

N. Varanatham

TĀLAVĀDYA SEMINAR-2

**Proceedings of
The Tālavādyā Seminar No. 2 and Allied Papers**

Compiled and Edited by
Bangalore K. Venkataram

Published by
PERCUSSIVE ARTS CENTRE (Regd.)
183, 8th Cross, 2nd Block, Jayanagar, Bangalore - 560 011.
(Phone : 6630079)

About the Art Centre, & Publications etc

".....I appreciate the excellent work done in the field of Taala - by you. I am proud to have friends like you and it is my earnest desire that you may succeed in all the ventures that you undertake in the field of music." ...

Pandit Nikhil Ghosh, Bombay

"..... The centre is doing valuable service in the field of Percussive Arts through publication of monographs containing indepth information in various aspects of the Science and Art of Percussion. It is perhaps the only Centre of its kind dedicated exclusively to the dissemination of knowledge on all aspects of Percussion among the erudite and laity. I am particularly happy at the dedicated and high standards of work being put in by the Board of Management.....

U.D.N. Rao

"..... ಶಾಸ್ತ್ರೀಯ ಸಂಗೀತದಲ್ಲಿ ಈ ವಿಭಾಗ (ತಾಳವಾದ್ಯ) ದ ಬಗ್ಗೆ ಜನಸಾಮಾನ್ಯರಿಗೆ ಪರಿಚಯ ಸೃಷ್ಟಿಕರಿಸಿ. ಸುಸ್ವರವಿಲ್ಲದಿದ್ದರೂ, ಅಪಸ್ವರ ಕೇಳಿದೊಡನೆಯೇ ಉಂಟಾಗುವ ಪ್ರತಿಕ್ರಿಯೆ, ಬಹುಶಃ ಲಯದ ಬಳಕೆಯಲ್ಲಿ ಏರುಪೇರಾದ ತಕ್ಷಣ ತಿಳಿಯುವುದಿಲ್ಲವೆಂದು ಕಾಣುತ್ತದೆ. ಸ್ವರ, ರಾಗ, ಕೃತಿಗಳ ಬಗ್ಗೆ ಇರುವಷ್ಟು ಪ್ರಕಟನೆಗಳು ಲಯ, ತಾಳಗಳ ಬಗ್ಗೆ ಇಲ್ಲ. ತಾಳವಾದ್ಯ ಕಲಾ ಕೇಂದ್ರ ಈ ಬಗ್ಗೆ ತಿಳುವಳಿಕೆ ಹೆಚ್ಚಿಸಲು ಅನೇಕ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ನಡೆಸುತ್ತಾ ಬಂದಿದೆ.....

ಸ್ಯಾ. ದಾಮೋದರಿ ನಿಟ್ಟಿರು ಶ್ರೀ ನಿವಾಸರಾವ್

"..... The Centre can be duly proud of its publications, monographs, which will be its legacy to posterity. Its services in the cause of promotion of Percussive Arts will be remembered by all knowledgeable ones in the field exemplary. To the best of my knowledge, this centre is the only organisation working exclusively for the promotion of knowledge in Percussion and Percussive Arts ...

V. Krishnan

"..... The Percussive Arts Centre was formed some years back to make people better informed about this area of music. This Centre through a series of programmes including papers, demonstrations etc has highlighted the manifold aspects of Tala and Laya as to inform even lay people. Some of them have been published in the form of monographs. But the major event is the Annual Taalvaadyothsava where emphasis is on Thala and Laya. Perhaps, this is the only such Festival held in the country"

Justice E.S. Venkataramiah

"..... As I see from Delhi *"This conference has a significance and a validity beyond what has been discussed"* here. I can say so with some authority as I am here, presently chairing a Committee in UNESCO which is having very "knowledgeable" discussions on cultural dimensions of development. It would also be appropriate to mention that *"the establishment of the Percussive Arts Centre itself has been an important event."* The development of the Centre within a short time to the present status, we owe to Venkataram. Bangalore and Venkataram have become inseparable. *"Institutions like the Percussive Arts Centre, Seminars and conferences such as of today, I am sure contribute a great deal towards these objectives.*

J. Veeraraghavan, Delhi

N. Ramanaiah

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A collection of papers presented during the Talavadya Seminar No. 2 organised by the Percussive Arts Centre, at Bangalore on the 7th & 8th March, 1993, under joint auspices with The Indian Institute of World Culture, Bangalore, under the financial assistance of Sangeet Natak Akademi, Delhi and The Karnataka Sangeetha Nruthya Academy, Published by The Percussive Arts Centre, Bangalore.

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EDITOR'S NOTE

It is quite well known that our Arts Centre has been working exclusively for the promotion of percussive arts and perhaps the only such organisation of this kind in the country. Among the several programmes organised by this Art Centre, **documentation** of material on Percussive instruments not easily available hitherto, in exclusive editions receives priority consideration. Generation of data on various aspects - historical, textual, scientific and other areas has been the primary object of organising these seminars on Talavadyas.

Publication of the proceedings of the Talavadya Seminar-1 in 1994 by the Karnataka Sangeetha Nruthya Academy containing the Physics of Indian Drums, Talavadyas of different regions, studies on Leather & Woods used in Drums, Concept of rhythm in Western Music, Role of Talavadyas in two Indian classical system, etc has been acclaimed a reference manual. The present edition of the proceedings of the Talavadya Seminar-2 held in 1993 containing data on Khanjari (Kanjira) & Ghata is expected to be useful to students & practitioners of these branches of the percussion art and will create an awareness among them. The Karnataka Sangeetha Nrutya Academy, Sangeet Natak Akademi, Delhi helped us in this venture and we are grateful to them.

I Should record our gratitude to all the contributors without whose active participation, this would not have found the light of the day. We are beholden to the noted scholar Sri B.V.K.Sastry for his preface. My thanks are due to Kum. V.Kalavathy Sri H.S. Sudhindra, V. Krishna & Sri B.S. Purushotham for their efforts in correcting the proofs and especially to Kalavathy for running around for the press and carrying out the allied jobs. M/s Pragathi have done an excellent printing job of this highly technical work. I hope the readers will benefit in reading this compilation. It is hoped that this publication will be received with interest by all.

Bangalore K. Venkataram
Editor

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THAALA VAADYA SEMINAR-2

The second THALAVAADYA SEMINAR organised by the PERCUSSIVE ARTS CENTRE under joint auspices with the Karnataka Sangeetha Nruthya Academy and the Indian Institute of World Culture under financial assistance from the Sangeet Natak Academi, New Delhi was held on the 7th and 8th March 1993 from 10 AM to 8PM on both days. In addition to the Inaugural and Valedictory sessions, the proceedings were distributed over six sessions which included 12 papers, 4 special recitals, 2 Innovatory recitals, 5 Illustrated talks, 4 Laya Vinyasa items and a German Percussion ensemble. A response session elicited interesting Question-Answer time by the participants, observers and scholars present.

H. Kamalanath, President of Bangalore Gayana Samaja, the oldest sabha in the nation, in his Inaugural address, stated that his views were that of an Organiser, connoisseur and a lover of percussions. It has been a good augury that the role of percussions has after all been recognised and due recognition accorded. He complimented the Art Centre on its achievements in a fairly small time by way of publications etc. Scholar Prof S.K. Ramachandra Rao in his presidential address stressed the independent role of percussions and the great role of percussions in the field of music. He observed that an ideal Talavadyakara should know the relation between 'Naada' and 'Sowkhya'. One who knows the secret of the 'Vaadanaa' and its 'Sowkya' would turn out to be a great percussionist and instanced Palghat Mani Iyer as one. Kumari V. Kalavathy rendered 'Sharade Varade' of Veena Seshanna in Kalyani melodiously for invocation. Pandit R.V. Seshadri Gawai, Chairman of State Academy welcomed and Bangalore K. Venkataram, Executive Director of the Art Centre briefed the activities of the Centre and the Seminar. Veteran musician scholar R.K. Srikantan in the key-note address dwelt at length on the origin and evolution of Laya Vadyas in his neatly prepared paper.

In the Post-Tea session Dr S.A.K. Durga, Director, Centre for Ethnomusicology, Madras presented a paper on 'Pot and Frame drums of world music, with special reference to Ghata and Khanjari' followed by an excellent vocal recital of Nagavalli Nagaraj. A geetha in Simhanandana Tala and a thillana of Maha Vaidyanatha Sivan in Kanada in Simhanandana tala were presented, where she very precisely brought the 'Angas' of the Tala in the 'Kriya'. Anoor Dattatreya Sharma provided the mrudanga support. Dr T. Lokanadha Sarma, Director, Development Centre for musical Instruments, Government of India, read a paper on 'Talavadyas'.

The post-lunch session began with a 'Konagolu' recital by Nagendra, M.S. Shyamprakash, T.V.Balakrishan and S.Prashant of Karnataka College of percussions who rendered their mnemonics of percussions in Misra Chapu with eloquence and precision. After Laya vinyasa by R.A.Rajagopal (Ghata) and B.N.Chandramouli (Khanjari), R.S.Nandakumar (Mysore) rendered a pallavi with Simhanandana tala in right hand and a combination of some talas in left hand; as this item was slated to be a pallavi in Simhanandana, R.K.Srikantan, Chairman of the Advisory Council, suggested the rendition only in Simhanandana in preference to the 'Avadhana' style adopted, which however was not adopted. After another Laya Vinyasa by veterans Sosale Seshagiri Das (Khanjari) and K.N.Krishna murthy (Ghata), R.Chandrasekhariah of Mysore brothers narrated the 'Rajavidyadhara' of the Ashttothhara shatha tala pallavi composed by him and M.S.Sheela rendered this melodiously and eloquently with Bhava and precision.

Members of the "Drummelele Maa" of Germany, Chrisoph Haberer, Ramesh Shotaam and Stefan Bauer rendered a percussion ensemble with Drumset, Thavil (Dolu) and Konnakkol (Konagolu), Vibraphone, Marimba etc and treated the audience to an excellent laya vinyas. B.V.K. Sastry, the noted art critic in his remarks made a specific reference to the individual personality of percussions and the performance of this Troupe.

Dr P.K.Srivatsa presented a paper on the 'Improvisations on the manufacturing techniques and design of Ghata' in session-4 followed by another paper on 'Khanjari and Ghata vidwans of yester years' by B.M.Sundaram of Pondicherry with informative material, followed by a Laya vinyas by C.K.Syamsunder (Khanjari) and Palghat V.A.Sundaram (Ghata). Veteran Vocalist R.K.Srikantan gave an innovative Vocal recital to the accompaniment of H.P.Ramachar on Khanjari and Bangalore K.Venkataram (Ghata) followed by Laya Vinyas by the latter. The session concluded with an illustrated talk by H.P.Ramachar on Khanjari, where in he stated that his attempts to trace textual and authentic material on the origin of sound production through leather instruments were in vain. He made a reference to 'Dambadi' in folk and rural areas and narrated in detail his attempts to blend with the 'sruthi' of the performers and cited instances of such concerts. He also illustrated profusely the playing of his Khanjari to suit and match the stroke-plays of mrudanga by deft craftsmanship and artistry of his hand-work.

The morning session-5 on the 8th March, the second day began with a paper by Dr V.S.Samphkumaracharya, Mysore, on 'Laya Vidwans of past and present (Ghata and Khanjari), their competence and contribution to the art' followed by another paper by Dr N.Somanathan, Leather Research Institute, Madras on 'Scientific studies on the skins used in Khanjari' with lot of statistical figures on the studies made. Dr B.Rajanikantha Rao, former Station Director, All India Radio, presented a paper on 'Khanjari and Ghata artistes of Andhra, past and present'. Prof Dr R.Sathyanarayana of Mysore spoke on 'Scope for research in ghata and khanjari'.

In the post-lunch session-6, a paper by T.S.Parthasarthy, Madras on Kanjira was read by V.Kalavathy, while a paper by Dr N.Ramanathan of Madras University on 'Understanding of modern talas in the background of ancient tala system' was read by V.Krishna. After a laya vinyasa by B.K.Chandramouli (Khanjari) and Sukanya Ramagopal (Ghata), N.Raghavan read a paper on 'Evolution of khanjari from the folk karadi majalu'. Sukanya Ramagopal read a paper on 'Ghatam' by T.H.Vinayakaram. Anoor Ananthakrishna Sharma in his illustrated talk on 'Comparison of uses of khanjari and Ghata in semi classical and Cinema music' played several excerpts from Film songs to exhibit use of exclusive instruments like Ghata and the attempts in 'Fusion in music'. Senior Mrudanga artiste A.V.Anand in his Illustrated talk on the 'Uniqueness and limitations of Khanjari and Ghata in relation to Mrudanga' supported by B.R.Ravikumar (Ghata) and V.Krishna (Khanjari) played mrudanga to drive home his points. In his fairly long analysis touching the different aspects of Ghata, Bangalore K.Venkataram narrated the textual references in addition to references in Epics, Sculpture, Archaeology and referred to the manufacturing methods and the difficulties thereon and narrated the several printed publications available on this.

In the penultimate response session participated by observers, participants and listerners, several points were raised and answered by way of explanations. The points raised were: whether the usage of the term 'Upapakkavadya' for Kanjira and Ghata etc is right?-'Is the word 'Upapakkavadya' or 'Sahavadya' to be used?-which is correct?- Is there any evidence for this? How useful is this Seminar to Vidwans? What about poor response of practicing vidwans?-' What reasons can be attributed? How authentic and correct is the claim that the kanjira is correctly tuned as referred to? Which of these-Pot drums or Frame drums are of earlier origin and what proof? The positioning of Ghatam by earlier vidwans and present artistes differ-why? Why Ghatam is thrown at the climax of the 'thani'-is this of artistic presentation or just a clap trap trick? What are the situations when the 'sruthi' of ghata changes and is there any remedy for 'sudden changes' in such variations? Manufacturing techniques of ghata, etc. These were replied and explanations offered by B.V.K.Sastry, Dr Doreswamy Iyengar, Bangalore Venkataram and B.M.Sundaram: Usage of pakkavadya would be adequate and upa or saha is not required-the AIR just states accompaniment and no prefixes. Usage of a seminar of this type is for purposes of 'documentation' of requisite data on the origin, evolution, and other aspects of the art and instruments which may not be any direct use to a musician, but its use lies in these being preserved for posterity, as we do not have a system of history of our music. All instruments like Dolu, Kanjira have their pitches, not perceivable to human ears, unless brought down by a few octaves-adjustments are made by padding, hitting, watering or moisturing etc which is nothing but 'tuning' them for use to match the item they are supporting,

Pot drums are doubtless of earlier antiquity than Frame drums which are of later evolution. Earlier vidwans used to remove their top shirting to avoid sweat and with the present day amplifiers etc no such necessity arises and hence difference in playing postures have changed and this does not affect as long as the sound produced is acceptable. Throwing up and catching the Ghatam with a sound is an art of a master- artiste who can resort to this at the climax, if a suitable 'theermanam' is played by the mrudangist. If not artistically done, this would lose its art and appear 'clap trap' gimmick. The sruthi of Ghata changes minutely when exposed to the heat of flood and video lights, excess humidifier in airconditioned rooms etc. 'sudden' changes do not result in conditioned good Ghatas. Observers complimented the organisers on the usefulness of the proceedings in their written observation.

The valedictory session began with an invocatory item by Sukanya Ramgopal with a Ghatamala, an item played with 5 Ghatams set to Mohana, pentatonic scale played in 3 kalas and thrisraa adroitly. Dr V.Doreswamy Iyengar in his valedictory address complimented the present day percussionists on their very much improved state- of-art and referred to the all-time-great Palghat Mani Iyer who revolutionised the field of percussions. He lauded the efforts of the Art Centre in organising such seminars, utility of which would only be known in future when its use would be felt by posterity. Noted art critic B.V.K.Sastry in his presidential address referred to the publicity required for percussions which is gaining momentum and felt that such seminars go a long way in promoting the interests of percussions and eliciting better appreciation by public. When the sense of history is lacking in our music, such efforts of the Art Centre go a long way in exploring the origins, evolution of these instruments. Mention was also made of textual references like 'Padmarajapurana' and Kumbha vadya and the talas for these. References to Ghata in Gujarat etc and black crude pot-like instruments seen in the residences of Vidwans and references to 'Karachakra vadya' were made. Sastry stated that efforts to compose exclusive compositions for these percussions have to be attempted and observed that it is the responsibility of the artistes to attempt these and innovate. While referring to the Talaprabhandas efforts of Gyanprakash Ghosh and items like those of Vijayaraghava Rao should be innovated by us and impetus given in this direction. This, of course, would be a slow process.

Pandit R. V. Seshadri Gawai rendered the vote of thanks while Anoor S. Ramakrishna welcomed the gathering.

The two-day seminar was participated by 52 scholars and musicians in addition to the other dignitaries whose presence added glamour to the proceedings. Excerpts of the proceedings have been video taped and when the entire proceedings of the several papers presented are got in cold print, it would be an exercise worth all the troubles taken by the participants and the organisers.

KEY NOTE ADDRESS OF R.K. SRIKANTAN

Sriman H. Kamalanath, President, The Bangalore Gayana Samaja, Sangeeta Kalaratna Prof. S.K. Ramachandra Rao, Justice Nittoor Srinivasa Rau, Pandit. Sheshadri Gavai, distinguished musicians, musicologists, Rasikas, ladies and gentlemen, let me have the pleasure of extending a cordial welcome to all of you who have spent a good deal of your time, energy and ability in studies & researches in the field of Karnataka music - Vocal and Instrumental, and I thank you very much for accepting the invitation to this second Seminar on Tal Vadyas, arranged by the Percussive Arts Centre, Bangalore, under the joint auspices of Indian Institute of world culture and Karnataka Sangeeta Nruthya Academy. I thank Sriman H. Kamalanath for kindly agreeing to inaugurate this Seminar. He has been actively and Continuously associating himself with the cultural activities of our state. As such there can be no better choice for inaugurating this Seminar. Sangeeta Kalaratna, Shastra Choodamani Prof. Ramachandra Rao, as you all know well, is a profound scholar, musicologist, writer and an eloquent speaker. We are doubly fortunate that Sri Ramachandra Rao presides over this inaugural session. These two honourable gentlemen with their presence here have added grace, dignity and weight to this unique occasion. My thanks are due to vidvan K. Venkataram, Director, The Talavadya kala kendra, for having given me this opportunity to deliver the key note address of the Seminar.

The Percussive Arts Centre is striving hard to promote the interests of percussive Arts and to highlight the role of rhythm and tala in our music. This is intended to educate the listeners on better appreciation of these basic aspects of music. The focus of this Seminar is on Ghatam and khanjari, their evolution, improvisation on the manufacturing technique, and their role in our music concerts. Distinguished scholars and musicologists enlighten us about these aspects. The deliberations and papers will be highly rewarding and a source of many interesting facts to all of us assembled here. It is true we have achievements to our credit. Gradually and more rapidly during the last 30 years or more the performers as well as the learners have increased phenomenally in numbers. But at what cost? At the Cost of the quality ie. Quantitative increase, qualitative decrease. The sense of values in rendering classical music, and the sense of values of those listening to such music have taken a trend which cannot be welcomed and accepted. As such the task ahead of us is to raise the standard of the sense of values and educate the younger generation to take more interest in classical music and its appeal. We must

try to work out some kind of fruitful liaison between the younger generation steeped in scientific and technical studies and our traditional forms of expression.

Our Musical Heritage:-

Art, like man, cannot survive in isolation " Art is a human activity having for its purpose the transmission to others of the highest and best feelings to which man has risen" - Tolstoy. Music is the product of profoundest experiences of the individual and the Group. The fact is that man possess his Vocal Cords - a means of Producing song -, in his body an instrument for rhythmic movement, and in his mind the capacity to imagine and perceive musical sounds and form. Fine arts are important in promoting human Culture and progress. Traditional styles, old schools, Classical renderings are the Cultural anchorage and aesthetic identity of people. India is a marvellous Country. Her hoary Civilization and Culture have earned for her a unique place in world culture. India's musical culture, the richness, variety and prolific character of her musical literature and repertoire, the amazing number and Variety of her musical instruments belonging to the Chordaphonic, (Tata), aerophonic (Sushira), membronophonic (Avanaddha) and autophonic groups and the fine galaxy of musicians, composers and musicologists produced by her have all earned for India a dignified, place in world Culture in general and World music in particular. It may be a betrayal to throw away a great and ancient heritage to chase some glamorous, crazy, vulgar and riotous brands of dance and song.

Indian classical music is an intimate art and many of its secrets, intricacies and pleasures are not surrendered to an undevoted student and an unguided ear. Karnatak music in particular is at once emotional, intellectual and mathematical. Its melodies are unique, its diverse forms rich and its appeal universal. Indian Music is yet another exercise of the Indian mind in its path of exploration into the mysteries of nature and of ultimate truth. The very word Bharata is condensed out of the musical expressions of Bhava, Raga and Tala. No where in the world has the science of Sound, music and rhythm been studied so deeply and exhaustively as in, ancient India. Panini, Patanjali, Bhartruhari, Nandikeswara, Anjaneya, Bharata and many more are outstanding among those who have contributed to the unravelling of the mystery of sound, music, rhythm and creation.

Place and Importance of Music in life:-

There is no aspect of life where music cannot play its role-be it social, cultural, or martial event.

In spite of all the ups and downs it has gone through during the several Centuries of its growth, Indian music has retained its highly aesthetic and elevating spirit and its unique individuality. Even the British rule which imposed alien values on Indian life could not destroy our musical heritage. What we now call as classical music is by ancient standards **Deshi** music; for it is profane, pleasing to the common man, and most important, it has regional variations. All these go to show that today's music is the resultant of the reactions of innumerable parochial styles of music. What a sublime concept of Nadabrahma has been conceived by our ancient seers and elders through which they have created a vibrant life, science and tradition in music. One who has understood Nada as the very basis of music, releases it as the subtlest of Vibrations, which forms the life current in each and every cell in his body. It is the omnipotent Nada, which, following particular rhythms, curves and waves flows through our life, enriching us with experiences.

The Nature and definition of performing Arts:-

It is the close connection with religion, mythology, with philosophic and mystic systems and enduring cultural patterns that has sustained the Indian tradition of the performing arts as enunciated by Bharata and others after him. The performing arts are an integral part of the process of living, deriving validity from interactions and communication which alone can lead to the renewal and reinterpretation of any tradition. Without a discerning audience these performing arts will not survive except as atrophied and fossilised expressions.

A performing art, in its simplest and most obvious form and meaning, is an art which lives only when it is being performed. That is, these arts live only in time. The sound of music lives only for the second it is created. But it leaves huge shadows of wonder, beauty, inns and vanishes. Only a memory is left. The performing arts - watching them, listening to them, being involved in them, mentally participating in them, sharing in the tension, the excitement created and emotion, Consciously or unconsciously, being activated by them, provide a kind of experience which is different from emotion recollected in tranquillity. In a live performance, the impact of the art is like the intuitive recognition of quality, of the truth of the art and of its performance, taking in experience with the mind, the senses, apprehending it not through the externals, but seeing into it. And as such we will be back to the concept of perception. In a music concert the performance, whether vocal or instrumental, varies from one musical tradition to another, one idiom to another. While listening to an alapana in vocal or some instrument, a musician or a rasika expects a degree of creativity on the part of the performer, his ability to comprehend the many subtleties and profundities inherent in the concept of raga & musical form (Like

wise with a tala vadya player regarding the intricacies of laya and tala. Even as a musician takes up a raga for exposition and gives beautiful alapana so also a mrudangam player or the player of some other percussion instrument like Ghatam or Khanjari or Morching is able to take up a tala for treatment and give a good exposition of the same. This rhythmic discourse of the chosen tala as you all know well, is called Tani Vinike. In such a tala discourse one can notice distant sections like, the introduction, body and conclusion. It will be a real intellectual treat.

