CHAPTER VII

THE STUDY OF NADAPRAKAŚĀ - IN SCIENTIFIC AND LITERARY MANNER

This chapter forms the core of the thesis as it is very long, it is divided in two units for the sake of comprehension. The first unit discusses āhata nāḍā and the second is anāhata nāḍā
UNIT - I
THE STUDY OF NADAPRAKĀSA - IN SCIENTIFIC AND LITERARY MANNER

WORSHIP OF NADABRAHMA

The book ‘Saṅgīta Candrika’ starts with the worship of Nādabrahmā.

“ॐ! Nādabindusāktyākhya sāntabhēdēna bhasvate
Namaścidañantamayabrahmaṇe jagadatmane” ¹

Salutation to the Nādabrahmā which is the Sakti situated in union with the Śiva, due to the ‘praṇavā’ which is the comprehension of 'A' kārā, 'U' kārā, 'Ma' kārā, Nādā, Bindu, Śakti and Śāntā.

The² divisions of ‘ॐकार’ have been explained in the previous chapters. Praṇavā has seven elements³ - so say ‘Mantra Śastras’. Explanation of those elements is done here. Hence it can completely be considered as a prayer based on tantrik concept or thoughts. Worship of Śakti is seen here.

Paraśakti’s lotus like feet manifest itself as Humsamantrā and as a union of nāda-bindu which is also the form called ‘Śabdabrāhmaṇa’⁴. What we can understand from the first line is the worship of ‘Sṛicakrā’ with ‘ Antarapūja’ as interpreted by ‘Samayācāraś’. When Devi is worshipped in
the form of ‘Sṛcakrā’ in the innerheart, she appears immediately shows her blessings. In Praṇavā, the ‘A’ kārā, ‘U’ kārā and ‘Ma’ kārā are the comprehension of Brahmā - Viṣṇu and Rudrā. Bindu is the comprehension of ‘Sadāśivā’ and Nādā is that of ‘Parāśakti’. Since Nādā is situated in ‘Bindu, it is opined that ‘Dēvi’ is united in ‘Sadāśiva’.

Here it is mentioned as ‘Samayācāra Upāsanā’ because of the usage of the phrase ‘Citānantamaya Brahmāne’ in the second line. The place of bindu in nine triangled Sṛcakrā is situated below five triangles which are the comprehension of Sakti (saktyātmakā) and above the four triangles which are the comprehension of Siva: it is the position which is distinguished by Śrīsankara asks ‘Sudhāśindhū’.

Seven Parts of Pranavā - The Origin of ‘Letters’.

In Īohm-kara, seven elements are shown as ‘A’ kārā, ‘U’ kārā, ‘Ma’ kārā, Nādā, Bindu, Śakti and Śāntā. Praṇavā thus is the ‘Brahmarūpa’ and ‘Brahma vācakā’. Since Brahma is the supreme being, there is no differentiation as ‘Vācyā or Vācaka’. ‘Sabdabrahmā’- the Atma of all beings and universe, which is full of anandā without any trace of sorrow which is also called Caitanyasvarūpā. From this nādabrahmā sprang Mahattattvā and other Śūksmabhūtā including the elements, which are the different forms of Nādabrahman. This order of
creation has been explained in the previous chapters in detail. Seven elements of *Prana*va are analyzed in detail in ‘Prapancasaranavacana’ of Sankaracarya and also the origin of ‘Akshara’ (letters).

“Sā tattvasā jñā cinatra jyotīsa sannidheṣtadā
vicikirṣurghanibhūtva kvacidabhyēdi bindutām
bindōtasmād bhidyamānād ravō f vyaktātmako bhavēt
Sa ravaśrutisamanpanneissābda brahmēdi kathatē
tatvistārprakārō f yam yadhā vaksyāmi sāṃpratam
Avyaktādantaruditavibhēda gahanātmakam
mahannāma bhavēttatvam mahatō f haṃkrītistadhā
Akārācāpyukkārasca makārō bindurēva ca
nādasāaktīsca śānśca tārabhēdāssamīritāh” 10

The seven svaras of music and other varnas are originated from the seven elements of *prana*va, which is the state of *Anaha*va nāda11

**Concept of Nādabrahmā**

According to *Nissangaśārṅgadēva*, the nādabrahmā and its worship :-

“Caitanyam sarvabhūtānām vivarttam jagadātmanām
nādabrahmatadadānandamadvītyamupaśmahe
Nādopāsanayā dēvā brahmavishnumahēsvarāh
bhavantyupāsita nūnam yasmādeśe tadātmanah"

Let us worship nādabrahman, that incomparable\textsuperscript{13} bliss which is immanent\textsuperscript{14} in all the creatures as intelligence and is manifest in the phenomenon of this universe. Indeed through the worship of nādā we worship gods like Brahma, Viṣṇu and Śiva, since essentially they are one with this nādā.

The benedictory verse is addressed appropriately to nādabrahman. The author having described the genesis and the structure of human embodiment, which is the instrument of voice production, now turns to give a detailed treatment of voice, its constituent elements and other related matters, in the words kārīka, having dealt with the producer, the author purposes to deal with the product ‘Caitanyam',\textsuperscript{15} means the sentience in all the creations. Nādabrahman refers to the indeterminate state of manifestation and as such it is all pervading, without any limitations of individuation. Caitanyā is the essence of having without implying any opposite.

The concept of nādā and brahma here confronted with the concept of nādabrahman.\textsuperscript{16} The commentators explain it grammatically as nāda ēva brahma, i.e. nādā is itself brahma, or it may also be interpreted as ‘nādā is brahma like’. If nādā is taken as an adjective to brahma, then it will qualify the word
brahman, in which sense kārikā interprets nāda as an object of superimposition of brahman which takes place due to the common character both viz, sentience. Nāda and brahman are two words representing two different concepts, the word nāda brahman is a compound word representing a single concept, viz, brahman manifests as nāda. Thus ‘nāda ēva brahman’ may be understood in this light.

Worship is an act of devotion and the incomparable bliss of nāda is the ultimate source of all such inspiration. The gods Brahmā, Viṣṇu and Siva in the puranic mythology represents the three aspects of the manifestation of brahman into the phenomenon of the universe, viz, creation, preservation, destruction, the three being the part and parcel of a single movement, called ‘Śakti’ or the energy or the creative power of brahman. This energy is also called nāda or śabda, that is the power of brahman. Nāda brahman is also known as śabda brahman. So essentially the gods Brahmā, Viṣṇu and Siva being the aspects of the same deity, are one with Nāda.

A REMEMBRANCE OF ANCIENT PRECEPTORS

The book starts with the worship of Nādabrahman along with the desire to get blessings from preceptors.
Bless me with the droplets of ambrosia (*Amrut*) which is the graca of the lotus -s heart of preceptors who are the cause for the blooming of *Kumuda* (a kind of flower) of knowledge. This book had been written by the said author after a systematic study of many scientific documents on music published by ancient scholars and also experimenting with the usages and methods.

From time immemorial many created scientific books on the subject of music.

