LAYA VADYAS
(TIME-KEEPING INSTRUMENTS)

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PREFACE

In this second volume of the Series, a description of the various laya vadyas is attempted. Instruments of the membranophonic and autophonic varieties used in concerts of classical music, sacred music, dance music and folk music have been treated of. The drums used in the temple rituals of South India offer a fascinating branch of study. Altogether 108 instruments are noticed in this volume. The 32 Plates containing illustrations of the Instruments as well as the playing postures of some of those Instruments will be useful to those who are not familiar with the play on these instruments.

Certain instruments have been put to uses other than musical and these are pointed out at the appropriate places. A detailed classification of Percussion instruments is given in Chapter II. The materials used in the manufacture of percussion instruments, the manner of skinning and preparing the drum-heads, in which art the musicians of the South have exhibited all their resourcefulness will be of interest to students of comparative musicology. In Chapter VII, Miscellaneous, the topics dealt with will be of use to music teachers and those who wish to take to the making and repairing of musical instruments as their career.

A useful glossary of 112 terms, explaining the parts of musical instruments and the terms used in the technique of musical instruments making has been appended.

THE AUTHOR.
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LAYA VĀDYAS

(TIME-KEEPING INSTRUMENTS)

CHAPTER I

INTRODUCTION

Laya vadyas are instruments used for keeping time. They are found in all countries and are used by people belonging to all strata of society— from the prince to the peasant. There are many laya vadyas in India. They are used for providing rhythmic accompaniment in concerts of art music, sacred music, folk music and dance. Whereas laya vadyas like the Mridangam, Tabala, Kanjira, Ghatam and Tavil are admirably suited for providing a cross-rhythmic accompaniment in concerts, there are other laya vadyas like the Chipla on which just strokes conforming to slow and fast rhythms can be played.

Laya vadyas are of great antiquity and are the earliest musical instruments known to human history. When, during hunting, the early man had a big bag, he became overjoyed and danced in ecstasy. He kept time to his dancing by clapping his hands. Later he used two pieces of hard wood for the purpose. Layā vadyas of complicated construction, design and shape were gradually evolved. The instruments belonging to the avanaddha (membranophonic) group are noted for the complexity of their structure. The same is not however the case with the instruments belonging to the Ghana (autophonic) group.

Laya vadyas have enjoyed a certain status in India. In the celebrated Vadya traya: Vina, Venu, Mridangam, the concert drum finds an honourable mention. The Vedas as well as the epics, Ramayana and the Maha Bharata refer to various kinds of drums. The Samhitās and the Brahmanas refer to the Bhumidundubhi, the big earthen drum. This was used during the Mahavrata ceremony. The Deva dundubhi (celestial drum) is mentioned in the Ramayana. Valmiki tells us that this drum roared on all auspicious occasions. In ancient Tamil literature, we find references to the Tyaga murasu (sacrificial drum), Nyaya murasu (Judgment drum) and Vira murasu (Martial drum). Drummers formed part of the royal establishments. The right to the Pancha maha sabdam, which included within it the sounding of some drums was a coveted honour. Kings and other dignitaries had special tamukkus made of bronze as a sign of royalty and used them. Drums have been used in temple rituals. The Panchamukha vadyam itself is a royal sacred drum and is played in the Tyagaraja Sannidhi in the temple at Tiruvarur.
Drums: Their various uses.

Drums have been put to various uses from ancient times. They were used for making announcements, as for instance the approach of a temple procession. They were used for giving publicity by the State. The Africans have been using a drum language. By particular characteristic sequences of strokes, the tribal chieftains were able to communicate messages to people miles away. For instance through a particular sequence of strokes, people were asked to attend a meeting in the evening. Another sequence of strokes warned them of an approaching danger and asked them to be alert and so on. The sound of the drum travelled long distances without much loss of intensity.

In the medieval period the Naqbat was performed during stated hours of the day and night to enable the people to know the time. Huge conical drums (Bheri) were stationed in the village look-outs. Men keeping watch at the look-outs, beat these drums violently at the sight of robbers at a distance and gave timely warning to the villagers. The latter immediately woke up and got ready to drive away the marauding plunderers with their crude weapons.

Nagara Mantapam

It may be of interest to know that Tirumal Naik, the famous ruler of Madurai in the early 17th century, took his midday meal only after the Puja to Goddess Andal at Srivilliputtur was over. He established a number of Nagara mantapas (drum stations) at every mile from Madurai to Srivilliputtur. The distance between the two places was about fifty miles by the shortest route. At the conclusion of the ritualistic worship, the drum at the Srivilliputtur temple was beaten. The sound of this was heard by the man at the next drum station and he beat his drum. This sound was picked up at the next drum station and the man in charge there, beat his drum and this was repeated at every subsequent station till the person in the Nagara Mantapa at Madurai heard it and sounded his drum. Tirumalai Naik got the information in his Palace in about 5 minutes’ time, since sound travels at the rate of 1100 feet per second. Since sounds proceed as spherical waves, the persons at both the forward and back stations heard the sound simultaneously. Whereas the person at the former station retransmitted the message by beating his drum, the man at the back station got confirmed that his message had been picked up and retransmitted by the person at the next station.

Origin of Resonator

Most of the drums have resonators to amplify the sound. The idea of a resonating chamber suggested itself to early man, when he heard resounding notes emanating from hollow trunks of trees. When birds with strong beaks and
claws sat over such hollow trunks or scratched them, sounds emanated. The pot-drum emerged as a result of this observation. The bhumi dundhubhi referred to in the Vedas is a big earthen drum consisting of a pit dug into the earth and covered by animal skin. It was struck with a long stick.

Materials used

Various kinds of skin, metals, wood and earth are used in the making of laya vadyas. The skin of cow, calf, sheep, buffalo, varanus, monkey and snake are used in the making of drums. Leather braces of buffalo-skin are used in the Mridangam. The shells of drums are made of jackwood, redwood and margosa. Ebony, black-wood and rosewood are used in making castanets. Amongst the metals, brass, copper, iron, aluminium, zinc and bronze are used in the making of shells of drums. Bronze and steel are used in making cymbals. The shells of Khol and Baya are made of mud. Ghatam is made from a special kind of mud available in Panruti and Manamadurai in South India. In the circular drum, Kanaka tappattai, the ring is of thick bamboo—Kalmungil (Dendrocalamus strictus). Hoops made of strips of bamboo, glued and bent in the form of a ring are also used in the Kanaka tapattai. In the drum Urumi, the milky juice of a plant is applied on the right head and rubbed. This head when stroked, gives that characteristic sound. In fact, Urumi is an onomatopoetic name. Hempen hoops are used for the Tavil. Iron filings or manganese dust mixed with cooked rice provide the black-paste on the right head of the Mridangam. Cords of cotton and rings of metal are used in the Dolak. Sheet iron rivetted together is used for making the body of the Nagara. Rings of iron are used in the Suryapirai, Chandrapirai and Morsing.
CHAPTER II

CLASSIFICATION

Laya vadyas may be classified from the following points of view. The classifications mentioned herein are not however mutually exclusive. An instrument may figure as an example under more than one head.

1. **Stringed, Wind or Percussion:**

   The Gettuvadyam is an instance of a laya vadya belonging to the stringed group. Its strings are tuned like the strings of a Tambura and are played upon with two thin sticks.

   The conch is an instance of a laya vadya of the wind group. It is used to provide a rhythmic accompaniment in Nagaswaram band alongside of the Tavil.

   Drums and cymbals belong to the percussion group of laya vadyas.

2. **Avanaddha (Membranophonic) or Ghana (autophonic):**

   Under the former come the Mridangam, Tabala, Kanjira and Tavil and under the latter, the Jalra and Brahma talam.

   Autophones have no resonators.

3. **Manually played or automatically played:**

   Instruments like the Mridangam and Jalra are played by man. But instruments like the Metronome and the Tala yantra are played automatically through a mechanical device.

4. **Monophonous or Polyphonous:**

   Instruments like the conch and morsing can give only one note at a time and they belong to the monophonous group. In the Mridangam and Panchamukha vadyam which have plural faces, more than one stroke can be played simultaneously and these belong to the polyphonous group.

5. **Tunable or Non-tunable:**

   Instruments like the Mridangam and Tabala can be tuned to a desired pitch. But the pitches of instruments like the Ghatam and Jalra are determined at their make and once they are made, it will not be possible to alter their pitch.
6. **Name of the Instrument**: Whether Arbitrary, Derivative or Onomatopoeic:

Tavil is an arbitrary name. Mridangam is a derivative name, since the instrument was originally made of mud or clay. Idai surungu parai (Udukkai) is so named because it is narrow at the centre. Instruments like Budubudukai and Urumi are named after the sounds given by them and are instances of Vadyas with onomatopoeic names.

7. **Number of drum faces**:

Tabala is a single-faced drum and is an Eka mukha vadya. Mridangam is a double-faced drum and is a Dvi-mukha vadya. Pushkara is a three-faced drum and is a Tri-mukha vadya. Panchamukha vadyam is a five-faced drum.

8. **Used singly or as a pair**:

Mridangam is a unitary drum. But Tabla and Baya are two distinct drums and constitute a single unit. Damaram consists of two separate conical drums and together form a unit. Pambai consists of two cylindrical drums and together form a unit.

9. **Stationary or Portable**:

On account of its hugeness, the Panchamukha vadyam is mounted on a wheeled carriage and kept stationed at a corner of the temple corridor. Laya sthambhas are likewise stationary musical stone pillars. But Mridangam is a portable instrument and can be carried from place to place.

10. **Plain-faced or complex-faced**:

The Kanjira is a plain-faced drum. But the Mridangam is a complex-faced drum. At the centre of its right head, a permanent fixture of black paste can be seen.

11. **Single-skinned face or plural-skinned face**:

The udukkai has a single-skinned face. But the right head of the Mridangam has three concentric rings of skin. In the Panchamukha vadyam in Tiruvarur, the face in the centre of the drum and which is larger in size compared to the other faces, has a circular ring of skin (ంంంం) along the edge. The four heads along the periphery of the instrument have single skinned faces.

12. **Drums with a stretched thread along the diameter of the faces**:

This is seen in Idakka and Udukkai and this results in a buzzing effect when played.
13. With or without tuning blocks:

In modern Tabalas, the head is provided with tuning blocks which enable the head to be tuned to a desired pitch without striking the knots at the peripheral points.

14. Instruments requiring a recurring expenditure to maintain them:

Jalra does not require any expenditure to maintain it. But the mridangam has to be periodically re-skinned and the black paste renewed periodically.

15. Status in concerts: Pradhana tala vadya or Upa tala vadya:

Mridangam and Tabala are pradhana tala vadyas. But Kanjira, Ghatam and Morsing are upa-tala vadyas.

16. Utility:

Mridangam is a concert drum. Sanna udal is a temple drum. Pambai is a folk drum. Bheri is a martial drum. Naṭṭuva tala is used in concerts of Bharata natya. Jaya ghanta is a victory gong. Mangala bheri is an auspicious drum. Abhisheka dundubhi is the coronation drum. Nyaya murasu was the judgment drum and Tyaga murasu was the sacrificial drum. There are also the funeral drums. Edaka is used also as a sruti vadya. Tabala tarang is a sangita vadya. There are drums used by sorcerers and gypsies.

17. Single purpose drum or Multi-purpose drum:

Mridangam is a single-purpose drum since it is used only for providing rhythmic accompaniment in concerts of music, dance, kalakshepa and bhajana. But Tamukku is used in the Naiyandi melam and also for publicity.

18. Compass:

In the Panchamukha vadyam, the five heads are tuned to five different notes and with the two kuda-muzhas (pot-drums) one on either side, the compass of the instrument will comprise the saptav svaras.

In the mridangam, the notes of the two drum-heads bear an octave relationship or a samvadi relationship. In the case of all other instruments, the heads give only a note of a specific pitch.

19. Current or Obsolete:

Mridangam is a current instrument. But Pushkara is an obsolete instrument.
20. **Manner of Play:**

   (1) Played by hands (Atata) : Ex. Mridangam.

   (2) Played by sticks — straight  
       or bent (Vitata) : Ex. Damaram.  
       or with a leather strap or hard rubber : Ex. Tamukku

   (3) Played by hands and sticks  
       (Atata-vitata) : Ex. Tavil.

   (4) Played by stroking (Urumi).

   (5) Self-struck — Damaru and Budubudukai.  
       Herein the knotted end of the string strikes the two faces alternately as the instrument is rattled.

   (6) Played by plucking as in Morsing.