Brilliant performances, which call for the highest virtuosity on the part of the performer, only communicate the essence of a great tradition. The art of performance exists in the instant of execution. (ಎನಿಕೆಗೆ ದೃಷ್ಟಾಂತವಾಗಿ, ಕಚೇರಿಯನ್ನು ಮಾಡುವ ಬಗೆಗೆ ಉದಾಹರಣೆಯಾಗಿ). A musician's life, whether vocal or instrumental, is focused on the instant of execution, because a performing art is a performing art only when it is being performed. Only in rare cases are the artistry and the technique evenly balanced. These performing arts are not just spectacles; they are indistinguishable from life. There is much in common in the approach to Art in all its forms; also, in the process of Creation much Common ground is covered and there is identity of purpose. Music, Vocal or instrumental, dancing, drama, Painting, Sculpture, all strive towards the same end. A Musician, who dissolves his identity in music and rhythm, makes his body an instrument at least, for the duration of the performance, for the experience and expression of the spirit.

What is Rhythm?

There is a famous saying:- " In the beginning was rhythm". It is perfectly true that very little can exist without it. Rhythm is the heart beat of music, and, as such, music is absolutely dependent on it. The word rhythm is used to denote in general the laya as well as the Tala of a song. These two features are, however, integral but independent. Rhythm or laya is disciplined movement in time and space. Rhythm has a definite psychological effect in life and can work out wonders as nature always responds to rhythm.

Musical time in India, more obviously than elsewhere, is a development from prosody and meters of poetry. With the orientel, the words themselves are rhythmical. Great value has always been paid by Indian grammarians in giving the exact value to the syllable in verse. It is the duration which is all important and this paved the way for the most sophisticated development of time - measures in South Indian Music.

What is Tala? Tala is a temporal device which measures the duration and regulates the rhythmic flow of music and also the playing of Tala Vadyas. Though

Melody without rhythm would lose its vitality, its strength, and its meaning, rhythm can exist without melody.

Rhythm, because it is a sense, is not easy to define, and it is often confused with time. And though many can keep time, fewer can keep rhythm. Rhythm cannot be taught, but the sense may be developed by practice. Rhythm must be felt physically even if no movement is made. The main musician of a concert must first feel the rhythm and the music before he can convey it to his accompanists and to the audience. This rhythm is what we call laya. This laya is ordained by a law - ie. Cosmic law. "Rhythm is motion capable of being perceived as a succession of occurrences. Within the frame work of the Cosmos it is Continuous and eternal". With specific application to Indian Rhythmic Expression Rabindranath Tagore states. - "Rhythm is not merely in some measured blending of words, but in a significant adjustment of ideas, in a music of thought produced by a subtle principal of distribution which is not primarily logical but evidential". --- -. " In perfect rhythm the art form becomes like the stars, which in their seeming stillness are never still, like a motionless flame that is nothing but movement". Rhythm, which is beyond the Compass of the senses, and which Patterns the gait of the tune, is abstract. Therefore the life energy of the flow of music is Rhythm and Tala. Rhythmic music is time immemorial, perhaps, one can say it is old as Vedas where in started rhythm oriented tuning of the ply of sounds (Gati-Marga) wedded to words. Premordial orderliness of movement is laya. This laya is not Tala. When this laya or rhythm takes a concrete form or takes on meaning, it becomes tala. The tala illumines the nature of elapsing time and becomes an accompaniment, as with a mrdangam, Ghatam or Khanjari etc, so much a part of the meaning evolving out of the Raga, that the two become inseparable. In a solo performance of percussive instruments Tala is more than rhythm; it is the nature of time that begins to be demonstrated. Time is carved and **Shredded**, and cut into ribbons. A thousand prismatic surfaces of time flash each for a brief instant and disappear. The tala becomes a mode of time just as a raga is a mode of notes and tune (mode - ರೀತಿ, ಕ್ರಮ, ಮಾರ್ಗ). Basically a tala is formed by emphasizing various instants in some recognizable pattern. Laya gnana and Tala gnana are different aspects and a very special and accurate relationship between laya & tala, between laya and melody should be established,

A percussive instrumentalist should be as highly trained an artist as a singer, or any other instrument player. In a melodic system of music like ours, it is the subtlety and the complexity of the melodic line that leads to the development of rhythms of equal sophistication to match them and support them. "A tala has a

disciplined frame work and yet offers endless possibilities of expressing varied rhythmic ideas through compositions which may be pre-conceived or spontaneous or a combination of both."

The tala system of Carnatak music is one which is primarily mathematical in character, with its internal coherency, logical rigidity and numerical accuracy. It is very perfect and very elastic. Its theory is more uniform in both the systems of Indian music than the Raga system, though the names are different. "Tunga Muni" emphasises the intricate nature of the Tala system of our music. "If one can see the form of southern breeze, the form of Shiva, the form of scent, the form of Manmatha, the form of the Veda, One Can see the subtlety of the tala". The development of tala mnemonics and the art of percussion have contributed to the highest development of the tala system. In Carnatak music concerts the mridangam, the Ghatam or the Khanjira player, when accompanying the main musician does not merely play sarvalaghu tekas but provides a cross rhythmical accompaniment based on the style, movement (kalapramana), and rhythmical construction of the compositions rendered. This requires high intellectualism, creative skill, and a fine sense of aestheticism and anticipation. This contributes to the excellence of the concert.

Percussive Instruments of India:-

There is a large variety of percussion instruments in India from the most unsophisticated in structure to the most complicated used for providing simple rhythm for folk and tribal dance and music and for playing intricate talas of Hindustani & Carnatak music. The history of the evolution of Indian drums can be found in ancient paintings and sculptures. It is believed that the oldest instruments might have been idiophones - Ghana Vadyas. The first musical instruments were also those that evolved out of objects of use in daily life. For instance, the pot which was used for cooking, storing, was also perhaps the first instrument and examples of this variety are even found to day like the Ghatam, the nool and so on. Khanjira is another popular tala vadya which is closed on one side with two animal skin. It is held in one arm and the sound is produced by striking the animal skin stretched across a round wooden frame by right hand. This instrument has no definite pitch and the sound produced is of short duration. It is suited for beating out the rhythmic patterns in a tala vadya ensemble. It was raised to the concert level as a tala vadya accompaniment by the pioneer Manpoondia Pillai. Then Nayana Pillai was very particular in having Khanjira as an accompaniment. Dakshinamoorthy Pillai was on the scene. Palani Subramanya Pillai followed him. Madras late Venunaikar, H.P. Ramachar, Sosale Seshagiridas, Nagarajan, Harishankar are some of memorable names in Khanjira playing. Earliest among known Ghatam Vidvans are

palani Krishna Iyer, Umayalpuram Narayana Iyer, Sundara Iyer, Alangudi Ramachandran, Vilvadri Iyer, Kodandarama Iyer, Madras Devarajulu, Nanjanagoodu Seetaramasastry, Manjunath and to day K.N. Krishnamurthy, Bangalore K. Venkataranm, M.A. Krishnamurthy R.A. Rajagopalan, Vaidyanathan, Vinayakaram Palghat Sundaram etc. Our layavadya ensemble have a very good foreign audience and market. These tala vadyas have their own charm and methodology and that is why they are popular in our indoor Music concert also. It is customary that instruments like Ghatam, Khanjira and the like should follow the main laya vadya the mridangam. The Ghatam and khanjira artists should know how to follow the mridangam in a concert, the main artist, as and when occasion arises and very particularly they should exercise their discretion as to what, when and how to play and what not to play. These upa-pakkavadyas should be complimentary to the mridangam and should enhance the excellence of the concert. At no point should they fail to blend with music and mridangam. They should always feel the sense of responsibility to the main artist and the audience. They should not take the listeners for granted and there should not be any tint of eccentricity. Rhythm does and should play a big part in music to make it pleasing, sastric and traditional. However, giving it more than its legitimate place leads to disaster in making a music concert unmusical, frightfully noisy, appealing more to the mind than to the heart and the emotions. The aim of a good and pleasing concert should not be to exhibit exclusively mastery over rhythmic calculations, and to embarrass accompanists by strident and surprising variation in the tala patterns. Surely there is a need for acquiring a sense of proportion on the part of any performer who intends to avoid boredom and satiation in concerts.

What is the benefit of a great tradition if it cannot serve the growing generation? The impact of modern science and technology in which our young people are now steeped, has made them turn their backs completely on our hoary tradition. They feel that it is slow, not so exciting, but it is for you to point out what is the core of our music tradition and make them aware of the sense of values and excitement that lies in it. Because after all, the future is in their hands and all the efforts we are making will come to nothing if we cannot retain their innermost interest in our traditional Arts.

SCIENTIFIC STUDIES ON KANJIRA

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Kanjira is a single face open type of drum. Over a hollow wooden frame made up of jack wood, varanus skin is covered on one side and the other side is open.

When we explore the history of this instrument, Tamil literature refers to a drum known as "Chiruparai". On the basis of the information, one can establish the relationship between chiruparai and kanjira on scientific basis.

Literature refers chiruparai using with words viz. **Aaguli**, **Thoodagam**, and **chiruparai**. On the basis of Tamil Lexicons of ancient times, one can say that all the three are the different varieties of chiruparai.

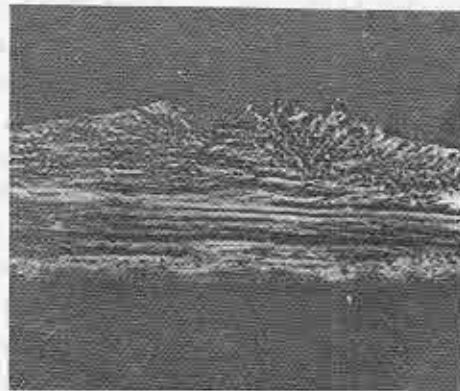
When we analyse the sound of Aaguli, **Maduraikanji**, a book of Sangam period (1 A.D.), refers that Aaguli was tuned to "sadjamam" of Yal sound along with other musical drums like Muzhavu.

Aaguli was played only with hands and also with least force. If that is the case, for an instrument to be so musical, the structure of the instrument and the construction is to be unique. When we analyse for the structure and the quality of sound, literature states, that the face of Aaguli is very small, whereas the sound produced from Aaguli was very loud.

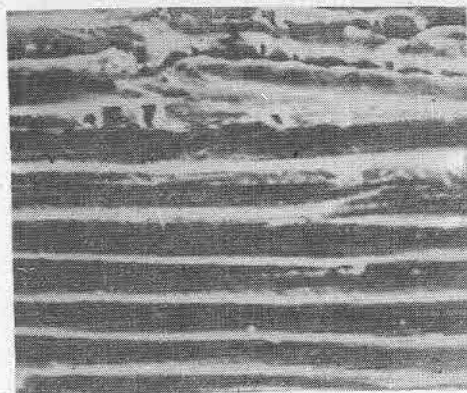
Malaipadukadam, another Tamil book of sangam period, clearly states, that deer skin was used in the construction of this drum and it produced a jinglingsound. This was also shown by other literatures which originated in later dates.

Many references show that chiruparai was used along with other drums in Yal concerts.

Kanjira's construction, usage and playing pattern etc. have the similarities with the above mentioned chiruparai. Like chiruparai which was played in Yal concerts along with **Tadari**, **Muzhavu** and **Tannumai**, kanjira is also played in concerts along with Mridangam. The skin structure also has similarities, which will be discussed at the end of this paper.



Varanus skin used in current form of Khanjira



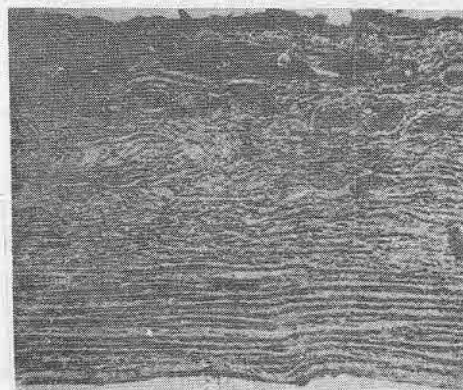
Enlarged view of Varanus skin

instrument produces musical sound (harmonic).

Correlation coefficient data suggest that chiruparai is well correlated with **Iddaka, Takkai** etc. On the basis of the correlation, the instruments were classified into groups and chiruparai goes into a group of instruments which produce loud sound. This coincides well with the details of an old grammer book **PANCHAMARABU**, which classifies 34 drums into groups.

When we go into the details of the science behind the drums, in drums, drumhead acts like a two dimensional string. The sound produced in drums depends on dimensions of the drumheads, tension, force given etc.

Sound produced by various instruments like mridangam, kanjira etc., were analysed. The different syllables were played on these drums and the sound was analysed using level recorder. When we compare the loudness of the sound. it is in the same range in the case of mridangam and kanjira. Actually in the case of mridangam, the sound comes from the drum heads, which is made up of altogether 5 layers of skin from both heads, and it is a closed drum, which contains a specific volume of resonating column. Whereas in kanjira, the same sound is produced from a single layer of thin skin and it is an open type of drum. That means the skin structure plays a dominant role in producing a rich sound.



Deer skin used in Chiruparai

In Tamil literature, various drums were referred and the details of the sounds produced by these drums were also narrated. For this narration, specific type of words were used to explain the sound produced by specific type of drums. All these informations were collected and the relationship between any two drums were statistically analysed using Spearman's equation.

When we take chiruparai, the narrative words of about 47% of the total data, suggest that this

Leather skin is made up of fibrous proteins known as collagen fibers. During sundrying, partial gelatinisation takes place and forms into a oriented structure. The structure depends on the angle of weave and angle of run.

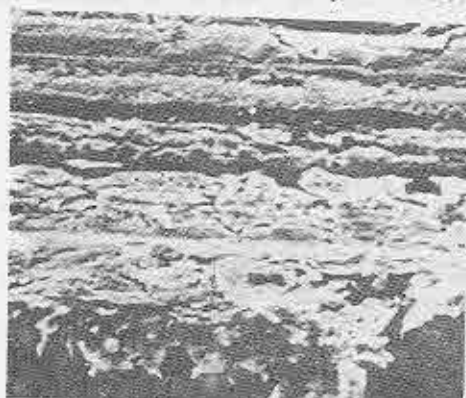
The deerskin which is used in chiruparai and the varanus skin which is used in current form of kanjira, were taken for study. The cut cross sections of varanus skin (Fig.1) shows parallel fibre orientation along the skin and at the bottom, network structure is seen (Fig.1). In sun dried deer skin (Fig.2), at the middle, network structure is seen and at the bottom parallel fibre structure is seen.



Bandicoot skin

When we play the drum, the force was transferred to the next layer, which contains parallel fibre structure. This region acts like a stretched string (like in Veena) and vibrates, when all the strings vibrate at a time, the energy was increased, it resonates and altogether, the richness of the sound produced was increased. When we have the skin where in the fibres run in all the directions, the energy in different directions was nullified and dissipated. Therefore the skins which have parallel orientation will produce rich sound. This gives an idea, that with a very small drum face of 7 inches, how the varanus skin produces rich sound, that too when played with hand with least force.

Though kanjira is superior in construction, we cannot make anymore kanjiras, since the processing of varanus and other reptile skins is totally banned by Government of India. At this juncture, we have to search for other alternatives for varanus skin.



Enlarged view of Stomach lining used in Iddaka, Udduku etc. (hour glass shaped drums)

We cannot adjust the resonator size of other parameters, since kanjira is an open instrument. We have to monitor only the skin structure. The structure, similar to that of varanus skin is present in many reptile skins and fortunately, in lower class mammal skins. It was found that Bandicoot skins have similar properties to that of varanus skin. Studies were made with these skins and all the properties of Bandicoot skin and varanus skins were compared.

Moisture absorption

	Absorption			Desorption		
	60	80	90	60	80	90
Varanus,	14.0	17.0	27.0	18.8	22.2	28.0
Bandicoot	14.2	17.5	29.0	18.8	23.0	31.0

Sound Quality

	decay constant tuned	loudness level(phons)	
		tuned	untuned
Varanus	76.6	98.2	105.3
Bandicoot	76.6	101.4	104.1

Results of the field trials

Kanjiras made with

- | | | |
|--------------|-------|-------------------|
| 1. Varanus | | Standard |
| 2. Bandicoot | | equal to standard |
| 3. Sheep | | below standard |
| 4. goat | | below standard |
| 5. cow | | below standard |

Kanjiras with bandicoot skins were given to kanjira players and assessed. The quality of sound and feel of the kanjiras made with bandicoot skins is the same as that of varanus skins.

Tables show that both varanus and bandicoot skins have similar characteristics and the decay constants are also the same after tuning.

As the kanjira has to be played fast in concerts in order to match with mridangam sound, a low decay constant is a must for a good kanjira, so that each stroke played will die quickly and the whole pattern of play will be distinct. The sound spectrum and decay constants were different for the sheep, goat, cow skins etc. Therefore the artiste's intention of choosing the varanus and bandicoot skins can also be scientifically justified.

To sum up, the existing form of kanjira has very close relations with chiruparai and probably would have evolved from chiruparai.

The deer skin and varanus skin have comparable skin structures, which again shows the close relations with kanjira and chiruparai.

Studies reveal, the bandicoot skins are the good substitute for varanus skin in the construction of kanjiras.

References.

1. N.Somanathan. Ph.D. thesis, University of Madras (1989).
2. P.Balasubramanian, Ph.D.thesis, Univ. of Madras (1982).

THE KANJIRA

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India possesses a rich variety of musical instruments, many of them dating back to hundreds of years. Compared with the other parts of the world, it is found that almost all types of stringed, wind and percussion instruments are seen in India.

Ancient Sanskrit works on music classify musical instruments mainly under three heads:

- (1) Stringed instruments which are called Tata Vadyas, Examples Violin, Vina, Sarangi, Dilruba, Esraj, Gottuvadyam, Sitar, Svaragat, Sarod and Svaramandala.
- (2) Wind instruments called the Sushira Vadyas, Examples Nagaswaram, Flute, Shehnai, Mukhavina etc.
- (3) Percussion instruments called Avanaddha Vadyas Examples Mridanga, Tavil, Ghata Tabala, Kanjira, Pakhwaj, Dholak.

Among Percussion instruments, there is so much of variety that it is difficult to enumerate them within the span of an article. To mention only a few - Mrudanga, Tabala, Nagara Tavil, Dolak-, Damaru, Mardalam, Suddha Maddalam, Udukkai, Udai, Davandai, Pambai Bheri, Muraja etc. The Ramayana and the Mahabharatha mention many percussion instruments and even the Bhagavadgita furnishes the names of Panava, Anaka and Gomukha. The Dundubhi and Deva Dundubhi are of course mentioned in many Sanskrit works.

Tracing the history of musical instruments in India, it would appear that percussion instruments of the drum variety were the first instruments to be invented by man. Two ancient Tamil works, the Silappadhikaram and Jivaka Chintamani mention no less than 31 kinds of drums in use in ancient Tamil Nad. A detailed description of these instruments is also found in the above works. Many forms of drums are mentioned as having been used mainly during times of war and they were called Vira Murasu.

Percussion instruments made of leather (Charma Vadya) are associated even with deities. The following sloka mentions that the Sanskrit language was born from the beats of the drum of Lord Nataraja.

Nruttāvasāne Natarājarājo Nanāda Dhakkām Navapanchavāram |

Uddhartukāmaha Sanakādi Siddhān Yetadvimarshē Shivasūtrajālam ||

The instrument mentioned herein is the Dhakka otherwise known as Damaruka. Nandikesvara, the mount of Lord Siva, is always referred to as an expert player of the Mridanga.

Among the rare percussion instruments in the south, the Panchamukha Vadya in the Tyagarajaswami Temple at Tiruvarur is of special importance. This instrument, when played, produces a different sound from each of its five faces and these are known as Pancha Maha Sabdham. It is well known that Lord Siva is depicted as having five faces and Sri Tyagaraja, in his kriti 'Nada Tanum', has referred to the origin of the seven notes from the five faces of Sankara.

Although there are so many varieties of drums, only a few are used as accompaniments in music concerts and these are the Mridangam, Dolak, Tabla, Pakhwaj and Kanjira. Actually Tyagaraja, in his "Sogasuga Mridanga Talamu" in the raga Sriranjani, refers only to the Mridanga. In course of time, a demand arose for more than one Tala Vadya during a music performance and in addition to the usual Mridangam, the Kanjira and sometimes the Ghatam were added. These may be called the Upatala vadyas in a kacheri.

Among these, the Kanjira has become a highly popular instrument in recent times. From old records, it is gathered that this was formerly known as Sallari and Kaipparai. This instrument consists of a round wooden frame, made of the same wood from which Mridangams are made, with a piece of leather stretched over it. In the Tamil country, the skin of an animal called the Udumbu, (Pangolin) is considered to be the best for the instrument. Brass rings are then added which produce a jingling sound when the instrument is played. Some connoisseurs of music object to this sound which may give a discordant note but it has a great appeal with the masses and the instrument is becoming popular, finding a place in music performances.

The Jatis or Bols of Kanjira are almost the same as those of the Mridanga except that the Kanjira has to be played only with one hand (the right or the left).

Most of the prominent Mridangam players of south India are also good kanjira players and occasionally prefer to accompany a concert on the kanjira for a change. Among the famous kanjira players of the past, I may mention Talainayar Radhakrishna Iyer, Pudukottah Manpundiya Pillai and Pudukottai Dakshinamurthi Pillai. Dakshinamurthi Pillai, who was formerly an excellent Mridangam player, took to kanjira in his later days and become more famous on that instrument. Top ranking class Mridangam players like Palghat Mani Iyer and Palani Subramanya Pillai were also good kanjira artistes and occasionally showed their proficiency on the smaller instrument before appreciative audiences.

EVOLUTION OF KHANJARI FROM FOLK KARADI MAZAL

N. Raghavan.

It is a fact that Margi music has its roots in the Desi concept. True to this fact the folk traditions have a rich legacy of its own. The folk traditions of each region is a reflection of the aspirations, mental make-up and social requirement of that community and region. Thus the wide range of varied hues and shades are available in folk music.

The North Karnataka has a very rich folk tradition varying in nature and content but pleasing and enlightening. The folk tradition of this region has a rich shade of percussion variety, where percussion potentials are presented in all its grandeur and manners. To name a few a) Sanbala Vadana b) Dollina Kaipattu c) Halage Vadana and Karadi Mazal. In Karadi Mazal a group of artists normally bring in the rhythmic patterns in an enchanting manner. The group consists of three shehnai or sundari instrument players to play the lehara, a self melodic pattern to denote a particular Tala pattern. The group consists of two Damboli players (Khanjira) and two tala cymbals (like the ones used in Kamsale). As the lehara starts the talas and the intricacies in the form of Nadai in various Jatis unfold itself, after the Damboli and the cymbal players alternate themselves in presenting the various possibilities of a particular Tala.