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"Samiksya purvastrani prayogam pariviksyacanivatakandreana laghusangitaacandrika" 19
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"Sadasivah brahma bharatah kasyapoh munih
matango yastikoh durgah saktissarddulakohalau
visakhiloh dattilascakambalo f svatarastadhah
Vayurvisvavasurambharjtnana narahad tumbaraah
Ajaneyoh matriguptoh ravanoh nandikesvarah
Svaitirgunoh binduraah ksetrarajasca raulah
rudroh nanyabhupaloh bhjavallabhastathah
paramarddih ca somesoh jagadekamahipathi
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18 Anugrahantu vijnanakumudobodhanendavah
gurudeva hrdamboha karunamrta bindavah

19 Samiksya purvastrani prayogam pariviksyacanivatakandreana laghusangitaacandrika

20 "Sadasivah brahma bharatah kasyapoh munih
matango yastikoh durgah saktissarddulakohalau
visakhiloh dattilascakambalo f svatarastadhah
Vayurvisvavasurambharjtnana narahad tumbaraah
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Svaitirgunoh binduraah ksetrarajasca raulah
rudroh nanyabhupaloh bhjavallabhastathah
paramarddih ca somesoh jagadekamahipathi
vyākhyātārō bhāratīye lokātōdbhāta sāṅkhukāh
bhättābhīnāvaguptāscā srimān kirtiṭidharābhīdhaḥ
Sāṅgadēvassōmanādē vraghunādhamahīpātiḥ
pārāśvādevā kallinādē kalaṅkaścāpyahōbīlaḥ
purandaragururāmāmāmātyō venkāṭadīkṣitāh
gōvindadīkṣitā balaramākhya dharāṇīpātiḥ
Sāṅgitagrandhakartārō bahāvō f nyē ca viśruthāḥ"

It is after a determined study and application of the scientific documents on music written by the so suggested ancient preceptors like Bharatamuni and Matanga, which are very popular even today that the said author named Krṣṇacandra had written this script. This book has been written with a view to grasping easily the principles of music and to learn it with joy as the writer himself has used mellifluous words like Candrenā, Candrika, Laghu and Tanyate. Music is a phenomenon of sound (music is ‘Sabdavisēśam’). There are two different types of sounds ‘Dhvanisvarūpā’ (music) and ‘Akṣarasvarūpā’ (literature). The former gives enjoyment to the heart irrespective of the meaning of words where as in the latter words give us joy. Instrument music is also part of music. Hence, to explain the special cause of that Sabdavisēśā, firstly, different kinds of sounds and its general characteristics are explained.
Types of Sounds

Sound (Nādā)

Āhatā  Anāhatā

There are two types of sounds which are worth hearing such as Āhatā and Anāhatā²³. How worth the qualities like rūpa, rasa, gandha, sparśa and the things including clothes which are dependable on them to be grasped by the sense organs of vision, taste, smell and touch, in the same way, the thing which is suitable to be grasped by the sense of hearing, is the sound. The sound exists generally as two types: Āhatā and Anāhatā²⁴.

The atoms in water, earth etc., and their shape, taste etc., cannot be grasped with the sense organs. Even then there is enough ‘Svarūpayōgyatā’ in those atoms which enable it to be grasped by the respective sense organs. We cannot grasp them since these atoms do not unite together to form a big thing. Likewise, even though we cannot grasp anāhatā sound, it has the qualities as ‘Svarūpayōgyatā’ to be able to be grasped by the sense of hearing²⁵. It is in this way that all the scientists on music differentiate the sounds which are worth to be heard. The said author has used the word ‘Śabdā’ in the same meaning as ‘Nādā’. All other authors have used the same as ‘Nādā’²⁶.

In Sangitaratnākarā:-
“Āhatō f nāhataścēti dvidhā nādō nigadyate
Sō f yam prakāśate pīnde tasmāt pīndō f bhidhiyate”

Nādā is said to be two fold viz produced and unproduced. Since it manifests itself in the human body, the process of embodiment is being described.

ĀHATA NĀDĀ

It is due to the collision cum union of two solid objects that any kind of Ahata sound is produced. The collision cum union (samyōga) between two things may be of two types such as Abhighātā and Nōdanā. That which collides fast is one type. That which joins very slowly is another type. Of these that which collides fast is called ‘Abhighātā’ and the other one is called ‘Nōdanā’. It means that the cause of all the sounds we hear are by the collision cum union of two solid objects which is the form of Abhighātā.

SAMYŌGAJAM

When the gong of a bell is struck with a hammer, sound is produced. The bell is set into vibration and sound is echoed through the air. These vibrations reach the ear and the eardrum is set into vibration. These vibrations are communicated through the brain. By touching the gong with the hand, one can feel the vibration of the gong. Similarly the cycle bell produces sound
due to the vibrations produced by the gong. When the cycle bell
is touched with hand, the vibrations are stopped and the bell
does not produce sound. If a pith ball pendulum is held in
contact with the edges of a vibrating gong, the pith ball moves to
and fro. This shows that the gong vibrates as long as the sound
is produced.

**HUMAN EAR**

Human ear is a natural sound receiver. The human voice and
the human ear together form a fundamental and natural sound
system.

The hearing mechanism is a highly sensitive electro-acoustic
transducer. The human ear responds to sound waves of a wide
range of frequencies, wave forms and intensity. It communicates
acoustic pressure, variation of the eardrum into pulses in the
auditory nerve system. These pulses are communicated to the
brain which in turn identifies and interprets these pulses. The brain
converts these pulses into aural sensations viz, perception of
sound.

The human ear responds to frequencies in the range of 20 to
20,000 hertz. The range of sound intensity over which the ear
is sensitive is 1 watt/m² to 10⁻¹² watt/m². The human ear is
more sensitive to variations in frequencies as compared to varia-
tions in sound intensities. The human ear is comparatively more
sensitive to sound of low intensity.

For animals the audible frequency range for hearing is different. Beyond these frequency limits, the sound is not audible. The elastic waves relating to frequencies higher than 20,000 hertz are called Ultra sonic waves or Ultrasonics.

HEARING

Sound is a series of vibrations moving as waves through air or other gases, liquids, or solids. A ringing bell, for example, sets off vibrations in the air. Detection of these vibrations, or sound waves, is called hearing. The detection of vibrations passing through the ground or water is also called hearing. Some animals can detect only vibrations passing through the ground, and others can hear only vibrations passing through water.

Humans, however, can hear vibrations passing through gases, solids, and liquids. Sometimes sound waves are transmitted to the inner ear by a method of hearing called bone conduction. For example, people hear their own voice partly by bone conduction. The voice causes the bones of the skull to vibrate, and these vibrations directly stimulate the sound-sensitive cells of the inner ear. Only a relatively small part of a normal person's hearing depends on bone conduction, but some totally deaf people can be helped if sound vibrations are transferred to the skull bones by a hearing aid.
Humans hear primarily by detecting airborne sound waves, which are collected by the auricles. The auricles also help locate the direction of sound.

After being collected by the auricles, sound waves pass through the outer auditory canal to the eardrum, causing it to vibrate. The vibrations of the eardrum are then transmitted through the ossicles, the chain of bones in the middle ear. As the vibrations pass from the relatively large area of the eardrum through the chain of bones, which have a smaller area, their force is concentrated. This concentration amplifies, or increases, the sound.

When the sound vibrations reach the stirrup, the stirrup pushes in and out of the oval window. This movement sets the fluids in the vestibular and tympanic canals in motion. To relieve the pressure of the moving fluid, the membrane of the oval window bulges out and in. The alternating changes of pressure in the fluid of the canals cause the basilar membrane to move. The organ of Corti, which is part of the basilar membrane, also moves, bending its hairlike projections. The bent projections stimulate the sensory cells to transmit impulses along the auditory nerve to the brain.