21. **Materials used in the manufacture:**

   (1) Made of Wood. — Chipla.

   (2) Made of wood and skin — Mridangam.

   (3) Made of metal. — Jalra.

   (4) Made of metal and skin. — Udal.

   (5) Made of Stone — Stone gongs and laya sthambhas.

   (6) Made of earth — Ghatam.

   (7) Made of earth and skin — Khol.

22. **Played on open face or stopped face:**

   In the Suryapirai and Chandrapirai, the open faces are struck. But in the Mridangam, sometimes, the fractional areas of the drum-head are damped by the hand and played. Notes of higher pitch are produced in this process.

23. **Shape of the Instrument:**

   (1) Barrel-shaped (Mridangam).

   (2) Hour-glass shaped (Udukkai).

   (3) Cylindrical-shaped (Pambai).

   (4) Mortar-shaped (Timila).

   (5) Conical (Damarum).
(6) Hemi-spherical (Nagara).
(7) Circular (Kanaka tappattai).
(8) Pot-shaped (Kudamuzha).
(9) Circular discs (Jalra : Brahma talam).
(10) Concave discs of metal (Kuzhitattalam).
(11) Oval-shaped (Pujari kai chilambu).
(12) Bent-oval-shaped (Silambu used in Kandyan dance).
(13) Triangular (Triangles of Metal).
(14) Rod-shaped. Tempered metallic rods giving clear notes of specific pitch are used for playing the jatis in Bharata natya by some artists.

24. Posture in play:

Alingya (Horizontal) : Mridangam.

Urdhva (Vertical) : Tabala.

In the nagasvaram parties preceding a temple procession and in street bhajanas, the Tavil and the Mridangam are tied round the waists of performers and played. Sometimes they are suspended from the shoulders by tapes or thick cotton cords and played. The Pambai and Kirikitti are tied to the waists and played. The Suryapirai and Chandrapirai are tied to the forehead over a thick cushion of cloth and played with a stick. The semakkalam is suspended from the left arm and struck with a stick. The Dasari tappattai is held in position between the elbow of the left hand and the left side of the stomach and played by the right hand.

25. Constant posture and changing posture in play:

Instruments like the Mridangam and Tavil are kept at a constant posture right through and played. But in the case of the Ghatam, on account of the strokes given at the neck part, belly part etc., the instrument is sometimes kept vertical, and sometimes horizontal with the mouth of the pot facing the stomach. It is sometimes thrown up into the air and caught by the hands in accordance with rhythm.

26. With an open frame or with a closed resonating chamber:

Kanjira is an instrument wherein the skin is strained over one side of an open circular frame. Damarum is an example of an instrument where the skin is stretched over a hollow shell (i.e., with air inside).
27. Identical in shape, but different in size and manner of play:

Instruments like the udakkai and davandai are of the same shape but differ only in size. There are four instruments belonging to the udakkai family, some like the budubudukkai belong to the q̣ata group and some like the davandai to the vitata group.

Likewise, the Brahma talam, Ilattalam, Talam, Nattuva talam and Jalra are all of the same shape though different in size, weight and metallic composition.

28. Identical in manner of play but different in shape and size.

Castanets furnish good examples. Here two pieces of hard wood are clashed against each other. In the Chipla, the two pieces of wood are shaped like a fish. Sometimes they are provided with knobs at the two ends. In the Tikkiri kattai there are two circular plates of wood with an extended handle. The plates are struck against each other. The Daru talam, of the villu set, consists of two oblong pieces of wood. The Chakkai used in the chakkai attam, is a small rectangular plate of teak wood 7 inches long and \( \frac{3}{4} \) inch broad. Four such plates connected by a cotton thread, are held in the four interspaces between the five fingers and clashed rhythmically.

In addition to the above-mentioned wooden clappers, there are also the bone clappers.

29. Whether used singly or collectively.

Instruments like the Mridangam are used singly in concerts. In Bhajanas there may be three, four or more playing on the Jalra. In the Temple of Tooth in Kandy, Ceylon as many as 24 drummers play simultaneously on festival occasions. The hall in which the drums are played is aptly called the “Hall of Drums”. This collective drum music reminds one of the Avanaddha kutapa referred to in ancient musical works.

In Kolattam or stick-play, a number of sticks are used simultaneously to provide the rhythmic accompaniment. Danda rāsa or Danda lāsya i.e., dance with sticks are other names for this form of folk dance. This is common to all parts of India. In Kolattam, twelve or sixteen girls stand in a circle and provide rhythmic accompaniment with their sticks to the music sung. In Pinnal Kolattam, we come across this collective rhythmic accompaniment provided by sticks. The girls march and dance to variegated footsteps.
30. Whether the sound is produced directly or indirectly.

In Kattappattai (कैटप्पत्तै) and all drums, sounds are produced directly by striking with the hand, fingers or sticks. The gejji worn on the legs furnishes an instance of sound produced indirectly. As the feet stamp on the ground rhythmically, the strung gejaji bells tied to the feet produce sound. The jingles in the Kanjira are likewise made to sound indirectly.

31. Shape of the stick used for playing.

(a) Straight sticks are used in Tambattam.

(b) Sticks with a curve or a loop at the end are used in damaram.

(c) Sticks with a knob at the end, the knob being of some soft material, are used in Kettle drums. The ends of sticks are wound with rags sometimes. Leather straps are used to strike the tamukku and the ghatam in the Villu Pattu.

32. Manner of production of sound.

(a) By striking as in Gongs

(b) By clashing as in Castanets

(c) By shaking as in Kaichilambu

(d) By plucking as in Morsing

(e) By friction as in the Revolving rattle and the Kokkara used by the sorcerers of Malabar.

In the Omkara mani, the sound is produced by rubbing the rim with a mallet. In the Urumi, the sound is produced by stroking the drum-head with a bent-stick.

33. Whether provided with accessory sounding parts:

In membranophones and autophones, in addition to the main sounds produced by playing on the drum-heads, accessory sounds are produced simultaneously through jingles and gejaji. These add to the sum-total effect. A polyphonous, rhythmic effect is produced in the process. Thus the jingles in the kanjira and chipla produce delightful sounds and they go pleasingly with the main sounds of the instruments. Jingles are thin pieces of metallic discs attached to the circular frame of the Kanjira and similar instruments. Jingles are seen in Kolmani, Chintal or Haribols and in the Visu kol (Villadi kol) or striker in the Villadi vadyam.
34. **Musical value:**

Mridangam and Tabala are useful for providing a cross-rhythmical accompaniment in concerts. But on the Nagara, only patterns of strokes can be played.

35. **Whether an independent instrument or whether it forms part of a band:**

Nagara is an independent instrument. But the Kirikitti is an instrument forming part of the Naiyandi melam. The Ilattalam forms part of the Kathakali accompaniment. Jayaghanta formed part of the Pancha maha sabdam.

**Pancha maha sabdam** was a unique honour conferred on eminent persons in the past. The person honoured enjoyed the right to go in public preceded by this band of performers playing on the 5 instruments. Tivari, Datta, Kahandikka, Jayaghanta and Kale.

The **Pancha turya** of the Buddhistic ritualistic music consisted of music on five varieties of instruments (a) Atata, (b) Vitata (c) Atata-vitata (d) Ghana and (e) Sushira.

36. **Possibilities in quick alterations of pitch:**

The Tavil is an instrument with a fixed pitch. But in the Udukkai and the Idakka, the pitch of the instrument can be increased or decreased by the grip of the hand over the loose ends of strings collected and held in the hand at the centre of the instrument. The other ends of the strings are tied along the periphery of the two drum-heads.

37. **Number of Parts:**

Ghatam is an example of a laya vadya without detachable parts. But in the Mridangam there are the parts like the drum-heads of skin, the braces, the body of wood and tuning blocks. Kanjiras have jingles on their frames.

38. **Skin being strained, stretched or stitched over the drum head:**

In the Kanjira, the skin is strained over the frame. In the mridangam, the skin is stretched over the drum-head. In the tavil, the projecting skin of the drum heads is stitched over the hoops.

39. **Distribution:**

(a) **Whether an All-India Instrument or a Provincial Instrument:**
The Mridangam is found all over India. But Idakka is a provincial instrument and is used in Kerala.

(b) Ubiquitous (universal) or National: Castanets and Tambourines are found in all countries but the Mridangam is the national instrument of India and is found only here.

40. Miscellaneous.

Under this head, come all those drums which are not specifically used such for providing a rhythmic accompaniment. The martial drums, ceremonial drums and message drums are examples.

(a) Martial drums.

Adambara, Ranabheri, Poppurai and Kinai (Tudi) were martial drums. They were sounded in a terrific manner to strike terror in the enemy.

(b) Ceremonial drums.

The Bhumi dundubhi was sounded during the Mahavrata ceremony.

Mana murasu, also called Mangala murasu was the wedding drum. The auspicious drum was also sounded on happy occasions like the birth of a heir to the King. These and the Abhisheka dundubhi sounded during the coronation of Kings are examples of ceremonial drums.

There were the Prabhat vadyas like the Kalai murasu (கலை முரசு) or Yamabheri (மத ஆரை) which were played during day break to wake up the kings from sleep. The auspicious drum, Pratikala Nandi pataha was sounded along with the conch to announce the day break.

(e) Message drums.

By playing particular sequences of strokes, messages were communicated to armies and people far away in mountainous regions.
CHAPTER III
PERCUSSION INSTRUMENTS

Concert Drums: Mridangam.

This is the classical drum of India and is met with in all South Indian music parties, Katha kalakshepams and Bhajanas. It is included in the celebrated Vadya trayam Vina, Venu, Mridangam. This is an indispensable accompaniment in concerts of both vocal and instrumental music in South India. Mridangam solos given in concerts are a real treat to the ear. Drum-playing is a great art in India and the like of this is not to be seen in other countries. It requires years of practice to attain proficiency in playing the Mridangam. The celestial musician, Nandikesvara is said to be an adept in playing the instrument.

The name mridangam literally means ‘clay-body’. The shell was originally made of clay, though later it came to be made of wood. In the mridangam of ancient times, the black paste adorning the right head was not used. The utility of this paste was gradually realised and used. The instrument is also called Maddalam.

The body of the Mridangam is scooped out of a single block of wood. Jackwood or redwood (Alangium decapitalum) or the wood of the Margosa tree is used for making the body. The core of the cocoanut tree and palm tree are also used for the purpose. The jack tree grown in the vicinity of temples is ideally suited for making the mridangam since the sound waves of the temple music and temple bells must have had their impact on the tree and made the wood responsive.

The shape of the body of the Mridangam might be likened to two bottomless flower-pots joined at their rims. Skins fastened to leather hoops and tightened by leather braces are stretched over the two heads. Small cylindrical pieces of wood placed between the shell and the brace help in adjusting the pitch of the instrument.

The right-head of the Mridangam consists of three concentric layers of skin, the innermost being concealed from view. These three are respectively called Vettutattu, Koottatttu:and Utkarattatu. The outer ring is called Mittu (Mittu tol) in Tamil and the inner ring Chapu (Chapu tol) in Tamil. Calf skin is used for the outer ring and sheep skin for the inner ring. In the centre
of the right head is a permanent fixture of black paste. This circular layer called variously Soru, Karanai and Marundu in Tamil, is a composition of manganese dust, boiled rice and tamarind juice or a composition of fine iron filings and boiled rice. The stone called Kitan is found in deposits in places like Vallam in Tanjore District. This stone is powdered and mixed with rice in a proper proportion and used. The black paste called chittam in Tamil is applied on the inner skin (Chapu tol) in small grains and finely rubbed over for hardening with the polished surface of a hard stone. The paste is thickest in the centre and thins out towards the edges. It is this black layer that gives the fine characteristic tone to the Mridangam.

The left-head consists only of two rings. The outer one is of buffalo skin and the inner one is of sheep skin. At the commencement of a concert, a paste of soojee and water or of boiled rice, water and ashes is temporarily fixed on to the centre of this head and this paste is scraped off at the close of the concert. The quantity of this paste is so adjusted that the note given by the left-head is exactly an octave below the note given by the right-head. Sometimes the pitch of the left head will be found to be a fourth below the note given by the right head of the mridangam.

The diameter of the left-head is greater than that of the right-head by about half an inch. The right-head diameter varies from 6¼" to 7" and the left-head diameter from 6¾" to 7½". The right head is tuned to the tonic note of the performer.

On the two hoops of the instrument, there are sixteen interspaces for the leather braces of buffalo skin to pass through. By downward and upward strokes with a small hammer on the hoop at the appropriate points, the pitch of the instrument can be increased or decreased by as much as a full tone.