Certain players in their region are so good that they can share their merit with any of Katcheri Khanjira Vidwans.

Karadi Mazal is used in auspicious occasions and to takeout processions of religious importance.

IMPROVISATIONS ON THE MANUFACTURING TECHNIQUES & DESIGN OF GHATAM.

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Introduction: 'Ghatam' as we all know, is one of the ancient percussion instrument extensively used in folklore & it has come to the classical concert platform about 200 years ago.

A well tuned Ghatam, adds its own flavour for the concert with its ringing sound & 'Ghumkara', especially while accompanying instruments like Veena, there by contributing to an enriched concert experience.

Basically, a Ghatam is a simple mud pot with special emphasis on the construction especially at the neck portion, surface finish, which are made to different pitches. The Ghatam owes its origin to 'Kumbha Vadya' (which is also essentially a mud pot) which was in vogue a few centuries before, as one of the percussion ensemble. This was played during temple & other ritual festivals. But, as a folk instrument, this has a long history of more than 6 centuries. Ghatam was then called 'Mattaē'. It was played with or without skin or membrane tied to its mouth. Some times, a string was attached to a support along the Vertical axis & it was plucked or twanged softly to give a 'Ghumki' type of effect while playing. In Kerala, during festivals 'Pancha kumbha Vadyas' 5 Ghatams which are made as a single instrument with 4 Ghatams in 4 Corners & a Central bigger pot. Their mouths are tied with thin skin. (For details ref. books on Indian musical Instruments by Prof. P. Sambamurthy, Dr. B.C. Deva & monographs on 'Temple Instruments of Kerala') Thus, Ghatam has been an integral part of folk & classical music percussion instruments.

TYPES OF GHATAMS

ALL DIMENSIONS IN CMS FIGURES NOT TO SCALE

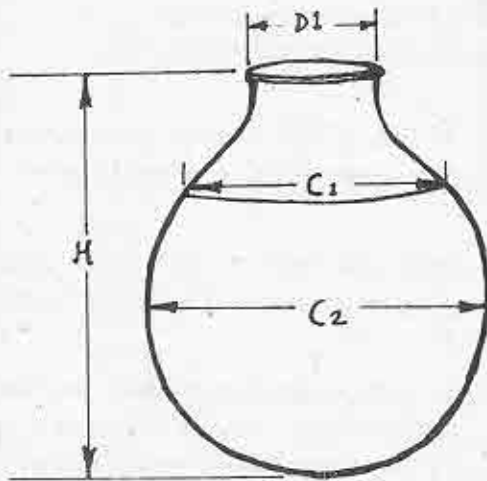


Fig. 1 $H = 38$ $D_1 = 13.0$ $C_1 = 61$ $C_2 = 123$

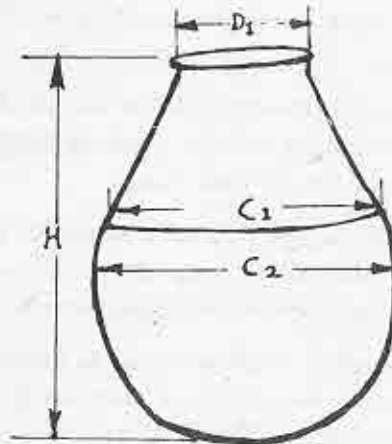


Fig. 2 $H = 34$ $D_1 = 10.5$ $C_1 = 84$ $C_2 = 90$

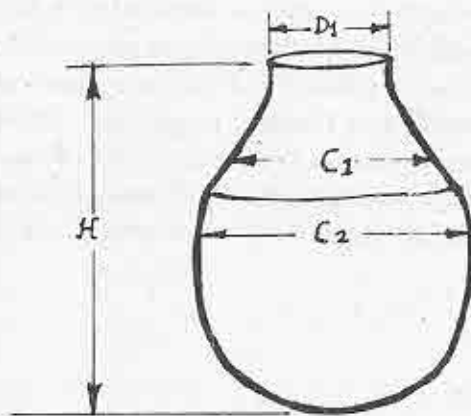


Fig. 1 $H = 34.5$ $D_1 = 9.5$ $C_1 = 87$ $C_2 = 99$

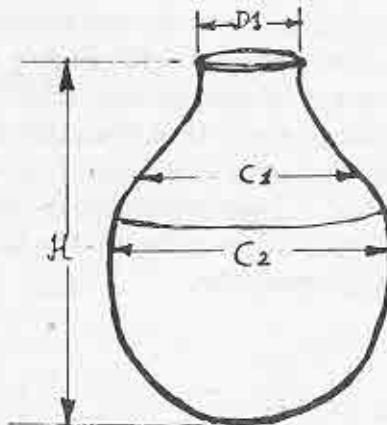


Fig. 2 $H = 35$ $D_1 = 10$ $C_1 = 89$ $C_2 = 101$

NOTE: THE THICKNESS OF THE WALL OF THE GHATAMS VARIES FROM 1-1.7 CMS DEPENDING ON THE TYPE, PITCH & PLACE ie NECK, BELLY. THE DIMENSIONS ALSO VARY FROM 10-15% IN EACH CASE DEPENDING ON THE PITCH & TYPE

Before going into the Research & Development on this ancient instrument, it is necessary to study the present ways of manufacturing methods/techniques, materials used, tonal qualities, durability, turning techniques etc & later on identify & analyse the drawbacks of the same.

CONSTRUCTION: A mere cursory glance at the Ghatams reveal 2 types basically, with regard to shape.

- (i) Circular pot shaped with short neck, quite large in Volume. [Ref. fig.1]
- (ii) Almost hemispherical with long or medium tapering neck [Ref fig 2. & 2a]

Now let us analyse the features of the above.

- (i) **The first one** (Fig 1) was usually made in Karnataka at places like Channapatna, Mangalore & also in some parts of Andhra Pradesh. The salient features. are (a) relatively shorter diameter of the mouth compared to the belly portion as the dimensions in fig I indicate. (b) Short & smooth neck portion. (c) Larger Volume, usually tuned to Lower Srutis [$3/4$ to 3] (d) The thickness Varies from 1.0 cm to 1.4 cms.

This type of Ghatam produces a soft, melodious sound especially 'Tha & Nom' The 'Ghumkara' is pleasant because of shorter diameter of mouth compared to its belly [The ratio ranges from 1:9 to 1:10] The inner surface is not that smooth compared to its counter part. The bond Strength of the material & the density is not optimum & hence the instrument is quite fragile. The baking is quite good. It may not be out of place, to mention that, a special quality of Ghatam was being manufactured at Channapatna a few decades ago, especially during late 19th century & early part of this century.

The mud used was mixed with certain resins & some Aimes Alalekai (Terminalia Chebula) egg & was allowed to saturate for a few days. Then fine iron powder was mixed and the Ghatam was made. The baking was also quite Uniform. The Ghatam had a deep purple shade & was known for its durability & ringing sound.

- (ii) **The second type** (Fig 2) is being manufactured at Madurai, Kerala & Tamilnadu (Madras). These are in Vogue now. The salient features are (a) Relatively larger diameter of the mouth with respect to the belly portion as the dimensions in fig 2. indicate. (b) Long & tapering neck with marked change in cross section on the outer surface (c) Smaller Volume usually tuned to higher pitch/ Srutis [$3-5 \frac{1}{2}$] (d) Quite heavy due to thicker cross section [Varies from 1.2 to 1.8 cms]

This type of Ghatam produces almost metallic sound with 'Treble' Characteristics, which is due to the higher sand content in the material. The surface texture is quite suited to higher speeds of playing & provides a better grip. But, the 'Ghumkara' is not that effective as compared to the type I., because of the larger diameter of the mouth compared to the belly. [The ratio varies between 1:7.5 to 1:8.5] The Ghatam is highly non-durable because of the imbalance in the weight with respect to belly & neck portion, resulting in a quick brittle fracture.

(iii) The third type or the off shoot of type 2 is that of Devanahally [Ref fig 2a]

The characteristics of this type are

- (a) Shorter, tapering neck compared to Type 2.
- (b) The neck portion near the mouth is almost straight or slightly curved with a thinner rim compared to that of type 1 & 2.
- (c) The Overall height is also slightly less than that of Type 2
- (d) For higher Srutis, ie, 41/2 - 51/2, it is slightly underbaked.
- (e) The weight of this Ghatam is also lesser than its counterpart (Type 2)
- (f) The diameter of the mouth is marginally less than that of Type 2 & the Ghumki is better than the former.

In Mangalore & Kerala, Ghatams are made using the Laterite soil which is available abundantly in those regions. The shape of the Ghatam is almost like Type 1 but with a more taper at the neck portion & the diameter of the mouth is also slightly higher. The thickness of the Ghatam is slightly less than that of Type II because of the higher density of the soil & Cohesion. 'Tha' & Dhi and Meetu, Naatu Nakki [Colloquial Kannada terms for certain strokes] sound better. Similarly good soil is available in Madanapalle & parts of East Godavari belt, which are well suited for manufacturing Ghatams.

Some of the prominent places of manufacturing of Ghatam are Devanahalli, Kumbarahalli, Mangalore, Channapatna, Ramanagaram, in Karnataka; Manamadurai, interior Tamilnadu; Madanapalle, some parts of East Godavari belt in Andhrapradesh. Trivandrum, Palghat in Kerala.

Having done a brief comparative study of different schools of manufacturing of Ghatam, it is required to analyse the different factors to be considered for the improvisations to be made.

Factors to be Considered:

- (i) The most striking factor in Ghatam is the relation between the 'Thickness' and the 'Quality' of the sound produced.
- (ii) Design of the neck portion
- (iii) Material characteristics ie. bond strength, density, hardness, workability etc
- (iv) Surface Characteristics (inner & outer)
- (v) Total Volume of the Ghatam Vs Sound produced & also the overall shape
- (vi) Baking procedure/technique
- (vii) Tuning of the Ghatam
- (viii) Miscellaneous factors

Extensive research has been carried out by the author on the above gross factors & many subtle factors and improvisations are made keeping in view, the Cost benefit factor.

Design concepts & Improvisation:

The basic and important aspect in designing a Ghatam is striking a compromise between the thickness of the Ghatam & the sound produced. Hence, the material used is of prime importance, which has to be workable, easily available, attain sufficient hardness, have good bond strength.

- (i) The author has evolved a polymer solution, which when mixed with red mud, sand and admixture of resin, fine iron powder & certain herbs; has proved to be ideal, workable & satisfies all the required properties which has been testified by number of experiments (Lab & field trials)
- (ii) The neck portion is scientifically designed which has gradually varying cross section & taper to facilitate playing & also the production of the requisite quality of sound. The mouth portion is slightly curved & a beeding is given for the production of a really good 'Ghumkara'. The ratio between the diameter of mouth to that of belly is kept below 1:9 -1:10
- (iii) The neck & the mouth portions are designed such that, they not only satisfy regarding the production of quality sound, but also the strength characteristics. Because, many of the present day Ghatams develop a crack, or break at the neck due to the handling stresses & also due to the unbalance in weight distribution, due to heavy belly portion. So, care is taken, while designing the Ghatam.

- (iv) The surface characteristics play a Vital role in assisting playing a fast tempo, provide good grip & also in resonance. The inside finish must not be very smooth to facilitate tuning and also must be uniform without dents, large air pockets. To achieve an optimum outer finish, the material chosen for design (improvised) satisfies completely & to Compliment the same, a fine high density adhesive powder is sprayed by spray gun, just before the raw ghatam starts hardening. This not only increases the surface hardness but also fills up fine air pockets reducing the porosity & surface defects. This has proved, to have remarkable effect on resonance & also make playing a pleasure by good ergonomics. The new material along with this surface treatment has not only contributed for improving the quality of sound, but also durability & facilitate playing.
- (v) The over all shape of the designed Ghatam has not only observed the best of Type 1 &2 but also has certain fine improvised features, having a sound scientific back ground. (Ref.FIG.3)
- (vi) Packing of the Ghatam is another very important step. The existing Ghatams are not baked Uniformly and dark & black spots can be seen on them due to non Uniform & excess baking resulting in pitch variations.

The new designed material. (ie mud with polymer & admixtures) can withstand very high temperature (approx 200c) without developing any undue reaction. A low cost baking chamber to facilitate rotation of Ghatam for Uniform heating has been designed. Here the rate of heating & cooling can be adjusted, so that the finished product matches all the requirements. All these have contributed in producing the melodious & high quality sounds (Tha, Dhi, Tom, Nam, Dheem, Ghumkara) apart from a strong & highly durable, economical instrument.

Tuning: Instead of the Conventional wax / tamarind, hard, thin self adhesive rubber pads are used which are easy to fix & remove & have better control over pitch/sruti.

Conclusion: Once, the above methodology & techniques are, adopted, the cost of the instrument comes down markedly or may cost very marginally more than the existing conventional ones. But, considering the benefits, they far outweigh the costs. Even though these experiments were done more than a decade ago by the author, there has been an unnecessary delay in promoting the project & implementing the same on larger scale.

Hope, the musical fraternity will soon be benefitted.

* * *

PAPER ON GHATAM

T.H. Vinayakaram

Ghatam Artiste & Principal

Sri Jayaganesh Tala Vadya Vidyalaya, Madras.

I. Origin:

Paying my respects and salutations to my father and Guru Sri. T.R. Harihara Sharma and His Holiness Kanchi Sri. Sankaracharya, I present this paper.

GHATAM means pot in Sanskrit. It is a percussive instrument and ancient like other musical instruments mrudangam, veena etc. Sage Valmiki in his Ramayana describes about the sound emanating from Ghatam (Sundara kadam, Chapter 10, Sloka 46). Besides, in a work called 'Krishna Ganam', there is an important reference about 'Ghatam'. In this, there is a description of a cowherd playing on a pot as an accompaniment to Lord Krishna's flute. GHATAM has found its place in ancient books on musical instruments. From all these, we conclude that Ghatam is a very ancient instrument.

II. DESCRIPTION AND MAKING OF GHATAM:

GHATAM is different from ordinary mud pots, with its mouth being narrow.. Its size differs according to the pitch or sruthi. The ones of lower pitch will be of bigger size. It has three portions namely mouth, a slanting portion from the mouth and the round shaped bottom portion.

A special type of baked clay is used for the preparation of this instrument. With that, copper, iron or brass fillings are mixed. The mix which also includes some other powders is known to the traditional makers only. The main bonding agent is egg.

This instrument is made in number of places in south India, but the ones made in Mana Madurai are famous for their quality and strength. So this is preferred by most of the vidwans.

III. HISTORY

Known as Noot in Kashmir and Mudki in Rajasthan, it was mainly a folk instrument in olden days. In south India, it has become highly sophisticated instrument raised to a concert status. Apart from traditional concert platforms, GHATAM is also gaining prominent status in Rock music, Jazz, Jugal bandhis, fusion, ensembles and other unique programmes.

IV METHODS OF PLAYING

In North India, the instrument is placed on a small round block with the mouth facing upwards and played on the sides by right hand and on the mouth by left hand. Rings and bangles are also used to create sound. But in South India, it is placed on the lap, its mouth facing the stomach, played with the gush of air with the help of belly. It is played with fingers, wrists and even nails. Its position is changed while playing. It is the only instrument whose position is changed while playing. Some times to delight the audience, the instrument is thrown up and caught suitably in rhythm, mainly during laya vinyasas.

V. FINGERING TECHNIQUES

Basically it has three modes of sound production using middle portion, upper portion and the bottom portion of the instrument. Seven words are given to indicate these three sounds to enable easy fingering. The seven words are namely THA, THI, THOM, NAM(DHIM), TI, KUN, NA. The combinations are chosen so that it will be pleasing to ears. For different talas fitting combinations are played.

VI. SPECIAL FEATURES OF GHATAM

Unlike other instruments this is the only instrument which is homogenous in structure. This is the only instrument which is moved into various positions during playing. Like flute, the pitch or shruthi of this instrument cannot be changed.

VII. SOME OF THE OLD WIZARDS

It is understood that the famous kanjira player Pudukkotai Dakshina murthy pillai was well versed in ghatam also. Later Palani krishna Iyer, Sundaram Iyer, Vilvadri Iyer, Alangudi Ramachandran, Kothandaramaier were all notable ghatam vidwans.

VIII. CONCERT FEATURES OF GHATAM

Though a concert can be held without a second line percussion instrument, there is certainly a difference when a ghatam, kanjeera or a morching joins with mridangam in a concert. Normally a dhothi is good enough. When we put on a shirt we feel a completeness. When a 'Angavastra' is put on it adds to our get up. Added to this if we wear perfumes also we feel satisfied. In the same way the second line percussion instruments add a beauty and completeness to the concert. During 'swaras' when mridangam is played for main artiste, the second line percussion instruments are played for violin. During 'Thani Avarthanams' or laya vinyas, the new sound of the second instrument combines with the sound of mridangam and gives a beauty to the 'Thani'.

Comparing GHATAM with mridangam which is the basic laya instrument in Karnatak music, we note the following aspects.

- both are played using both the hands.
- sound places of mridangam is almost available in ghatam also.
- 'ghum' sound can be produced more or less in ghatam also.
- syllables and korvai's of mridangam can be produced in ghatam also with matching 'Nadam' & get up.

Certain disciplines are to be observed for the 'ghatam' to add beauty to the concerts. In the beginning of the concert itself the 'ghatam' artiste should ascertain the level and mentalities of the main artiste, violinist and the mridangist. This has to be learnt by experience. During keerthanas & pallavis mainly mridangam is played but ghatam can join if required. During Pallavi, 'ghatam' can join in top level & low level syllables and join fully during 'Swaram'. During laya vinyas it should be played matching with the 'korvai' of mridangist but with out exceeding the same. While reducing in Thani it should be played in close association with mridangam. Even if it is not possible to play the same reductions in misram, kadam etc, atleast the qualities of these should be reflected in 'ghatam'. Overall, it should be played without affecting the beauty of the whole concert.

IX. CERTAIN DIFFICULTIES

GHATAM has got some unavoidable disadvantages. As already told, we cannot alter the shruthi of this instrument. Though the shruthi matches with the main artiste in the beginning, it may change during the concert due to climatic & other conditions. This cannot be corrected like other instruments. If the pitch is slightly on the higher side, we can some how manage. But nothing can be done if the pitch is low. On such situations the 'thumb' should not be used much because the 'Nadam' mainly emanates from that only.

So the success & satisfaction of playing 'ghatam' in a concert depends upon the cooperation of main artist, other factors like good instrument and more than all, the blessings of Lord.

X CONCLUSION

In this article I have elaborated whatever I had to say about GHATAM. I may be excused for any mistakes in the same. I thank Percussive Arts Centre, Bangalore for having given the opportunity to present this article, in their seminar - on Tala Vadyas being held on 7th & 8th March 93.

GHATAM

B. M. Sundaram

'Ghatam' is a popular and important percussive instrument featuring in music concerts of South India. The term, in Sanskrit, means an 'earthen pot'. Pot is a multi purpose utensil of considerable antiquity. This instrument acquired the name, since it is made of clay. It is equally popular in folk music. In valmeeki's Ramayana (Sundara Kanda 10:46) there is a verse:

Kalaseem Apaviddhayānyā Prasuptā Bhāti Bhāminī.

Anjaneya, during his search for Seeta, finds in the bed chamber of Ravana, ladies asleep, with their hands still laying upon musical instruments, after exhaustive playing upon them one among those is depicted as holding a 'Kalasee' (Ghatam). The author of an article on Ghatam (published in 1982), has stated that 'Kumbhavadya', mentioned in the Yuddha Kanda of the same Ramayana is the forerunner of Ghatam. I would like to say that 'kumbhavadya' is the earlier name for the rare instrument, Jalatarangam and not of Ghatam. Some old works on music speak about Ghatam.

Sārangadeva gives in his 'Sangeeta Ratnākara' as follows:-

Pataho' Marddalāschātha Hudukkā karatā Ghata:

Kathitā Pātavarnā Ye' Marddale' Te Ghate' Matā: |

Sundhākalasa of 1350 A.D. says in his 'Sangeetipanishad Sāroddhārā' (4:94)

Tathā Damaruko' Bukkā Duddadī Kundalī Ghata:

'Sangeeta Dāmodara' of Subhankara (15th c. A.D) also speaks about this instrument:

Ranamabhi Ghataṽdyam Dundubhi Chāvajascha |

In the fourth chapter of 'Rasa Kaumudi' of Srikantha (1575 AD), we come across a verse:

Patahe' Dam Trivalyām Dom Ghate' Ghadavibhe'data: |

Mummadi Chikkabhoopala and king Tulaja have quoted verbatim the same verse given by sarangadeva.

'Vādyā Prakāsa', written by Vidyāvilāsa Pandita in 1787 A.D. mentions about this instrument.

Hudukkā Dukuli Chaiva Bhāndāto'dya Jhallari.

Here, the term 'Bhānda' is used for Ghatam, but at another place, the auother uses the word 'Ghata'

Karchakra Kāradeevādyā Charghera Ghate Changa cha.

'Bhānda' also means a pot. In ancient Tamil literature, we find the usage of the work 'Mondai', which means a pot. In a recent brochure on Musical instruments, Mondai has been illustrated as a small drum, one-sided. You might have known about the popular saying in Tamil: *Pudiyā Mondaiyil Pazhaiya Kal* - Old Toddy in a New Pot.

'Mondai' may be construed as a synonymn for Ghatam. The Saivaite Saint, Tirugnanasambandar of the 6th century A.D. speaks about this in his Tevaram - 'Garland of Devotional Hymns'.

Kuzhalinosai Veenai Mondai Kotta Muzhavadira ---

Pannil Yāzhinar Payilum Mondaiyar ---

Sallari Yāzh Muzhavam Mondai Kuzhal Tālam Adiyamba ---

The Tamil Lexicon 'Choodamani Nighantu' equates Ghatam with Kudamuzha. Kudomuzhavu is the Panchmukha vadya. Though 'Kuda' and 'Muzhavu' mean 'a pot' and 'a percussive instrument' respectively, we can't ascertain that Kudomuzhavu and Ghatam are same. Saint Tirunavukkarasar, a contemporary of Sambandar gives the names of both Kudamuzha and Mondai, making them distinct with each other. (*Pidava Mondai Kudamuzhavam Kodukotti Kuzhalumonga*) A still earlier work, 'Perunkadai', belonging to the 4th c. uses the term 'Ghatam'. (*Ghata Muzhakkinnisai Idaiyidai Iyamba*). There is another age-old lyric, in which we find a line. (*Tayir Sumandu Valai Suzhalum Ghatam Veesi*). Here the word 'Ghatam' is used to indicate the mud pot containing curd.

It is considered that the ancient 'Bhoomi Dundubhi' might have probably caused the birth of 'Bhanda' or 'Ghatam'. The Borobudur relic belonging to the 8th C.A.D. portraying a Ghatam played with both hands in a sitting posture, bears evidence to the fact that this instrument was popularly prevalent since very early times.

