



# सांस्कृतिक स्रोत एवं प्रशिक्षण केन्द्र CENTRE FOR CULTURAL RESOURCES AND TRAINING

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## Musical Instruments

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India is the inheritor of one of the most ancient and evolved music systems in the world. The continuity of the musical traditions of India is established through a study of musical texts and numerous visual references one finds of musical instruments in painting and sculpture from prehistoric times to the present day.

The earliest evidence of music activity is found on the walls of cave paintings at Bhimbetka and in several parts of Madhya Pradesh, which were occupied by man approximately 10,000 years ago. Much later, in the excavations of the Harappan Civilization also, evidence is available of dance and music activity.

Musical instruments are the tangible and material representation of music which is an auditory art. A study of these helps in tracing the evolution of music and also explains many aspects of the material culture of the group of people to which these instruments belong. For instance, the hair used for making the bow, the wood or clay used for making the drum, or the hide of animals used in the instruments, all these tell us about the flora and fauna of a particular region.

The Tamil word for instrument-Karuvu is found in Sangam literature of the 2nd to 6th century A.D., the literal meaning of which is "tool". This is extended to mean instrument in the context of music.

Very ancient instruments may be seen as an extension of the human body and we find even today, sticks and clappers. Dried fruit rattles, the Kaniyani Danda of Oraons or the dried berries or shells tied to the waist are used for producing rhythm, even today.

The hand was referred to as the Hasta Veena, where the hands and fingers are used to show the notation system of vedic chanting, coordinating sound with mudra-hand gesture.

In the Natya Shastra, compiled by Bharat Muni dated 200 B.C.-200 A.D., musical instruments have been divided into four main categories on the basis of how sound is produced.

- The Tata Vadya or Chordophones- Stringed instruments
- The Sushira Vadya or Aerophones- Wind instruments
- The Avanaddha Vadya or Membranophones- Percussion instruments
- The Ghana Vadya or Idiophones- Solid instruments which do not require tuning.

#### Tata Vadya - Stringed Instruments

The tata vadya is a category of instruments in which sound is produced by the vibration of a string or chord. These vibrations are caused by plucking or by bowing on the string which has been pulled taut. The length of the vibrating string or wire, the degree to which it has been tightened, determines the pitch of the note and also to some extent the duration of the sound.

The tata vadya are divided into two broad categories-the plucked and the bowed, and further subdivided into the fretted and non-fretted variety. The oldest evidence of stringed instruments in our land, however, are harps in the shape of the hunters bow. They had a varying number of parallel strings made of fibre or gut. There used to be one string for each note, plucked either with the fingers or with the plectrum called the kona. Veena was the generic term for stringed instruments referred to in texts: and we have the ekatantri, the sata-tantri veena, etc. The Chitra had seven strings and the Vipanchi nine; the first was played with the fingers and the second with a plectrum.

Representation of these can be found in many sculptures and murals of olden days, as for example, in the Bharhut and Sanchi Stupa, the reliefs of Amaravati and so on. Mention of Yash is found in old Tamil texts from the 2nd century A.D. The playing of such instruments was an important part of ritual and ceremonies. As the priests and performers sang, their wives played on instruments.

Another class is of the dulcimer type, where a number of strings are stretched on a box of wood. The best known of these was the sata-tantri veena-the hundred stringed veena. A close relative of this is the Santoor, a very popular instrument still played in Kashmir and other parts of India.

A later development of stringed instruments are the fingerboard variety, which were most suited to Raga Sangeet and many of the prevalent instruments of the concert platform, whether fretted or non-fretted, bowed or plucked fall into this category. The great advantage of these instruments is the richness of tone production and continuity of sound. In the finger-board instruments all the required notes are produced on one chord (string or wire) by altering the length of the wire either by pressing it with a finger or a piece of metal or wood. This increase or decrease in the length of the vibrator wire is responsible for the changes in pitches of notes-swaras.

Bowed instruments are usually used as an accompaniment to vocal music and are referred to as Geetanuga. They are divided into two broad categories-the upright and the inverted. In the first category the fingerboard is held straight up as in the case of Sarangi and in the second category, that is, in the inverted variety, the board or resonator is held towards the shoulder and the fingerboard dandi is held across the arm of the player as in the case of the Ravanahastaveena, the Banam, the Violin.