(Fig. Ear)
Ear
Limits of audibility

The limits of audibility of sound depend upon the intensity and frequency of sound. In order that a sound is audible, it must have a certain minimum intensity and a certain minimum frequency. The minimum intensity of sound necessary for the sound to be audible, is called threshold intensity of audibility. The minimum audible frequency is called lower pitch limit of audibility.

There is also a maximum intensity limit, beyond which the sound produces a sensation of pain on the ear. Similarly, there is a maximum frequency limit, beyond which the sound is not audible. The maximum audible intensity limit is called the threshold intensity of feeling. The maximum audible frequency limit is called upper pitch limit of audibility. The minimum audible intensity and the maximum audible intensity vary with the frequency of sound.

The human ear is sensitive for frequency in the range 500 hrz. to 7,000 hrz. This range of frequency represents the range of ordinary speech. The peak sensitiveness of the ear range from 2,000 to 2,500 hrz. Beyond a frequency of 7,000 hrz. the human ear is insensitive. The frequency range used in music extends from 40 to 4,000 hrz.

The threshold intensity increases both at high and low frequency levels. The increase is more at the low frequency level. The intensity that causes painful sensation in the ear is maximum at a
frequency of about 800 hrz. However, at this frequency, the threshold of audibility is low. At a frequency of 1,000 hrz., the ratio between the two pressure amplitudes is $10^7 : 1$. The corresponding intensity ratio is $10^{14} : 1$. This ratio is enormously high.

The lowest audible frequency is 30 hrz. whereas the highest is 20,000 hrz. The audible frequency range for the ear between 30 hrz and 20,000 hrz. constitutes a range of eleven octaves. However, in the case of the human eye, the range of frequency in the visible region ($3.75 \times 10^{14}$ hrz to $7.5 \times 10^{14}$ hrz) constitutes only one octave. Out of the eleven audible octaves seven are avail-

SOLID SUBSTANCES

After saying that the cause of all the sounds we hear is the union of two solid objects based on collision, the said author precisely mentions what those solid objects are:

"Prthivijalatējōvāyavaśabdaśca mūrttāni" 39

Solid materials are all those which come under the five elements such as earth, water, teļus, air and sound. Of these, metals such as iron, copper, brass etc. and stone, wood, sand, leather, bone, rope etc. are contained in earth. Water includes
steam, ice cube, clouds etc.; and Tejus includes fire, electricity, sun etc.; and air includes prāṇa, apāna and the external air.

THE ORIGIN OF AHATA SOUND

The word ‘sound’ to be understood here is the Ṇhatā sound which is the cause of echo, frequency etc.. The cause for the origin of Ṇhatā sound is the collision of two objects of same category or different categories.

VIBHĀGAJAM

It is said that like samyogavisēṣam, the origin of sound is also due to Vibhāgavisēṣam (splitting of objects).

‘Vibhāga viśeṣacca’

The word ‘mūrtānām’ has to be added to this sūtra and the word ‘ḥatāḥ’ to be attached from the earlier

THE ORIGIN OF AHATA SOUND

The above said things like earth cause the Ṇhatā sound due to their splitting. It is of two types. That which breaks off very quickly is one type and that which separates slowly is the other type. The first one is called Vidaraṇā and the second one is Visakalanā. The solid sound which is Vidaranātmakā causes Ṇhatā sound. The sounds formed due to the breaking of rocks, splitting of bamboo, breaking of metal vessels, snap of fingers
etc.. and thunder, cracking of fire work (a shot) etc.. are similar forms of sound. In the discussion of the sounds of music no importance is given in vibhāgavīśēśam. Hence it is disissed seperately. It is mentioned here because Vibhāgajā also comes under the cause of sounds. Vibhāgajā is the sudden splitting of solid objects resulting in air pressure causing the sound samyōgavibhāgajam. It has been mentioned separately in order to understand it clearly.

![Sound Diagram]

MUSICAL SCALE

Chord

When two or more notes are sounded together, the combined note produced is called chord. If the combined note produces a pleasing effect on the ear, it is called concord. If the combined note produces a displeasing effect on the ear, it is called discord.
**Harmony**

When two or more notes are sounded simultaneously, the combined note, producing a pleasing effect on the ear is called harmony.

In Western music, where a number of instruments play simultaneously, harmony is produced.

**Melody**

When two or more notes are sounded one after the other, the combined note producing pleasing effect on the ear is called melody. The most prominent feature of Indian folk music is melody.
DEFINITION OF ĀHATA ŚABDĀ

‘Vāyutaraṅga viśeṣam āhatam’

Āhata is the quality (viśeṣa) of waves of air. Some are of opinion that Āhata constitutes the waves formed in the air. They say that like the currents in water, waves form in the air due to the striking of solid objects and it spread in accordance with vicītaraṅganyāya. Like the collision of two stones causing sparks, similarly we can grasp the sparks formed in the ākāśa by the hitting of waves in the air making that too a wave of sound which can be grasped with the sense of hearing.

According to phycisists, human ear is a natural sound receiver. The hearing mechanism is a highly sensitive electro-acoustic transducer. The human ear responds to sound waves of a wide range of frequencies, wave forms and intensity. It communicates acoustic pressure variation of the eardrum into pulses in the auditory nerve system. These pulses are communicated to the brain which in turn identifies and interprets these pulses. The brain converts these pulses into aural sensations viz, perception of sound.
Different views on the definition of sound.

According to the exponents of ‘Kadambamukulanyāyā’, Āhatā sound is the ‘Ākāśagunavisēṣā’ which forms one after another in an order due to the pressure of waves in air. Some say that sound is the wave form produced as mentioned above in the substance called as atmosphere which is always moving and which is also considered as the basis of the volume of sun rays, light etc.. But some are of opinion that Āhatā sound is the waves formed due to the collision of solid objects in the ‘vidyut’ which is always moving speedily in the Ākāśā.

In Sukla yajurvedā about the change of air into sound:-

“Vāyukhāt śabdastad Saṅkarōpahitah”

Air is the product of Ākāśā, which itself is sound. 

Saṅkarōpahitah

In Bhartṛhari’s ‘Vākyapadiyā’ and in ‘Pañiniyā Śikṣā’, the evolution of air into sound is mentioned.In ‘Vākyapadiyā’:-

“Vāyoranūnam jñānasya Śabdattvāpattirisyatē kaiściddarśanabhēdō f tra pravadēṣyanatvastitah”
SUBSTANCES ARE OF TWO TYPES -

Sapratikham and Apratikham

Apratikha substances support the state of other substances in it. Sapratika substances obstruct the state of other substances in it. These are called as Amūrtā (shapeless) and Mūrtā (that which has shape) respectively. In the opinion of said author, water and earth are Sapratikha and air is Apratikha.

It is in Sapratikha substances that the separation cum union is seen and in Apratikha substances they are not seen. Hence, regarding the doubt that how aptly the transfer of sound causes due to the separation cum union of air which is Apratikha substance, Bhartrhari in his Vākyapātiyā, gives the following explanations.

"Tasya kāraṇasāmarthyāt vēga pracaya dharmaṇah sannipātādvibhajyantē sāravatyō f pi mūrttayaḥ"56

After becoming a hurricane, the air can move very strongly and can break up the mountains, uproot big trees, change land into sea and vice versa due to its union cum separation. So, the argument that there is no union cum separation in air does not sustain.
According to Jainamata it is the atom which transforms into sound.