Ghatam is used in Rajasthan, with the names 'Mutki' and 'Gajri'. In the valley of Kashmir and also in the plains of Sind, Ghatavadya finds place in choruses and other or chestal ensembles, but called 'Noot'. The singers of 'Soofiyana Kalam' and 'chhakri' have been using it. The 'Noot' is placed in front of the player on the floor or on the lap with its mouth facing upward.

Ghatam is made out of a special variety of clay, mixed with copper or brass particles and iron filings. Egg is used for making a paste and then the pot is well

baked in the klin. A particular tribe of potters excel in manufacturing this instrument, to the required pitch and quality of sound. Ghatams made at Manamadurai are very famous and durable, while these of Panrutti (South Arcot district of Tamilnadu) come as the second best. Unlike many other instruments, the pitch of the Ghatam is constant, but could be slightly increased or decreased by placing chinaclay inside the hollow portion of the pot.

Ghatam is an important percussive instrument, though classified under 'upa pakkavādyas' and being handled dexterously by eminent masters of this art. It is really distressing to see that some music organizations of Madras, do not offer a place to Ghatam, in the concerts arranged by them, by way of a foolish resolution. It is quite surprising as to how these institutions boast themselves as the foremost to promote and foster Music and Musical instruments.

There had been several Ghatam players in South India, from very early times, but the generation gap and want of authentic history have crippled us to trace those names. Let us remember about some artistes, at least, on this happy and fitting occasion.

Ranga Rao and Shama Rao are two names of Ghatam Players connected with the Mysore Palace. No other detail about them is available, at the moment.

In 1829, Guruswami Iyer was born as the son of Ialugudi Ramayyar and became a Ghatam player, attached to the Mysore court.

Polagam chidambara Iyer (1841-1915) was an expert on this instrument and had accompanied Maha Vaidyanatha Iyer, Sarabhasastrigal and others. His brother, Kesava Iyer, was a violinist.

Umayalpuram, a village near Kumbakonam has the pride of having produced a lot of musicians, including Sundara Bhagavatar and Krishna Bhagavatar, direct disciples of Saint Sri Tyagaraja. Sundaram Iyer was born there in 1853 and he had shared the concert platform with Kancheepuram Nayana Pillai and others. His cousin, Narayana Iyer (b: 1856) was also a Ghatam player, besides being a Mridangist. The credit for making Ghatam, a popular concert instrument goes to Pazhani Krishnayyar.

Krishnayyar was born in 1876 at Kalayamputtur, near Pazhani, as the second son of Ranganatha Sastrigal (who lived upto the ripe age of 98) and Seetal akshmi Ammal. He learnt vocal music from Trivandrum Padmanabha Bhagavatar disciple of Palghat Paramesvara Bhagavatar and started his career as a vocalist in the Harikatha Kalakshepams of Thanjavur Panchapakesa Bhagavatar. As providence would have it, he happened to listen to the Ghatam performance of Coimbatore Anantachar (about whose details, we are in the dark) and took interest in that instrument. He practised on it rigorously for some time and soon gained an

opportunity to exhibit his skill, in the presence of Anantachar. The latter felt very happy and took Krishnayyar as his disciple and imparted the playing technique etc., Thus, Krishnayyar bloomed as a Ghatam artiste. His amazing talent to sing the keertanas of Rama Nataka of Arunachalakkaviraya, to his own Ghatam accompaniment, used to secure him profuse encomiums from his fellow-musicians. His expertise was on intrinsically permutated combinations of Laya. Ramanathapuram Srinivasa Iyengar, Konerirajapuram Vaidyanatha Iyer and many such stalwarts had the fortune of being accompanied by Krishnayyar and in appreciation of his meritorious service, he was presented with a golden bracelet (Toda) on 17.10.1897 at Madras. His niece was Meenakshi Ammal, wife of the great Mridangam Master, Thanjavur Vaidyanatha Iyer, who was the guru of palghat Mani Iyer, our Dr. T.K. Murthi and of many others. Among the disciples of Krishnayyar, the most noteworthy artiste was Mannargudi Pakkiri Pillai.

Pakkiri Pillai was older than Krishnayyar by nine years and hailed from an illustrious clan of Nattuvanars. He was initiated into his family heritage, by swaminatha Nattuvanar. Pakkiri Pillai had to quit the profession, provoked by a silly approach of a landlord. Very soon he attained proficiency on the Taval, by learning that art from Swarnam pillai. He served as the stock accompanist to the legendary, Mannargudi chinna Pakkiri Pillai, but parted with him because of a misunderstanding. He didn't want to play Taval for anyone else and left for Madras to learn Mridangam from the Violin Vidwan, Malaikkottai Gorindaswami Pillai. The latter introduced him to Pazhani Krishnayyar. But, Pakkiri Pillai, endowed with a good singing voice, was taught about 600 compositions by Krishnayyar. Prevailed upon by Govindaswami Pillai and Krishnayyar, Pakkiri Pillai introduced the art of Konakkol on the concert stage and become the uncrowned monarch in that art.

Pazhani Muthayya Pillai, father of pazhani Subramania Pillai, was another disciple of Krishnayyar, worthy of mention. He was under the tutelage of Pudukottai Manpoondia Pillai also.

This great master of Ghatam, Pazhani Krishnayyar, passed away on 12.2.1908, the Mahamakham day.

Pazhani Rangappayyar (born in 1892) was a close relative of Krishnayyar and a ghatam artiste of repute.

Sikkil Narayana Pillai was a Taval accompanist to kumbakonam Sivakkozhundu Pillai for a good number of years, but left playing Taval only to become an exponent on Ghatam.

Madurai Ghatam Mani Iyer was born on 21.6.1895, as the son of Sankaranarayana Sastrigal. He learnt Mridangam first from Manpoondiya Pillai, them from Pazhani Muthayya Pillai and switched over to Ghatam. He had accom-

pained the Veena Brothers of karaikkudi, Mazhavai Subbarama Bhagavata and such others.

Umayalpuram Kotandarama Iyer, was the son of Narayana Iyer, about whom I spoke earlier. Born on 27.10.1899, he learnt Mridangam from his father, music from Mayuram Veenai Vaidyanatha Iyer and had provided mridangam accompaniment to Ramanathapuram Srinivasa Iyengar, Konerirajapuram Vaidyanatha Iyer, Madurai Pushpavanam Iyer and so on. He was, for many years, both a Mridangist and Ghatam accompanist to Dr. M.S. Subbalakshmi. He passed away on 1.6.1966.

Tiruvilvamaalai S. Vilvadri Iyer, son of Subramania Iyer, a reputed chenda player, commenced his initial tutitions on mridangam from his uncle, 'Alli' Paramesvara Bhagavata and then came to Thanjavur Vaidyanatha Iyer, for advanced training. Only on the advice of this guru, he took up Ghatam in 1936. He was a stock accompanist to Dr. M.L. Vasantakumari, for a long period, though he had participated with many other vidwans. He was on the staff of A.I.R. Madras.

The status of Ghatam got elevated by the persevering efforts of Alangudi Ramachandran. He was born on 22.6.1912 and from his childhood evinced interest in percussion instruments. He spared no pillar or vessel to run his fingers, as practice. Happened to notice his craving, the Taval wizard, Needamangalam Meenakshisundaram Pillai took him under his care and coached him in executing Korvais, Moharas etc. Thus, Alangudi became an outstanding virtuoso on Ghatam. Almost all the front-ranking musicians of his time, have been accompanied by him. He attained eternal rest on 15.6.1975.

Kandiyer Muthayya Pillai was a disciple of Needamangalam Meenakshisundaram Pillai. He took up Ghatam, in lieu of the Taval and came up. He was the pioneer to start and conduct Saint Arunagirinatha festival, at Tiruchirapalli. Having lived throughout as a strict celibate, he died in 1964 at the age of 52.

Kottangudi Srinivasa Iyer and Devarajulu Naidu of Madras were two more Ghatam players of the recent past. Annavarapu Gopalam, a disciple of Kumbakonam Taval Thanavel Pillai, was a popular Ghatam player of Andhra Pradesh.

On the Contemporary scene, we have a multitude of brilliant Ghatam artistes. It may not be possible to enumerate all of them here, but to name a few:-

Umayalpuram Visvanatha Iyer, nephew and disciple of Kotandarama Iyer, Krishnapuram M. Vaidyanathan, Bangalore K.S. Manjunath, Palghat A. Sundaram, T.H. Vinayakaram, Bangalore K. Venkatram, E.M. Subramaniam, T.H. Subhashchandran, R.S. Krishnamurthi Rao, Nagaraja Rao, Ernakulam Ramakrishnan, N. Govindarajan, T.V. Vasam, T.D. Balasubramanian, Umayalpuram Narayanaswami, Sukanya Ramgopal, Tiruchi Rajaraman, Kumbakonam T. Pazhanivelu, Ramudu Iyer, Tiruppullani Navaneeth Krishnan, Kuttalam Kannaiya.

SOME ASPECTS OF GHATAM AND KHANJARI

Bangalore K. Venkataram

A reference has been made in Ramayana in Yuddha Kanda (VI, 37, 52) of Kumbha Vadhya which is the primitive form of the present Ghatam. Ghatam has been described in the Sangeetha Rathnakara of Sarngadeva, 1230 AD (Chaper VI, Sl. 1085-6, Page:472). Manasolasa of King Someshwara of 1131 AD (Ch.16, Page:102, Baroda Sanskrit Edition) refers to Ghatam. The Silappadhikaram of Elango Adigal (2nd Century/5 - 7th Century A.D. mentions an instrument (muzhavu) which is the proto-type of the modern Ghatam.

Archaeological Ref: Ghata shown in Borobudur Relief IBa 300 and Ib 19 (8th Century) as played by a sitting figure with mouth upwards, played with both hands. There are baked earthenware drums with a single skin. In early central Jawa used to be an abundance of earthenware drums and sound pots, which are no longer used today.

In India Nataraja sculptures show Ghatam as an accompaniment esp. in Karnataka. In several places in South India, Nataraja & Shiva temples carry a five membraned huge Ghatam called Pancha mukha vadya. These are played with both hands at the Sandhi Pooja and special occasions.

Accoustical Characteristics

The natural pitch depends on the thickness and density of the clay and iron powder. The pitch is inversely proportional to the diameter of the instruments and to the thickness and density of the wall.

Accoustically the Ghatam is analgous to the holmholty resonater

∴ its natural frequency = $f = \frac{c}{2\pi} \sqrt{\frac{S}{lV_0}}$, where S = crossection of the neck,

l = length of the neck,,

V_0 = vol of the Ghatam

$C = \sqrt{\frac{P}{p}}$ where P = pressure, p = density of air.

Accoustically, the ancient membranophone Ghatam corresponds to a percussive suborder 'a', it undergoes transverse vibrations in the membrane. Its accoustic behaviour is very complex : Upper partials tend to the highly inharmonic. The fundamental is made of less stable, giving a definite pitch;

in badly made instrument, the pitch in unstable.

a percussive noise, not a note, is heard if membranophones, the accoustical capling is loose.

The mode of adjustment of pitch by affixing wax uniformly is an art itself.

KANJRI

KANJRI also called KHANJIRA, called KHANJARI in the North, is one of the most ancient musical instruments of the percussion variety. It is used all over the country in India for accompanying folk songs and devotional music. In the South it has secured a more dignified place and is sometimes used for accompanying classical music as well.

The KHANJRI is very simple in construction and consists of a circular wooden frame of about ten inches in diameter and two and half inches broad. Across one side, some type of skin, preferably that of the wild lizard is stretched. The other side is left open. The frame is provided with three or four slits and a few pieces of metal or coins are inserted in a cross-bar inside the slit. These make a jingling sound when the instrument is shaken. The Khanjri is held in the hand by the left hand and the palm and fingers of the right hand are used to strike to skin to produce the variations of sound patterns. Usually the application of a little water to the stretched skin reduces the tension of the skin to the required pitch. The variations in sound are brought about by pressing the skin near the rim with the four fingers while playing.

In the classical concert in the South, the Khanjri is used to supplement the mridangam. Experts can produce, with only one hand, all the variations and patterns that are played on the mridangam.

In recent memory Pudukkottal Dakshinamurthy Pillai has been a great exponent of this instrument.

In South Indian music an important place was given by Dakshinamurthy Pillai. His personality had a unique splendour. He was a great Subramanya Upasaka. It seems his son Swaminatha Pillai was playing even better than his father. Bangaru Iyer, Venunaiker, Devakkottai Sundeararaja Iyengar Palani Subramanya Tody Khanjira has become Pillai, Dakshinamurthy were all responsible in maintaining the place of kanjira. Today kanjira has become a subsidiary instrument. No place is given to this even on request. Sometimes it is sent even behind the tamboora artiste. It is very difficult to get an applause as a violinist or a mridangist. Kanjira is as important for a concert as salt in a meals. It has to be used very discreetly and in very right proportions. Kanjira artiste should have a very good knowledge of vocal. A concert can go on without kanjira but not without a violin or mridangam. So the kanjira should only be played in right places. This should not be played in vilamba tempo where bhava is of importance. Kanjira is rhythm oriented. It has to be played to suit the other instruments following them very closely and in co-operation with all of them. There is sruthi for this also. From 2 1/2 to 5 pitch it can be tuned to Shadja. Lower than that it would be nice if it is tuned to Gandhara or Panchama.

Mysore has a rich tradition in Kanjira, Sosale Rama dasaru, Venkatesha devaru, and Bangalore Sringaram Pillai were great kanjira artistes. After Khanjiri Seshagiri Das who was a master a number of artistes, there has been no body in these 10 years.

FRAME DRUMS AND POT DRUMS IN WORLD MUSICS WITH SPECIAL REFERENCE TO KHANJARI AND GHATAM

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Frame Drums are classified under Membranophones of the Percussion group of instruments. Membranophones are instruments where the sound source is vibrating skin or membrane. The basic working mechanism of drums is pretty simple: they have only three parts namely a skin, a frame over which the skin can be stretched and a connector to attach one to the other. In the case of Frame Drums only two parts are found - a frame which is attached with the membrane.

With only a few exceptions, the playing surface of the drumheads in every nook and corner of the world is round. "Could it be that in the dark mists of the past someone discovered that the tension of the leather could be more evenly stretched if it were on a round Frame and that this invention spread throughout the world as the way that Drums were made as a convention an unquestioned tradition?" remarks David Reck in his book.

The symbolism of the circle, the ring without beginning and end, is a traditional one. It is an image etched on man's consciousness from the first time the eyes perceived the sun and the full moon. In India, the circle is also expanded as chakra, a great mystic wheel of the Gods and Goddesses and the representation of cycles of Existence - the Karma Theory. Secondly the Tala and the rhythm pattern within the Tala. The concept of cycle movements symbolising pradakshina in the ritual of Hindu worship and offering obeisance to the Almighty is represented in the Tala concept. The family of Frame Drums is amazing not only because of its distribution - which is almost world wide but also because of its antiquity.

Small pottery statuettes of women playing round frame drums with their hands are dug up from the ruins of UR (2000 B.C). Similar drums often with rattling jingles attached, are played to this day in the Middle East, where they are still associated with the singing and dancing of women. Known as the Duff, Tar or Doira in the South and East of Mediterranean, this instrument migrated to Europe where it became known as Tambourine.

The Frame Drum without Jingles is the principal instrument of central and North Asian Shamanism. Also in the Arctic, it becomes the principal instrument of Eskimos. It is found among the Native Indian peoples of the North and Central

America. Square Frame drums quite large in size are played in Ghana in West Africa which is very rich in the variety of drums. Their main musical activity is the performance of drums. Generally African drums are played at one end only. The Frame Drums are in Square shape and the skin is attached to the frame and the back side of the frame will be as four square divided by two sticks. But in subsharan Africa, frame drums of the circular variety with hoops made of wood or clay are found. In the Yorubaland of Africa a rectangular Frame drum with wooden shell is called Samba. Samba is a popular Frame Drum. It was originally used in a type of music called "Asiko" which Christopher Watermann, an ethnomusicologist describes as a christian counterpart of "Sakara" and the Samba was introduced to West Africa by Afro- Brazilian repatriates. Samba frame drums are used today in the music of the Africanized (ie. non-orthodox) churches of Yorubaland in Africa.

The most popular instrument in Pan-Islamic tradition is Frame drums. It comes in several distinct forms throughout the Pan Islamic World and is called by a dozen names, the most common of which are Duff, Taar and Bendaire.

Its basic form is a circular, single headed frame drum, either plain or with snares attached beneath the skin. Metal discs may be set in the frame or metal rings attached around the inside of the rim behind the skin. There are also diamond and square shaped frame drums. The Frame drums are also known as Tambourines in Pan-Islamic world. Regardless of the size and shape, frame drum is a vital element in the most lively forms of Pan Islamic music particularly in dances, wedding songs and other women's songs. Women play the frame drums often in their women's songs in sociocultural rituals and ceremonies. Khanjari is a popular frame drum in Bangladesh played by men and women even to-day.

A Common Frame drum of Folk tradition of India is the Duff. It is an open circular frame with only one side covered with skin. It is played either with the hand or the sticks. The diameter of these drums vary from three inches to three feet. These drums are used only for devotional and Folk music and in other social festive occasions. These drums are called by various names in different regions in India such as Damphla, Daera, Daphde, Dappu, and Tambattam. Duff is used North India, which consists of a round frame of wood about six inches wide and about three feet in diameter covered on one side with skin which is stretched by means of a network of thin leather Thongs. The drum is held in the left hand and gripped against the stomach. It is played with the fingers of the right hand which a thick stick held perpendicularly over it by the fingers of the left hand is made to strike the instrument at intervals. The duff is closely associated with Holi Festival. In Maharashtra, the duff is used to accompany Lavami and Abhang. It is known as Tappu in Tamilnadu and Dappu in Andhra. In the folk singing of Maharashtra's

"Powada", Duff, the single membrane frame drum is held in the left hand of the performer and played with a wooden stick. Dimdi is another frame drum used in Maharashtra Powda singing. It is a round single faced frame drum of wood 12 to 13 cm in size held on the left hand and played by the right hand. Sometimes the thumb of the holding hand touches the membrane from inside for producing special effects. This instrument is used for self accompaniment for rhythm or supportive accompaniment to the soloist in the Powada singing of Maharashtra.

The fore runner of the Frame Drum Khanjari can be said as Dardura or Dardara, the single faced drum described by Bharata in his Natyasastra. Bharata in Chap. 33 " On covered instruments" speaks of three kinds of drums, Mrdanga, Panava and Dardura. Manmohangosh in his commentary says that one side of its wooden frame is covered with hide or membrane. It looks like a large gong. From this one can infer the frame drum described as Dardura is a round shaped one. The playing of the Dardura is described in Natyasastra from verse 72-76. Bharata says "The playing of Rakthi Trikala - free strokes by right hand fingers, strokes by one's right hand, and holding the Dardura by the finger of the left hand and fingers to raise the pitch and playing with the fingers of the right hand in speed and strokes half checked and free hand by the right hand are recommended". These playing techniques can be related to the techniques of Khanjari playing of today. Dardura was also described to have performed along with Mrdanga and Bharata describes the seating of the Percussion Instrumentalists and remarks that.

"Dardara player sits left to the Mrdangam player" which seems to have the same with Khanjari player now-a days. (Verse 221).

Though what Bharata describes as Mrdangam is a drum made of clay Mrd + Angam with two faces is not the same as what we call the drum Mrdangam it was the Main drum for accompaniment. Dardura is described as single faced circular frame drum and was subservient to Mrdangam as Upatalavadhya.

Regarding the qualities of a Dardura player, Bharata says in the Verse 298 that "the player of Dardura who is firm and clever in his art, is swift and nimble, knows all the rules of playing and knows to play the other instruments (mrdangam) as well." This qualification described for a Dardura player holds good for a khanjari player as well to-day.

Upto date the khanjari player is required to possess these qualities and knows to play well the Mrdangam. The Khanjari is called also as Khanjira in South India and it is one of the most ancient musical instruments of the percussion group. In the temple sculptures, there are many representations of circular drums composed of skin stretched over a circular frame all over India. It was/is used all over India for accompanying Folk and Devotional musics of India because of its handy size

and its potentiality to play the various rhythmic patterns effectively by the right hand in this small drum. In South India, Khanjari occupies a more dignified place and status as it is used as an accompaniment along with Mrdangam in the classical music performances. The Khanjari is very simple in construction. A circular wooden frame about 10 inches in diameter 2½" broad is stretched with the membrane of the wild lizard (Skin of UDUMBU) on one side. The other side is left open while the frame is provided with three or four slits, a few pieces of coin or pieces of metal are inserted in a cross bar inside the slit. These make a jingling sound when the instrument is played. The Khanjira is held on the left hand and the palm and the fingers of the right hand are used to play on the covered skin head, the different Jathi patterns. The instrument's tuning is adjusted by simple methods such as sprinkling of the water on the back side of the skin to reduce the pitch and a little heat to raise the pitch. The tonal modulations are brought out by pressing the skin at the rear with the four finger's tips of the left hand and unpressing the skin while playing the Khanjari.

The drum's physical relationship to the player can tell us a great deal about how it is played. Drums played on only one hand are usually placed upright or propped at an angle. Frame Drums are almost always light enough to be held on one hand which is the left hand in most cases.

With regard to the Pot drums, the Pot drums are found not as many as we find Frame drums in the World Music cultures.

HSVAV is an Earth drum or pot drum in China, an ocarina of baked clay or porcelane. This pot drum is mainly played in the chinese folk music recitals. HOBOK is one of the Folk percussion instruments in Cheju island (a Korean pot drum) which is in the shape of a water jug. The player makes the sound by striking the mouth of the pot with different rhythmic strokes.

Ghara is a pot drum in Pakistan an earthern pitcher used to provide rhythmic accompaniment in Sindhi Folk Music.

In Eastern Nigeria, the Ijaw and the Ibo are clay pot drums. They do not have skin on the top of them. They are filled with little water. The amount of water in the pot determines the pitch of the pot. These pot drums are played with special fans made out of the Frond of palm or Coconut. The drummer strikes the mouth of the pot along the rim with the fan and produces a soft mellow tone. A player may play on one pot alone or on many pots at a time.

In the Yorubaland of Africa, there is a circular frame drum made of clay. This drum is known as ORUNSA and in played by young men during Ramzan in order to wake people up for the early morning meal.

In India many clay pot drums are seen in the Folk music tradition of Rajasthan to Kerala. But the place of Ghatam, a pot drum has an unique place as a rhythm instrument in classical music performances of South India. The Ghatam may be said as the off shoot of the drum namely Alingya mentioned by Bharata in his Natyasastra in chap '33 as the instrument which is embraced and played. In the north the Ghata is extensively used in Folk music tradition.

The clay used for making the ghatam is mixed with iron fillings and then baked. The ghatam is played by both the hands with the movement of fingers and wrists. The mouth of the pot is pressed against the belly and the rhythmic strokes are played in three places of the Ghatam-near the neck, centre and the bottom of the outer surface which give the tonal modulations.