#### Kamaicha

The Kamaicha is a bowed lute played by the manganiars of west Rajasthan. The whole instrument is one piece of wood, the spherical bowl extending into a neck and fingerboard; the resonator is covered with leather and the upper portion with wood. There are four main strings and a number of subsidiary ones passing over a thin bridge.

The kamaicha links the sub-continent to Western Asia and Africa and is considered by some scholars to be the oldest instrument, with the exception of the Ravana Hatta or Ravana Hasta Veena.

The variety of upright bowed instruments are generally seen in the northern areas of the country. In these there are again two varieties, the fretted and the non-fretted.



#### (a) Different parts of a stringed instrument

The resonator- Toomba of most stringed instruments is either made of wood or from a specially grown gourd.

Over this Toomba there is a plate of wood known as the Tabli. The resonator is attached to the fingerboard-the Danda at the top end of which are inserted the pegs-the Khoontis, for tuning the instrument.



On the Tabla there is a bridge made of ivory or bone. The main strings pass over the bridge, some instruments also have a number of sympathetic strings below the main strings. They are called the Tarab. When these strings vibrate, they add resonance to the sound.

On the fingerboard of danda, in some instruments, metal frets are attached which are either permanently fixed or are movable. Some stringed instruments are plucked with the fingers or by using a small plectrum called the Kona, while in others, sound is produced by bowing, (See diagram A)

#### (b) Placement of Swaras

The line drawing shows placement of notes-the swaras-Sa Re Ga Ma Pa Dha Ni Sa on a 36" length of wire, the frequency of vibration of each note is also shown in the picture. (See diagram B).

### Sushira Vadya

In the Sushira Vadya group, sound is produced by blowing air into an hollow column. The pitch of the note is determined by controlling the air passage and the melody is played by using the fingers to open and close the in the instrument. The simplest of these instruments is the flute. Generally flutes are made of bamboo or wood and the Indian musician prefers these due to the tonal and musical attributes of these materials. However, there are references of flutes made of red sandalwood, black wood, cane, ivory, bronze, silver and gold also.

The diameter of the bamboo flutes is usually - about 1.9 cms; though, flutes with wider diameters. are also commonly, used. The musical text Sangeet Ratnakar written in the 13th. century by Sharangdev refers to 18 kinds of flutes. These categories are based on the distance between the blow hole and the first finger hole (see diagram).

Excavations of the Indus civilizations have shown bird whistles of clay, and seals which show wind and percussion instruments. Actual musical instruments are made of bamboo, wood, animal hide, etc. which perish when buried for any length of time, hence, flutes made of wood or bamboo have not survived the ravages of time and are not found in excavations of past civilizations.

There is reference in the Vedas to an instrument-the Venu which was used as an accompaniment to chanting and recitation. There is also mention of a kind of a flute called the Nadi. The flute has a variety of names like Venu, Vamsi, Bansuri, Murali and so on in the north, and Pullankuzhal, Pillankarovi and Kolalu in the south. The wind instruments are roughly divided into two categories on the basis of how sound is produced. They are:

- the flutes, and
- the reed instruments

### Flutes

Single or double flutes with only one hollow tube with finger holes for controlling the pitch of the note are very common in many parts of the country. Long horizontal flutes with a larger diameter are used to play slow passages such as Alap of the lower registers. Smaller and shorter flutes, sometimes held vertically, are used for Taans, the faster passages, and also for producing higher pitches of sound. The double flutes are mostly played by musicians of the tribal and rural areas and are rarely found on the concert platform. They resemble beak flutes which have a narrow aperture at one end. One finds references to these types of instruments in the sculptures of the first century in the Sanchi Stupa which shows a musician playing on a double flute.

### Reed instruments

Reed instruments like the Shehnai, Nadaswaram, etc., have one or two reeds inserted in the hollow beak or tube of the instrument, these vibrate when air is blown into them. In this type of instrument the reeds are bound together with a gap between them before inserting into the body of the instrument. The body of the tube is conical in shape narrow at the blowing end and opening out gradually with a metallic bell at the farther end to enhance the volume of the sound. A set of spare reeds, an ivory or silver needle for adjusting and cleaning the reeds are also hung from the mouth piece of the instrument.