“Añavah sarvaśaktitvat bhēdasamsargavṛttayah
chayātapa tamah sabda bhāvēna parināminah”

Jainas imagine atom as the creative power of all things (Sarvakārya jananaśakti). This is the root factor of all substances. In it contains infinite power (Śakti viśeṣā). Ultimately the indivisible atom is one. If so, how does an indivisible atom transform into Chāyā, Rūpā, Tamas and Sabdā? Even though the indivisible atom is one, it has various powers. That is why it is reflected as image, heat etc. are ultimately the forms of sound.

Vaiśeṣikamatam

Vaiśeṣikās accept four types of indivisible atom such as pārthivam, thyjasam, āpyam and vāyavyam. Of this it is the indivisible atom of vayavya transforms as sound.

SANKHYAMATAM

Sānkhyās accept the five molecular which exist in Panchabhutas such as, molecular of shape (Rūpatanmātra), molecular of taste (Rasatanmātra) molecular of smell (Gandha Tanmātra) molecular of touch (Sparśa Tanmātra) and molecular of sound (Sabdatanmātra). These are again accepted
as rūpaparamāṇu, rasaparamāṇu, gandhaparamāṇu, sparśaparamāṇu and sabdaparamāṇu.

SIDDHANTAMATAM

Āttūr presents his own theory. Like earth, water, tejus and air, sound is also a basic substance. Like the minute particles of earth, water etc., i.e. indivisible atom spread all over, the atoms of sound particles are also spread everywhere. Thus, the group of atoms of sound which spread everywhere is called as Anāhatā sound. It is that group of atoms of sound which is called as Ākāsā - one of the five elements. When the group of atoms of sound in the air due to collision of solid objects join together to form waves with the help of air, then that is called as Ahatā sound. Then it can be heard by us like the indivisible atoms of earth when join together is visible to us.

BHARTRHARI’S OPINION

The minute and indivisible atoms of sound cannot be grasped with the sense of hearing. Bhartrhari in his 'Vākyapadiyā' says that the indivisible sound atoms which are not subject to in the way as mentioned, when get stimulated become unified sound form.

"Svasaktau vyayamānāyām prayatnena samīritāh
Abhvīva pracīyantē sabdākhyā paramāṇavah"
Clouds are ultimately minute water droplets. In that way it is not visible to the eyes. But when it solidifies due to the action of air, it can be seen as clouds. There were minute water particles even before it became clouds. Only when they unite, it becomes visible. Likewise the indivisible sound atoms which already exist, when stimulated due to collision, unite together and become subject to the hearing sense. The earthquakes and eruption of volcanoes are only due to the endeavour of indivisible atom.

**OPINION OF AUTHORS ON MUSIC**

The earlier opinion is held by preceptors of music, Sri Nāradā in his ‘Saṅgita Makarantā’ observes the following.

"Anāhatadāhatā marutā nunassarati vidyutāh"

Āhatā sound forms due to the stimulation of anāhatā sound by air. That means Anāhatā sound is the ‘Upādānākāraṇā’ of Āhatā sound and stimulation of air is its ‘Nimittakāraṇā’. That āhatā sound gets stimulated by air goes through ‘Vidyut’. By means of ‘mūrtābhīgātam’ we can understand the concept of mūrtābhīgātam. Since it is shown that ‘by the stimulation of air’, even after āhatā sound changes to wave form, only by the stimulation of air gets changed to āhatā to be able to hear by us.

The sound waves which are more gentle than the waves of tejus, get enough density to be able to move the nerves in ear
only when it combines with air. Only such sound waves are called as \textit{āhata} sound\textsuperscript{65}.

\textbf{VARIETIES OF ĀHATA SOUND}

\textbf{IN \textquoteleft SAŃGITAMAKARANDĀ\textquoteright.}

Naradā says in \textit{Saṅgīthamakarandā} that there are five types of \textit{Ahata} sounds which are \textit{Nakhajam}, \textit{Vāyujam}, \textit{Carmajam}, \textit{Lōhajam} and \textit{Śārirajam}.

\begin{quote}
\textit{"So f ṣyāhatō pāṇcavidhō nādāstu parikīrttītāḥ}
naka vāyuja carmaṇi lōhasarirajastathā
nakham viṇādayah prōktāḥ vamśādyāḥ vāyupūrakah
carmaṇi ca mrdangādyah lōhastāladayastathā
dēhanādēna mē yuktāḥ nadāḥ paṇcavidhāḥ smṛtah"} \textsuperscript{66}
\end{quote}

Stringed instruments like \textit{vina} comes under \textquoteleft \textit{Nakhajam}\textquoteright. Flute, \textit{Nāgaswara} etc. are \textit{Vāyuja}. Percussion instruments like \textit{Mridangam} made of leather are \textit{Carmajam}, other percussion instruments are \textit{Lōhajam} and that which forms the body - \textit{Dēhajam}.

\textbf{METHOD OF LEARNING SOUND}

Sound waves having combined with air constitute \textit{Ahata} state which gets delayed to reach our sense of hearing. Here since air is the \textit{Sahakārikāraṇam}, the delay occurs. For example, sounds
of thunder and explosion occur in some distance could be heard by us only after a little delay. The order in which we grasp the sound like those is described here. When that sound waves reach our ear, the nerves in the ear are set in motion. Then mind reaches there that movement is called as grasping power (Grahaṇa Sakti), which sets to operate through veins to the buddhi and is situated between the eyebrows (bhūmādhyam). This state is called the process of hearing.

RELATION BETWEEN MIND AND SENSE ORGANS IN BHAGAVATGĪTA

Since all the matters are to be decided by intellect (Budhi), without the final decision of the mind, no act (karma) will be decided even if the sense organs, mind and reminiscences drag strongly the mind towards. Hence in Bhagavatgīta:-

"Indriyāṇi parānyāhuh indriyēbhyaḥ param manah
manasastu para buddhiḥ yō buddheḥ parastu saḥ"

Here budhi can be interpreted as Ātmā.

"Ātmamanassamyogena, manah indriyena, indriyamardhena"

If it is like this, without the help of mind, nothing can be understood. In Bhagavatgīta:-
To which one of the senses which enters the object of senses the mind follows, it is like dragging the knowledge of that man similar to that of a ship dragged by wind. When a sound wave reaches the ears and stimulate the nerves there while we think of some other subject, that sound cannot be heard by us since that does not stimulate the budhi due to the lack of presence of mind. In kārika the ‘Manassamyogena’ is given in order to explain this fact. If the nervous system, from the sense organs to the seat of wisdom, is defective, sound cannot be heard. That is why the deaf cannot hear even though there is the presence of mind and also some could hear subject to the degree of the defect.

Sound waves which spread like lightning when go beyond a distance, the contact with air gradually decreases and the sound decreases gradually when the distance increases.

**SUSRAVA-DUSRAVA SOUNDS**

It is said that sounds are pleasing to hear and some are disturbing. The enjoyment occurs in the respective sense organs since vibrating motion is made in the nerves in accordance with the structure of the seven organs. Sweetness stimulates the nerves
of tongue and fragrance the nerves of nose etc. similarly sound waves are suitable for the structure of nerves of ears. When soft vibrating motions are made, then pleasure occurs through that sense. On the other hand, bitterness, pungent, taste and sourness etc. are not suitable for the structure of the nerves of taste, since when they come in contact with them, they causes nuisance through those same organs.