Both the Frame drum and the pot drum are simple instruments and throughout the world music culture one can find them widely but used only in Folk music Tradition. It is an unique honour for the Khanjari, the Frame drum which is played as an accompanying percussion instrument in classical music performances of South Indian Music and the Ghatam, the pot drum which is also performed in classical music concerts of South India. These two instruments became the talavadhyas of Sasthriya Sangeet mainly due to the performers of these instruments whose skill and mastering over the instrument turned them as marvellous instruments with Kalaideoscopic tonal variations as accompanying instruments of Karnatic music.

Therefore we are indebted to pay our respects to the great masters such as Manpoondiya Pillai, Pudukkottai Dakshinamoorthy Pillai, Pazhani Krishna Iyer and Ghatam Sundaram Iyer without whom these instruments would not have become the percussion instruments of classical music of South India, the Karnatic Music.

Another feature of these musical instruments is their migration from one culture to another and they move from culture to culture more easily and quickly than musical ideas, philosophies and concepts. Thus the frame drums and pot drums are found throughout the world music cultures as Folk instruments but a special and unique feature one finds in the Khanjari/Khanjira and Ghatam is their honoured place in Classical Music as they are used in classical music of South India along with Mrdangam very often. It may be very well described as that of India's contribution to the culture of world music.

**Prominent Past and Present Ghata and Khanjari
Vidwans and their contribution to art
(with special reference to laya vadya
Vidwans of Mysore).**

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Introduction:- We have a long unbroken tradition of music, drama and dance. Music Portrays the joys and sorrows of life, its ups and downs, the agony and aspiration, the ecstasy of fulfillment, of lost love, pity for un deserved tribulations and a desire to mend in a spirit of peace, detachment and hope. Music is an essential element of culture and as it is not just a sensual art, it is a necessary part of the education of both boys and girls. A training in melody and rhythm certainly helps in shaping character and behaviour, better than reiterated precepts.

The sound language originated from instinct and developed into the art of music as cultivated by different nations. It consists of inarticulate sounds which are termed notes in music, produced chiefly through the vocal chords. The sound language, though intelligible is very effective. The sign and sound language are common to man and the lower animals. Man understands the signs of animals and likes their sweet notes. Likewise animals are capable of knowing his signs and feel the power of his music Hence, it is no exaggeration when it is said - the child knows, the brute knows, and the cobra knows the sweetness of music. (ಶಿಶುವೇತ್ತಿ ಪಶುವೇತ್ತಿ ವೇತ್ತಿ ಗಾನ ರಸಂ ಘನಃ :1)

It is a well-known fact that a musical note pleases the ear, while a noise displeases it. why is it so? The difference between a musical sound and a noise consists in the fact that the former arises from regular vibrations of the air. The only essential cause to give rise to agreeableness is regularity. Regularity is the order of nature. Everything in the Universe, the sun, the moon, the stars etc. are working through an ordered system. The planets move round the sun in regularity. They move round their axes in regularity. The years roll by in regularity. The seasons, the tides, day and night come and go in regularity. Everything is ruled by the inevitable law of cause and sequence - Karya Kaarana Sambandha. Obedience to rules of regularity means pleasure and disobedience - pain. That is the grand power of regularity. Rhythm is the oldest impulse of man.

A rhythm connotes the idea of an ordered and measured motion (Gati) and tempo connotes that the time unit in the sense of pace or duration of speed. Music is said to be a blend of mathematics and art. Rhythm is Considered as the intellectual side of music and melody as its senuous side. Rhythm denotes a thought and so, there is will as well as purpose behind rhythm. It is an act and it acts or

plays the role of eternal succession of time. What we call sound is itself a rhythm, for it is a repetition in time.

Rhythm connotes the idea of tala i.e of beating time. It has been said that the word tala came into being from the word tala or Karatala. In olden times, the early people used to sing and dance and keep time or measure of time by clapping of hands.

Time in itself is not perceivable, but for its divisions Kāṣṭha (काष्ठ), Nimisha, Muhurta etc, it is perceived as material objects. Time and space are Co-Existent. This twin aspect of time gives rise to the conception of laya or tempo. In music, time and space-rhythm and tempo, play an important role in creating a systematic order and also for controlling and beautifying the art of Nritya, geeta and Vadya. They create a standard for measuring the unmeasurable eternal length and breadth of the manifestation of the entire art. Besides, there are three grades of manifestation of rhythm and tempo, which are known as slow (Vilambita), medium (Madhya) and fast (druta). These grades create different psychological influences in the minds of both artists and the listeners.

In Vedic times, rhythm was observed in composition or Sahitya, with the help of meters of chandas. Tunes were added to Rks or stanzas and these were sāmāgānas. It may be noted that pallavi, anupallavi, charana, group singing had their origin in sāmāgāna. Rhythm and tempo were used to regulate the letters and time.

The syllables or varnas are known as the sound or Svāra. This has been divided into different time units like Hrasva, Deergha and Pluta. The Hrasva sound lasts for only one mātrā or one unit of time, the Deergha for two units of time and the pluta for three units of time. The sound svāra is also known as the letter or Akshara (Svāra aksharamitryuktam). The different modes, as already mentioned, were adopted for three kinds of Pronunciation. In every vṛitta, the number of mātrā is increased, mātrā being the measuring unit. The old sanskrit verses of musical pieces - varna vṛitta - was determined by the syllable unit and the mātrā vṛitta by the time unit. Both these units were known as chhandas and laya - rhythm and tempo.

The word laya indicates the idea of time-beats or tala, as one is interlinked with the other. Infact, tempo is realised in the continuity and tala, which is fixed time measure running in cycles. Sarngadeva says that both vocal and instrumental music and dance are based on time-measure (Geetam Vaadyam tathā Nrityam yatastaale Pratisthitam).

In the age of the Ramayana and Mahābhārata, the artists and musicologists were considered as - kalā mātrā Viśeshagyaḥ' is, they were acquainted with different accents, letters, mātrās and tālas. Bharata in his Natya sastra says that music rests on tala - 'Gaanam talena dhaaryate.' Laya or tempo means the difference

of one unit of time (kalaa - ಕಳಾ) from another (Kalaa Kaalaantara Kritam Sa layonama Sangyitam - (ಕಲಾಕಾಲಾಂತರ ಕೃತಂ ಸ ಲಯೋನಾಮ ಸಂಜ್ಞಿತಮ್) Bharata has divided tala into two - Nissabda-beat without sound and sasabda - beat with sound. It can be said that the three forms of speed are known as laya or tempo.

Laya Vadyas maintain this tempo in music. It is usually said that Sruti is the mother and laya is the father of music (Srutirmata layah Pita). This is a very significant statement. The mother nourishes the child with all her love and makes it grow. The father disciplines and ensures its safe and ordered growth. In music, tala discharges the function of the father and ensures fulfilling its true purpose. Hence, the percussion instruments were devised and introduced in our music as an essential feature. Sarngadeva defines tala as the basis (ತಳ) of every form of Indian music - vocal and instrumental and also dance (ತಾಳಸ್ತಲ ಪ್ರತಿಷ್ಠಾಯಾಮ್ | ತಲ್ಯತೇ ಪ್ರತಿಪಾದ್ಯತೇ ಗೀತಂ ವಾದ್ಯಂ ಚ ಯಸ್ಮಿನ್ ಇತಿ|talyate pratipaadyate Geetam Vaadyam cha yasmin it). The importance of laya vadya cannot be exaggerated. Devoid of laya, music will be mere singing, in fact, music has continued to be classical on account of the laya Vadyas. The Manasollasa emphasises the importance of laya vadya in the following couplet.

(ವಾದ್ಯೇನ ರಾಜತೇ ಗೀತಂ ನ ನೃತ್ಯಂ ವಾದ್ಯವರ್ಜಿತಮ್ | ತಸ್ಮಾದ್ಭಾದ್ಯಂ ಪ್ರಧಾನಂ ಸ್ಯಾದ್ಗೀತ ನೃತ್ಯಕ್ರಿಯಾವಿಧೌ | Vadyena rajate geetam na nrityam vadya Varjitam | Tasmāt Vadyam Pradhānam Syāt geeta nritya Kriyā Vidhou | |)

The Sivatatva Ratnakara emphasises the importance more emphatically.

ನಾ ತಾಲೇನ ವಿನಾ ಗೀತಂ ನವಾದ್ಯಂ ತಾಳವರ್ಜಿತಂ ||

ನ ನೃತ್ಯಂ ತಾಲಹೀನಂ ಸ್ಯಾತ್ ರಂಜಕಃ ಸತತೋ ಮತಃ ||

(Na talena Vina geetam na Vadyam tala varjitam | Na nrityam tala hinam syat ranjakah satato matah | |)

The Ghata and Khanjari: In the course of her long history, India has evolved a large Variety of musical instruments, which have been classified under four heads. Among these, the percussion instruments are called Avanaddha or Aanddha Vadyas.

Drum playing is a great art in India and a large variety of drums are used for keeping time and providing rhythmical accompaniments to classical music concerts, folk music, dance etc. Drums like the mridanga, tabla, pakhawaj, ghata, Khanjari and dol or tavil are ideally suited accopmaniments. Good artists often give solo performances by creating variations on the theme, which are as rich and complex as the melodic Variations.

Research has shown that most of the modern percussion instruments have descended from very primitive instruments of the past. Varieties of percussion

instruments are mentioned in vedic literature, puranas and some of them have been depicted in ancient and medieval monuments at Mathura, Amaravati, Chidambaram, Belur, Somanathapur and Halebid, to mention only a few. On vedic literature we come across Dundubhi, Bhoomidundubhi, Talava, Muraja etc.

In a South Indian classical music concert, the mridanga is both an accompaniment and a solo instrument. Scholars are of the opinion that it has descended from an ancient instrument called pushkara. In the tani - avartanam, the mridanga vidwan will improvise on the tala of the pallavi, wherein he shows his creative skill in playing the most intricate and complicated rhythmic combinations within the tala chosen. In bhārata natya, the footwork of the dancer is translated on the mridangam.

Besides the mridanga, other laya Vadyas like the Ghata, Khanjari Morchang, Dholak etc. are used as supplement to mridanga. The ghata, the kumbhavadya of ancient literature, is one of the ancient instruments. It is mentioned in the Raja Manasollasa of Chalukya Somesvara III (1126 - 1138 A.D.) along with other instruments like the Pataha, Hudukka, Dakka, Karada, Mardala, Trivali, Damaru, Kahuda, Selluka, Dakkali, Dundubhi, Nissanaki and Bheri

ಪಟಹೋಽಥ ಹುಡುಕ್ಕಾ ಚ ಡಕ್ಕೇ ದ್ವೇ ಘಡಸಂ ತಥಾ ||

ಕರಡಾ (ಟಾ) ಮರ್ದಲಶ್ಚೈವ ತ್ರಿವಳೀ ಡಮರುಸ್ತಥಾ |

ರುಜಾ ಚ ಕಾಹುಡಾ ಚೈವ ಸೇಲುಕಾಶ್ಚ ಘಡ (ಟ) ಸ್ತಥಾ ||

Patahotha Hudukka ca Dakka' dve' ghasasam tatha || . Karada (ta)
mardalachhaiva trivali damarustatha || Ruja Ca Kahudacaiva Sellukascha ghada
(-ta) statha || . - Chapt 15. Geeta Vinoda - St. 523)

Later, the sangita ratnakara of sarngadeva (13th cent) mentions it. Later works which have borrowed much from this work, mention this instrument Tulajajis (1729 - 1738 A.D) Sangita Saranritam says.

ಪಟಹೋ ಮರ್ದಲಶ್ಚಾಥ ಹುಡುಕ್ಕಾ ಕರಟಾ ಘಟಾಃ |

(Pataho mardalashyatha hudukka karata ghatah |)

Very strangely it is not mentioned in the inscriptions belonging to Karnataka of the period between 450 - 1300 A.D. They mention the Panchamaha Vadyas, the Dakka, Hudukka, mardula, bheri etc.

The Ghata is a simple instrument. It is only an earthen pot with a belly and a narrow mouth. It is said to be made of the five elements of nature prithvi - earth mixed with A.P. - water and baked in Tejas - fire. The all pervading vayu is to be found in it and the sound is produced from the Akasa or space quality clay is mixed with iron filings and then baked and the Ghata is manufactured. Different Varieties of Ghatas, differing in shape, size are made to suit different srutis. Sometimes, this vadya is adjusted to the sruti by sticking or pasting was inside.

It is played with the two hands, the wrists, the ten fingers and the nails - The mouth of the pot is pressed against the stomach and the strokes given at the neck, the centre and the bottom of the outer surface achieve a considerable tonal variety producing good musical sound.

Just as the earth has got different climatic conditions from the north to the south, so also the sound differs in various places in between the two poles of the Ghata. Just as all along the latitudes, almost the same climate prevails, so also, in this instrument there is the same kind of sound along the same latitudes. In this instrument, it is possible to produce interesting varieties of Sound. It is feasible to play tala in the fastest kalas, It is capable of very fast tempos in rhythmic patterns. Moreover, the humkara sound which acts like a spring and adds a special resonance and richness, is produced - in different varieties by adjusting the proportion of space between the air inside the pot and that out side the mouth of the pot. All the kinds of humkara that are played by the mridanga can be produced in this instrument also.

Though the Ghata is an ancient percussion instrument, it is came to be played as an accompaniment nearly a hundred years ago. The Vidwan who is credited to have developed this instrument to be an accompaniment in music concerts was Polagam Chidambara Iyer. (b-1841.) in the latter part of the last century. He used to accompany such famous Vidwans as Mahavaidyanatha Iyer, Patnam Subrahmanya Iyer, Sarabha Sastri and others. Another famous Vidwan was Palani Krishna Iyer (1876 - 1908). After listening to Coimbatore Ananthachar he began to play the Ghata. He learnt vocal music from Padmanabha Bhagavathar, disciple of Paramesvara Bhagavathar. As he had a good voice he used to sing and play Ghata simultaneously. He became a disciple of Coimbatore Ananthachar and received higher training. Khanjari Vidwan Mamudia Pillai heard him playing on the Ghata in a concert at Pudukote. He was very much pleased and became a close friend. Iyer was honoured in 1917 with a golden bracelet at Madras. He used to accompany the concerts of the then, famous Vidwans as Konerirajapuram Vaidyanatha Iyer, Ramnad Srinivasa Iyengar and others.

Umayalpuram Kondandarama Iyer was another famous Ghata Vidwan, born in 1889 as the son of Ghatam Narayana Iyer, he learnt playing on the mridanga from his father and music from Vaidyanatha Iyer. He was an accompanist to all the Vidwans of his time. Mani Iyer of Madurai was another famous Ghatam Vidwan.

Tiruvilvamalai Vilvadri Iyer (1901 - 1974) was another well-known Vidwan from 1936 onwards. His father was a famous Chende Player. Vilvadri Iyer learnt at first from his elder brother Paramesvara Iyer and received higher training from, Tanjavur Vaidyanatha Iyer and was a popular and well-known Ghata Vidwan till his last days. Alangudi Ramachandran, Annavarapu Gopalan were other well-known Ghatam Vidwans. K.S. Manjunath (1928-1989) other wise known as Bangalore Manjunath or Ghatam Manjunath was a frontrank Ghatam player of the recent Past. Born at Sagar in Shimoga Dt, as the son of Seshagiri Upadhyaya, a well-known Maddala player of his time, received early training in mridanga. Later

he received training from Palghat Srinivasa Iyer, Palghat Subrahmanya Iyer, L.S. Seshagiri Rao and became a good concert mridanga Vidwan. After listening to Vilvadi Iyer's Ghatam, he became inspired and took to Ghatam and began to play in the concerts of Mysore Chowdiah and other famous Vidwans. He visited Japan in 1970 at the invitation of the Fuji Telecasting company and was the first to display his skill outside India. He visited Germany in 1971 and Hongkong in 1977 and took part in the Asian arts festival. He has trained a large number of disciples and among them Bangalore K. Venkataram and A.V. Anand are well-known. N.L. Seetharama Sastri was another famous Ghatam Vidwan of the recent past. Now, we have M.A. Krishnamurthy, G.S. Ramanujam and other Vidwans who have even carrying on the art of Ghatam playing.

Khanjari : It is also one of the ancient Percussion instruments, like the Ghata. According to some scholars, it is said to have been imported from Arabia. But we have sculptured representation in many temples like the Arkesvara temple at Alur, near Chamaraja Nagar, in Mysore Dt, and the Tripuramtaka temple at Balligave. The Arkesvara temple belongs to the chola period built in about 1020 A.D. Some scholars are of the opinion that it has been evolved from the tamate, a folk instrument. The sangitaratnakara mentions it (13th cent) as Karachakra Vadya. Though the present instrument is not the same, it has been processed and evolved and cultured and brought into the fold of classical music. It is mentioned by some medieval Hindi Poets. It is used all over India for accompanying folk songs and bhajans. In south India now it enjoys a dignified place as a supplement to the mridanga.

It is very simple in construction. It consists of a circular wooden frame about 10 inches in diameter and 2 1/2" to 3" broad. Across one side, some kind of skin, Preferably that of a wild lizard is stretched and the other side is left open (Experiments are being carried on by various institutions to improve it sound by the use of different skins). The frame has two or three slits and a few pieces of metal or small bells are inserted in a crossbar inside them to make a jingling sound when it is played. It is held by the left and the palm and fingers of the right hand are used to produce variations. A little water is applied now and then to adjust it to the required pitch. The variations in sound are brought about by pressing the skin near the rim with the four fingers. During the concert, the artist produces with only one hand all the variations and rhythmic patterns that are played on the mridanga. Among the most prominent luminaries who contributed to the art of playing this instrument, Pudokattai Manpoondia Pillai was a pioneer. He received training under Tirugokarnam Mariappa pillai and by his incessant practice and creativity bestowed a dignified place for this instrument in classical concerts. His knowledge of laya and creativity in playing the tani avartas was a feast to the listeners.

His famous disciple was Pudokattai Dakshinamurthy Pillai (1875 -1937). He was the most famous mridanga and Khanjari Vidwan in the early part of this century. He was influenced by Tanjavur Krishna bhagavatar, Tanjavur Pakkiri,

Narayanaswamy Appa and other Vidwans He blossomed first as a Ghata Vidwan and later at the suggestion of Narayanaswamyappa, took to mridanga and Khanjari. In the pursuit of laya he was a hata yogi. He could handle all the three instruments with ease and grace. He was a wonderful Khanjari player, with deep knowledge of laya and wonderful creativity. He was a favourite with all his contemporary musicians. Among his disciples mention may be made of Tanjavur Ramadas and Devakote Sundara Raja Iyengar.

Dakshinamurthy pillai's son Swaminatha Pillai who followed the footsteps of his father was also a famous Khanjari Vidwan.

Mridanga and Khanjari were not unknown in ex-Mysore State. The Trinesvara temple, the prasanna Krishna swamy temple and other old temples in the palace fort had mridanga players for the Vadya Seva. The mridanga was the popular percussion instrument for dances. Mummudi Krishnaraja Wodeyar (1799-1868), who ascended the throne after the fall of Tippusultan, was not only a master of music and dancing, but also a learned musicologist and author, but also a patron of music and learning. He gathered in his court many famous musicians of his time. Among them was Lalgudi Rama Iyer (1807-1867), a direct disciple of sadguru Tyagaraja and a pallavi expert. He was also a fine Ghata Player. His Son Guruswamy Iyer was an expert Ghata Vidwan. Another direct disciple of sadguru Tyagaraja, Chittoor Radha Krishna Iyer was an expert Khanjari Vidwan. Another well-known Ghata Player was Ghatam Ranga Rao, Morchang Lakshmanachar was another court musician. Thus the Mysore Royal court patronised Upa or Saha Pakka Vadya players.

The next Maharaja Chamarajendra wodeyar (1868-1894) was not only a Violinist, but also a great lover and patron of music. It may be mentioned that he was the first Maharaja to form a dramatic club in his court and enlist the services of the best musicians of his time. Vidwan Nanjappa was a well known khanjira player during his time.

Krishnaraja wodeyar IV (1895-1940), the worthy son and successor of Chamarajendra wodeyar, was a Versatile musician and a great Patron of Karnatic and Hindustani music. His rule marked the golden age of music and dancing in the state. Bangalore Singaram Pillai, a disciple of Kanchipuram Nayana Pillai was an expert Khanjira Vidwan during this period. Another note worthy Vidwan was Ghatam Shyama Rao. Harikesanallur Muthiah Bhagavathar was fine mridangam player also. Sosale Ramadas (1890-1950), was the son of Harikatha Vidwan Sosale Srinivasa Rao. He went to salem in his eleventh year, learnt music from a yogi for a period of twelve years and after his return became a famous harikatha Vidwan. He was a linguist and an actor. He was an expert khanjira player. Among his disciples Sosale Seshagiridas is a well known khanjira player. Seshagiridas (b. 1925), the son of Sosale Pranesachar received training under Sosale Ramadas and Sankara Narayanadas and Asthana Vidwan Venkatesa Devar and served as an artist in the A.I.R. He has accompanied all the present day famous musicians and has been acclaimed as an expert khanjira player.

With the advent of Muthuswamy Devar to Mysore mridanga and other laya Vadyas received fresh impetus. The mridanga which was confined to dance performances and temples soon relegated the tabla to the background and became the first laya Vadya in music concerts. Muthuswamy Devar has a highly respected and popular mridangist of the Mysore Royal Court. With his specific fingering technique, artistic and tuneful Ghumkis, he brought about a revolution in mridangam playing. He had several disciples. Among them were T.M. Puttaswamiah (Moogiah), initially a tabla player, and T.M. Venkatesa Devar (son of Muthuswamy Devar). The advent of Muthuswamy Devar established a new style in mridangam playing in Mysore, such as playing the jatis and moharas.

The tabla was an inevitable percussion accompaniment for a long time in music concerts in Mysore state. Khande Dasappa, his descendents Seenappa and Rudrapappa and Rangappa were well known tabla players. The descendents of Tabla Subbiah, M.S. Ramiah, Seshappa and Rajappa took to the mridanga. In Mysore, Hassan and Chikkamagalore there were many amateur upapakkavadya players.

The annual music festivals conducted by veena Seshanna (1852-1926) in his residence, the Bidaram Krishnappa's (1866-1931) Sri Ramamandiram's Ramotsava, Sri Krishnotsava conducted by the late Harikatha Vidwan Krishna Iyengar at Bandikeri Sri Venkataramanswamy temple. Provided the much needed platform to the Saha laya vadyas. Moreover, musicians from outside Mysore, used to bring their own accompanists and with the advent of the A.I.R. the saha laya vadyas gained in importance and stature.

Some reasons may be cited for the some what late recognition of the saha laya Vadyas in music concerts. To have more than one laya vadya meant diminishing returns to the musicians. For some musicians the upapakkavadyas were an allergy, for reasons best known to them.

To day the upapakka Vadyas have come to stay. There are many vidwans who match the mridangam player in tonal quality, pattern, structure, sound variation and other aesthetic and subtle aspects which go to give laya a significant dimension. There are many who do not simply accompany but go together with the main mridangam player during the neraval, swara vinyasa and tanas.