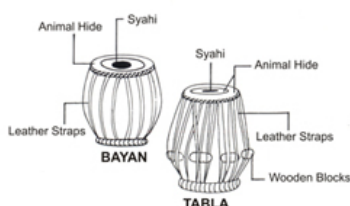


The Shehnai is a reed instrument in which there are seven holes along the tube which are used for playing the melody by opening and closing them with the fingers. It is known as a Mangal vadya and is usually played on all auspicious occasions in north India such as marriages, temple festivals, etc. The Shehnai is considered to have come to India from West Asia, there are other scholars who believe that this instrument travelled to China from India. It is now a popular instrument in concerts, the sound is very sweet and suited for playing Raga Sangeet. In the early fifties of this century, Ustad Bismillah Khan is credited for popularising this instrument. Today, Pt. Anant Lal, Pt. Daya Shankar are also noted Shehnai players.

### Avanaddha Vadya

In the Avanaddha Vadya category of instruments, sound is produced by striking the animal skin which has been stretched across an earthen or metal pot or a wooden barrel or frame. The earliest references to such instruments have been found in the Vedas where there is mention of Bhumi Dundhubhi; this was a hollow pit dug in the ground and covered with the hide of a buffalo or ox which was stretched across the pit. The tail of the animal was used for striking the animal hide and thus sound was produced.

Drums have been divided into different categories on the basis of their shapes and structure as also the position and placement for playing. The main categories are-Oordhwaka, Ankya, Alingya and the waisted or the Damaru family of drums. (see diagrams).

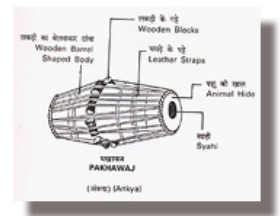


### Oordhwaka

The Oordhwaka drums are placed vertically before the musician and sound is produced by striking them with sticks or the fingers. Prominent among these are the Tabla pair and Chenda.

### Tabla

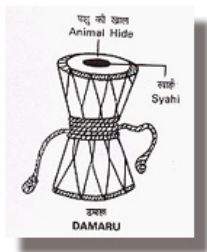
The Tabla pair is a set of two vertical Oordhwaka drums. The right side is called the Tabla and the left, the Bayan or Dagga. The Tabla has a wooden body with a covering of animal skin, this is held together with leather straps. Between the straps and the wooden body, oblong wooden blocks are placed. These are used for tuning the drums. There is a syahi paste applied in the centre of the animal skin, the tabla can be tuned accurately by striking the rims with a hammer. The body of the bayan is made of clay or metal and is covered with animal skin which also has syahi paste applied on it. Some musicians do not tune this drum to an accurate pitch.



The tabla pair is used as accompaniment to vocal and instrumental Hindustani music and with many dance forms of northern India. The complicated talas of the Hindustani music are played with great virtuosity on the tabla. Prominent musicians playing the tabla today are Ustad Alia Rakha Khan and his son Zakir Hussain, Shafat Ahmed and Samata Prasad to name a few.

### Ankya

The Ankya drums are held horizontally before the musician and usually both sides are covered with animal hide. Sound is produced by striking both sides with sticks or fingers. Today, in this variety, the Mridangam, Pakhawaj, Khol, etc. are prominent. The musician may sit on the floor and play the instrument or hang it from the neck while dancing or standing. Seals which have been excavated of the Indus Civilization show figures of men playing the horizontal drums hung from the neck.



### Alingya

The third variety are the Alingya drums. These drums have the animal hide fixed to a wooden round frame and are embraced or held close to the body with one hand while the other hand is used for playing on the instrument. Under this category, the Duff, Dufflies, etc. are very popular.

### Damaru types

Another prominent group of drums are the waisted or Damaru variety. The instruments in this category range from, the small Huddaka of Himachal Pradesh to the larger instrument known as Timila of the southern region. The former is struck with the hands while the latter is hung from the shoulders and played with sticks and fingers. These are also known as the hourglass variety of drums as their shape resembles an hourglass.

### Ghana Vadya

The earliest instruments invented by man are said to be the Ghana Vadya. Once constructed, this variety of instrument do not need special tuning prior to playing. In early times these instruments were the extension of the human body such as sticks, clappers, rods, etc. and were also closely related to objects of utility in daily life such as pots and pans, jhanj, falams, etc. They are principally rhythmic in function and are best suited as accompaniment to folk and tribal music and dance.

### Jhanj Player, Konarak, Orissa

In the Sun temple of Konarak, Orissa, we see this large sculpture nearly 8 ft. high of a lady playing the Jhanj.