Working of Sense of hearing in Brhadaranyakopanisad

“Ākāsa ēva yasyāyatanam śrōtram tōkah manah jyōtih yō vai tampuruṣam vidyāt sarvasyātmanah parāyaṇam”

The sound waves which come from outside strike the ear drum and from there go to cochlea in the inner ear for which the movement of three bones such as incus, malleus and stapes is necessary. One part of this sound grasping portion of the ear is called round window and the other part is oval window. The said bones are seen in the auditory passage of the ear. When the external sound waves fall on the ear drum, it is the malleus which makes vibrations to pass to the incus. Then sound waves go to cochlea from stapes through oval window. Cochlea consists of large nerve roots and five special parts such as spiral ganglion, spiral ligament, scala tympani, scala vestibuli and vestibular membrane. This spiral ligament consists of basilar mem-

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brane and spiral organs of corti. It is all these which arrange the phones in an orderly manner. The sound waves pass through it are of three types such as high frequency, middle/medium frequency and low frequency. High frequency, medium frequency and low frequency are termed as \textit{Tārastā}, \textit{Madhyastā}, and \textit{Mandrastā} respectively in music. In grammar (\textit{vyakaranam}) it is called \textit{Svaritā}, \textit{Anudattā} and \textit{Udattā}.

**REASONS FOR SUŚRAVĀ AND DUSRAVĀ- IN BAGAVATGĪTĀ**

What we call as \textit{Staibhāvā} is ‘pitch’ to the western musicians - i.e., \textit{Tārattvam, Uccērattvam, Madhyatērattvam} and \textit{Nimnatērattvam}. As eye has a visual cortex, the ears have auditory cortex. Generally the structure and function of sensory nerves of all people are alike but rarely in a few people there will be diversity. That is why some people do not like sweets but prefer sour and pungent tastes. This natural speciality is often quoted in \textit{Bhavatgīta}:-

\begin{quote}
“\textit{āyuṣaṭṭvabhāralārīgāya sukhaṣprītivivardhanāh}
\textit{rasyāḥ snidhāḥ stirāḥ hṛdyā āhārāṣṭtvikāḥ priyāḥ}
\textit{kātvamlalavānādyuṣṇatikṣṇarūkṣavidāhināḥ}
\textit{āhārā rājasasyeṣtā dukha śokāmayah pradāh}
\textit{yātayāmam gatarasam pūtiparyuṣitam ca yat}
\textit{uccīśṭamapi cāfmedhyam bhōjanam tāmasapriyam}”
\end{quote}
**Sāttvika** types of food which are hearty, nourishing, juicy increase contentment, enjoyment, health, strength, vitality and life. Those who are **rājasa** types like food which contains too much pungent taste, sour, saughty, hot and difficult to digest which increase sorrow and grief. Food which had been prepared long before, which has lost its original taste, spoiled, stale, left overs which are not suitable for eating is liked by the **tāmasa**.

Same is the case with the sense of hearing. Some people prefer hearing cracking sound, playing of **takil, Pāṇḍimēlam**, etc. to music and ringing of bells. In each sense organ the structural change in their veins can also be made to some extent through acquaintance. In that way, like the one who doesn’t like pungent taste comes to like it due to constant acquaintance, unpleasant sound will also become pleasing on constant acquaintance with them.

**SRĪTṚNDRIYAVAIGUNYAM**

That sound which has the quality to stimulate the nerves of sense organ can be divided into two: **Svarūpavaiśamyā** and **kālavaiśamyā**.

**SVARŪPAVAIŚAMYAM AND KĀLAVAISAMYAM.**

The cause of obstacles to sound in the sense of hearing may
either due to the natural unevenness or due to the sound waves. Here 'natural unevenness' means sounds of certain animals like bull, and the like; sound formed when a coconut shell is rubbed against a rock etc. It can also be said that in music there comes this 'natural unevenness' when a different note comes to a rāgā not suitable to that particular rāgā (apṣvarā). These also agitate the sensory nerves due to the disunion of established arrangements of ragas. But here there is another speciality which comes the fact that there are different type of hearers. That which does not suit the change of time is the 'Kālavaiśamyam'. One 'Mātrā' is the time needed to spell eight laghu letters. In this order in a song or an instrument with a particular timing (Kālavyavastiti), double the number of eight i.e., sixteen, its half i.e.four, and its half i.e. two 'Akṣarakāla' etc.. are suitable for that particular ' timing'. The other 'tālās' such as Muktāi, Eduppu etc. are 'Avatālā' which come under 'Kālavaiśamyam'. In poetry wrong use of 'Vṛttam' is also 'Kālavaiśamyam'. Thus 'Kālavaiśamyam' will also excite the ears. The only difference between 'rūpavaiśamyam' and 'kālavaiśamyam' is that the former excites the ear first and the other one only after reaching the brain.
Division of Āhatā Sound

Sounds can normally be divided in two ways.⁸⁹

According to the said author all kinds of Āhatā sounds can briefly be included in two divisions such as Sphota and Nada. His explanation follows:⁹⁰

SPHŌTA AND NĀDĀ

Since the sounds like our conversations which are ‘Varṇātmakā’ sounds; splitting of bamboo, cutting of wood etc.. do not sustain and is only just a ‘crack’. It comes under sphōta. Sounds like playing Vīṇā, ringing of bells, singing songs etc.. sustain and hence come under Nāda.⁹¹

In his opinion all sounds which are just like ‘Crack or a break’ do not sustain are sphota and all sounds which are sustainable are Nādā.

OPINION OF BHARTRHARI

Following the opinion of Bhartrhari, the author of ‘Vākyapadiyā’.

"Tasmād bhinnakāleśu varṇa vākya padādiśu"
In *sphota* there is no difference like short or speed or medium etc. The sounds like short etc. are the characters of ‘Prākrta dhvani’ and sounds like speed etc. (drudādi) are that of ‘Vaikṛta dhvani’. As *sphōta* does not glitter/shine without the eclipse of ‘Prākrta dhvani’ hat dhvani is considered as the time of *sphōta*. Prakṛtadhvani eclipse is unavoidable to sphota which is indifferent to time. Where as *druta*, *madhyama* etc. cannot be seperated from *sphōta*. Moreover *drutā*, *madhyama* etc. do not help glitter *sphōta* just as prakṛtadhvani does. Inshort prakṛtadhvani which eclipses *sphōta* and vaikṛtadhvani which only increases the time of *sphōta* are not the features of *sphōta* but are the traits of dhvani. Here, the thearetecian of music refers to ‘Nāḍā’ by the term dhvani.

“Alpē mahati śabdē vā sphōta kālo na vidyate
parastu śabdasantanāḥ pracayāpacayātmakāh”

“Dūrāt prabhēva dipasya dhvanimātram tu laksyate
Khāṇḍādinam ca śabdeṣu vyaktōbhēdah sa dṛśyate”

Whatever sound produced by the union and separation of air, that sound is *sphōta*. Dhvani is the successive sound after the *sphōta*. What we hear from a distance is dhvani and not *sphōta*.  

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Examples are ringing of bell, beating of drums etc.

**Sphōta - Sakhanḍa śabda, Nādā - Akhanda śabda**

*Sphōta* is called by the author of *Bālarāmabharata* as *Sakhanḍa śabda* and the *Nādā* as *Akaṇḍa śabda*. *Sphōta* is pervasive (*vyāpakam*) and *nādā* is inseparable (*vyāpyam*). *Nādā* is produced due to a special type of *sphōta*. This means *Sphōtavisesa* is which in the cause of *nādā*, is the effort of *'Bindubhēdanam'*. Hence *sphōta* is the sound in nature and *nādā* is its resonance.