In Mysore and Bangalore almost all the mridanga artists beginning with H.P. Ramachar are also fine khanjira and ghatam artists and other percussion instruments. We have Vidwans P.G. Lakshminarayana, G.S. Ramanujam, Ramesh, Srinath, M.A. Krishnamurthy, M.S. Jayaram, V.Suresh, Ravishankar, Sudarsan, Anur Anathakrishna Sharma (Shivu - he is hailed as a genius by the musicians), H.S. Sivasanker and many others.

These artists are carrying on the percussive art, whose perception of rhythm and art of playing has been enhancing the charm of Karnatic music.

GHATA AND KHANJAR: SCOPE FOR RESEARCH

*Mahamahopadhyaya
Dr. R. Sathyanarayana*

I thank the Percussive Arts Centre for this opportunity to share some of my thoughts on the scope for research on Khanjira and Ghata and seek your pardon for the extemporaneous nature of this presentation.

1. Areas of Research

Research on these instruments may be undertaken on numerous aspects including the following:

i) Historical:

What is the antiquity of these instruments? What were the circumstances which led to their invention? When did they emerge as concert instruments? What changes did they witness in order to be in tune with changing cultural and musical environments? Other similar questions may be posed.

A word of caution must be sounded at this point. When these instruments are regarded as Cross-Cultural or trans-cultural phenomena, two anthropological tenets should be borne in mind: a) each culture develops its own diachronous clock and b) similar states of the collective mind generate similar products. Therefore, in any synchronous cross-section, temporal anteriority does not necessarily constitute a cause. Unconnected, independent, parallel discoveries or inventions are not new to history.

ii) Pragmatic or functional:

How can the existing instruments be modified for better results? What new performance methods and techniques may be evolved? How can the invaluable, but now obsolete manual techniques (alamkaras, hasta patas and sancas) described in the ancient and medieval music treatises be resurrected and restored to the class room and concert hall?

iii) Acoustical:

Let me take this up as the main thrust of this presentation. So, I shall elaborate on this theme presently.

iv) Ethnomusical:

What are family interrelationships among members of this class? Can these be traced to prototypes? What are the analogues in other musical cultures? What are their mythemes? How are the mythemes related to the traditional and contemporary culture of the ethnic group? In other words, how are the symbolifications ramified in the intracultural and inter cultural matrices?

v) Sociological:

What are the socio-cultural and socio-economic statuses of the manufacturer and of the performer?

vi) Classification and organology:

Descriptive methods have yet to be evolved in India for musical instruments in general and these instruments in particular.

vii) Technical:

An adequate notational system for solo and accompaniment performances is a long-standing urgent desideratum.

viii) Biographical:

Biographies of the masters of the recent past and of the present, detailing technical excellences, special accomplishments and contribution as well as of instrument makers highlighting traditional methods and the innovations introduced by them should be prepared and published.

ix) Market Research:

To be undertaken in respect of raw materials for manufacture and market for the finished product.

2. Acoustical Research

Acoustical Research is one of the more pressing needs of our present musical and musicological endeavour. Therefore I shall confine this presentation to this research area with reference to these percussive instruments.

Any systematic attempt at acoustical research on ghata involves the following phases:

i. Heuristics:

A thorough familiarity with available data and previous work carried out on analogous instruments, as also the sources and venue of these data is

absolutely essential and is the very first step. Patience, methodicalness and comprehensiveness have no substitutes. Importance of heuristics cannot be emphasised enough in any research project, especially one that is based on an empirical discipline such as acoustics of musical instruments. I have appended a short, selective bibliography and a short list of galleries/museums of musical instruments in India and abroad for use of the research scholar; these are by no means complete; the scholar must enlarge these through discerning effort.

ii. Physical parameters:

Such as shape, size, materials etc. of the instruments as well as investigative instrumentation should be carefully and exhaustively determined.

- iii. Experimental and parametrical **Variables** should be carefully and completely determined. The effectiveness and reliability of the end result are directly proportional to the thoroughness with which these are determined.
- vi. An empirical equation is constructed to include **all** the relevant, component variables in their mutual relationships and in their relative contributions. Equation constant/s are derived by assigning specific values to the relevant variables.
- v. The Variables in the empirical equation are now **systematically explored** by taking them through a range of values in a number of phases such that the values cover the actual range in the practice of these instruments; each main term in the equation is transferred to the left hand side so to fully explore the interrelations among the variables.
- vi. **A general - equation** is next sought to be evolved for each of i) acoustical characteristics and ii) instrumental characteristics by standardising these through extrapolation of individual or specific values to general values. Only then will the equation be useful for large scale application e.g. manufacture.
- vii. **Finer tuning** i.e. low range variability of the pitch component of these instruments should be provided for in the above equation separately through a simple, auxiliary equation, in the final stages of the experimental work.
- viii. The **timbre or tone quality** of the final product is the single, most important factor of the instrument. This is a very complicated phenomenon which is still, by and large, mysterious- almost mystical. It needs to be thoroughly and scientifically investigated in terms of both

personal ('touch') characteristics of the performer and the instrumental characteristics. The latter should be determined by nondestructive investigative methods applied to live instruments.

ix. Spectral analysis:

should be comprehensively resorted to determine i) natural frequency ii) consonantal (i.e. pataksara) contributions of these instruments.

- x. **Marjana vidhi** (damping methods in membranophones) taught by the ancient masters such as Bharata may be investigated with a view to present day application.
- xi. Each phase as outlined above should be marked with adequate exposures (publication of a paper, circulation among Cognoscenti etc.) so that it may receive adequate and competent criticism and may stimulate or serve other workers in the field.
- xii. The foregoing is a general scheme and should be extended, **mutatis mutandis** to other membranophones (especially mrudanga and pak-havaj) and idiophones (such as the kamsystala and its family).

3. Ghata

History of ghata and khanjira is outside the scope of this paper. Therefore, I shall be content by saying that the earlier known authority to describe ghata in theoretical contest is Sarvajna Somesvara III (**Abhilasitarthacintamani** 4.16.776 cd- 777:102)

ಸುಪಕ್ಕಂ ಚ ಘನಂ ಶ್ಲಕ್ಷ್ಮ ಮಲ್ಪವಕ್ತ್ರಂ ಮನೋಹರಂ

ಚರ್ಮಣಾನದ್ಧವದನಂ ಪಾಣಿಭ್ಯಾಂ ವಾದಯೇದ್ಭಟಂ |

ವಿಶ್ವಿದ್ಯಯ ದೈರ್ಘ್ಯೋಽಸೌ ದ್ವಾದಶಾಂಗುಲ ವಕ್ತ್ರಕಃ ||

This may be compared with Sarngadeva (Sangeetha Ratnakara 6.1086 c.d. - 1087 : 615 2nd ed.)

ಘನಃ ಶ್ಲಕ್ಷ್ಮಃ ಸುಪಕ್ಕಶ್ಚ ಸ್ತೋಕವಕ್ತ್ರೋ ಮಹೋದರಃ

ಪಾಣಿಭ್ಯಾಂ ವಾದ್ಯತೇ ತಚ್ಚೈಶ್ಚರ್ಮನದ್ಧಾನ ನೋ ಘಟಃ |

ಕಥಿತಾಃ ಪಾಟವರ್ಣಾ ಯೇ ಮರ್ದಲೇ ತೇ ಘಟೇ ಮತಾಃ ||

His commentator Kallinatha offers no comment on this but Simhabhupala (Sangita sudhakara comm. ibid. (oc.cit.:618) explicates the above passage thus:

ಘನಃ ಅಂತಸ್ಕಾರಃ ಶ್ಲಕ್ಷ್ಮಃ ಮಸ್ಯಣಃ ಸುಪಕ್ಷಃ ಸಮ್ಯಕ್ ಪಾಕವಾನ್

ಸ್ತೋಕವಕ್ತ್ರಃ ಅಲ್ಪಮುಖಃ ಮಹೋದರಃ ಸ್ಥೂಲೋದರಃ ಚರ್ಮನದ್ವಾನನಃ

ಚರ್ಮಣಾ ಆಚ್ಛಾದಿತ ಮುಖಶ್ಚ ಯತ್ರ ಕರದ್ವಯೇನ ವಾದ್ಯತೇ ಸ ಘಟಃ |

There is a membranophone described in Sangitarathnakara (6.1086- 1091 ab:616) called ghadasa. Except for the small phonetic similarity in the name it is quite different from the ghata. Ghadasa is actually the hudukka but differs from the latter only in two respects Viz. a) its right drum-head (called mandats) is covered with uddati (parchment from the inner lining of a cow's belly in the region of loins and ilium) (b) tension (or tautness) of the left mandate is regulated with a rope. Somesvara 12 angular for the mouth and 2 Vitastis for the length i.e. diameter; this gives a mouth-belly diameter ratio of 1:6.28: on the other hand, Ahobala (Sangitaparijata 2.83,84:97) gives this ratio as 6:72 i.e. 1:12. This is considerably lower than the value in the modern ghata which ranges from 1:8 to 1:10

I shall now take each descriptive term from the foregoing passage from Sarngadeva as a nucleus and suggest around it some physico- parametric and other Variables which constitute (partly) the instrumental characteristics of the Ghata.

1. **Ghana (Solid):** What are the ingredients of the 'Composition'? What is the role of the polymer, if used, in this mixture? How are fineness (degree of division), Porosity, homogeneity and density of the mixture, as also the wall-thickness quantitatively related to the natural pitch of the instrument?
2. **Slaksna (Smoothness):** what are optimal surface characteristics such as grain size and packing? What compromise, if any, is needed between smoothness and optimal grip? What is the contribution of the smoothness of the inner surface to the tone? What are the contributions of porosity, sintering etc. to the smoothness?
3. **Supakva (baking/firing):** What type of furnace is best suited for uniform heating? What are temperature gradient characteristics for optimal baking i.e. rising-Constant-falling (to room temperature) in relation to composition- formula? Two modes of heating are possible: moulded, unbaked ghata is fixed in position while the furnace rotates; the furnace is fixed while the ghata to be fired rotates on its horizontal and vertical axes.

4. **Stokavaktra (narrow mouth):** It must be noted that the ghata described in textual tradition is a membranophone (because its mouth is fastened with a membrane) While the modern instrument is idiophone.

What should be the mouth-belly diameter ratio for best results? what should be the shape of the neck-straight or curved, of the mouth - lipped or unlippped? What is the best height of the neck? And the thickness? If the mouth is uncovered as in the present day, an end-correction should be applied in order to arrive at the true pitch and suitable mathematical equation would have to be developed to determine the end-correction. If the mouth is fastened with a leather-or parchment membrane, what should be the skin characteristics?

5. **Mahodara(Large belly):** Ghata is now made in two shapes: almost spherical and ovoidal. Is shape a contributory factor for pitch or quality? Volume makes an important contribution to resonance; What is the critical Volume for generating a resonance which is neither booming nor flat? Thickness contributes to both pitch and resonance. Thus Volume, wall thickness, possibly shape, membrane (if any), end correction, composition-formula etc. are closely inter-related to the pitch, resonance and tone quality of ghata.

Energy distribution in the acoustic spectra of many idiophones show that the sounds generated are noises i.e. they lack the quality of tone. But if tuned well, the first partial (octave note) is clearly heard in the upper regions, especially shoulder and rim. Therefore the sounds have both consonantal and vowel character in parts, and the former predominates. This is an interesting combination and is worthy of exploration.

An important need of the ghata is a device or devices for fine tuning i.e. dampening or sharpening.

Ghata is the only Indian percussive instrument which yields a sound from every part, in which every part of each hand and wrist may be employed in generating sounds, in which the human belly may be used as a conjugater resonatar, which may be played through a range of 180 degrees and involves all five elements (pancabhūta) in making. Sārngadeva ascribes to it all the sound which may generated on a mrudanga; he is speaking of it, of course, as a membranophone. Nevertheless, this comparison is interesting and worthy of an exploratory study because (his)ghata is a unimembranophone while the mrudanga is a trimembranophone and the modern ghata is membraneless. Another important difference is that both hands may used in close proximity on the surface of the ghata while this is not (usually) so on a single head of the mrdanga. The drumheads and the hands are both elastic in mrudanga while only the hands are elastic and ghata surface is inelastic (unyielding); therefore the nature of impacts (and sound

generating devices) are entirely, different in both instruments. Mrudanga has a closed cavity and the ghata, an open cavity. It is in the face of such differences that the above comparison becomes intriguing.

An interesting cousin of the ghata is the pancamukha vādyā, a multi (to be precise, penta-membranophone) which is available in many sculptural representations in south India; the actual instrument is found in the Tyagaraja temple in Tiruvārūru and Tirutturaipundi etc. in Tanjore district and in the Government Museum at Egmore, Madras. It is a temple drum, played during rituals, in 'sarvavādyam', and in the kubera position (northern quarter) during the navasandhi. It occurs only in Siva temples and its five 'mukhas' are believed to symbolise the five faces of Siva Viz Sadyojāta, Tatpuruṣa, Isāna, Aghora and Vāmadeva. It has a huge spherical shell made of an alloy of five sacred metals (pancaloha) with five tubular projection at the top, the one at the centre has two membranes (as in the left drumhead of the mrdanga), while each of the remaining four, each situated in a corner, has a single membrane of goat skin stretched over it, with the aid of ropes which are tautly wound round the belly. It is played solo or in accompaniment to suddha maddalam. The performer stands in the northern quarter (Vāmadeva position) and strikes on the membranes separately with a single palm or simultaneously with both palms. The instrument (which weighs nearly half a ton) is mounted on wheels for facile transportation.

It is not improbable that ghata is an adaptation from folk analogues; An organological (and therefore acoustical) approach to the ghata would therefore benefit from a study of its folk cognates. So, I shall briefly mention a few folk cousins of ghata, which occur all over India in various shapes, sizes and modification: The mizhavu of Kerala is pitcher shaped, made of bronze, has a single narrow neck, a single face of thick parchment, and is played by the Nambiar with hands and stick in Kūdiyāttam. It measures 17 cm. The balldrum of Madhya Pradesh consists of an earthenware ball (22 cm.) sliced off at the two ends over which two skins are laced with leather straps. The left skin is pasted from inside and is pitched lower than the right skin. It is suspended from the neck with a coir string. The burrakathā dākka of Andhrapradesh is a bottle shaped vessel with the bottom end chopped off; the ghumera of Orissa is an earthen pot with long funnel neck, and a big round hole at the bottom. The open side is pasted with parchment. Pabujike Mate of Rajasthan is a two piece drum consisting of two large earthen pots provided with short broad necks on opposite sides. Leather membranes are tautly stretched over them and tied with leather straps. The membranes are struck with hands and are tuned to different pitches. It is played in unison by two performers.

4. **Khanjari** Though khanjari is an established concert membranophone in South India and occurs in comparable forms as a folk instrument all over India it does not appear in musical literature or literary references till comparatively recently. In the form of tambourine (Fr., tymbryl -Timbrel) it was well known in the ancient cultures of Assyria, China (hoop-drum), Arabia and Persia (daf), peruvian Incas (chilchils), Greenland (aelyan). It has been used by the Romans and Gauls and in the biblical times. In medieval Europe a catgut was stretched across the parchment to produce a rattling effect when struck. The medieval hindi poets mention the instrument. Its cognates are spread all over India in the form of chengu, tammate, ghera, halage, dayara and karacakra. Such rim drums are played in Rajasthan on a lizard skin fastened to a wooden frame (20 cm.) by the kalbelia and jogi tribes, by the jogis in U.P. (17 cms. lizard skin), by the gondes in Madhyapradesh (deep rim tapering on the inside, 13cms.), by mendicants in Karnataka (13cm., lizard skin, jingle plates), in Gujarat (25.5 cm. 2 parallel rows of 13 jingle plates), the damadi in Maharashtra (15cm. lizard skin), in Orissa (16cm. 4 metal jingle plates), the dagar in Assam (earthen frame, Vellum skin, no jingles), the kalasi in the Laccadives (28 cm. parchment held by hoop) etc.

The only proximate reference to this instrument in textual tradition is by Ahobala (**Sangītapārijāta** 2.114,115:90) to cakravadya and (ibid. 2.229:92) to kara cakra:

Cakra vadya:

ಚಕ್ರಾರಾಕಂ ಚಕ್ರವಾದ್ಯಂ ವಿಸ್ತೀರ್ಣಂ ಹಸ್ತ ಮಾನತಃ |
 ಸ್ಯಾದಷ್ಟಾಂಗುಲ ಗಂಭೀರಂ ಯುತೇ ಸ್ಥೂಲೇನ ಚರ್ಮಣಾ ||
 ಕೃತ್ಯಾ ಹೃದಿ ಸ್ಥಿತಂ ವಾದ್ಯಂ ಹಸ್ತಾಭ್ಯಾಂ ತತ್ತು ವಾದಯೇತ್ |
 ವಿತಸ್ತಿಮಿತದಾರುಭ್ಯಾಂ ಅಥವಾ ತತ್ ಪ್ರವಾದಯೇತ್ ||

Thus it is circular, 24 (Indian) inches wide, 8 inches deep, covered with a thick skin, held at chest level and played with both hands or a wooden stick 12 angulas (or 9 inches) long.

Karacakra:

ಕಶ್ಚಕ್ರಂ ಕೇಚಿದಾಹುರ್ದಶಾಂಗುಲಪ್ರಮಾಣತಃ |
 ಚತುರಂಗುಲ ಮಾನೇನ ಗಾಂಭೀರ್ಯಂ ತಸ್ಯ ಸಮೃತಂ |
 ಪೀಡಯೇದ್ವಾಮಹಸ್ತೇನ ದಕ್ಷಿಣೇನೈವ ವಾದಯೇತ್ ||

The karacakra is a diminutive version of cakravadya (cf. tāla- Karatāla), being ten angulas wide and four angulas deep. It is pressed with the left hand and played

with the right hand. Other rimmed membranophones are rare in textual tradition in Indian music and do not correspond to the khanjari.

Acoustical research involves as a first step the study of instrumental characteristics among which the following deserve consideration.

- i. **Materials:** Nature of wood, skin and Jingles.
- ii. **Skin Variables:** toughness, elasticity/stretchability, tenacity, seasoning procedures, thickness or density per square, uniformity when stretched, grain structure.
Fastening methods, uniformity of tension at the rim, diameter, materials used in fastening e.g. glue, screws etc.
- iii. **Skin-Source:** relative merits and demerits of the skins of sheep, Ox, goat, buffalo, rat or bandicoot;
The generally accepted skin comes from the varanus (uda, udava, udambu) which belongs to the varanus lasertaelia or varanus monitor. It is an amphibian lizard, ambivorous, and flourishes in the habitats of India, Egypt, Commano Islands, Indonesia, the Sahara desert, Malaysia, China, Australia etc, seven to ten feet long; what are the relative merits of these skins?
- iv. **Acoustical :** It is important that the spectral characters of musical instruments should be investigated not under artificial laboratory methods but **in vivo**. Artificial frequency excitations do not take into consideration the asymmetric tension distribution over the membrane (of the khanjira or any other membranophone) resulting from sagging (due to strokes from different parts of the hands and wrists with varying forces and the absence of loading). The pitch generated is a function of the part of the membrane and the part of the hand in contact, the force of impact, pressing of the skin at the rim with the left fingers, difference in manual techniques etc. The frequency generated cannot be resolved into bayer components as in the Mridanga.
- v. **Performance :** the severe limitation of the membranes surface and of the left hand fingers to only judicious pressure, thus leaving only the right hand (but not the wrist) to develop manual techniques erects a challenge to device as many sounds as possible which are generated on both membranes of the mridanga but using only one (much smaller) membrane and only one hand without the facility of simultaneous sounds (which is available in the mridanga).

5. Suggested Reading and Instrument Collections

As promised in 2(1) above, I give below a short, selected, suggested reading and a similar list of places of musical instruments collection with a reiteration that neither aims at comprehensiveness.

Suggested Reading

- Campbell, A. Notes on the Musical Instruments of Nepal (Journal of Asiatic Society of Bengal, Calcutta 6.2)
- Deva, B.C. Musical Instruments, ICCR, Delhi
- Dey, Captain C.R. Musical Instruments of India
- Dubois, Claudie, les instrumente de Musique Indienne, Paris
- French P.T. Catalogue of Indian (Musical) Instruments, Proceedings of the Royal Irish Academy Vol 9, Pt.1
- Kothari, Komalt, Rajasthan ke lok-vadya
- Krishnaswamy, S. Musical Instruments of India.
- Sambamoorthy, P., Layavadyas, Vadyalaya, Madras
- idem, Catalogue of Musical Instruments in the Government Museum, Madras,
- Meerwort A.M., Guide to Musical Instrument in the Indian Museum, Calcutta,
- Rosenthal, Ethel, Story of Indian Music.
- Tagore, S.M. Hindu Musical Instruments
- Baines, Anthony, Musical Instruments through the Ages, Penguin Books Ltd. London
- Groves Dictionary of Music and Musicians
- Groves Dictionary of Musical Instruments
- Lavignac A, Laurencie, Encyclopedie et Dictionnaire da Conservatoire, Paris
- Marcuse, S., Musical Instrument, A Comprehensive Dictionary
- Bessara boff N., Ancient European Musical Instruments, Harvard
- Buchner, A Musical Instruments through the Ages, London
- Donnington, the Instruments of Music, London
- Galpin F.W., Textbook of European Musical Instruments, London
- Geiringer K., Musical Instruments, London.
- Hipkins A.J. and Gibb, W. Musical Instruments, Historic, Rare and Unique, London.
- Mahillon V., Catalogue descriptif du musee Instruments du Conservatoire Royal de Music, Brussels, Ghent.
- Major, Museum Musium, Kassel
- Sachs, Curt, the History of Musical Instruments, New york
- Kumst, Jaap., Music of Java, the Hague
- idem., Ethnomusicology, the Hague
- Winternitz.E., Musical Instruments of the Western world.

Museums and Collections

Sangeet Natak Akademi, New Delhi
Tribal Culture Research and Training Centre, Hyderabad, Ahmedabad,
Chindwara
Barbon Museum, Bhavnagar
Sangit Nritya, Natya, Mahavidyalaya, Rajkot Sangeethavadyalaya, Madras
Government Museum, Egmore, Madras
Jayachamarajendra Art Gallery, Mysore
Department of Folklore, University of Mysore, Mysore
Department of Anthropology, Delhi University, Delhi.
National Museum, Delhi
Adimajati Sevak sangh, Jhandelwalam, Delhi
Assam state Museum, Gauhati
Bharatiya Nrityakala Mandir, Patna
Bihar Tribal Welfare and Research Institute, Ranchi
Prince of Wales Museum, Bombay
Kelkar Museum, Poona
Department of Folk Music, Karnataka University, Dharwad
Tribal Research Bureau, Bhubaneshwer
Roopyan Samsthan, Jodhpur
Bharatiya Lok-Kala Mandir, Udaipur
Department of Instrumental Music, Banaras Hindu University, Varanasi
Anthropological Survey of India, Calcutta
Kerala State Sangeet Natak Academy, Trichur
Indian Museum, Calcutta
Horniman Institute, London
British Museum, London
Galpin Institute, London
Music del homme Paris,
Glinks Museum, Moscow
Department of Asian and African Music, Music Composers union, Moscow
Department of Music History, Xaanxi (China)
Department of South Asian Music, Beijing
Department of Music, National Museum, Hard, Bratislava
Department of Music, London School of Oriental and African Studies, London.

