खली यो श्रुतियोगी त्यो यो अनुयोगी
तत्रतः श्रुतिगता जातिवर्णा को वा ब्रिज्यति ॥

"As sweetness in the cane-juice and milk cannot be described by words, even so how can the Jatis assigned to the śruti (or vice versa) be expressed through words?"

While quoting the above Śrīnivāsa adds that these Jatis are accepted because they can be recognised by the ear:

अत्रप्रत्यवेष्टितास्तां विचारप्रत्यवेष्टितसमागता: ॥

Then the question naturally arises as to why this division of śruti among the Jatis has been given. What is the purpose of this division? In answer to this Ahobala describes the Rasa (sentiments) theory, as the different sentiments are revealed by the different notes:

1. Cf. 37.
2. RTV, 17.
3. RTV 21–28; SP. 52–60.
4. SP. 60.
5. RTV 28. SP. 61.
1. शाख (Comic)—sa, ma, ga, Komala ma.
2. भावा (Love)—ri, dha, ni, Tivrata ma.
3. शोभा (Disgust)—Pa.
4. महाभ (Fearful)—Pa.
5. शीर्ष (Heroic)—All Tivr. svaras.
6. आदर्श (Marvellous) } Tivrata notes.
7. रैंड (Terrible)  }
8. ध्वनि (Pathos)—Pa.¹

It is quite possible that opinions differ as regards relation of Rasas to particular notes. But so far as the connection of śruti with jāti is concerned, it is to be noted that the names of jātis have some connection with the sentiments revealed by the śrutis thereof and similarly the names of the śrutis may indicate somewhat the sentiment manifested.

3. Svaras :—The nāda when revealed by a śruti or śrutis, is called svara :—

अनुसर्णत्वमात्र: लिभानुरणानालसक: ।
राजपन्ति स्वतः स्वान्ते आतुर्भाविति ते स्वरः ॥

"Melodious and resonant sound, which follows śruti and itself pleases the hearts of the listeners, is svara."

Then, are the twelve svaras different from the śrutis? According to Ahobala they are the same.

श्रुतिः श्युः श्वरामित्वा शाब्दगतेन हेतुन ।
अभिवृद्धिकरणः मेदोक्ति: शाब्दसम्भवता ॥
सर्वाश्च श्रवणस्तवत्मेशु स्वरत्मां गता: ।
रागेन्दुल पुत्रां श्रुतिसन्तै स्मारता ॥

"Because of both being heard and recognised by the ear the Śrutis are not different from the Svaras; but the difference between them recognized by Śāstra is as between a snake and its coil."

"All the śrutis in different Rāgas assume the role of the Svaras and it is because of the Rāgas that they are heard and thereby get the name Śruti."

¹ SP. 94, 95, 96.
Thus audibility of every śruti has been accepted by Ahobala. Then why is the number of Svaras 12 and not 22? This is what makes Śrīnivāsa differ from Ahobala on this subject. Śrīnivāsa clearly explains that Svaras are different from the śrutis as the former are audible in contrast to the latter:—

स्वरस्य: अनुभो भिषा: आच्छादेन हेतुना।

4. Svaras:—Suddha and Vikṛta—So for as the Suddha Svaras are concerned Ahobala and Śrīnivāsa agree on the traditional concept that four śrutis are assigned to sa, ma and pa each, two śrutis to ga and ni each and three śrutis to ri and dha each. But the case of the Vikṛta svaras is different. Śrīnivāsa mentions the following svaras as Vikṛtas:—


He mentions also the prevalent alternate names of the Vikṛta Svaras:—

1. Śuddha ri — Pūrva ga
2. Śuddha ga — Tivratara ri
3. Śuddha ma — Atitivratama ga
4. Śuddha dha — Pūrva ni
5. Tivratara dha — Śuddha ni

Thus the total number of Śuddha and Vikṛta svaras, according to Śrīnivāsa, becomes twelve. In this discussion, a reference to 29 Svaras by Ahobala may create some doubt—

एकोनिःशतुच्छन्ते ते श्वेते मिल्लाता: स्वराः।

This possible doubt is removed by the author by omitting the use of ten Vikṛta Svaras*:—

1. RTV, Śrutijativiveka, 19.
2. Cf. 42–49.
3. RTV. 46 to 49
4. SP. 65
5. SP. 497–99.
1. पूर्व रि 2. तीति रि 3. तीति ग
4. तीति ग 5. तीति म 6. तीति म
7. पूर्व ध 8. तीति ध 9. तीति नी
10. तीति नी

If the seven Śuddha Svaras are excluded from the rest, the number of Vikṛta Svaras becomes five. The five other prevalent names mentioned by Srinivāsa are accepted by Ahobala. Thus it may be noted that according to both, the number of Svaras is twelve.