**THE VISESADHARMA OF NADA IN PHOTA**

In *sphōta* special function to form *nādā* is explained. The reason for *Nādā* produced in certain cases of *sphōta* is due to the collision of solid substance which in its turn caused by the solidity of the substance. The bonds between the parts of wood are much stronger than that in cotton. It is much stronger in stone and it is still more strong in metals. Hence the collision of solid substances produces *sphōta* which results in *nādā*. This phenomenon is called *nimittaparisti*.

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“Sphōtarūpakāvāgīna dhvanēgraḥanāmimṣyatē
kaiścit dhvanirasamvēdyāḥ svatantrō f nyeih prakalpitāḥ”
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Dhvanīh sphōtaśca sabdānām dhvanistu khalu laksyate-
alpō mahāmśca kēṣānīcit ubhayam tatsvabhāvatah”
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Sounds have two features and they are \textit{vyanjakadhvani} and \textit{vya\=ngyasph\=ota}. The former manifests in \textit{drud\=a}, \textit{madhyam\=a}, \textit{vilambitam} and latter is unaffected by change of time.

**SPECIAL METHODS IN FORMING SPH\=OT\=A AND N\=AD\=A.**

Explaining with examples the methods of forming \textit{sphota} and \textit{N\=ada}.

**Collision of solid substance and Sound waves**

It is due to collision of two solid objects that sound is produced\textsuperscript{104}. One collision produces one vibration which leads a sound wave called \textit{sph\=ota}. When a stone is put in water, it produces only a wave which is a \textit{sph\=ota}. In that way only one sound wave is formed due to one collision in \textit{Varn\=occa\=ran\=am} and so on. Like a wooden block which floats when put in water move upward and downward making a series of sound waves. Due to collision a solid object produces continuous vibration and which in turn produce continuous sound waves then there exist \textit{sphota} and \textit{n\=ada}. Of this the first vibration in \textit{sph\=ota} and the subsequent sound waves formed due to continuous vibration is \textit{N\=ada}.\textsuperscript{105}

It has already been described that the hardness of the solid object is directly proportional to the sequence of sound waves produced by it. Due to plucking of \textit{\=V\=ina}, ringing of bells etc. such kind of \textit{sph\=ota} and \textit{n\=ada} are produced. The continued sound waves in it is much more than that produced from striking a \textit{Mr\=lda\=ngam},

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Maddalam etc. This is how Sphātaviśeṣaṇam becomes the cause of Nāda.

SPECIALITY OF SPHŌTA AND THE SERIES OF NĀDĀ

The cause and effect aspect between sphātaviśeṣaṇam and continued Nādas and between collision of solid objects and sound waves are described. It causes in such a way that the first vibration produced by the collision of two solid objects make next vibrations which in turn produces further sound waves. Like this, it can be considered that the vibrations and the sound waves formed become a series of sound waves in an orderly manner.

Thus, the argument is that in the same way as a vibration of so much strength causes another vibration of so much strength and a wave of so much magnitude causes subsequent wave of so much magnitude the vibrations and waves have mutual aspect of cause and effect.

OTHER OPINIONS ON THIS SUBJECT

Opinion of others on this subject have been discussed here.

VAISESIKAMATANIRASAM

The first real vibration due to beating is the cause of first sound wave and second real vibration is the cause of second sound wave. In this order each vibration has causation above each waves. Likewise abhighātaviśeṣaṃ and mūrtaviśeṣaṃ become
causes of vibration depending upon the strength of the substances. Here the first vibration, the second and so on. Hence there is cause-effect relationship between sphota and nada.

If it is so, all the real vibrations may be the reasons for sphota which is the first wave and Nada which is the second and the subsequent waves. Since there is no speciality in the part of cause, it would be accepted that sphota is also a part of Nada. If it is accepted that the waves have cause of the subsequent waves, since sphota is not formed of a first wave and for Nada first wave is the cause, it is not objectionable to accept that sphota is part of Nada if the Waves of Sphota do not amount to the part of Nada. This is their view. Contradicting this, others point that sabda is karya, means it is created by samyogavibhaga of sound which is called sphota. Bhartrhari in his Vakyapadiyā-:

“yah samyogavibhāgābhyām kāreneirupajanyatē sasphoṭah śabdajāh śabdāḥ dhvanayoḥ nyeirudāhṛtaḥ”

Whatever sound is produced first due to the union and separation of air, that is sphota. But, here, the author rejects the opinion of ‘Vaisēśika-s’. According to ‘vicitarāṅganyāyā’, sound to sound waves (as already said) reach the surroundings of auditory sense organ. But dialecticians rejects this and they are of opinion that the sound produced from a sound is temporary.
The vaiyākaraṇa-s who are ‘nityatvavādinaḥ’ of sound accepted the first vibration as sound (Sphōṭā) and the subsequent waves as dhvani (Nāḍā). The author agrees more with the opinion of Vaiyākaraṇa-s.

Disagreement with Vaiśeṣika116 principles is made clear in sixteenth verse.

Without collision of solid objects, vibrations are not formed and without vibrations the sound waves are not formed. That is, sphōṭā is seen where there is one vibration of an object. So, as there will be more than one vibration at a spot of collision between two objects cause and effect relationship between vibrations and sound waves can be achieved. This vibration is not sphōṭā but a part of Nāḍā which is not seen in other places. General cause of first vibration produces ordinary sphōṭā. Hence the first wave formed at the place is only sphōṭā. It is proper to accept that it is not a part of Nāḍā but the cause for the formation of a stream of waves of Nāḍā.117

SIDDHANTAMATAM

According to Siddhāntamatā, as real vibrations and sound waves have general cause and effect character, only in accordance with this, one vibration and one wave are formed at the place of Nāḍā.118 For reasoning the gradual loss of strength of
vibrations when numerous vibrations are formed in a collision, like a former vibration of so such strength is the cause of latter vibrations of so much strength, we need only to accept that the earlier vibration at the place of nada has cause and effect nature with regard to the subsequence vibrations. Similarly, since the strength of vibrations and magnitude of waves equally have cause and effect aspect, and with regard to that, the comparison of magnitude of waves occur at the place of nada, for reasoning the comparison of magnitude of waves, we need not have to accept that each wave has motive about subsequent waves.

Since the cause and effect never come together, it would be understood that the sphota visesam which is the cause, is not a part of the Nada which is the effect. Thus is the siddhantamatam which is apt and logical.

**DIFFERENCE OF NADA IN CONVERSATION AND MUSIC**

Even though, it is due to the strength of bonds between the particles of solid objects like Vīṇā, bell etc. that sphōta and Nāda are formed by way of vibrations during collision, clarification of the doubt that of the bodily sounds, how nada is not produced in conversation and it is produced in music, is given.

During conversation the veins which are the carriers of bodily
sounds become moderately loose without being much stretched. So the collision, which is the union of life breath there, produces only one vibration. That is why in conversations only śphōṭā and not Nādā is produced. In music, the part of those veins become hard due to tightening. Then the collision of the life-breath in it produces a stream of vibrations and in that way śphōṭā and nādā are produced. It is by striking the veins, which are the carriers of sound, by life-breath that the sound is produced from the body - says the principles of Anatomy. It is clear that the bond between the molecular of those veins are directly proportional to the number of vibrations and in that way low, medium and high tones are formed in Nādā.