The instrument is played with the two hands, wrists and finger tips. Jati exercises are first learnt vocally and practised on a dummy instrument. The practice on the mridangam is then commenced with preliminary beats and strokes. Even as a clever musician is able to show his creative skill in the field of music, so also an expert mridangam player is able to display his powers of creative skill in the sphere of tala by playing new permutations and combinations of jatis. The cross-rhythmic accompaniment provided by the mridangam player in Indian concerts is something unique. The rhythmic harmony provided by him considerably heightens the interest in a concert. Pakhawaj, the corresponding instrument in Northern India, has smaller heads.

There are two kinds of Mridangams:—
(a) Low pitched (Taggu sruti) and
(b) High pitched (Heechhu sruti).
The Taggu sruti mridangam is intended to be used for pitches ranging from 1 to 3 i.e., from C to E and the Hechchu sruti mridangam for pitches ranging from 4 to 5½ i.e., from F to G sharp. The lower-pitched variety is used in concerts of male singers and higher pitched variety in concerts of lady singers.

The dimensions of the Mridangam are:

(a) for Taggu sruti: Length 24", Breadth (Centre Diameter) 11½". The diameter of the left side (Toppi) is 7¾" and the diameter of the right side (tunable head) or Valantalai is 6¾". From the left head (Toppi) to the ring (Arada) in the centre, the length is 10¼" and from this point to the right head, the length is 13½". The thickness of the shell is 9/16" thick on the right side and at the left side it is 10/16". In the middle, it is about 3/4" thick.

(b) for Hechchu sruti: Length is 22". Diameter of the centre is 10". The Diameter of the right head is 6½" and that of the left head is 7¼". From the left side to the central ring, the length is 9¾" and from the ring to the right head 12½". The thickness of the shell at the right side is ½" and that at the left side 9/16".

The various stages in the manufacture of the Mridangam are:

1. The block of wood is cylindrically shaped and cut with a saw to the required size.

2. This block of wood is then inserted in the special clamp. A thick rope passes over a big wheel and also over the wheel attached to the clamp. By operating the wheel, the block of wood is made to rotate and the outer circumference is shaped to that of a barrel by special chisels.

3. After the shell has been shaped to the required dimensions externally, the block is removed from the clamp. The inside of the wood is scooped out and made into a hollow shell. This is done by means of a special long chisel. Then the shell is smoothened with sand paper and varnished.

4. Skinning the drum-head: On the right side (Tunable head) there are 3 layers of skin. (1) The inner-most layer is of cow-skin and the next ring is of cow skin and the outer-most ring is of goat-skin. First the three skins are stretched over the right head in a tight manner. The outer skin is sliced off in the middle to make the inner ring and the innermost layer visible. The skin is stretched over the shell by piercing holes all round and making temporary cotton threads (Poi-varu - literally false braces) pass through them. The threads pass over the
main body and are tied at the other end. Then the skin is dried in the sun. The skin of the left head is also prepared in the same manner. After drying, both the heads are fixed tightly to the shell by putting circular rings made of twisted leather straps on both the drum-heads. These are held in position by long braces of buffalo skin about 1/4" in breadth. This brace replaces the poi varu and it is taken through 48 holes (eye-lets) on the right-side ring head and 32 holes (eye-lets) on the left-side ring head and the brace is wound all round the shell-body.

(5) **Applying black paste to the right head:**

The black paste is prepared in small bead-like balls and applied and rubbed on and over the drum surface till the proper delightful tone is got. Afterwards it is made round in the centre and excess scraped off.

In the low-pitched mridangam, the area covered by the paste will be larger than that of the high-pitched variety. After allowing it to dry the tone is made all round evenly. The note should be exactly even on all sides and also on the outer rings and the inner skin.

*Tabla and Baya:*

These two instruments take the place of the Mridangam. They are used in theatrical music and in concerts of Hindusthani music. The tabla’s head corresponds to the right head of the Mridangam and the baya’s head to the left of the same. The shell of these one-faced drums is either of wood, metal or clay. Sometimes the baya also is provided with a permanent fixture of the black paste referred to under mridangam. In such cases, the black ring, instead of being in the centre as in the Tabla and Mridangam, will be found near the edge. Some bayas are provided with tuning blocks.

The Mridangam and the Tabla are the two concert drums wherein there is provision for adjusting the pitch. They lend themselves admirably to all kinds of drumming finesse.

*Kanjira:*

The instrument is very simple in construction. Over one side of a circular wooden frame 8 or 9 inches in diameter and about 3 or 4 inches deep, a piece of skin, usually of varanus is strained. The frame is provided with three or four slits containing pieces of metal strung together. In addition, small clusters of ankle-bells are suspended from hooks fixed on to the frame. These together give a pleasing and jingling accompaniment as the instrument is played.
This is the cheap tambourine used in concerts and bhajana parties. This is also used by mendicants.

Amongst the upa tala vadyas used in concerts of South Indian Music, the Kanjira occupies a prominent place. The Mridangam and Kanjira go well together. A high speed in play is possible on this instrument. The instrument is held in the left hand and played with the fingers of the right hand.

Amongst the instruments of the Kanjira family, the Tatappalagai, Kanaka tappattai, Dep and Dasari tappattai may be referred to here:—

**Tatappalagai**

The tatappalagai (తాటపపోలగి) used by tattans or dasaris is a Kanjira of about 9 inches in diameter. In the place of the skin, a thin, circular and resonant plate of wood is nailed on to the frame. This plate virtually takes the place of the skin and is played upon. This is used in folk dances.

**Kanaka tappattai**

This consists of a ring of bamboo and skin is strained over it. The diameter of the face is about a foot. This instrument is played in temples associated with Tyagaraja dance.

The same drum of about 15 inches in diameter and called Valantalai tattu (వలాంటలాయ తత్తు) is used to provide the rhythmic accompaniment in Nagasvaram concerts in some places like Kayts, in Ceylon.

**Dep**

This is a large tambourine and the skin is strained over a ring of wood. Jackwood or the wood of neem tree is used for the purpose. The frame of the Dep consists of three chords or segments and joined to form a circular ring. The skin of buffalo or calf is used in the Dep. The diameter of the face is about a foot and the breadth of the wooden ring is about 4 inches. This instrument is used to provide rhythmic accompaniment during recitals of Lavanis, a kind of folk song. Lavanis have interesting tunes and they were formerly sung to the accompaniment of two tamburas. The Dep is played by the right hand. On the left hand, a small ring of iron or steel called metti (మెట్టి) is kept and rhythmic accompaniment provided by striking the rim with it. The note given by the drumhead and the note given by the rim bear the shadja – panchama relationship. The same instrument when played with two sticks becomes the tappu or parai.
In Madurai, the Dep is called Vattattappu (வத்தாட்டப்பு).

The Dep is also called tattai (தட்டை).

**Dasari Tappattai**

This is the small tambourine used by the Pandarams and Dasaris along with the Semakkalam and the Conch. A piece of calf’s skin is strained over a circular metallic frame sloping on both the sides. It is held in position between the stomach and the elbow of the left arm and played by the right hand fingers, the left hand proper, holding and striking the semakkalam.

* * * *

**Dolak**

This is a simpler drum found all over India. The shell is hollowed out of a solid block of wood. The braces are of twine or of thick cotton thread and pass through circular rings of metal near the middle of the shell. These rings aid in tuning. The two heads are plain. The instrument is played with the two hands.

**Glass Dolak**

This is similar to the Dolak in structure but the resonator is made of Glass. This instrument has recently been designed. It provides a delightful accompaniment in concerts. It is as good as the Dolak made of wood. The dimensions of this instrument are a bit smaller than that of the Dolak. There are small metallic rings on the body through which the cotton threads pass and by pulling these rings the pitch of the right face can be altered. Unlike the Mridangam, both the faces are made only out of a single layer of skin. The skin is stitched over a metallic ring which tightly fits on the face of the instrument on both sides. There is no black paste on either of the faces of this instrument. There is a specimen of this instrument in the Sangita Vadyalaya, Madras.

**Dolki**

This is an instrument similar to the Mridangam. The resonator is made of rose-wood. It is much smaller in dimensions than the Mridangam. The right head over which the black paste is applied has 2 layers of goatskin. Unlike the Mridangam, both the skins are stitched together at the inner circumference by cotton threads to an iron ring. This is bigger in diameter than the head of the instrument. There is no outer ring of skin as in the case of Mridangam. There are 9 holes or eye-lets through which the twisted cotton threads pass before being tightened to the body of the instrument. The left-head is similar to that of
the mridangam though much smaller. Both the faces of the shell are almost of the same circumference. Whereas the skin of the right head overlaps the face of the resonator, the left head has got a ring of twisted leather hoop through which the cotton threads pass. The Mamudu or black paste on the right head is not so thick as in the Mridangam and hence the note given is not so deep and resounding as in that instrument. The tone resembles that of the Tabala. There are 9 cylindrical wooden pieces about 2" long and \( \frac{1}{2} \)" in thickness made of black-wood. These are placed about 6" to the left of the right head. The cotton threads are twisted round and round by manipulating these wooden pieces. These pieces of wood which are placed in between these threads are thus used to increase the pitch of the instrument. If the threads are loosened by turning the wooden pieces in the opposite direction, the pitch decreases. Thus this instrument is not tuned by striking with a hammer along the periphery of the tunabe head.

Tavil

This is the drum used in the Nagaswaram band or the Periya melam. It consists of a barrel-shaped shell, hollowed out of a solid block of wood. The skins on the two sides are stretched and stitched over hempen hoops or hoops made of six or seven bamboo sticks bundled together. The hoops are fastened to the shell by means of leather thongs interlaced. A band of leather passing round the shell along the middle over the braces serves to tighten the instrument up to the desired pitch. The thickness of the wall of the shell varies from 1/8 to 1/10 of an inch. The right head is played by the right hand, wrist and fingers and the left head is struck with a stick held in the left hand. This is the drum used in outdoor music.

The shell is manufactured out of a large cylindrical block of jackwood about 16" long and shaped in the machinery used for making the Mridangam. It is 15\( \frac{1}{2} \)" long, 8-5/16" in diameter on the side played by the hand and 8-13/16" in diameter on the side played with the stick. In the centre it is 13\( \frac{1}{2} \)" in diameter. On the left head, a paste is applied. This paste consists of the scrapings from the surface of the pitas of Vigrahahas over which abhishekan has been performed in temples. The scrapings are mixed with castor oil in a suitable proportion. These are applied in the centre to a circular area of 2" on the inside.

Formerly, the shape of the shell was cylindrical, though now it is barrel-shaped. The stick used in tavil play is hard and dense and is made from the Purasai (Portia tree) or Erazhinjil sage-leaved alangium — Alangium lamarki.
Khol

This is used in Bengal. The resonator is a bit longer than that of the Mridangam and tapers towards the right head. The right head is almost fully covered with the black paste. Its diameter is about 4” to 5”. The instrument is covered all over with leather braces. These serve to hold the drum heads in tension. The leather braces are thinner than those of the Mridangam. The body is made of baked clay. The tone of the instrument is not so resounding as in the Mridangam.

The resonators in drums not only serve to amplify the sound but also to maintain evenly the tension of the drum heads.

Abhyasa laya vadyas.

These are laya vadyas which are intended for practice by beginners. The dummy mridangam consists of a wooden frame with two circular plates of wood on the two sides. Beginners practise the preliminary exercises on this instrument before starting practising on the real mridangam. The dummy mridangam is known by the names Pāta Kattai (පාතල් යටටා) and Silambam Kattai (සිලම්බම් යටටා). Pāta is the sanskrit word signifying jati or solkattu.

Another laya vadya used for practice is the tattu kazhi (තත්තු කොඩි). This is a plate of hard wood struck with a stick. The wood of Pālai (පාලා) (Iron wood of Ceylon) or මෙසු මෙරා mesua ferrea or Jack tree is used for the purpose. The nattuvanar or the dance teacher strikes this while teaching the preliminary exercises to the pupils.
CHAPTER IV
RHYTHMIC INSTRUMENTS OTHER THAN DRUMS

Moresing

An elastic, thin and flexible steel strip called the tongue is rivetted at one end to a circular iron frame. This strip projects a little beyond the ring at one end and at the other end is slightly curled. It passes right along the centre of the ring and between the two arms. The instrument is held in the left hand and the fork portion is held in the mouth. The curled end of the tongue is plucked by the forefinger of the right hand. The cavity of the mouth acts as a resonator. A skilled performer is able to play all the jati combinations with accuracy. When played along with the mridangam, the combined effect is delightful and pleasing. Moresings for different srutis are available. One has to choose and use in a concert the moresing conforming to the sruti of the chief performer. Minor adjustments in sruti are made by slightly loading the tongue with wax.