5. Komala & Tivra Svaras:

When Svaras stand on their respective Śruti or Śrutis, they are Śuddha Svaras.

In other words, when four Śrutis are assigned to sa, ma and pa, two Śrutis to ga and ni and three Śrutis to ri and dha, they are śuddha svaras. When this assignment is disturbed, they become Vikṛtas. The Vikṛtas are of six kinds:

1. तीति 2. तीति ग 3. तीति म
4. अतितीति म 5. कोमल and 6. पूर्व or कोमलति

When a Svara rises up by one Śruti, it becomes Tivra and if it goes up to two Śrutis it is Tivratara. Similarly when it goes up by three or four Śrutis, it is called Tivratama and Atitivratama. As opposed to this when it stands on its penultimate Śruti, it is Komala and when it is lowered by two Śrutis, it becomes Pūrva or Komalatara.

6. Svaras (Vādi, Saṃvādi etc.):

The notes when used in any particular Rāga according to the nature of the Rāga, assume different roles and from the viewpoint of their use, they may be divided into four types—1. Vādi 2. Saṃvādi 3. Anuvādi 4. Vivādi. As their names suggest Vādi is the main svara, the soul of the rāga, with which the Saṃvādi is

1. SP. 67-72 correspond with RTV 55-58.
in agreement. Anuvādis are the svaras which follow Vādi and Saṁvādi. Anuvādi harmonizes with Vādi and its coinciding Svara. Vivādi is the excluded note, the use of which may cause disturbance in the melodic quality being manifested. This has been described by Śrīnivāsa thus:

अभाव्यः स्त्रातु संवादि वादी राजसमे गतः ॥
भृत्तुरुपेऽनुवादि स्त्रातु विवादी शत्सब्रजेवत् ॥
रक्तिबन्धुदकारिलावि विवादिलं स्वरो गतः ॥

1. RTV 53-54-SP 79, 82-83.
7. *An Interesting Note on Svaras*:—Besides these descriptions, Ahobala has mentioned the tradition, class
birth-place, colour, deity, metre, and sentiment of every note.

<table>
<thead>
<tr>
<th>Note</th>
<th>Tradition</th>
<th>Varṇa</th>
<th>Birth-place</th>
<th>Colour</th>
<th>Deity</th>
<th>Metre</th>
<th>Sentiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. sa</td>
<td>Divine</td>
<td>Brahmin</td>
<td>Jambū</td>
<td>Lotus</td>
<td>Agni</td>
<td>Anuṣṭubh</td>
<td>Humour</td>
</tr>
<tr>
<td>2. ri</td>
<td>Seer</td>
<td>Kṣatriya</td>
<td>Śaka</td>
<td>Red</td>
<td>Brahman</td>
<td>Gāyatri</td>
<td>Love</td>
</tr>
<tr>
<td>3. ga</td>
<td>Divine</td>
<td>Vaiśya</td>
<td>Kuśa</td>
<td>Yellow</td>
<td>Moon</td>
<td>Triṣṭubh</td>
<td>Humour</td>
</tr>
<tr>
<td>4. ma</td>
<td>Divine</td>
<td>Brahmin</td>
<td>Kraunca</td>
<td>White</td>
<td>Viṣṇu</td>
<td>Bṛhati</td>
<td>Wrath, Fear</td>
</tr>
<tr>
<td>5. pa</td>
<td>Paternal</td>
<td>Brahmin</td>
<td>Śālmali</td>
<td>Black</td>
<td>Nārada</td>
<td>Paṅkti</td>
<td>Love</td>
</tr>
<tr>
<td>6. dha</td>
<td>Seer</td>
<td>Kṣatriya</td>
<td>Śveta</td>
<td>Yellow</td>
<td>Tumburu</td>
<td>Uṣṇik</td>
<td></td>
</tr>
<tr>
<td>7. ni</td>
<td>Demonic</td>
<td>Vaiśya</td>
<td>Puṣkara</td>
<td>Multi-coloured</td>
<td>Dhanada</td>
<td>Jagati</td>
<td></td>
</tr>
</tbody>
</table>

8. *Svaras and Śrutis*:—We have already seen that the Śrutis assigned to the Suddha Svaras by Śrīnivāsa and
Ahobala are the same and in this regard, their opinions hardly differ. It has to be noted in this connexion, that
Ahobala does not fix the notes to the Śrutis but simply defines the Vikṛta Svaras by the means of rising up or lowering
down of the note by a śruti or Śrutis. It is only by this approach that we know the Śrutis assigned to the Svaras.