EMINENT KHANJIRA AND GHATAM ARTISTES OF YESTERYEARS.

B. M. Sundaram

This paper tries to present some eminent Khanjira and Ghatam artistes of yester years, but in noway, exhaustive manner.

Khanjira or **Khanjari**, as it is mentioned here, is a small size Tambourine with a single face. Generally, it is played by the right hand, holding it in the left. It is a circular shaped wooden frame, covered on one side with the skin of Iguana (udu). Small jingles are also attached to the wooden frame. Ancient treatises on music mention this instrument, under the name, 'Jhallari'. It seems to have been originally used in Tribal music and gradually adopted by the mobile Bhajan troupes, since it is handy and easy to carry. Due to passage of time, the name 'Jhallari' became 'Khanjari'. Tirugnanasambanda, ne of the on of the Saivaite Nayanmars of the early 7th Century A.D. mentions 'Sallari': ".....*Sallari Yazh Muzhavam*....." in many of his devotional hymns, called "Tevaram".

Only in the last century, the status of Khanjari was elevated, as a concert percussion instrument. It cannot be tuned to any pitch. By making the leather wet, by sprinkling water, inside the frame, on the back surface of the stretched hide, soft and pleasing sounds are produced. A number of rhythmic syllables cannot be produced on it, like the Mrudangam.

Ta and tom are the only two sounds produced. Due to this limitation, it could not compete with the Mrundangam. To make it potentially competent and to win the appreciation of the audience, the artiste has to delve only into the depths of the rhythmic ocean. He, by his skill in dexterously handling it, becomes competent to pair with the Mrundangam, to the possible extent, on the concert dais, either while accompanying or in Laya Vinyasa.

The credit for ushering this instrument on the concert platform and elevating its status to heights is due to 'Laya Brahman' Pudukottai Manpoondia Pillai. He was born in 1857 at Tirugokarnam, a suburb of Pudukottai. The innate 'Laya' provoked him to accent his fingers, on whatever thing came to his hand. Keenly observing the playing of 'Dep' in Lavani Programmes, usually held in the palace, Manpoondia Pillai managed to procure one and started his intensive practices. He was employed in the palace as a 'light man' i.e. he has to go around and lit the lamps

every evening. He, in the association of some mendicants, who were good singers also, used to accompany them on his 'Dep'. Observing his keen desire to become a 'Layavadyakara', Brahmandanda Paradesi, a mendicant and a great singer with abundant proficiency in 'Vyavahara', started to coach the young Manpoondi and then introduced him to Mariyappa Pillai, a Taval Vidwan of Tirugokarnam. Manpoondia Pillai, very soon became a Giant in intricate rhythmic exercises. From then on, he discarded the 'Dep' and took up the khanjira, which was also, somewhat bigger in size, than that of the present day. He experimented more and more and reduced the size of iguana. Till then, it is learnt, only the skin of antelopes were used. In the beginning, no musician encouraged him nor consented to have the Khanjira, a new instrument, as an accompaniment. Only about eleven years later, he gained recognition, day by day, only to be venerated as the very personification of laya. He trained many like Dakshinamurthi Pillai, Pazhani Muthayya Pillai, Tiruchendur Ramayya Pillai and so on. The great 'Laya Simham', Manpoondia Pillai, became a saint, in his later years and assumed the 'asramanama' as Murugananda. He attained eternal rest, on 10.1.1921, Pushya Bahula Panchami day.

Dakshinamurthi Pillai was born in Pudukottai on 30.12.1875, as the second son of Ramaswami Pillai and Amaravati Ammal. He served as a Sepoy in the Palace, but was exhibiting his aptitude to become a Layavadyakara. Once on seeing a cook in a chaultry, himself enjoying at his own singing all the while, to his drumming on a water pot. Witnessing this rare performance evoked interest in the mind of Dakshinamurthi and he started to practice on the mud pot and managed to get one or two performances. Seetapati Josyar of the local palace volunteered to teach him mrudangam. Months later, Dakshinamurthi had further training from Iluppur Mookkayya Pillai. Then he was engaged, on a monthly salary, as a mrudangam - tabla accompanist in the dramas of the famous Balamani. She introduced him to Tiruppazhanam Panchapakesa Sastrigal and thus Dakshinamurthi gained entry as an accompanist in the field of Kathakalakshepams and thereby left the drama company. Mangudi Chidambara Bhagavatar entrusted to Manpoondia Pillai, the responsibility of grooming up Dakshinamurthi. Mastering the art, under the feet of the great Lion, a new Dakshinamurthi Pillai appeared on the musical arena of South India. His solos as well as the mode of accompanying have been unsurpassed till this day. His was equally proficient in Mrudangam and the Khanjira. Like his guru, he also took to Sanyasa and came to be known as 'Chinmayananda Mounaguru Swamigal'. He attained siddhi on 25.5.1936, creating a void in his art .

Sevugapandya Tevar, Zamindar of Seithur (1890-1962) was not only a patron to music and musicians, but himself was a very talented Khanjira player. He learnt the art from Dakshinamurthi Pilla and Pazhani Muthayya Pillai. He had shared the concert platform with many.

Madras Venu Naicker was a very prominent Khamjira artiste and a disciple of Dakshinamurthi Pillai.

Pudukottai Dakshinamurthi Achari (1901-1962) learnt Khanjira and Mrudangam from his namesake and was a talented artiste.

Chittoor Radhakrishna Iyer was a contemporary of Manpoondia Pillai. Originally, he was a Violinist, but became an Ekalavya of Manpoondia Pillai and turned out to be a competent Khanjira player.

Veeraraghava Chaudhry and Bandarayya were from Andhra Pradesh. They had the Gurukulavasa under Dakshinamurthi Pillai and blossomed as khanjira players, though they were not so popular. Bandarayya was so attached to his guru, that he treated himself as a servant of Pillai and lived with him, till the end.

Devakottai Sundavaraja Iyengar, elder brother of Veena Narayana Iyengar and son of Azhagaraswami Iyengar was another prominent khanjira artiste. He learnt mrudangam from one Srinivasa Iyengar and after listening to Dakshinamurthi Pillai's performances, took up Khanjira, as his full time career. He lived for 69 years and passed away in 1970.

Parthasarathi Naidu of Madras was a student of Peetambara Desai and a reputed Khanjira player. Most of his participation on the instrument was with Turaiyur Rajagopala Sarma.

Tiruchendur Sankaranarayana Dikshitar was a disciple of Dakshinamurthi Pillai, but his career was not for long.

Swaminatha Pillai was the only son of Dakshinamurthi Pillai, who possessed many finer aspects of his illustrious father and much encouraged by Palghat Mani Iyer

Udumalai Marimutha Pillai, a great khanjira player started his initial lessons from Dandapani Pillai, a close friend of Dakshinamurthi Pillai. Marimutha Pillai's mathematical executions were appreciable feasts to the listeners. He had accompanied many stalwarts, but, for many years, he was a stock accompanist to K.B. Sundarambal. He joined All India Radio, Tiruchirapalli and was on the staff.

Another Khanjira Player, on the Staff of AIR, Madras was Kandanur Bangaru Iyer. T.R. Mahalingam (MALI), the flute wizard, never missed to utilise the

professional services of Bangaru Iyer, whenever he made himself available for performances.

Madurai Krishna Iyengar, though originally a Mrudangam artiste, took part in most of his performances only on the Khanjira.

Artistes of some other categories also have excelled in handling the khanjira. Chidambaram Pallavi Vaidyanatha Pillai was a Nagasvara Vidwan; Malaikottai Panchami was a great Tavalil artiste; Keeranur Chinnatambi Pillai, son in law of Chidambaram Vaidyanatha Pillai, a nagasvara vidwan; Pazhani Muthayya Pillai, a Tavalil Vidwan and disciple of Manpoondia Pillai; his son, Pazhani Subramania Pillai, a mrudanga Vidwan; Kuttalam Sivavadivelu Pillai, also a mrudanga Vidwan and many such others, were equally competent on the khanjira also.

Ghatam is an earthenpot, that has become a Layavadya in our music concerts. Valmeeki's Ramayana mention as ----- (Sundara.10:46). Sārangadeva, Sudthakalasa, Srikantha and many other writers speak about Ghata. An ancient Tamil epic 'Perunkadai' of the 4th C.A.D. gives it "*Ghata Muzhakkin Isai Idaiyidai Iyamba*". In Northern India, the instrument has various names like Mutki, Gajri, Noot, Chakri and so on.

The earliest names of Ghatam players, so far traceable are Ranga Rao and Sama Rao of the Mysore court.

Polagam Chidambara Iyer (1841-1915) was a renowned Ghatam artiste of his times. His brother, Appaswami Iyer was vocalist, while another brother, Kesava year was violinist Chidambara Iyer was fond of horses and his stable always had four horses in the minimum. He had accompanied Maha Vaidyanatha Iyer, Patnam Subramania Iyer and Sarabha Sastrigal.

Guruswami Iyer (B:1853), son of Lalgudi Ramayyar, lived in Mysore and was a talented Ghatam player.

Umayalpuram Sundaram Iyer (B.1853) was a disciple of Chidambara Iyer and had accompanied many stalwarts like Naina Pillai.

His brother, Narayana Iyer (B.1856) initially learnt mrudangam but switched over to Ghatam.

Coimbatore Anantachar (1870-1921) was a Ghatam player and a disciple of Satyamangalam Ramachandra Rao.

The names 'Ghatam' and 'Pazhani Krishnayyar' are inseparable. Born in the year 1876, as the son of Kalayamputhur Ranganatha Sastrigal, Krishnayyar learnt

vocal music from Padmanabha Bhagavatar, son of Palghat Paramesvara Bhagavatar. He started his career as a supporting vocalist in the musical discourses of Tanjavur Panchapakesa Bhagavatar. He became the 'manasika sishya' of Coimbatore Anantachar and very soon became as an outstanding Ghatam player. Most of his participation was with Konerirajapuram Vaidyanatha Iyer. He was awarded a golden bracelet at Madras on 17.10.1897.

Rangappayyar of Pazhani, who lived in Madurai was both a Ghatam Player and a Harmonist. He was the first guru of Maharajapuram Visvanatha Iyer. Though Rangappayyar devoted most of his time to Vocal and Harmonium, he was only known as 'Ghatam Rangappayyar'. Born in 1892, he lived for 58 years.

Ghatam Mani Iyer of Madurai was born on 21.6.1895, as the son of Sankaranarayana Iyer and became the disciple of Manpoondia Pillai. With a view to respect the intimitable style of Dakshinamurthi Pillai, Mani Iyer left playing the khanjira and took up Ghatam, on the suggestion of his another guru, Pazhani Muthayya Pillai. Mazhavai Subbarama Bhagavatar and Karaikkudi Veena brothers, may be mentioned among the lot, to whom Mani Iyer had provided Ghatam accompaniment.

Umayalpuram Kotandaramayyar born on 27.10.1899, as the son of Ghatam Narayanayyar, learnt mrudangam from his father and also practiced Ghatam. He learnt Vocal music also from Mayuram Veena Vaidyanathayyar. He provided mrudangam accompaniment to Konerirajapuram Vaidyanatha Iyer, Poochi Srinivasa Iyengar, Madurai Pushparaman and upto M.S. Subbalakshmi. Then he became a regular Ghatam accompanist to MSS until he passed way on 1.6.1966.

Srirangam Nagaraja Rao (B.1900) was a Ghatam Player, regularly accompanying Palladam Sanjeeva Rao.

Tiruvilvamalai Vilvadri Iyer (B:30.10.1901) learnt mrudangam from his uncle 'Alli' Paramesvara Bhagavatar and Tanjavur Vaidyanatha Iyer, but turned out to be a Ghatam Player, on the suggestion of Vaidyanatha Iyer. He joined AIR. Madras as a staff artiste and served till his death.

Kothangudi Srinivasa Iyer (B:1910) was another reputed Ghatam artiste, as also Madras Devarajulu Naidu, a disciple of Peetambara Desai.

The status of Ghatam got elevated by Alangudi Ramachandran. Born on 22.6.1912. he came to Alangudi and then moved over to Needamangalam, to run a hotel. Out of his interest in Ghatam playing, he approached my father (Needamangalam Meenakshi Sundaram Pillai) and learnt various rhythmic nuances and

formats. He soon rose to heights, as a very prominent Ghata Vidwan. Having had accompanied great artistes, he passed away on 15.6.1975 at Bombay, during one of his concert trips.

Kuttalam Kannayya Pillai, who was in the service of AIR, Tiruchirapalli, was a student of Kuttalam Siravadivelu Pillai and a full fledged Ghatam player.

R.S. Krishnamurthi Rao, was a disciple of K.M. Vaidyanathan and served AIR, Madras, as a Ghatam artiste. He had accompanied almost all the front ranking artistes. On 16.11.1987, while he was engaged in playing at Ayyaval festival, Tiruvisamallur, he fell down and passed away.

Many Taval vidwans switched over to Ghatam and to cite a few:

Siikkil Narayana Pillai (B:1890) was a Taval accompanist to the great nagasvaram maestro, Kumbakonam Sivakozhundu Pillai and on whose death, Narayana Pillai left playing the Taval and took up Ghatam.

Tillayadi Pattur Pillai (B:1901) was another Taval vidwan turned Ghatam artiste. Likewise, Kandiyur Muthayya Pillai (1912-1963) was a disciple of my father and was a stock accompanist to Dharmapuram Abhiramisundaram Pillai. From 1948, he started to accompany many leading artistes on the Ghatam. Similar instances are common in Andhra Pradesh also. Annavarapu Gopalam may be given as an example. Since, separate papers on Khanjira and Ghatam player of Karnataka and Andhra Pradesh are to be presented by scholars here, I restricted to Tamilnadu only. The names mentioned here are not exhaustive, as I said earlier. A complete survey has been undertaken now and very soon PAC would bring out a work on these artistes.

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KHANJARI AND GHATAM VIDWANS OF ANDHRA PRADESH. (Past & Present)

Dr. B. Rajanikantha Rao

My to-day's talk will be a sort of flash back of my memories of last half a century and odd, and information collected from a couple of learned friends of Andhra.

Until the end of the 19th Century or the beginning early decades of the 20th century, I think besides mere Mridangam there was not awareness in Andhra, of any **upapakka Vadyas** as the present generation of Vidwans call them namely khanjari, ghatam, morching etc, to which, may be added the gethu, jalra, dolak, and chiplakatta, all the latter type heard in drama or katha kalakshepa.

In early thirties, I heard the accompaniment and tani avartanam of the great Dakshinamurthy Pillai in Kakinada Saraswati Gana Sabha. In 1935, during a short journey of a couple of summer months in Guntur, I attended a series of Ganasabhas, wherein one day I heard for the first time Potturi Veeraraghavayya's Khanjari.

My learned friend Sri. B.M. Sundaram has confirmed yesterday what I heard from my AIR colleague Vidwan Dandamudi Ramamohana Rao that the great Manpundia Pillai was the first Vidwan who started mastering Khanjari and had three great sishyas. Dakshinamurthipillai, Palani Mutthu Pillai and Potturi Veera Raghavayya. Yes, this Potturi was the earliest Guru of Dandamudi on the Mridangam, and later chose Palani Mutthu's son Subramanyam Pillai as his Guru!

The well known Mridanga Vidwan, and lifelong accompanist of the late Dwaram Venkataswamy Naidu and Dwaram Narasinga Rao the senior most of the tala vadya vidwans of Andhra and South India - namely Sri Kolanka Venkata Raju is hale and healthy as perhaps an Octagenarian. The most interesting fact about him is that he is a Kumbha Kara, a potter by kula vritti, a Talavadya Vidwan of Mridangam and a Silpi, master in mud plaster casting. A silpa murti of Sri Tyagaraja done by Venkataraju is an important item to see in his creative den at Payakarao-peta and he is known to be casting ghatams also.

In a three year stint as the Director of Sri Venkateswara kalapitham of Tirupathi Tirumala Devasthanam, I am proud of having arranged on the inaugural day in 1982 June or so, a Talavadya katcheri, led by Sri Kolanka Venkataraju, besides a vadya brinda orchestra programme specially conducted by the late Emani Sankara Sastri. Of course the Talavadya Katcheri consisted of the Dolu (Maniramayya), the Ghatam by Annavarpu Gopalam, the Khanjari by Guntupalli Krishnamurthy, Konakolu by Annavarapu Basavayya, morching by Alugolu Satyanarayana etc.

A good number of them have been appointed by me in Tirupathi Kalapitham as lecturers, starting from Late (Dolu) Muniramayya, who was an experienced accomplished artiste in playing Ghatam, Khanjari ect.

Besides the very first Khanjari Vidwan Potturi Veera raghavayya, two vidwans known normally for their mastery of Dolu - namely Mantena Veeranna of Tadepalli gudam and Guntupalli Guravayya had taken up Khanjari and made a name for themselves.

Annavarapu Gopalam and Nidumolu Raghavayya besides being masters in Dolu, attained a special mastery over Ghatam, Khanjari and Mrudangam. Annavarapu Gopalam worked in Akashvani Vijayawada as Nilaya vidwan for the percussion and as Ghatam lecturer in Venkateswara Kalapitham Tirupati. Alugolu Satyanarayana disciple of Bezwada Karina Rao mastered Khanjari, Dolu and Ghatam and was appointed by me in kala pitham Tirupathi. He has now, succeeded Annavarapu Gopalam as lecturer in Ghatam.

Guntupalli Guravayya's son Krishnamurti who specialised in Khanjari playing was, appointed by me in Kalapitham Tirupathi as lecturer and now works in the Annamacharya project.

Among the **Ghatam artistes** of the present mention must be made of Nandivara Mallikarjuna Rao of Kakinada, Nemani Somayajulu, who is working on the staff of AIR-Hyderabad, and Kalyanaraman for playing Ghatam, Khanjari and Mridangam as a staff artist of AIR Vijayawada. Harinath Bata of Ramachandrapuram is a Khanjari player.

Bhusurapathi Adiseshayya who is a Dolu Vidwan of Maddipadu Prakasam Dt. takes interest in Khanjari also. He is the father of Venkateswaralu an MA in literature and author of Nagaswara, Dolu, Kalakarula Charitra. Velagapudi Sriramulu of Rayapatnam Khammam Dt was a disciple of Muniramayya and is a player of Dolu, Mridangam and Khanjari.

While thanking my learned friend Sundaram for reminding me about in late Kandanolu Bangarayya whom I know very well as my colleague in AIR Madras in forties and fifties and add a credit title for his Andhra origin - because of the intiperu Kandanolu which happened to be the historic medieval name of Kurnool.

Without taking any credit for Andhra, I pay my remembrances to two of our late Ghatam Vidwans who were my cherished colleagues in All India Radio, the senior most Vilvadri Iyer of Madras AIR and Manjunath of Bangalore.

I am happy to have participated in this august seminar on Khanjira and Ghatam, in living moving force behind being the duo Mr H.P. Ramachar, and Mr Bangalore Venkataram, and I express my grateful thanks to organisers of the Percussive Art Centre, to whom, I make bold to pass off a humble suggestion to this institution specialising in Percussive Arts to invite and honour the senior most Talavadya Vidwan of Andhra - Sri Kolanka Venkataraju whom I recently met in one of the conferences at Vijayawada.

UNIQUENESS AND LIMITATIONS OF KHANJARI & GHATA IN RELATION TO MRUDANGA

A.V. Anand

At the outset, various aspects of these instruments are to be studied to a considerable extent though not in detail to appreciate the role of these in concerts and also solo performances such as Talavadya ensembles.

Firstly, before this, the capabilities and uniqueness of Mrudangam, the King among the percussion instruments should be understood. Only then, all the aspects of Ghatam & Khanjari can be understood and assessed in relation to Mrudangam, which is the subject of this paper.

Mrudangam as most of the regular listeners of Karnatic Classical Music concerts know is an indispensable accompaniment in a concert. It has more than one function to do in a concert. Viz. It keeps the tempo of the Krithi being rendered by the main artiste by keeping the Tala & monitoring the laya.

Besides this basic function, mrudangam can be played in such a way, that it closely accompanies in its true sense, the mood of the Krithi (Bhava) which is a blend of the Raga Bhava and the krithi's lyrical value or the sahithya or the text. This is possible because of the uniqueness of the instrument, which can produce a variety of different sounds within the frame work of the basic shruthi. So many different pleasing sounds and combinations and variations can be produced and such pleasing sounds and their effects cannot be produced in any other instrument. Of course, the playing and accompanying a krithi or any type of compositions, apart from the uniqueness are speciality of this instrument, the artiste's capability is also a contributing factor. This latter part is a common factor in playing any instrument, that is, exploiting and making maximum use of the various sounds, variations and combinations to give the best possible effect and to accompany the main artiste, which depends on the artiste's skill. This is so with all percussion instruments.

Now, with this background and basic understanding, let us try to know about Ghatam.

It is a Pot Instrument, which is matched to different pitches. Generally, four or five different varieties of sounds can be produced on this instrument and a few effective combinations and variations of sounds are possible with this instrument. Even with these limitations, some patterns which are played on Mrudangam can be played on Ghatam, also with a striking similarity and with pleasing tonal quality. Some patterns and combinations of strokes can be very effectively used while accompanying stringed instruments like Veena, Gottuvadyam. A perfect blending of subtle pleasing sounds on the stringed instrument can be matched with ghatam and these can be embellished and total effect and beauty of the main

performer's mood can be enhanced. This is a unique quality of the instrument. Along with Mrudangam, Ghatam can make a very good match as a 'UPAPAKKAVADYA" (as an accompaniment to Mrudangam). Since more than 60 - 70% of patterns played on mrudangam can be re-produced on ghatam with nearly similar corresponding patterns, which are possible on that instrument, Of course, with the limitations in view, the total effect will have to be taken into consideration, while assessing the validity and efficacy of this observation. This is a highly laudable uniqueness of this instrument inspite of the limitations it has, in relation and comparison to the umpteen possibilities on mrudangam.

Khanjari is an entirely different type of percussion instrument. Since it has only one face (skin fastened on one side of a cylindrical wooden frame with a small width) and has to be played on it with only one hand, it has greater limitations than Ghatam. Only two or three varieties of sound and a limited variations in the tonal quality of sounds can be produced on this instrument. A few patterns played on mrudangam can be played on Khanjari, which appear to be similar to what is played on mrudangam. In spite of the limited scope and constraints to play freely on this instrument, which is because of the very nature of construction of the instrument, it can be effectively played to match mrudangam in solo turns by translating some of the patterns played on mrudangam into its own language of communication giving a good impression on the listeners. The skills of the artiste of course plays a very important part, while playing on Khanjari, which has more limitations than possibilities to match mrudangam.

Before concluding the paper, I would like to express my opinion about how and how much these upa-pakkavadyas can contribute to the success of a concert.