Ghatam

The mud pot is one of the ancient time-keeping instruments and is mentioned in the Ramayana. The mouth of the ghatam is open and somewhat narrow. When closed with a parchment, it becomes the pot-drum. Strong, durable and resonant pots for this purpose are made at Panruti and Manamadurai in South India. The pot is played with the two hands, wrists, the ten fingers and nails. The mouth is pressed against the stomach so that when strokes are given, the air inside is set in vibration and gives a deep tone. A very high degree of speed in play is possible on this instrument. Finger-strokes are given at the neck, centre and the bottom of the outer surface and the resulting tones in these positions also vary. Unlike other percussion instruments, the ghatam is not kept in the same position, during play. Sometimes the mouth faces upwards and sometimes away from the performer.

Gettu vadyam

This is a stringed instrument shaped just like a tambura. Its length is shorter than that of the tambura. It has a rest at the left end. The four strings are tuned to correct pitch and delightful rhythms are played on the instrument with two thin sticks. The sticks strike all the four strings simultaneously.
There is a sculpture of Çetua vadyam in Hale Alur in Mysore state.

**Tuntina**

This single-stringed sruti vadya already described in the book: *Sruti Vadyas* an P. 23 is also used as a laya vadya. The person singing a song in Adi, Rupaka, Chapu, Jhampa or Tripura tala plucks the string at the points where the beats fall in the tala. Thus this instrument serves a double purpose.

**Nattuvanga talam**

This is a pair of cymbals used in the Chinna melam i.e. Bharata natya recitals. It is used by the Nattuvanar or the Guru of the Dansuese or Dancer. This talam consists of two small circular pieces of metallic discs. One is made of iron and the top piece which is lifted and struck against the bottom piece is of bronze. The iron piece is a bit larger and heavier than the bronze piece. The bronze piece is a bit concave on the inside. It gives a delightful staccato sound and provides the most suitable accompaniment to the lilting gait of the rhythmic patterns of the dancer.

**Jalra**

This is a pair of metallic cymbals used for keeping time in music. They are of brass or bell-metal. They are circular flat discs and are usually connected by a cord or cotton thread passing round their centres. The Jalra is principally used in Harikathā Kālakshepam and Bhajana parties. Mendicants also use it to keep time to their music. Even with such a simple instrument, there are skilled performers who are able to play all the difficult combinations of jatis and cope up successfully with even the expert mridangam performers in concerts. Pandharpur Jalras are famous for their fine tonal quality and are in great demand.

**Kuzhi talam**

This is almost like the jalra in structure, the only difference being that it is deeply concave in the middle portion. This is used in concerts of sacred music i.e. in recitals of Tevarum and Tiruppugazh.

This is also called Kuzhi mani (குழிமணி)

**Chiplā**

This consists of two pieces of hard wood (black wood or rose wood) about six inches in length, flat on one side and rounded on the other. They
are provided with slits into which Jingles (small metallic pieces) are inserted. Sometimes hooks are fixed to the top and ankle bells are suspended from them. The Jingles and the ankle-bells together give a pleasing sound as the wooden pieces are clashed. A brass ring is fixed on the back of each wooden piece for the fingers to pass through. The two pieces of wood may be shaped to look like a fish or they may be provided with knobs at the two ends.

Chipla is not depicted in ancient sculptures.

Conch

The conch is used as an upa tala vadya in nagaswaram concerts. The main rhythmic accompaniment provided by the performer on the tavil is supplemented sometimes by performers on the conch and Kinikitti. The conch is played solo and in conjunction with the tavil.

The conch is played along with the temple bells during rituals. The notes of the conch and the bells blend delightfully since their pitches bear consonantal relationships.

Chintal

Chintal or Haribol consists of two long metallic bars resembling the sword in shape and rivetted together at one end. The length varies from 2½ feet to 3 feet. Brass jingles are attached to the bars. The instrument is held in both hands and shaken in accordance with rhythm. This is used in Bhajana Parties. A number of performers on Chintals join together and perform during the recitals of Namavalis and sacred music and the cumulative effect is interesting.
CHAPTER V

TEMPLE DRUMS

Many of the drums have been kept alive by being used in temple rituals. In shrines like the Brahadaamba temple in Pudukkottai, 32 instruments have been traditionally used. The use of Ashtādasa vadyas (18 instruments) is enjoined in the Agamas relating to temple rituals.

The 18 instruments are:

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<th>Bheri</th>
<th>Maddala</th>
<th>Sabda</th>
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<td>Madduka</td>
<td>Tala</td>
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<tr>
<td>Dhavala</td>
<td>Mridanga</td>
<td>Tumburu</td>
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<td>Dindima</td>
<td>Nupura</td>
<td>Turya</td>
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<tr>
<td>Dundubhi</td>
<td>Panava</td>
<td>Venu</td>
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<tr>
<td>Kahala</td>
<td>Patha</td>
<td>Vina</td>
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Generally, stringed instruments are not used in temple rituals for the simple reason, that their tone is thin and incapable of reaching the ears of the crowds assembled for worship. Further they will not be readily available for use, since they have to be tuned.

The Pancha vadyas used in the temples of Kerala comprise, Idakka, Timila, Chenda, Chengala and Kombu.

In Buddhist temples, the Pancha turyas are used. The Pancha turyas include an ātata vadya, vitata vadya, ātata-vitata vadya, ghana vadya and sushira vadya.

The Pancha maha sabda or the five great sounds, comprised the sounds of the five instruments: Tivāri, Datta, Kahamdikka, Jayaghanta and Kāle. The victorious and gallant warriors were given the honour of going in the streets preceded by this band of five instruments.
According to a Lingayat writer in the *Viveka Chudamani*, the Pancha maha sabda comprised the sounds of Sringa, Vammelata, Sankha, Bheri and Jaya ghosha.

**Temple Drums**

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<td>11. Vira vandi</td>
<td>24. Dhanki</td>
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</tbody>
</table>

**Panchamukha vadyam**

This is a huge instrument and has a big spherical resonator made of *pancha loha* i.e., a mixture of five metals. There are five projecting tubes on the top, four from the four sides and one from the centre. The central tube is a bit larger in diameter and has a circular ring of skin (*Vettuttattu* - *(వెత్తుతుడు)*). Four pieces of goat-skin are stretched over the four faces on the sides and for the central face there is an outer ring of skin in addition to that of the playing face, as in the case of *Mridangam*. The skin of milch cow is also used for the purpose. The skins are tied to the instrument by ropes fixed to a metallic ring which go round the mouth of the resonator. The instrument is played solo and in conjunction with the suddha maddalam. Delightful rhythmic patterns can be played upon this instrument. Acoustically also, this instrument is of interest. By sprinkling particles of fine sand over the faces, it is found that they arrange themselves in particular patterns of figures, when any one of the faces is tapped.

The Panchamukha vadyam is mainly played during temple rituals in Tiruvarur and Tirutturaipundi in Tanjore District. In the Sarva vadyam rituals,
this instrument is played. The instrument is placed on a wooden frame attached
to a platform on four wheels. It can thus be moved from one place to another if
needed. The five faces of this instrument represent the five faces of Lord Siva i.e.,
Sadyojatam, Tatpurusham, Isanam, Aghoram and Vamadevam. During the Navasandhi rituals, the instrument is played in the Kubera sandhi.

Along with two kudamukhas tuned to the adhara shadja and panchama respectively, the ancient scale of shadja grama (Sama gana) can be played upon it.

The Panchamukha vadyam is the heaviest instrument of the drum class. Its
weight is round about thirty maunds.

The skin of the faces on the north and south are thin, while the skin of the
faces on the eastern and western sides is slightly thick. The skin on the central
face, giving the lowest note is very thick.

Position of the drum-heads

(N) O Vamadevam  
(W) O . Centre O Isanam  O (E) Tatpurusham
Sadyojatam  
(S) O Aghoram

The performer stands at the Vamadevam side and performs on all the four
faces, striking them separately and at times simultaneously on two faces.

In the temple at Tiruppurungur in Tanjore District is a metallic image of
Nataraja with a figure in the pedestal part, depicted as playing on the Panchamukha
vadyam. This is a rare example of Nataraja with a performer on the Panchamukha-
vadyam. The playing posture is clearly seen. The central face of the drum is at a
higher level compared to the peripheral faces.

There is a similar bronze image of Nataraja in the temple at Udayarpalayam.

In the temple at Chidambaram, opposite the sanctum sanctorum and at the
bottom of the stone ratham, there is a sculptured figure with eight hands playing on
the Panchamukha vadyam. On the two sides of the instrument there are separate
single-faced pot-drums. These pot drums gave the notes sa and pa and the five faces of the main instrument gave the notes ri, ga, ma, dha, ni of the shadja grama.

In the temple at Tenkasi, to the right side of the pillar which contains a colossal figure depicting Maha Tandava is carved a figure with 8 hands playing on five separate Kudamuzhais-pot drums. The central drum is bigger in size compared to the others.

The figure that is performing on the Panchamukha vadyam is Bānugopan. He was a Deva (celestial) and became subjected to a curse. He was told that he will have his vimochana (freedom from the curse) when he performed on this instrument during the dance of Nataraja.

Nagara

This is the large hemispherical kettle-drum covered with hide and used in temples. The shell is of copper, brass or sheet-iron rivetted together. The diameter of the head is about 2½ to 3 feet. The skin is strained upon hoops of metal and stretched by leather thongs passing round the under side of the shell. The instrument is placed on a two-wheeled carriage, and drawn by a person who follows the procession of the Deity. The player sits on the carriage and beats the drum with two curved sticks. Sometimes a decorated elephant carries this drum on its back and goes in front of the procession.

Bigger varieties of this instrument, known as Bheri and Dundubhi were used in battle. The Indian epics make mention of these martial drums. The battle drum was regarded with great veneration and capture of this drum by the enemy meant the defeat of the army.

Damaram

This is the pair of conical drums placed on a bullock and seen preceding a temple procession. The shell is of wood and the braces are of leather. It is played with two sticks, one curved and the other straight. Standard strokes are played on this instrument.

When Damaram is played singly it is called Dakora vadyam

Udakkai

It is also called Tudi and Ldaisurungu parai on account of its being narrow at the centre. This is the hour-glass shaped drum laced with twine. A thin parchment is stretched over the two faces. Right along the middle, passing over the twine threads is a thick tape, the squeeze of which tightens the braces, resulting
in the sharpening of the tone. The effect of this is really interesting. The shell is of brass, wood or clay. The instrument is held in the left hand and played by the fingers of the right hand. It is used in all Mariamman temples and in the temples of village deities. It is used in the Villuppattu and in the Naiyandi melam.

On one face, a horse-hair (called kanni) is tied right across the diameter. When the other face is struck, the horse hair vibrates along with the drum - head and this results in a fine buzzing effect.

The Udukkai is also called Kodangi and is used by fortune-tellers.

The sacred Damaru, the attribute of Siva is of the same shape as the Udukkai but has a knot at the end of a string wound round the middle. When the instrument is rattled, this knot strikes the two faces at the centre alternately. Nataraja is represented with the damaru in one of his four hands (top right hand). The budubuduke of the gypsies and jugglers is a miniature damaru.

There is a variety of Damaru which is provided with two knotted strings, one near each end. The shell of this instrument is somewhat longer. High speed strokes are possible on this variety of Damaru on account of the two knotted strings.

In some sculptures, Siva as Vaṭuka Bhairava is represented as holding the Damaru mounted on a stick.

Davandai

Davandai is a bigger udukkai. The shell is of wood and is laced with twine. The skin on the two sides is thicker. It is played with a stick. This is also used in Mariamman temples and in some old shrines. In the image of Urdhva tandava Nataraja, the Deity is represented as holding the Davandai in between the two legs and striking it with a stick.

Pambai

This is a pair of cylindrical drums each about one foot in length. The outer surface is coloured and painted with flowers. It is played with two sticks. As in the dolak, the twine braces pass through metal rings which help in tuning. This is used in Naiyandi melam or the rustic orchestra. The instrument is tied to the waist and played.
Kanaka Tappattai.

See P. 17 for details concerning this instrument.