DIFFERENCE BETWEEN MUSICAL SOUND AND NOISE

musical sound

The sound that produces a pleasing effect or sensation on the ear is called a musical sound, the musical sound succeeds at regular intervals in quick succession and without any sudden change in loudness. The sound produced by plucking a string of an instrument and by a harmonium are musical sound.

In general, music is a complex and highly subjective mental sensation. Music is due to a combination or succession
of different notes produced by various sounding bodies e.g., vibrating strings, stretched membranes and air columns. Musical sounds have simple harmonic structure. Their wave forms are regular. Musical sounds consist of the fundamental notes and harmonics.

![musical sound](image)

**Noise**

The sound that produces jarring effect or displeasing effect on the ear is called Noise. The noise succeeds at irregular intervals and there is sudden change in loudness. The sounds produced by the gun and by a plate falling on the ground are examples of noise.

![noise](image)

Technically noise is defined as the result of the combination of single frequency sounds or pure tones. Noise has a continuous frequency spectrum but possesses irregular amplitude and wave form. Air-borne noise is mainly due to the variations of air
pressure with respect to the mean atmospheric pressure. Structural-borne noise is due to mechanical vibrations in elastic bodies. Liquid-borne noise is caused by changes in liquid pressure about the mean static pressure.

**Human voice**

The human voice is a natural source of sound. Human voice has four main parts.

1. **Power generation:**

   This comprises of diaphragm, lungs, bronchi, trachea and muscles. Throat, in the human body, passage leading to the lungs and the stomach, located in the neck in front of the spinal column. It contains the *larynx*, pharynx, and the upper parts of the esophagus and the trachea.

2. **Vibration**

   It is called *larynx*. The hollow chamber in which the voice is produced, at the front or upper part of the windpipe of humans is called the voice box (*Larynx*). It leads from the lower portion of the *pharynx* to the trachea and is situated in front of or ventral to the esophagus, behind the skin and connective tissue of the throat. The *larynx* is supported by ligaments from the hyoid bone, situated at the base of the tongue.
3. Resonators

After voice is produced, it is resonated in the chest, throat, and cavities of the mouth. The quality of the voice is determined by resonance and the manner in which the vocal cords vibrate; intensity is controlled by resonance and by the strength of the vibrations of the vocal cords. The acoustic resonators in the human system are nose, mouth, throat, other empty spaces in the mouth and sounding board e.g., head, chest etc..

4. Articulators

These are lips, tongue, teeth etc. The loudness of sound in human voice primarily depends upon the stream of air forced through the vocal cords from the lungs. The frequency of the human voice is dependent upon the elasticity and vibrations of the vocal cords. The quality of sounds depends upon the resonators.

Voice Production

In the human larynx (voice box), two pairs of vocal cords are present. They are made of elastic connective tissue covered by folds of mucous membrane. One pair, the false vocal cords, extends from the epiglottis to the angle of the thyroid cartilage; these cords narrow the glottis (the pharyngeal opening of the larynx) during swallowing. Below the false cords are the true vocal cords, extending from the arytenoid cartilages to the angle of the thyroid cartilage. Vibration of this pair of cords by air
passing out of the lungs causes the formation of sounds that are amplified by the resonating nature of the voice box. The pitch of the sound is voluntarily controlled by muscles that rotate the arytenoid cartilages toward the center of the body (slackening and lengthening the cords) for low tones, and toward the sides of the body (shortening the cords and pulling them taut) for high-pitched tones. The extent of the angle formed by the plates of the thyroid cartilage determines the depth of the human voice. The angle decreases in males at puberty, causing decreased tension of the vocal cords and a consequently deeper voice, and increases in most females at puberty, causing increased tension of the vocal cords.
UNIT - II
ANAHATA NADA

Explanation of the sound different from आहाति i.e., Anāhatā starts from the nineteenth sūtra.\(^1\)

When speak about Nāda it always begins with आहाति and moves to Anāhatā.\(^2\) Likewise it is commonly observed that, what begins with the meeting of man and woman, reaches the state of mokṣa by jīvesvarasamyogā (union of jīva and īsvara). Our anatomy is so shaped and structured as to enable us to get spiritual experience and to understand more about it the finest guide is Guyton's 'Medical Physiology' (the chapter endocrinology and reproduction up to female sexual act.).\(^3\) The same point is discussed in Ḥathayogaprādipika and Khērāṇḍasamhitā.

In Patanjalayogā it is described that moksha can be attained through different ways such as, yama, niyama, āśana, prāṇāyama, pṛtyāhāra, dhāraṇā, dhyāna and samadhi (mōksa).\(^4\)

It is explained in Bhagavat Gīta as to how one can attain salvation as stitaprajña, gunatīta, yāgi and bhaktā even while standing in the midst of war accepting the way of ‘Māmanusmara yudhya ca’,\(^5\) and about attaining salvation through the way of saptabhūmika in Yōgavasiṣṭa Rāmāyanā. The studies conducted by the Indian Rsi-s on this subject are

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very noble. In his ‘Ātmopadēśaśatakā’ Nārāyanaguru observes the following:-

“Adhikaviśalamarupradēśamonnāy-nadiperukunnatupōle vannu nādam šrutikalil vīnu turakkumakṣiyennum yatamiyalum yatvaryanāyidēṇam” ⁶

Āhata from Anāhata

Indian musicians take anāhata for worship to get ultimate communion after having heard the nādabrahma through Nādā worship.⁷ L. Muttayā bhāgavatar in his ‘Saṅgīta Kalpadrumam’ says about this-as: “This universes is the derivative of five elements”. It is filled with many individual souls. Nādā has been alive in jīva which gives birth to letters from ‘a’ to ‘ha’, letters combine to form words which in turn give birth to worldly and vaidika sentences (laukiā vaidika vākyās) and great mantrā-s like Gayatri which is vēdā in nature. Thus, from nādā originated music and world transactions.⁸

Ahata nādā is generally enjoyed by all men irrespective of whether he is a scholar or an illiterate, and even by all birds and animals. Having trained systematically, musicians can use this to get salvation by using it in worship, yōgā and worship of God etc..
Nāda

The word nādāḥ comes from the root word ‘Nāda’. This means ‘sound’ (dhvani). The ‘ĀUM’ which is its first form is called ‘Pranāvā’. Nādā is always seen connected with ‘Kalā’, in the same way as how ‘māyā’ is connected to ‘brahmā’. In pranava ‘O’(AU) is Nādā and anusvārā is Bindu. In Ōhmkārā, ‘Kalā’ comes by itself. It is this that Arunagirinātha says on ‘nādabindukalādinamōnamō’ while mentioning Pranāvā.

“Gītam nādātmakam vādyam nādavyaktyāprasāsyate
tadvayānugatam nṛtyam nādādhiṇamatastrayam
nādēṇa vyanjyatē varṇāḥ padam varṇāt padādvacaḥ
nadaśo vyavahārō f yam nādādhiṇamato jagat”

Even though it is generally said that all sounds are nāda, the sound which is not related to ‘Kalā’ does not deserve the name nada. Pleasuring sound could only be seen related to ‘Kalā’. As the sounds produced while grinding stones and cutting wood do not relate to ‘Kalā’, they are not nāda.