Both Ghatam & Khanjari when provided as upa-pakkavadyas along with mrudangam should play a supporting role, while mrudangam plays the major role in accompanying the main artiste. Because of the wider scope, mrudangam has got to accompany the main artiste both in maintaining the tala & laya aspect and also musical content or the bhava of the composition being rendered by him/her, it is the major percussion accompaniment in a concert. When either Ghatam or Khanjari artiste plays, he should very closely watch and follow what mrudangam artiste is playing and then play only such patterns, which are very close and similar to the ones played on mrudangam and of course, which are possible on the respective instruments. This will result in a homogeneous blending of the patterns, which will be very pleasing to the listeners and also does not disturb the mood of the main artiste instead it enhances the overall beauty of the krithi being presented. Instead of doing so, if each artiste indulges in playing in his own way, with his own manodharma (mental faculty), while playing with mrudangam, then it will give raise to a disturbing & un pleasing effect on the main performer and the listeners. Thus it mars the soothing and heart elevating experience which is intended by the main artist and expected by the audience.

TALA VADYAS

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"Ta" represents Siva and "La" represents Parvati.

"Ta" represents Tandava and "La" represents Lasya.

"Ta" represents Tala and "La" represents Laya.

The combination of various angas constitutes the Tala and with the permutations and combinations of the angas the talas can be expanded which is Tala Prastara and the Laya Vinyasa, the cross rhythmic patterns are employed within a tala, between two kriyas of a tala.

Tala, the reckoning of various kriyas to keep the time can be taught and learnt but not the Laya, maintaining the uniform level of interval throughout between the two kriyas of a kala. Laya suddha, as in the case of human voice, is the God's gift, should be in form and should come naturally.

Tala Vadyas, the term which itself is self explanatory, are the time keeping instruments, were the earliest musical instruments known to the man. For that matter, the life of any creature on this earth first starts with the rhythm - the heart beating. There is a natural rhythm in our walking, talking etc.

The first and the foremost tala vadya could be traced to the human body itself. The man has used both the hands for keeping the rhythm by clapping and feet by stamping on the floor.

Gradually, the evolution took place by way of using different materials like stones, wood, metals etc. In the construction of the tala vadyas.

We may find the representatives belonging to the tala vadya group among the stringed and wind instruments. Gettu Vadyam represents the former and conch - the Sankha, the latter, which is used to provide a rhythmic accompaniment in Nagaswaram band along side the Taval.

Tala Vadyas may be classified under two heads:

1. Avanadha - Membranophones - Covered with skin
2. Ghana - Auto phones - Metal

We have avanaddha Vadyas with an open frame like Kanjira and multifaced drums like Mridanga, Pushkara and Pancha mukha vadya.

We have pot drums with parchment on one side and the mouth open on the other side like Gummati, Tumbaknari, Bhangam, Ubhangam and the mouth of the pot covered with skin like Mondai, Kudamuzha.

Most of the instruments belonging to avanaddha and ghana groups have their origin from folk music and are still in use.

While the avanaddha Vadyas have resonators in different shapes and sizes, the auto-phones have no resonators. Most of the autophones are only the tala vadyas, Whereas many of the avanaddha vadyas are laya vadyas.

Tala vadyas may further be classified into:

- 1) Instruments used in tribal and folk music
- 2) Instruments used in temples
- 3) Instruments used in dance
- 4) Instruments used in music concerts
- 5) Instruments used in martial music etc.,

The instruments Khanjari or Kanjira and Ghatam have attained the status of upa tala vadyas in the modern music concert. Prior to this, the Khanjari was used as an accompaniment in Bhajans and the Ghatam as a popular instrument in Folk music.

Ghatam, one of the ancient time keeping instrument, is referred to in Ramayana and in some sankrit works on music. Similar to Khanjari, we find it in other parts of the world like Turkish tar and Terbang of Java. Most of the frame drums originated in the middle east and are still common there.

We find the percussion pots in Nigeria. The earthen pot Noot, a folk variety, is found in the Kashmir vally and Sindh. The Ghatam is much like Noot but is an improvement made out of special clay carefully kneaded and uniformly fired.

We find references made to Avanadha and Ghana Vadyas both in musical and non-musical literature. There are about 87 Avanaddha vadyas and 33 Ghana Vadyas, mentioned in these works.

Though we are able to know a great number of such instruments through literature and other sources, the actual number of instruments that are in use at present is considerably less. The reason for this may be attributed mainly to the lack of encouragement and non-accepting tendency of innovations.

The other reason may be, the so called main artiste of the present day not willing to have more sidemen, probably due to the financial considerations or his incompetence.

To over come this state of affair, the only solution is that the cultural institutions must come forward to provide adequate encouragement to these instrumentalists which may enthuse the younger generation to take to these instruments, thereby preventing their entering into the oblivion.

VALEDICTORY ADDRESS OF DR. V. DORESWAMY IYENGAR

I am really very glad that the percussive Art Centre, Bangalore has organised a Talay Vadya Seminar with the purpose of creating a greater sense of appreciation and understanding of percussive instruments among the listeners. I also understand that, in this seminar, the emphasis was on Khanjira and Ghatam in particular.

There seems to be a feeling among Khanjira and Ghatam artists that these instruments are not being given the due importance on a music platform. "Why these instruments are being called 'upavadyas' or sahavadyas"? - is the question that is being often asked. I think there is no ground for this complaints which is only iniquary. No-where in any printed music programme, Radio or TV have these terms been used. The status of any instrument depends on its player. I remember the days when palghat Mani Iyer (Mridangam) and Dakshinamurthy pillai (Khanjira) appeared on a platform, the latter took the first place and the former the second of course, both of them were legendary players.

In this seminar eminent scholars have presented papers on the importance of these instruments and how great players have succeeded in popularising these instruments and helped them survive on the music platform in their own right.

Sri. K. Venkataram mentioned that many people asked what was the use of such seminars while the attendance was so thin. I feel the utility of such exercises would be felt by posterity only in the long run. The usefulness of such seminars can never be minimised.

I complement the Bangalore Percussive Art Centre for having organised such a seminar and I look forward to many such programmes in future.

*Paper presented by VIKRAM PERCHURE, Rishi Valley
under their Craft development project in connection with
the symposium on Terracotta Art organised as
Ghatam Krishna Iyer commemoration. on 31.5.87.*

While it is indeed a privilege for my being asked to speak at this symposium today, the extremely novel subject of the forum this morning, has done much to bring into sharp focus, my attention to a very interesting but rather neglected subject of terracotta instruments and their manufacture.

Isn't it amazing that, we have before us a living tradition of making music on one of the most ancient of instruments?, and this too in an almost altered form?

In that magical act of transformation with the active aid of the five elements of nature, common clay becomes the terracotta Ghatam. If terracotta was first invented by man about 10,000 years ago, the, the ghatam as a musical instrument, must have followed soon after, for, who could have missed hearing the resonance of the humble earthen pot?

History apart, it is noteworthy that, the manufacturing techniques has remained more or less unchanged through time: unscientific, unpredictable and to a great extent, a shot in the dark.

Today, with the Ghatam proudly placed alongside the other honoured instruments of the classical music platform, the glaring setbacks in its inconsistent making techniques have become even more obvious. There are several reasons for this, and it may prove worthwhile to go into them.

A ghatam player is in need of one such ghatam which produces a particular shruti in need, say, E. He approaches the concerned potter who is familiar with the task. The absurdity of the situation is in that, the potter would have to make an indefinitely large number of pots and, by a hit and miss trial, God bless, he would probably come upon one such which would either approximately or accurately suit the required pitch. The percussionist in question would buy this piece leaving the hapless potter to decide the fate of the rest of the pieces which were made. The situation described may sound rather exaggerated and unjust, but it is not too far removed from what normally happens. This is because, there is just no way the potter can ever predetermine the results. On the other hand, no same ghatam player would allow himself to return with a kiln-load of ghatams of unrequired shrutis. So, what does one do?

The craft of ghatam manufacture is desperately in need of some breakthrough. Let's partake of this exercise. A typical ghatam comes into being in the foll. manner:

- the potter prepares a clay of extremely fine texture and plasticity, with a minimal content of organic impurity

- he prepares the clay by mixing and kneading it over and over to bring it to a uniform consistency and seasons the same for a couple of days.
- the well prepared clay is now patted into shape, very slowly, patiently and with great expertise which is required in creating a perfect spheroid form, uniform and symmetrical.
- this is allowed to gradually dry over a few days and after ensuring complete drying it is fired in a kiln.
- the loaded kiln is at first very gradually warmed with a slow fire.
- the temp. is gradually raised over a few hours until the peak temp, over 700. cent. is reached.
- the fire is gradually cooled slowed down and the kiln allowed to cool over 24 hours.
- after complete cooling of the kiln, it is now opened. The Ghatam is ready, probably perfect, but may not be to the specifications of the percussionist.

At a cursory glance, one can place the more important determinants that influence the shruti of the terracotta instrument:

- i) composition of the clay, ie., the physical characteristics and chemical composition of the material
 - ii) thickness of the ghatam wall, ie., the thinner the wall, the better the sound.
 - iii) temperature of the firing; higher the temperature, better, clearer and longer the life of the sound.
 - iv) evenness of the wall of the material; differences in the thickness of the ghatam wall will result in the variation of pitch when struck on different parts of the instrument,
- and so on ...

In spite of this being general knowledge, there is still no way a ghatam could be made to a predetermined pitch, for various reasons.

Firstly, terracotta as a material and its mode of manufacture has no experimental latitude possible at the critical stages of its processing. Terracotta forms at high temperatures above preferably 700. cent., in the sealed enclosure of a kiln.

Secondly, fundamental scientific procedure involving the play of factors in varying combinations of constants and variables. In spite of this, it is extremely difficult to regulate the influencing factors involved in terracotta manufacture. The most difficult of these are maintaining identical soil compositions, and still worse, how does one ensure that the potter makes exact and identical ghatams?

Lastly, the ghatam is a mono-tonal instrument with a fixed pitch. There is no known practical process which can ensure creating predetermined frequencies in such a vibrating body, even if it were a metal ghatam. An approximate range in pitch can be achieved beyond which other means of fine tuning need to be resorted to. With a metal body it is difficult enough. With terracotta, it is even more complex. So, what's one to do? We come back to the basic questions which is to ask, if means can be developed by which to make this instrument of fixed pitch to required shruti by predeterminable process?

I first had a very fruitful dialogue with Mr. Venkatram exactly a month ago. And since then, my thoughts have been attempting to rake up solutions to this problem. I come back to you today, with suggestions, though I wouldn't claim these to be of an ultimate.

I comprehend the problem from two points of view that of the potter, the manufacturer, and the other, his customer, the percussionist.

Firstly, I suspect that if it were possible to in some way remove some amount of materials from a ghatam, one could alter its pitch in one direction. Similarly, adding material would alter it in the other direction. Removing material is more feasible than adding, since the adding material tends to dampen vibration. I recommend that, the inner surface of the ghatam's vase be fixed with small petal-shaped clay prominences at the time of its making. Now, clipping of these petals will lower pitch. Therefore for a ghatam required at a particular pitch, a ghatam of a pitch higher by one or two shrutis is taken, and the petals chipped away with a plier until the pitch has fallen to required level. This is hypothetically true and therefore required some experimentation.

Now, from the point of view of the buyer, the percussionist, I recommend that, it is ridiculous for every ghatam enthusiast to possess 22 ghatams for the 22 shrutis, it is a wise solution, and a practical one too, that schools of music, institutions and centres such as this one, possess ghatams in the full range of shrutis, available on hire to professional percussionists, making available a ghatam of the specifically required shruti.

Now, before I end, I would like to share with you the feeling of enthusiasm and pertinence of this occasion. I personally believe that today terracotta as a source of musical delight has been largely neglected, despite the ghatam. I have personally been toying with ideas of reviving this form by designing a range of lilting and sonorous terracotta musical instruments. Some of these are the terracotta bells, flutes, gongs and drums.

Today, on the occasion of the 6th percussive Arts Festival, I wish to present this beautiful terracotta bell to the percussive arts Centre and its enthusiastic votaries, in reminder of the promises terracotta instruments hold.

THE HEADY POT

B.V.K. Sastry

(Courtesy : Deccan Herald - May 29th 1993 - Spectrum)

THE ordinary-looking pot has been an inseparable companion of man through the ages. Its origins may have been lost in the mists of antiquity. But the basic design and purpose of the pot have remained unchanged since the dawn of history.

The pot is considered a perfect art work by some artistes - some sculptors exult over its aesthetic aspects. The pot finds a role in the performing arts too. Called the ghatam, its muted metallic patter may be heard in the music concerts in the south. The pot drum ghatam and the plate like drum khanjari were the main subjects at a seminar held in Bangalore recently.

It is strange that both these instruments do not figure in the ancient Sanskrit texts on music. Yet they seem to have been a part of the music performances of the time as may be seen in the sculptures in many ancient temples. There the pot seems to have functioned more as a resonator than an instrument producing sounds by itself.

We come across variations of this form even now, for instance in the gummate of the south or the gummate of the north. Here, the mouth of a pot of jug is covered with hide and sound is produced by beating the hide with sticks or the palms and fingers. This pot drum family consists of other instruments like the ghumera or the *pabuji ka mate*.

The ancient text on music, Sangita Ratnakara, refers to a ghata vadya. According to the description here, it is a pot whose mouth is covered with hide and the sound produced by beating on the skin. This suggests an instrument like the mizhavu have of Kerala. In the old Kannada classic Padmarajapuram. We come across a reference to the kumbha vadya.

In this 14th century work, the author, while describing the court of Hoysala Ballala. writes of different music teams. He mentions a kumbha vadya among the tala vadyas (rhythm instruments). He also mentions the tala virama mathya as suitable to bring out the charm of the instrument. But we don't know whether it was an open pot or one whose mouth was covered by hide.

While the pot more or less acts as a resonator, we also find it producing sound on its own in the music concerts. it has been evolved mainly by musicians in the south. Here the pot, that is the ghatam, produces sound when struck by the fingers or the palms. It is an interesting instrument in that all parts of its body are used in the production of sound.

The number of performers seem to be relatively small, the main reason perhaps being the fragile nature of the instrument, and the difficulty in perfectly tuning it to the desired sruti.

In the seminar attention was focussed on these aspects. Production problems - how to make the body light yet strong by changing the raw material, the correct method of baking and applying wax to vary and improve the tone - were also discussed.

The khanjari is another instrument popular not only in music concerts but also among harikatha vidwans and bhajan groups. This is a circular drum and has developed its own technique in the south to suit the higher forms of music. Its origin again is lost in the mists of history. But one can only speculate about its evolution from earlier primitive drums.

It is possible that it originated from the bhoomi dundubhi of the Vedic period. Some scholars state that it might have originated from the durdara. The bhoomi dundubhi was probably hide stretched over a cavity formed after the earth was scooped out, it was probably beaten with hands or sticks. It is learnt that such drums could be seen among the primitive tribes in Africa or the aborigines of New Guinea till recently.

These drums must have gradually evolved into more refined versions, passing through different stages. The rim of the cavity was probably strengthened to bring in greater tension and improved sound; the position changed from the horizontal to the vertical and the skin stretched on some circular frame Further improvement in quality of skin, tone and sizes to suit different functions must have come about later. One comes across such circular drums in many parts of the world, under different names. One such version is the khanjari.

Though the ancient Sanskrit works on music are silent on the khanjari, it could be closet to the shobala. There is at least one reference that establishes both the name and the form of this hand drum. It is found in the *Sangita Sara* attributed to Main Tansen. The reference occurs in a passage from a verse - *Dundubhi, duff. khanjari bamayi hai* - testifying to the fact that this instrument was very much in use in north India in the 16th century. At another place Tansen describes the khanjari as a circular drum. 10 inches in diameter and 4 inches in thickness and decorated with *jhan* or jingles. There it is mentioned along with the dayira, a tambourine of Persian origin.

Thus the khanjari, though occupying a lower place in the musical heirarchy, has had a history of its own and must have been popular notwithstanding the fact that both the ghatam and the khanjari are not discussed in authoritative texts on

music. They come midway between the classical and folk instruments though functioning along with the former. And this fact may have been responsible for their absence in these texts which concentrated on what was deemed as classical.

In Karnataka the khanjari must have passed through several stages before its present incarnation. We come across names like pare or hare, in ancient inscriptions and texts; next comes the halage, tammate, tappate and so on. The circular drum halage is very popular in the rural parts and is indispensable in most socio - religious ceremonies. It has different varieties like the jagguhalage which is the size of a cartwheel to the kani, tamate and the khanjari. Dammadi is the name under which the khanjari was known in rural Karnataka.

The advent of the khanjari in south India may be traced to the Kirtankars of Maharashtra. Though the instrument was also called as dimdi, it was better known as khanjari. It must have caught the fancy of some of our rhythm artistes who must have elevated it to the concert stage. Now it is popularly known by the name of khanjari. This must have been corrupted later to kanjeera and ganjeera.

Both the ghatam and khanjari have certainly made music concerts lively and produced many distinguished exponents. Palani Krishna Iyer, Vilvadri Iyer, K.S. Manjunath and K.M. Vaidyanathan among old timers, T.H Vinaykram. B.K. Vekataram and Sukanya Ramgopal among the current performers spring to mind in this context. Pudukottah Dakshinamoorthy Pillai has become a khanjari legend, while others like Sosale Ramdas, palani Subbudu, and among the current performers, G.H. Harishankar and H.P. Ramachar spring to mind.

In the seminar, scholars not only from karnataka but also the neighbouring states discussed the various aspects of these two instruments and also gave interesting demonstrations. One of them was a detailed talk on the khanjari, its art, technique and the past masters by H.P. Ramachar. Sukanya Ramgopala came our with an exotic programme - a ghatam tarang.

EXTRACTS FROM THE MUSIC ACADEMY JOURNALS

*Experts' Committee Meetings of the Music Academy, the XXXI
Conf First day on 22-12-1957 at the Experts' Committee Meetings
of the XXXI Conference:*

KANJIRA

Vidwan Palani Sri Subramanya Pillai opened a discussion on the Tala-accompaniment called 'Kanjira'. He referred to the marvelous mastery of the late Vidwans Sri Dakshinamurti Pillai and Sri Mamudia Pillai on the Kanjira. He refuted the allegation that it could not blend with the 'sruthi' or would mar the vocal music. He appealed to the Academy to include the Kanjira as played by some who could do it well in the concerts of the Academy.

Sri. T.V. Subba Rao explained the position with reference to the concerts of the Academy in respect of the Kanjira. He said it is primarily because this accompaniment could not blend with the sruthi and also because the increase of the 'Tala' accompaniments would reduce emphasis on the music that the Academy had decided not to include it.

Semmangudi Sri Srinivasa Iyer said that there was no objection to the inclusion of Kanjira as played by the distinguished vidwans and that it could really add to the effect to the Vocal music.

Mudicondon Sri Venkatarama Iyer agreed with the view that as played by distinguished vidwans the Kanjira added to the effect of the music and could be included. On the question of antiquity of this accompaniment, the President (Sri T. Chowdiah) said that a number of Tala-accompaniments were mentioned in the texts and in the dance of Siva, and that we could not be dogmatic about this being a recent innovation. All India Radio gave place to the Kanjira. A general appeal was made by all vidwans that one more Tala-accompaniment might be added to the mridangam.

*Fifth day of the Experts Committee of the XXXI Conference of the
Madras Music Academy, on 26-12-1957.*

Kanjira: Talk and demonstration

Vidwan Sri Swaminatha Pillai, son of the Late Sri Dakshinamurthy Pillai of Pudukkottai then spoke on the Kanjira, and gave a demonstration of how the instrument should be played as a pleasing accompaniment. The Vidwan said that it was Sri Mamundia Pillai of Pudukkottai who brought this instrument into prominence and narrated an incident in which he played the Kanjira at a Bhajan organised by the famous Mridanga Vidwan Sri Narayanaswamy Appa of Tanjore. He said that Sri Narayanaswamy Appa was very much captivated by this instrument and expressed appreciation of it.

*..... Extracts from The Journal of the Madras Music Academy, Vol XXIX,
1958, Parts I-IV.*

About the Art Center, & Publications etc

" All in all, it was a very useful festival, one which has made the need and presence of an institution devoted to "Talavadya" felt most emphatically. There is no doubt that it has attracted the attention of fresh blood which should augur well both for our classical music and the centre in particular, which means the purpose of the festival has been served

S.N. Chandrashekar

"...We have every reason to be proud of this Centre, and to me it is a matter of deep appreciation to associate myself with the centre." . "... The only way to know about our Tala system is through this publication (Taala Sangraha), which is brought out by the Percussive Arts Centre, Bangalore. The centre is living upto its name by publishing this. I wish the centre all progress and prosperity...."

R.K. Srikantan

"..... The object of the Percussive Art Centre is to highlight this distinct characters and the fascinating world opened up by these instruments and make the people really conscious of the vast potentialities of these instruments and the beauty they reveal. Through numerous programmes, the centre has highlighted interesting features and land marks of this fascinating rhythmic world during these past several years." . "... even the range and quantum of the present collections itself is an achievement which is certainly a valuable contribution in the realm of rhythm in Indian music."

B.V.K. Sastry

"..... To my knowledge, there does not appear to be any periodical exclusively devoted to these (persuance of the cause of promotion of Laya and Thaala) aspects of music and your venture will go a long way in bridging this gap and in giving emphasis to the Laya and Thaala which are so essential in perception, preservation and propogation of music....."

H. Kamalanath

"..... I am in receipt of the Quarterly Newsletter of this Percussive Arts Centre.It is really good and fine that such a newsletter comes out from Percussive Arts Centre, Bangalore also wish you all sucess in all your endeavours. "

Umagalpuram K. Sivaraman

About the Art Center, & Publications etc

"....I am happy that the Percussive Art Centre of Bangalore has come forward to undertake Publishing this work (Taala Sangraha, a compendium of Taalas in Karnatak music). I welcome and appreciate their gesture. **It is noticed that the Percussive Art Centre has been striving to enlighten the general public on the proper appreciation of the art of laya and highlight the contribution of Layavadyakaras.** I wish well in their **sincere efforts to promote the interest in laya**"

Dr. M. Balamurali Krishna

"..... Sri Bangalore K. Venkataram, our popular percussionist and also the Director of the Percussive Arts Centre, deserves compliments for his persuasive encouragement to Sri Sundaram to work out this unique volume (Taala Sangraha), for publication by the Percussive Art Centre. **The Centre, although still in its tender years, has already done well in the cause of Percussive art and its research.** My best wishes to the Art Centre, with the fond hope that its progress would be better and higher still with march of time"

A. Subba Rao

" ...I am happy that the Percussive Arts Centre, perhaps the only organisation in our country of this type have come forward to bring to light such a useful publication. I wish their efforts all success....."

U.N.G. Dakshinamurthy
(Prof, Govt college of Music, Madras)

"..... Percussive Arts Centre who have been organising planned programmes to highlight the role of laya in music have been doing remarkable service in this direction and I wish the centre unprecedented success in their efforts....."

Dr. T.K. Murthy

".... The Percussive Arts Centre, Bangalore, under the able direction of Sri Bangalore K. Venkataram deserves all compliments, for having undertaken to print and publish Taala Sangraha I am sure that this will be a very valuable contribution to the field of music....."

Padmabhushan Dr. V. Doreswamy Iyengar