Udal, Periya udal, Sanna udal

Udal (ංෂංඉ) is a cylindrical drum and somewhat shorter in length. The shell is of wood. There is the Periya udal or the big size udal which is used in the Srirangam temple. The priest carrying the naivedyam (offering to the Deity) goes preceded by the person performing on the Periya udal. In the temple at Tiruvanaikkaval, when the gurukkal (priest) bedecked with silken costumes goes for puja, he is preceded by two performers playing on the udal. The udal is struck with a straight stick only on the right face of the instrument. The strokes given are ta, ta, ta ta ta.

Sanna udal

Sanna udal is beaten with a straight stick or a bent stick on both sides. This is played during the Brahmostavam when the Soolam is carried. It is also played in the early morning in Saivite temples as in the Ekambaranathaswamy temple in Kanchipuram.

Vira vandi

Vira vandi (ංෂංංංංං thanu) is an instrument like the udakkai in shape. It is about 18 inches in length. The shell is of bronze. In the Tiruvanaikkaval temple, when the priest bedecked with silken costumes goes for puja, he is preceded by a performer on the Vira vandi. The performer strikes the instrument on the right head with a stick and his beats synchronise with the strokes given on the udal by two other performers.

Suryapirai and Chandrapirai

Suryapirai (of the shape of the sun) and Chandrapirai (of the shape of the moon) are two interesting percussion instruments used in Mariamman temples and in temples of village deities. A thin parchment is strained over iron rings of the two shapes. The rings are connected to a handle with an extended arm. The two instruments are tied over cushioned foreheads of two persons and played with a stick. These instruments, called also Suryamandalam and Chandramandalam are used in the temple at Kalahasti, South India. Sometimes skilled performers provide a rhythmical accompaniment with this instrument in Nagaswaram concerts. Playing on these instruments is an item in the Sarva vadyam ritual of temples.

Timila

This is a two-faced drum and is largely used in the ritualistic music of the temples in Kerala. The resonator is of wood and is like a mortar in shape. It
is suspended vertically from the waist and played on one side with the hand. A high degree of rhythmic technique has been developed by performers on this instrument. This is a constituent instrument of the Pancha vadyam.

Chenda

This is the long cylindrical drum used in Kerala. It is played with two sticks. This is one of the instruments constituting the Pancha vadya played in the temples of Malabar. A performance of Kathakali is preceded in the evening by a performance of the Chenda. This preliminary performance is called Kelikottu. The rhythmical display on this instrument by skilled performers is very fascinating.

Idakka

From the point of view of instrumentation, the Idakka is of great interest. It has an hour-glass shaped resonator. The resonator is of wood. The skin is not strained over the two faces. Skins mounted on two circular frames and called savvu ( sửa) are just stretched over the two faces. There are strings tied on to the circumference of the rings. By gripping the strings in the centre, the performer is able to keep the skin on the two sides in a state of tension. The instrument is played with a stick. One is able to produce not only the different notes with accuracy on the instrument but is also able to play simple melodies extending over a compass of one octave. The dexterity of the performer lies in the fact that he is able to manipulate variations in pitch by tightening or loosening the grip over the strings to the required tension.

Suddha Maddalam

This is like the mridangam in shape but is bigger in size. The black paste herein is applied over a larger area and the paste is also much thicker compared to that of the Mridangam. It gives a loud tone. It is one of the instruments constituting the Panchavadyam in Kerala. It is used in Kathakali. This is also called Nandikeswara vadyam.

Suddha maddalam is played in the Tiruvarur temple along with the Panchamukha vadyam. Tambiappan, one of the disciples of Muthuswami Dikshitar was an eminent performer on this instrument.

Jakki

It is a small drum played during temple rituals. A specimen can be seen in the temple at Vridhachalam.
Muttu:

Muttu (இம்முத்து) is a small mridangam about one foot in length. The shell is slightly barrel-shaped. It is played in the Sapta Vitanka Kshetras in Tanjore District. In those shrines noted for Palanquin dances of Tyagaraja, solkattus conforming to a particular rhythmic pattern (Khanda, Chaturasra, Tisra, Misra, and Sankirna) are played on the drum.

Vira Maddalam

Vira maddalam is an instrument about 2½ feet in length and is played in some of the Vishnu temples.

Dakka

This is an hour-glass shaped drum of a bigger size. It is played with a stick and only one side of the drum is struck. It is used during the Oyyali nadai festival in Vishnu temples.

Dakki

Dakki is a conical drum. It is depicted in the sculptures at Sanchi. It is played during temple rituals. It provides a soft accompaniment.

Dhankā

This is a pair of conical drums carried on horse-back and played with sticks. It has a circular rim. The player sits on the horse-back and plays upon the drum kept in front. The horse carrying the dhankā is gaily decorated with coloured clothes and precedes the temple procession.

Dhanki

This drum is used to provide rhythmical accompaniment to the music of the Mukha vina, in the ritualistic music of temples in South India.

Tappu palagai:

Tappu palagai resembles the Dasari tappattai in shape but is slightly bigger. It is played on only one side but by both the hands. It can be seen in the Varadarajaswamy temple in Kanchipuram.

Jayabheri and Vira malahari are other drums used in some temples.
Ghana Vadyas used in Temples

Amongst the Ghana Vadyas used in temple rituals may be mentioned the Brahma talam or the Brihat talam. This is the pair of cymbals very large in size and about 8 inches in diameter. The gongs, bells and Kottumani (कोट्टुमणि) or cluster of bells are the other Ghana vadyas used.

**Combinational play**

During the performance of sarva vadyam in temples, certain drums are played in combination with Ghana vadyas and wind instruments and this combinational play goes under separate names. Thus:

Naragaja vadyam: is play on the left drum-head of the tavil with stick along with Brahma talam i.e. big cymbals. According to another version it is Damaram and Tavil played with sticks.

Tyagaraja vadyam is the simultaneous play on the instruments, Tavil, Brahma talam, Bhuri and Conch.

Raja vadyam is the combinational play on the Tappattai and Banka. Raja vadyam is also Tep played with sticks.

Takora vadyam is Nagasvaram played without talam (cymbals) and sruti and to the accompaniment of Damaram.

Hindusthani Takora vadyam is Sanai played along with Damaram. According to another version, it is the combinational play on Tappattai, Bhuri, Brahma talam and Davandai.

**Sangita Melam**

Sangita melam was a band maintained in some temples and courts of Kings. It was a part of the royal establishment of Sarabhoji and it was requisitioned to perform music whenever distinguished visitors came to Tanjore. There was a Sangita melam in the establishment of the temple at Tiruvarur. It played during the performance of the Pallaki Seva Prabandham. Shahji Maharaja, the author of the opera refers to the sangita melam in the anupallavi of the song, Singarampu pallaki cheluva jadave in Sankarabharana raga, Chapu tala. The following amongst other instruments constituted the sangita melam; flute, titti, kāhala, tala and conch.

The pancha vadyam played in some temples as in Kollengode and other places in Kerala is in a sense, a sangita melam. The 5 instruments played are Timila, Buddha maddalam, Flattalam, Conch and Idakka. The tremulous strokes given on the Timila have a fascination all their own.
Gudi Melam

This is a slang term used to denote indifferent and inferior type of music. Gudi melam (Telugu) గుడి మెలాము or Kovil melam (Tamil) literally means the music of the nagasvaram band played in temples. Competent performers are not always engaged to perform in temples during rituals and competent performers cannot be engaged by poor temples. Even when senior performers are in temple employ, they (at least the less conscientious of them) invariably choose to send some disciple of their’s to play during the routine rituals. Hence Gudi melam has come to signify third-rate type of music. During the marriage season, when most of the professional performers are booked to give concerts, the poorer class, engage the gudi melam as the last resort.
CHAPTER VI
LAYA VADYAS USED IN FOLK MUSIC AND DANCE.

Jamidika:

This is a drum with a bucket-shaped resonator and open at one end. The open end is about 9 inches in diameter and the closed end about one foot. Sometimes the resonator is slightly barrel-shaped. The closed end is covered with a thin parchment. At its centre is tied a string which goes through the inside of the instrument. This is tied to a stick at the other end. The stick which is a few inches away from the top of the shell, is held in position while playing. The string subjected to the pull is plucked and an interesting, rhythmical sequence of strokes is played. This drum is used as an accompaniment while singing ballads. At the end of each stanza of music, the performer plays a rhythmical sequence. At the end of a section of music, he punctuates the conclusion by playing a longer sequence of jatis. The instrument is a compound instrument, since it is a chordophonous and a membranophonous instrument combined. The performer while plucking the string in a state of tension a number of times, also hits against the wall of the interior of the instrument. The instrument is held in position between the left elbow and the left abdomen. The string is plucked with the right hand thumb and right hand forefinger. The stick is held in the left hand with a pull. The instrument is sometimes suspended from the left shoulder with a tape and played.

From the point of view of instrumentation, this instrument has a peculiarity all its own.

The sound heard corresponds to the syllables bum, bum, bum. The parchment is stretched over the rim at the broader end. The shell of the instrument is of brass. It may also be of wood.

I saw a performer on this instrument in the Village, Bellamkondapalem (which is between Macherla and Nāgarjunakonda) in Andhra Pradesh singing the ballad pertaining to the Valurāju Katha. Valurāju was a Yadava King. This is a Telugu ballad.
Ramdolu

Ramdolu (రామ్డులు) is a big cylindrical drum used in the Andhra Pradesh. It is about 2 feet in diameter and is beaten on only one side with a straight stick. This stick is provided with a knob at the striking end. It is struck only to give the tala gati: chaturasra, tisra, misra etc. The cross-rhythmical filling up of the tala avarta is done by the performer on the Tashāmarpa (see below). The Ramdolu is depicted in the Nāgarjunakonda sculptures. Ram-dolu is an onomatopoetic name, since it gives the sound ram-ram-ram.

Tashāmarpa:

Tashāmarpa (తశామార్ప) is a conical single-faced drum. It is used in Andhra Pradesh. It is suspended from the neck and played. The body of the instrument is in close contact with the chest of the performer. It is played with two thin sticks. It provides an interesting cross-rhythmical accompaniment to the main beats of the Ram-dolu. The tremulous strokes played on Tashāmarpa are highly interesting to hear.

Rumja:

Rumja (రంమ్య) is a tall single-faced conical drum of about 3½ to 4 feet in height. Its resonator is of brass. The diameter of the drum-head is about 12 to 15 inches. It is played by both the hands. It is used as an accompaniment to folk music in Andhra Pradesh. A particular caste of people perform on this instrument. This instrument is depicted in the sculptures at Nāgarjunakonda.

Villādi vādyam

A lacquered bow seven or eight feet long is fitted with a cord of strong leather. Sometimes the cord consists of a twisted string. A few bells are suspended from the bow. The middle of the bow rests on a pot. Four or five persons sit on the floor in front of the bow and strike the cord in turn with short sticks called visukol (విసుకోల) and villadikol (విలిడికోల). Lads, who undergo a course of training in this art, are employed in the temples as singers and are paid handsomely. The principal performer gives a religious discourse to the rhythmic accompaniment of strokes on the bow. The prose discourse is interspersed with songs and apt verses. Secondary rhythmic accompaniment is provided by the performers on:— (1) the Ghatam, whose mouth is struck with two rubber pads (2) Udukkai (3) Daaru talam-oblong wooden clappers and (4) Cymbals. The vocal music of the principal performer is strengthened by the music of other singers at the back.
Tantripañai is an interesting drum used by the rural folk. This is a pot drum with a metallic string inside. Formerly a gut was used in the place of the metallic string. Hence the older name of the instrument, Narambu panai. Narakunda and Tantikunda are the earlier and later names of this instrument in Telugu.

A piece of goat skin is strained over the mouth of the pot. At the centre of the skin is a small hole through which the metallic ring in the centre of a button projects inside. To this ring the string inside is tied. In the place of the button sometimes a copper coin with a hole pierced in its centre is used. The string in this case will be tied to a small piece of stick or knob and then made to pass inside through the hole in the coin and the skin. Thus the button, stick or knob serves the same purpose as the langar of the vina.

Since the size of the button, stick or knob is bigger than that of the hole in the centre of the skin, they have no chance of slipping inside. Further they are kept in position by the tension of the string. The string passes through the centre of the pot inside and emerges out of the back through a small circular aperture. Emerging from this aperture, the string passes over the top of the pot through holes drilled in the centre of three square pieces of wood and ends ultimately in a peg. The peg is inserted into a bigger piece of wood. This piece of wood supporting the peg is kept in position by being tied to a cotton thread passing round the neck of the pot. The wooden pieces on the outer surface of the pot are all kept in position by the tension of the string. By turning the peg, the pitch of the string can be adjusted to the required sruti or tonic note of the performer. Seven small metallic rings glide over the string inside the pot. When the instrument is played, these gliding rings vibrate along with the main string and the total effect is interesting and pleasing.