It is needless to quote the same verses again here. The combination of Śrutis and Svaras as acceptable to Ahobala may be seen thus—

1. *SP.* 84-96. It is further added that Tivra and Tivrata notes should be used in love and wrath, humour
and surprise and Tivrata and Tivrata in love and humour,
2. *SP.* 67 to 72 correspond with *RTV* 55 to 58.
A comparative study of Sruti Buddha Svara Komala Tivra

<table>
<thead>
<tr>
<th>Sruti</th>
<th>Suddha Svara</th>
<th>Komala</th>
<th>Tivra</th>
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</thead>
<tbody>
<tr>
<td>1. तीव्र</td>
<td>तीव्र नी</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. कुस्तस्वरी</td>
<td>तीव्रतर नी</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. मन्दा</td>
<td>तीव्रतम नी</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. छन्दोवती</td>
<td>छन्द</td>
<td>....</td>
<td></td>
</tr>
<tr>
<td>5. दुयावती</td>
<td>पूर्व रि</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. रज्जनी</td>
<td>कोमल रि</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. रंकिका</td>
<td>क्रष्ण</td>
<td>पूर्व ग</td>
<td></td>
</tr>
<tr>
<td>8. रौद्री</td>
<td>कोमल ग</td>
<td>तीव्र रि</td>
<td></td>
</tr>
<tr>
<td>9. क्रोधी</td>
<td>गाम्यार</td>
<td>तीव्रतर रि</td>
<td></td>
</tr>
<tr>
<td>10. वज्रिका</td>
<td>तीव्र ग</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. पश्चारणी</td>
<td>तीव्रतर ग</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. शीतिक</td>
<td>तीव्रतम ग</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. मार्जनी</td>
<td>मध्यम</td>
<td>अतितीव्रतम ग</td>
<td></td>
</tr>
<tr>
<td>14. शिती</td>
<td>तीव्र म</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. रक्ता</td>
<td>तीव्रतर म</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. सन्दीपनी</td>
<td>तीव्रतम म</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. आलापनी</td>
<td>पदम</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. मइन्ती</td>
<td>पूर्व ध</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. रोहिणी</td>
<td>.... कोमल ध</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. रग्मा</td>
<td>वैवत</td>
<td>पूर्व नी</td>
<td>....</td>
</tr>
<tr>
<td>21. उषा</td>
<td>कोमल नी</td>
<td>तीव्र ध</td>
<td></td>
</tr>
<tr>
<td>22. उषोभिणी</td>
<td>नी</td>
<td>तीव्रतर ध</td>
<td></td>
</tr>
<tr>
<td>23. तीजा</td>
<td>तीव्र नी</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We have already seen how Ahobala has excluded the use of ten *vikṛta notes* and the other names of the *svaras*. Thus like
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We have already seen how Ahobala has excluded the use of ten *vikṛta notes* and the other names of the *svaras*. Thus like
The above verses show that the distance of Śrutis between two svaras can be of either 8 or 12 or 11 or 13 Śrutis. The svaras which have 12Śrutis (interval) from each other are SamaŚrutika and those which have 11 or 13 Śrutis and in some cases seven or nine Śrutis in between them, they are called viṣama. According to these verses the following points should be noted:

1. The interval of eight Śrutis is observed in the Pañcama and the Tāra Sa.

2. The notes having an interval of 12 Śrutis—

1. मध्य षड्य & षड्यम
2. मध्यम & तार षड्य
3. कोमल रि & व
4. रि-च षड्य
5. ग-नी शुद्ध 6. ग-नी तीव्र
7. कोमल रि & तीव्रतर म 8. म - नी

3. The notes at the interval of eleven Shruti—

1. रि - प 2. शुद्ध ग & कोमल ध 3. तीव्र ग & शुद्ध ध
4. तीव्र नी & तीव्रतर म have an interval of 13 Shruti between them.

9. Vikṛta svaras of Śrīnivāsa:

On the basis of the above discussion, The Shruti, assigned to the svaras by Śrīnivāsa are:

1. श्रृंखला - हर्षदेवती
2. कोमल रि - रक्षनी
3. शुद्ध रि - रविलका
4. शुद्ध ग - कोषी
5. तीव्र ग - वज्रिका
6. मत्यम - मार्जनी
7. तीव्रतर म - रक्ता
8. पञ्चम - बालापिनी
9. कोमल ध - रोहिणी
10. शुद्ध ध - रथ्या
11. शुद्ध नी - कोषिका
12. तीव्र नी - तीजा

The above discussion leads to the definite conclusion that the vikṛta svaras of Śrīnivāsa-komala ri, tivra ga, tivratarā ma, komala dha and tivra ni correspond to the five vikṛta svaras of Ahobala and the Shruti assigned to them by both the authors are the same. It can be observed that the remaining vikṛta svaras of Ahobala have been excluded by him but it has to be noted that ten svaras, the use of which he avoided in the rāga description, were or could have been used in the author's period. Now in the next chapter, we will see how both the authors place Suddha and Vikṛta svaras on the speaking wire of the Vīṇā.