This instrument is held at a slight inclination to the horizontal and played. The drum face is away from the performer. The inclination results in the gliding rings slipping to the end of the string near the aperture at the back and vibrate from near the nodal point. The performer just taps the button or the coin as the case may be in the centre of the drum face, with the middle fingers of his right hand and left hand alternately. He plays a beautiful series of jatis or rhythmical sequences. The mild strokes cause the string inside to vibrate. The cavity of the pot acts as a resonating chamber.

By using strings of different gauges any pitch ranging from middle C to octave C, i.e., from madhya shadja to tara shadja can be got on this instrument.
The Tantipanai is thus a compound musical instrument, serving the double purpose of a drone accompaniment and rhythmic accompaniment. This sruti-cum-laya vadya produces a pleasing effect when played by experts.

This instrument is used by hill tribes to communicate messages to people down below. A drum language with code strokes is in vogue among them. The instrument is used also by Malas.

Gimmati

Gimmati is a kind of pot-drum used in the Telugu districts. It is used by the rural folk to provide a rhythmic accompaniment during the singing of the well-known ballad, Balanagamma Katha.

The pot is of the shape of the mud kuja commonly used for keeping drinking water. At the bottom of this pot is a circular aperture of about two inches in diameter. The skin which covers the aperture at the bottom is stretched over a circular ring of iron. There are ten holes along the circumference, and through these holes cotton threads pass. These threads pass over the mud pot and are tied to another circular ring at the spout end. The drum face is thus held in a state of tension by these threads. The instrument is held in a horizontal posture and played. The drum head on the right side is played upon by the fingers of the right hand. The cavity inside the pot acts as a resonating chamber. The occasional covering stroke on the open spout end, by the palm of the left hand gives the effect of a gunkara.

Pullivan kudam

This consists of a mud pot with a circular opening at the bottom. A vellum is stretched over the narrow mouth of the pot. A twine tied to the centre of the vellum on the outer surface passes through the pot along the hole at the bottom and passing through a slit in a wooden beam, ends in a metal cup. The pot and the metal cup are held in position. The twine is struck with a stick, the pot serving as a resonator. The twine is easily tightened by pulling the pot slightly away from the direction of the metal cup. This is used by the Pulluvans of Malabar, a tribe of serpent-worshippers.

Villukottu

The spathe of arecanut or cocoanut palm is taken and small slits are made at the two ends. A bamboo stick with knobs at the two ends is inserted between the slits and the whole thing appears like a bow. This bamboo stick which is held rigidly between the two ends is struck with another smaller stick.
Tambattam

Here, the skin is strained over a circular frame by means of a network of thin leather thongs. It is played with two small sticks.

Kirikkatti vadyam

This instrument consists of a pair of drums. They are made of jack-wood. The drum-head is of goat-skin and is fixed to the resonator by straps and tightened. There are two circular rings of skin above the inner layer and the straps are wound around the hoops. They pass around the body twelve times and finally tied. This is used in the folk dance and Nagaswaram concerts in Tamil Nad. This instrument is played with two sticks. The sticks are coiled at the end into a small circle with a projection. Both the ends are wrapped around with cloth. They are made of special type of canes. One face of this instrument has a plain skin-head while the other has a plain skin-head around which a ring of leather about 1” broad overlaps the outer circumference. This ring of leather is not however in contact with the skin inside. Both the faces have got hoops which tightly hold the skin in position. One face gives a muffled note while the other gives a straight note. Both the resonators are tied together by leather in between. There are also two hoops on the outer surface of the bottom portion of the two pot-like resonators to which leather braces are tightened.

Kidikitti, kinikitti and kirikitti are the other names of this instrument.

Kundalam

This consists of a pair of drums. The resonators of this instrument are similar in appearance to those of the Kirikkatti vadyam. The cotton strings passing round are fixed to the skin heads at the top by taking them around an iron ring. The skins are stitched over the iron ring. The skin heads are about 1” more in diameter than the head of the resonator. The rings are not visible. There are eleven holes pierced on the skin near the rings through which the threads pass. At the bottom end also they are tied to two iron rings held in position below the resonators by wooden pieces. One head of this instrument gives a muffled note while the other gives a straight note. The heads are alternately struck by two thin bamboo sticks, one of which is a bit curved at the striking end. Instead of leather straps, twisted cotton thread is used to hold the skin-heads in position on the resonators. Both the faces of this instrument are similar in appearance.

This instrument is used to provide the rhythmic accompaniment in the Poyakkal kudirai aṭṭam or the dummy horse-show.
Pirai kombu

This is a brass-wind instrument and is semi-circular in shape (i.e., bent in a semi-circle). It is conical in its structure and towards the end it is broader. This instrument gives a trumpet-like sound and is used in the pancha-vadyam band and also along with the chenda in the Temple festivals of Kerala. Air is blown through it in such a way that delightful rhythmic syllables are produced.

Ilai talam

This is somewhat like the Brahma Talam but is smaller in size and is used in the Pancha vadyam of Kerala. This is also used as an accompaniment in the Thayambaka i.e., Chenda solo in Kerala, and also as an accompaniment in the Kathakali.

Dappu

Dappu is a circular drum about 1½ to 2 feet in diameter and 4 inches deep. Cowhide is stretched over the frame on one side. This is played with two sticks.

Chakkai

This consists of four long thin rectangular pieces of wood. The sticks are of teak wood and are about 7 inches long and 1 inch in broad. They are strung with a thread and held between the fingers. They are struck by the palm and fingers at the other end and different rhythmic patterns are provided as in the kartal. This is used in the Chakkai attam.

Kudamuzhā

This is the pot drum, and is used along with Panchamukha vadyam. To a brass water-pot a skin is stretched over the mouth of the vessel (kudam) and this skin is held tight by an iron ring to which it is attached and this is fixed to the pot by cotton ropes passing all round the pot.

Tamukku

The Tamukku is of the shape of a pot-drum. The shell may be of bronze or other metal, and of earth or wood. Herein the skin is strained over a ring. The skinned ring is stretched over the mouth of the vessel and held in position by cotton cords passing underneath the vessel. The ring is called Chandra valaiyam. The tamukku is beaten with two leather straps. It is used for publicity also.
Arab chatti

This is the tamukku which has got a semi-circular shaped earthen pot for its resonator. Over this there is a skin tightened by leather straps all round. The leather straps pass through holes pierced all round the skin. The skin covers the pot almost half-way down. It is beaten by two leather straps.

Kanjiri

This is similar to Kanjira, but has got a thinner skin and in addition there are several eye-lets all over the frame and into these small jingles are inserted. Each eye-let contains two jingles. There are twelve such eye-lets pierced alternately in two rows all round the circular frame. The goat-skin fixed to this instrument is held tight on the circular ring by several metallic nails all round. This instrument is used in Hindusthani music. It is about 8" in diameter and is larger in circumference than the Kanjira.

Talam

Talam is the pair of small basin cymbals, the sweet tinkling of which goes very pleasingly with the soft music in a dance drama, dance concert, Harikatha or Tevara Bhajana. This is heavier than the Jalra and generally only the edges are struck. The two cymbals are not connected; but at the back of each is a tassel of silk or wood serving as a handle. The talam used in the Nagaswaram band resembles the ordinary Jalra but is thicker.

Kartal

This consists of a pair of wooden castanets and is used by mendicants. The flat circular plates have an extended handle. The instrument is held in either hand and the faces are struck against each other.

Silambu

This is a hollow circular ring of silver with metal pieces inside. It is worn on the legs. This along with the ankle-bells gives a sweet tinkling sound as the dancer sways to and fro. This is also called Nupuram and Karchilambu in Tamil i.e., silambu worn on the legs.

Gejji

This is the Salangai or Ankle-bells. It is also called Gejjam and Kinkini. This is between a musical instrument and an ornament. A thick cotton thread is passed
through the rings of the ankle-bells and knots on this thread between these rings keep the ankle-bells in position. This is tied round the ankles of all dancers (male and female), bhāgavatārs and some actors. Amongst the professional dancing girls, the gejījai is held very sacred, for it is the symbol of their profession. Once a woman of this class is decorated with the gejījai, which is always a solemn ceremony, she cannot give up her profession. Even in bhajanas, before the commencement of the Divyañāma Sankirtana, the bhagavatar is decorated with the gejījai by one of the senior devotees present. A special song is sung on this occasion. The untying of the gejījai marks the conclusion of the bhajana.

Tanjore Krishna Bhagavatar, the eminent performer of Harikatha Kālakshepam, is reputed to have selected Gejjai, each of which gave a note which coincided with the pitch of his voice.

Ankle-bells and Silambu are tied round the legs of cows on festival occasions like the Pongal. Every post-runner in India has a few bells attached to his little spear. Their tinkling may be heard for a long distance as the runner passes along the village.

Kaichilambu

Inside an elliptical hollow metal ring of about an inch in thickness are inserted thin metal pieces. Two such rings, one in each hand, are held between the fingers and moved to and fro or up and down so as to serve as a rhythmic accompaniment. This is very commonly used in Mariamman temples and in the temples of village deities.

Kaichilambu Pāṭṭu is a concert of folk music, wherein a singer narrates a story in song and verse. He provides a rhythmic accompaniment to his songs by the shake of the Kaichilambu in conformity to the beats of sarva laghu. The rhythmic accompaniment is further strengthened by performers on mridangam and ghatam. It may be pointed out that in all folk concerts, the rhythmical element is a dominant feature.

Budubuduke

This is a small mortar-shaped drum. It resembles the Damaru. It is found in sculptures and in the hands of Natarāja. It has two small strings with knots at the ends. When the drum is rattled, these knotted ends strike against the two faces of the instrument alternately. The drum is held between the thumb and the
fore-finger. Both the faces are covered with thin skin. It is a familiar instrument in the hands of the Kudukuduppai Andi, (Kudukuduppandi) a wandering minstrel in India. Kudukuduppai is only another name for Budubukai. This instrument bears an onomatopoeic name.

Pandarpuram Chipila

This chipila differs in shape and mode of play from the normal chipila. This is mainly used in Bhajana in Maharashtra. The name is derived from the fact that it is made in Pandharipur in the Bombay state. It consists of a pair of wooden pieces rectangularly shaped and 9" in length, and 2½" in breadth and 1" in thickness. Each piece contains four eye-lets 2" in length and ¾" in breadth. Thin brass pieces (two in each eye-let) are inserted into the eight slots in the wooden pieces. They produce a jingling sound when clashed against each other. There is a small hole in the centre of one piece for inserting the thumb and a long hole in the centre of the other piece for inserting the other four fingers.

Semakkalam

This is the bell-metal gong used by the Dasaris, mendicants, Pandarams and the people of the Panichavan caste. It is also called Somangalam on account of its moon-shape. It is used in temples also. A round stick of the calotropis plant is cut and used to strike the gong. In the month of Margazhi—the second half of December and the first half of January, it is a common sight to see the Pandarams in the streets of South India going about asking alms, singing Tamil songs, and keeping time with the Semakkalam. This instrument is also seen in the Tirupathi Pilgrims’ procession. While the sarva laghu accompaniment is provided by strokes on the Semakkalam, the cross-rhythmic accompaniment is provided by the same player playing on the Dasari tappattai.

Segandi is another name for this instrument. This name is derived from Jaya ghanta.

Musical Stone Pillars

We find Musical stone pillars in the temples at Madurai, Suchindram, Tirunelveli, Tadepatri, Lepakshi etc. But whereas these musical stone pillars (Sangita Stambhas), are tuned to a particular scale or raga, there are some musical stone pillars (Laya Stambhas) on which rhythmic accompaniment can be provided either to vocal music or dance. Such pillars are found in the Humpi ruins and Tadepatri. We find such pillars on both sides of the court-yard in the
Pampāpati shrine where music and dance were performed during the reign of the Vijayanagar Kings. Persons played on these pillars various jatis while the dance concert was going on. They played with sticks in a relay system. As the Musical pillars were scooped out of sonorous stone, they gave sweet musical notes.

Some of these pillars are so sensitive that a performer trained to play the Kanjira can with effect, perform on these pillars.

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Tala yantra

This is an instrument worked by electricity and devised in the Sangita Vadyalaya, Madras. There is a rectangular box of wood in which the electric motor is fixed. The rotating axis connected to the motor is fixed in such a manner that circular discs over which screw nails are fixed at spaced distances to obtain a particular tala, can be mounted and screwed on to the machine. Some of the screw nails fixed along the periphery of the disc, face upwards and some downwards. When the disc rotates, the screw nails strike against two levers. As the levers are struck and released, a small hammer at the end of the upper lever strikes against a piece of hollow cylindrical wood and similarly the lower lever strikes against a bell. The bell-sound stands the beat of the particular tala and the wooden sound indicates the finger counts of the tala. For the visarjita there is no sound and it is a silent count. For other talas we have to change only the disc. There are discs made for the several talas.
CHAPTER VII
MISCELLANEOUS

1. Hints to organisers of Exhibitions of Musical Instruments.

1. Take note of the space allotted and choose the number of instruments that can usefully be exhibited.

2. Select instruments representative of the stringed, wind and percussion groups.

3. Do not crowd the Exhibition with too many instruments.

4. Exhibit instruments which are attractive to look at and which are interesting from the cultural and musical points of view.

5. Present the instruments of a particular family side by side, so that the subtle differences in their construction and tone can be perceived. Udukkai, Budubudukkai, Davandai and Vira vandi are instruments of the same family but still differ from each other in some respect or other.

6. Get the necessary furniture inclusive of benches and tables and cover them with an attractive cloth. Place the instruments upon them and insert rests at appropriate places, so that the instruments will not topple down.

7. Engage the services of volunteers who are genuinely interested in music. They should, by their intelligent explanations and demonstrations make the visitors feel that they have profited by visiting the exhibition.

   While some volunteers will be required to regulate the admission and flow of visitors, some volunteers will be required to exercise vigilance and see that visitors do not pack off stealthily with some small instruments and spare parts. Other volunteers will have to be posted near each group of instruments to explain them to the visitors.

8. Volunteers who can speak fluently two or more languages should be engaged to explain the instruments to the visitors.
9. As more visitors are likely to come during holidays, extra volunteers should be engaged on those days.

10. Volunteers should be asked to work in shifts. They should not be compelled to work right through the day.

11. Visitors may sometimes ask silly questions but the volunteers should answer all of them patiently and to the best of their ability. They should give replies in a convincing manner and not lose their temper.

12. There should be a captain for the Volunteers. All instructions should be given to him, who in his turn will convey them to the concerned workers.

13. A Technician should be kept in readiness to attend to any emergency repairs that may arise in the instruments.

14. Care should be taken, while unpacking the instruments received for the exhibition and also while repacking them for being sent to the places from whence they came.

15. Every morning, the instruments should be carefully dusted and tuned and kept ready for being demonstrated.

16. Instruments should be arranged in tiers (at least three tiers) and displayed.

17. The instruments should be displayed according to a plan.

18. Some instruments may be exhibited in glass cases and some kept openly on tables and benches.

19. Do not arrange the instruments at a place exposed to sunlight and rain.

20. Wherever possible, arrange the instruments in a hall so that the demonstration on the instruments can be heard well.

21. Wherever possible, the making of a particular instrument through all its stages may be actually demonstrated to the visitors by a skilled workman. One day the making of a Vina, another day the making of Mridangam, another day the making of Nagaswaram etc. may be demonstrated.
22. Write in Indian ink in bold characters on white card boards or drawing papers the names of the instruments and parts and display them properly in front of each instrument or part.

23. Wherever possible, illustrations showing the postures in which the Instruments are held and played can be exhibited against each instrument. This will to some extent serve as an auto-education to visitors.

24. The list of instruments exhibited may be entered on a big sheet of paper and displayed at the entrance to the Exhibition.

II Makers of Musical Instruments and Repairers of Musical Instruments

The following code of ethics (គ្រូស្នៃ) may usefully be adhered to by those who have taken to Musical Instruments making, repairing and servicing as their career.

1. Examine well the instrument before selling it. If you are not yourself able to play the instrument, get some performer to play upon it and satisfy yourself regarding its correctness and concert-worthiness.

2. Give guarantees for the good performance of the instrument.

3. Take an interest in the instrument even after you part with it.

4. Be honest in your dealings.

5. Cultivate the good-will of the customers and win their confidence. It will pay you in the long run.

6. Do not sell instruments whose unworthiness you are patently aware of.

7. Be loyal to the Institution in which you are serving.

8. Business Integrity is a great virtue.

REPAIRS

1. Examine the Instrument brought to you for repairs carefully and suggest to the customer all the repairs that should be carried out in the interest of the good performance of the instrument. Make out a list of all the major and
minor repairs. It is quite possible that the customer may not be aware of all
the repairs that the instrument is in need of.

2. Prepare the estimates for repairs carefully and inform the customer of the
total cost. When he has agreed to pay the cost, do not ask for more money
at the time of the delivery of the repaired instrument. Such extra demands
only cause annoyance to the customer.

3. Calculate the number of days that will be needed to carry out the repairs
completely and deliver the repaired instrument on the day promised.

4. If you cannot carry out a repair, or if you do not possess the necessary
implements for carrying out a particular repair, say so frankly to the
customer and suggest to him the name of some competent repairer who will
be able to do justice to the work.

5. When an instrument is brought for repair, listen to its tone carefully and
see that after the repairs are carried out, the original tone is not
impaired in the least.

6. Do not remove the costly parts of instruments and replace them by inferior
ones. This is Adharma.

7. Give the customer useful hints so that the instruments purchased or repaired
will continue to give a faithful performance.

III Decoration work

Decoration work contributes to the handsome appearance of musical
instruments. The borders of the dandi, the circumference of the top plank
of the Tambura and Vina and the peripheral part of the top of the Kudam are all
ornamented with foliage work of ivory, deer horn, plastic or celluloid. Sometimes
a circular lining of horn, running parallel to the circumference of the top plank
along the edge is embedded. Mother of Pearl is also used in decoration work. The
sound holes on the top plank of the Vina are decorated with lotus designs.
Foliage work is also done around the region of the Nagapasam and the region
where the dandi is joined to the Kudam.

Embossed figures of Goddesses Lakshmi and Saraswati in gold or silver
coated with gold are fixed on the table of the Vina. The gourd of the Vina is
decorated with coloured paintings of deer, parrot, flowers etc.
The lines (Nabu) grooved on the outer surface of the Kudam also contribute to beautiful appearance. The Nabu is a feature of Tanjore model vinas. 23 lines (22 representative of 22 srutis and 1, representing the tara shadja) are grooved on the outer surface of the Kudam. The Mysore and Bobbili vinas have no such lines. There the Kudam is left free. In vinas with gourd resonators, it is ipso facto impossible to groove these lines. Trivandrum model Tamburas also have these lines.

Small pearls and delicately carved figurers of leaves and other designs in horn are fixed on to the tail-piece and pegs in some Violins.

IV Varnishing: Its Advantages

1. It gives an attractive appearance to the instrument.

2. It prevents insects and vermins from causing damage to the instrument.

3. The varnish on the Violin helps us to see the disposition of the grains of the wood (सस्माकांस, सश्रदी) more clearly. The Birds-eye maple wood used for the bottom plank in violin is seen to advantage when varnished.

Varnishing generally speaking, does not affect the tone of the musical instrument. Oil varnish, Spirit varnish, French varnish, Lacquer varnish, and Shellac varnish are the types of varnishes used.

V Vadya Guna doshas

Features of good Musical Instruments.

1. The tone should be pleasant and sufficiently rich.

2. The tone should have a continuity about it i.e., the tone should sustain for some time and not die out the moment it is produced by plucking.

3. The tone should have a carrying power.

4. The instrument should be easily and uniformly responsive through the entire range of its compass.
5. The instrument should be good to look at.

6. There should be a symmetry in its construction.

7. The sizes of the various parts of the instrument should bear a proper proportion.

8. Violins, wherein the Table has the grains dispersed in a lengthwise manner, and the Back with the grains dispersed in a breadthwise manner are speaking generally, good.

**Defects in Musical Instruments**

1. Presence of nodes, notches and ripples (हँड़ा हँड़ा) in the wood. This will be an impediment in the free vibration of the wooden resonator. The wood may develop cracks along those regions.

2. The tone being of a choked or gripped character (अन्धकार अन्धकार).

3. The tone having a tinge of nasality about it.

4. The tone having a tin quality.

5. The tone being somewhat incoherent and tremulous (अंगरेज अंगरेज).

6. The svarasthanas not being true on all the playing strings.

   In some violins, it may happen that on account of the faulty curve of the finger-board, correct notes may not be heard on all the svarasthanas on the 4th string. The gradient of the strings, the curve of the bridge and the curve of the finger-board are all inter-linked factors in the production of correct notes. Likewise in the vina, it may happen that on account of some of the frets not being placed exactly parallel to the meru and the bridge, faulty notes may be heard. The same defect will arise when the gradient of the frets is not homogeneous.

7. The Table of the instrument not being sufficiently thick. In such cases due to the pressure of the strings, the Table will sink down a bit off and on during play and this will result sometimes in alterations in the pitch of the strings.

8. Lack of symmetry.

   Imagine a line drawn right along the centre of a violin from the middle point of the scroll to the middle point of the end pin. If the two halves bifurcated by the line are not equal, that violin is said to lack symmetry.
9. The indiscriminate dispersal of the grains in the wood.

VI Causes for the dullness in tone of Shruti boxes and Causes for the decrease in pitch of the reeds of Shruti boxes.

1. The reeds may have become worn out due to long use.
2. The bellows might have developed leaks resulting in insufficient flow of air into the air chamber.
3. The valves may not be working well.
4. Dust might have got stuck up in the reed space i.e. in the space between the tongue and the frame of the reed.
5. The quantity of lead on the vibrating reed might have become less.

VII Glue

In stringed instruments, the various parts are separately made, assembled and glued. In Violin, gelatine is used for glueing. In other instruments, white glue and black glue are used. The skin is strained over the wooden frame in Kanjira and the glue used for the purpose is a paste prepared from the seeds of the tamarind tree, vendayam (fenugreek seed) and black gram. Vajjiram and Avalarakku are the names of the indigenous materials used for the purpose of glueing. Avalarakku is sea lac melted and run into thin layers like flaked rice. Wooden glue, is useful for pasting wooden parts and celluloid. Paper glue is useful for pasting paper and card-board in shruti boxes and violin cases.

VIII Shapes of Sticks used in Drumming.

The stick used in Tavil play is slightly conical in shape. It is made from the wood of the Iruvakshi tree (Tuscan Jasmine.) The stick used to strike the semakkalam is almost cylindrical in shape and is made from the plant calotropis. Sticks slightly curved at the end are used in Damaram. Sticks with a bend at the end are used in Urumi. Sticks wound with cloth are used in Kirikatti vadyam. Sticks with knobs at the end are used in Ramdolu.
GLOSSARY

Adana svaram, the extra hole other than the seven finger-holes and the four Brahma svaram holes in the Nagasvaram. This extra hole serves as an exit for the surplus air. Thus the Nagasvaram tube has in all 12 holes drilled on its sides.

Alinga, the horizontal posture in which an instrument is kept and played.

Anaisu (உலைசு) the metallic staple at the top of the nāgasvaram and into which the kendai (கேண்டை) is inserted. This staple is called the mel (மெல்) anaisu. The kizh anaisu or the lower anaisu is the bell-shaped piece adorning the bottom.

Anaisu (உலைசு), the corrupt form of Anaisu.

Arada (உரக்கோல்), the ornamental belt of horn passing round the underside of the dandi and seen near the kudam at one end, and the neck at the other end. In Vinas and Gotuvadyams of the Ekanda type, it may happen that the right end of the dandi may be a bit bigger than the left end. In such cases, an arada is fixed on only at the neck end. The ring along the centre of the shell of the mridangam is also called arada.

Ashrad asa vadyam, 18 instruments used in temple rituals, (see P. 24)

Atata (அடாதா), a drum played with hands: ex-Mridangam.

Atata - vitata (அடாதா-விதாதா) a drum played with hand and sticks: ex-Tavil.

Bass bar, the long piece of wood pasted on the under side of the top plank of the Violin and below the region of the left foot of the bridge.

Beradai, peg.

Bowed Instruments, instruments wherein the sound is produced by the friction of the bow on strings.

Brahma svaram, the four holes at the bottom of the conical tube of the Nagasvaram and which serve as controllers. The two pairs of holes are drilled opposite to each other.

Chala vina, an experimental Viṇa; see under Dhruva Vina, Chala Vina.

Chapu tol, the ring of skin between the black-paste and the outer ring on the right head of the mridangam.

Chenda melam, music by a group of instruments consisting of the Kurum kuzhal (a smaller Nagasvaram), Chenda, Vīkkān chenda, Kombu, and Ilattalam.

(The shell of chenda is of jackwood. Thick cotton ropes pass round the hoops of the two drum heads.)

Chin-rest, the small piece of concave-shaped wood clamped on to the Table on the left of the tail-piece of the violin and over which the chin of the player rests when the violin is played by persons standing. In India, wherein the violinist sits and performs, there is no need for the chin rest.

Chitra velai, decoration work.

Dandi, the stem or the cross bar in instruments like the Tambura, Vina and Gotuvadyam. The dandi is connected to the Kudam at one end and to the neck at the other end.
Daru talam, the oblong wooden pair of castanets used to provide rhythmic accompaniment in the Villupattu.

Deva vadyam, celestial instrument.

Dhruva vina, Chala vina, the experimental vinas devised and described by Bharata to illustrate the various kinds of srutis used in Indian music. In both the Vinas the strings were tuned to the notes of the Shadja grama 1, 10/9, 32/27, 4/3, 3/2, 5/3, 16/9. During the experiment, the strings of the Chala Vina were successively reduced in pitch by the interval of one sruti (i.e., pramana 81/80, purna 256/243, nyuna 25/24 and pramana 81/80) in four stages. At the end of the experiment, when the sa string of the Chala Vina was plucked, followed by the plucking of the seven strings of the Dhruva Vina, the scale of Sankarabharana was heard.

Donai, the wind instrument providing a soft drone accompaniment to the music of the Mukha Vina and used in temple rituals.

Edir-mettu, the small sliding bridge sometimes used in the tambura near the region of the neck. By moving this bridge up or down, the simultaneous decrease or increase of the pitch of the Panchama, Sarani and Anusarani strings becomes possible.

End-pin, the button at the top of the Violin and to which the gut of the tail-piece is tied. The end-pin is not glued. It is just held in position by the tension of the four strings.

Finger-board, the piece of black wood in the Violin against which the strings are pressed by the fingers of the left hand.

Gadichakkai, the two pieces of long wood placed along the two sides of the dandi in the vina and over which the waxy ledge is placed.

Gana-Pradarsana vadya, a musical instrument suitable for playing music and for illustrating musical facts, laws, and phenomena. Ex. Pradarsana Vina.

Gana vadya, a musical instrument in which one can play music; ex. Vina. The opposite of this is the Pradarsana vadya, which is useful only for demonstrating certain musical laws, facts and phenomena. Ex. Graha bheda pradarsini.

Gejikkai, the bodkin of ivory or horn used in the Nagasvaram for cleaning the mouth-piece of the lingering particles of saliva, during play.

Gudi melam, slang for an inferior type of band.

Headblock, the small block of wood that is glued on the inside of the violin at the region where the neck and the body are joined. This piece of wood gives stability.

Idamalai (இடம்பலை), the left head of the drum.

Izhāra (इझारा), the name for a bigger udukai in Kerala.

Jingles, small, thin discs of brass or other metal inserted in the slits in the frame of Kanjira and Chipla.

Jiva, Jivali, the thread of cotton, wool or silk placed between the strings and the bridge in Tambura and which when kept in position, gives an enriched tone.
**Jivara (இவர)**, the professional worker's term to denote all decoration work in the Vina, Tambura and Gotuvadyam.

**Jiva tagudu (இவர், டற்கு)** the metallic plate on the bridge of the vina, which when filed nicely and in the correct manner gives an enriched tone.

**Kaimani**, cymbals.

**Kalavai**, prepared paste.

**Kanni**, the string of horse hair tied right across the diameter of the udukkai on one side and which along with the vibration of the membrane gives a pleasing buzzing tone. There is no Kanni on the side which is played by the fingers.

**Karanai**, the black paste on the right head of the Mridangam; also called marundu.

**Kattai** (க.%). (Tam), 1. the key of the harmonium or the piano.
   2. The tuning block kept in position between the braces and shell in the mridangam and which when moved up or down helps in altering the sruti of the Mridangam to the required pitch.
   3. The body or shell of the mridangam.
   4. The stopper used in the gotuvadyam.

**Katti** (கட்டி), the professional worker's name for the fret of the vina. It is called கட்டி, கட்டி கட்டி or கட்டி கட்டி கட்டி according as it is made of brass or bronze.

**Kavana maddalam**, a temple drum performed in the Viṣṇu Kshetras during the Palarinquin dances.

**Kendai**, the metallic tube inserted into the conical tube of the nagasvaram at the top. The narukku or the mouth-piece is inserted into the kendai and the instrument played.

**Kinkinijālā**, a belt mounted with sweet-sounding gejajai and worn around the waist by dancers.

**Kimam**, the socket of metal connecting the dandi and the gourd rest of the Vina and Gotuvadyam.

**Kodu (கோடு)**, stick.

**Kolmani**, the name in Kerala for the Visukol used in the Villupattu.

**Korukkāntattai**, the seasoned piece from which the narukku for Nagasvaram is made. Korukku grows in marshy regions along the beds of the Kaveri river.

**Kudam**, the resonator in stringed instruments. In the Vina, it is hemispherical in shape.

**Kudikkai**, another name for Kuzhavi; see under Kuzhavi.

**Kumbha vadyam**, an instrument performed at the Isāna sandhi (north-west) in the Navasandhi rituals of temples.

**Kuzhavi**, the stopper i.e. the piece of wood held in the left hand and used to glide over the strings while playing the Gotuvadyam. Also called Kattai (கட்டி). **Kuzhimani**, Kuzhittālam.
Langar, string-holder: the metallic strings tied on to the nagapasm at one end and provided with rings at the other end. The playing strings of the Vina are tied to the rings of the langar and after passing over the finger-board they are tied to the pegs at the other end.

Langar valaiyam, the ring fastened at the end of the langar and to which the string is tied in the vina and the gotuvadyam.

Madachakkai, same as Madachattam.

Madachattam (మాదాచట్టము), the top plank of the peg box of the Vina and Gotuvadyam.

Mainam, wax

Manikkai, the beads threaded on the strings between the bridge and the attachment in Tambura and which help in finer adjustment of sruti. The manikkai may be of the shape of a bead or it may be shaped like a heart. It may be shaped to look like a swan or fish or some other animal.

Mamidu, the black paste on the right head of the mridangam.

Māvu (Tam), literally flour: denotes the temporary paste of soojee and water that is prepared and applied on the left head of the mridangam just before the commencement of a concert. The quantity of this paste is so adjusted that the note given by the left head is a fourth note below that of the right head.

Melachakkai, same as mela chattam.

Melachattam, the two long, thin wooden pieces glued on the two sides of the Dandi of the Vina and over which the waxy ledge is placed. On the waxy ledges are placed the frets.

Metti, the metallic ring with which the rim of the Dēp is sometimes struck.

Mettu, (1) bridge; edirēttu (opposite bridge) and pakka mettu (side bridge).

(2) Fret of the vina.

Mittu tol, (మిత్తు తోలు) the outer ring of skin on the right head of the mridangam.

Mute, a contrivance for deadening partially the volume of tone of musical instruments like the violin. It consists of a small piece of metal or wood and is placed over the bridge, clamping it slightly. Muted violins give a soft mellow tone.

Mutṭu (ముట్టు) the skinned drum head. The skinned left head is called idadu muttu (ఇడాడు ముట్టు) and the skinned right head as Valadu muttu. Edama muta and Kudi muta are the respective names in Telugu.

Nābu, (నాము) the decorative lines grooved on the outer surface of the kudam of the Tambura and Vīnā. These are 23 in number (22 srutis of a shtayi plus the octave shadja).

Nagam, the wire plectrum worn on the forefinger and middle finger of the right hand for plucking the strings in Vina and Gotuvadyam.
Nagapāsam, the metallic attachment of the shape of a horse-shoe and screwed on to the top of the Kudam. The langars are tied to the horizontal head-bar of the Nagapāsam.

Nagara mantapam, A small building wherein the nagara was stationed. (P.2)
Naiyāndi melam, rustic orchestra.
Narikku, the mouth-piece of the nagasvaram, made from korukku.
Nissāri vina, fretless vina, Ex: Gotuvadyam. The opposite of this is the Sāri vina i.e. a fretted vina.
Pakka mettu, side bridge accommodating the sruti-cum-tala strings in the Vina, Gotuvadyam and Pradarsana Vina.

Pancha mahā sabdam, the covetous honour bestowed upon men of letters and distinction in the past. The recipient of the honour had the right to be preceded by the performers on the five instruments whenever he walked along the streets. (see P. 25)

Pancha vadyam, five instruments played during the Temple rituals in Kerala.

Pāṭṭai, the leather pad used to strike the Ghatam in Vīllu Pattu.

Peg box, the region in the neck part of the Vina, Gotuvadyam and Violin containing the pegs.

Plucked instruments, instruments wherein the sound is produced by plucking the strings. Ex. Vina, Gotuvadyam, Tambura and Sitar.

Pradarsana vadya, a musical instrument with which one can demonstrate the musical laws, facts and phenomena. Ex. Graha bheda Pradarsini.

Pulsatile instruments, percussion instruments like the drums and cymbals.

Reed-board, the piece of rectangular plank in the sruti-box on which the reeds are screwed.

Resin, the transparent substance which is prepared and which when rubbed over the hairs of the bow in the Violin and instruments of the Violin family, helps in obtaining a sufficient grip over the strings.

Sangita melam, the band playing classical music.

Sāri (sōrī), the fret in fretted instruments like the Vina and Sitar.

Sātāni (sōtāni), the circular ring of metal with skin strained over it. This skinned ring is stretched over the shell of the Idakka on the two sides and played.

Sound post, the small vertical piece of pine wood connecting the top plank and the bottom plank of the Violin and placed near the region of the right foot of the bridge at a distance of about 1 to 3 millimetres behind it.

Struck instruments, stringed instruments wherein the sound is produced by striking the strings with a hammer or stick (Ex. Piano and Gettuvadyam).

Suraikkai, the gourd rest of the vina near the region of the neck. It also serves as a resonator. In Tanjore vinas, the suraikkai is made of cardboard. Sometimes it is also made of wood or metal.

Suttu var, the braces of leather wound round the central part of the shell of the Tavil and over the braces passing through the hoops of the instrument at the two sides.
Table, the top plank of the Violin and other stringed instruments and over which the bridge stands.

Tagudu (తగుదు), the metallic plate on the bridge of the Vina and Gotuvadyam.

Tail-piece saddle, the small piece of wood glued on to the top of the Table near the end-pin and over which the gut of the tail-piece passes.

Top-nut, the small piece of wood glued on to the neck of the Violin at the bottom of the finger-board and over which the strings pass before reaching the peg box.

Toppi, the left head of the mridangam.

Tudi (టుడి), an hour-glass shaped drum and belonging to the udukkai family. Its shell is longer and one side of it is struck with a stick. The instrument held between the legs by Nataraja in the Urduha Tandava pose is the Tudi. The pitch of the note given by the Tudi was an octave lower down compared to the note given by the damaru. For some portions of the dance, the two drums were simultaneously played, and the strokes blended together well since their notes bore the octave relationship (dvigunatva).

Turutti, the bellows of harmonium and sruti-box.

Urdhva, the vertical posture in which an instrument is kept and played.

Urumi melam: the rustic band wherein the urumi, nagasvaram, tavil, dolak and cymbals are played together.

Uruttu (ఉరుట్టు), the rings gliding over the langar in vina and gotuvadyam, and which help in the finer adjustment of sruti (pitch).

Valantalai, the right head of the drum.

Vettuttattu, (వెట్టుతాత్తు) the outer circular ring of skin on the right head of the mridangam.

Villadi kol, the stick used to strike the cord of the long bow in the Villu pattu.

Villu, the long bow used in Villu pattu (folk song). The stretched string of the Villu is twisted and is struck with two sticks provided with jingles. These sticks are called Visu kol and Villadi kol.

Virānam, a drum used in folk music.

Visu kol, same as Villadi kol.

Vitata (వితటా), a drum played with sticks, ex - Damāram.

Yali mukham, the head-piece of the Vina, shaped into the figure of a Yali, a weird animal.
Mridangam in the playing posture
Gettu Vadyam in the playing posture
Moresing in the playing posture
Tabla and Baja
Panchamukha Vadyam in the playing posture
Suddha Maddalam in the playing posture
Chenda in the playing posture
Idakka in the playing posture
Glass Doluk
Timila in the playing posture
Dhanka
Dep, Jamidika, Udukkai, Davandai. Suryapirai, Chandrapirai & Dasari tappattai
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Jamidika in the playing posture
Kaichilambu in the playing posture,
Varieties of sticks used in playing drums
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