The derivation of Nāda

“Nakāram prāṇanāmāṇīṃ dakāramanalam viduh
jātah pranōgnisamyōgattēna nādō f bhidhiyatē”
It is understood that the syllable ‘na’ (of nāḍā) represents the vital force and ‘da’ represents fire; thus being produced by the interaction of the vital force and fire is called ‘Nāḍā’.

This verse gives the derivation of the word nāḍā. In sanskrit, two types of derivations are offered, viz; (i) grammatical called ‘vyutpatti’ and (ii) what may be called in English ‘Semantic’, i.e., nirukti; and here the second one is offered is a semantic derivation, which is partly related to the tāntric system.

**Kārika** points out that according to the science of tantra, every seed - syllable ‘bijaśarā’ of a mantrā has a presiding deity, and in that context the letters ‘n’ and ‘d’ refer to prānā and agni i.e. the vital force and fire. The word ‘nāḍā’ is derivationally by ‘Sarīgadēvā’ as that which is produced by the consonants ‘n’ and ‘d’ put together.

Thus, the word nāḍā is significant both grammatically and semantically and is indicative of signifying the consequences of the interaction of vital force and fire, which is the ‘consciousness of sound’.

**Matanga** derives the word nāḍā from the root ‘nad’, ‘to sound’ in addition to the semantic derivation given by the author who has preferred to give the latter alone as it explains the process of voice production.¹³

The prince of poets Jagadekamalla in his Sangītacūdāmani
defines nāḍā and its derivation.

“Śarīra (ra) na (nna) dasambhūtirgitamnāḍāipravartate
nāḍā binduh svarāḥ rāgāḥ sambhavanti śarīrataḥ
svarā gūtam ca vādyam ca tālaścēdi ca tāṣṭayam
na siddyati viṇā nādam tasmannāḍāitamakamanjagat
agni mārutayoryōgāt bhavēnnadasya sambhavaḥ
bindurupadyate nāḍānnāḍānānkhilavānnayam”

niśpatti

“nakarā prāṇa ityukto dakaro vānirucyatē
ardhō f yam nādaśabdasya sankētata parikīrtitāh”

The same explanation is found in Sangītasamayāsāra by Parśvadevā.

In Ragavibodha :-

“ātmērayati vivakṣuścittam tadēha vahnimāhanti
Sa prērayate śūṣṭā brahmagrandhistitam mārutam
atiśūksamātika samjā nāḍāstanute f tra gānārhāḥ”

In Sangītadāmōdarā :-

“nābhērūrdhvam hrḍistānamārutah prāṇa samjnakāḥ
nadati brahmamarandhraṁ tēṇa nāḍāḥ prakīrttitāḥ
Ākāśani marujjātō nābhērūrdhvam samuccaran
mukhē f bhivyaktimāyāti yah sa nāda itīritāḥ

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sa ca prañibhavo f prañibhavascobhaya sambhavah
adyah kavyabhavo vinadi bhavastu dvitiyakah
trityo f pi ca vamsa dibhavah idham tridha matah” 16

In Samskrta sarasmagraham :-

“na naide na vinagitam na naide na vina svara
na naide na vinaragah tasman naidmakam jagat” 17

There is no ‘gita’ without nada, no svara without nada; no
raga without nada. Hence this universe itself is a derivative of
nada and filled with nada.

Divisions of Abhighata Nada

The divisions of nada formed due to ‘collision’ (abhighata)
is described here. 18 In the opinion of the said author there are
two types of ahat nada such as sukshanada and stulanada
of these, sukshanada is not clear. That means we cannot hear it
with our sense of hearing. Stulanada is clear which means it can
be heard by the ordinary sense of hearing. Though stula and
sukshanada are born out of collision, anahata nada is not
included in ahat. There are different opinions about this, which
can be seen in other books. They are described later.

Stulanada from sukshanada

To show that stulanada is formed from sukshanada, the dif-
f erent states of sukshanada are being told. 19
Different states of sukṣmanādā

Add the term sukṣmatāyāh to this suṭrā. Before considering the evolution of sukṣmanādā as stūlanādā, it is said that depending upon the variation in clarity, sukṣmanādā has three states such as sukṣmatamam, sukṣmataram and sukṣamam. 

Sukṣmatamā state, first one among this is explained showing the nature of order of creation which has already been described by science, vedaṇa etc.. This order of creation has been described in the previous chapters.

Here is the description of the opinion of the said author.

Sukṣmatamasabdasaṛṣṭi (Parā)

Of the three sukṣma nādās, the nature of the first one is as follows. When a desire occurs to produce nādā, the inner fire (Antarāgni) which is at the place called Madhya cakra just below the navel, strikes the air in nabhīcakra called brahmagrandhī. So, in that air or the atoms of anāhata nādā in the atmosphere there formed due to subtle vibration, a subtle motion occurs. It is described that the said movement passes through the navel, heart, throat and palate to transform into sound.

The author of Saṅgītaratnākara' Nīśaṅgasārīngadevā describes the process of voice production in his book S.R as follows.
"atma vivakṣamāno f yam manah prērayate manah
dēhaṁ vahnīmahanti sa prērayati mārutam
brahmagrandhistitāḥ sō f dha kramādūrdhva pathē caran
nabhīḥṛkṣṇhamūrdhāsyēsvāvirbhāvayati dhvanīm"

The process of the manifestation of sound in the human body, desirous of speech the individuated being impels the mind, and the mind activates the power stationed in the body, which in its turn stimulates the vital force. The vital force stationed around the root of the navel, rising upwards gradually manifests nada in the navel, heart, throat, the cerebrum and the cavity of the mouth as it passess through them.

Desire of self expression is the motive power that initiates the process into action. Why there is the desire for self expression is a metaphysical question and one can probably look for its answer to the benedictory verse; but the author is not, at the moment, concerned with that. As far as the individual, which is the medium of voice production is concerned, desire for self expression is discerned to be the cause of speech; and therefore of singing i.e., music and even dance as it is included in the concept of sangitā.
Part of Anāhata Nādā

As per vedanta-sastra, when God’s desire for creation is motivated, then how a subtle motion occurs in nature which iexists as ‘Māyā’, to form a Bindu - the basis for creation of Nādā, it is in the same way that such a movement occurs and causes the multiplication of the atoms of anāhata nādā. In Saṅgītaratnākara - the anāhata nādā is being described.

"Asti brahma citānāntam svayam jyotinirāṇjanam īsvaram lingāmiyuktamadvitiyamajam vibhuḥ nirvikāram nirākāram sarvēsvaramanasaśvaram sarvaśakti ca sarvajñānām tadamsāh jīvasamjñākāh"

[Brahman is existance, blissful awareness, the self-luminous and taintless supreme deity, said to be the ultimate cause, the non-dual, unborn, measureless, unmodified, formless, imperishable, omnipotent and omniscient supreme ruler.]

Human body is a part and parcel of the manifest phenomenon. To trace the process of the genesis of human embodiment, the unmanifest, unconditioned, timeless reality, explains the emergence of numberless individuals, their relationship with the reality, and the principle determining the difference inherent in the individual manifestations of that pure existance.

That state of nada—named ‘Parā’ due to th endeavours of
creativity which is the form of *nādā* and due to the similarity between the state of that nature which is the ‘*Parāśaktisvarūpini*’ and destructive power in creation, is the state which is the first one and which is ‘*Sūksmatamam*’.

This word can be given meaning as ‘one who is noble, *Śrēṣṭatamā*’ etc.. ‘*Śabdabrahmā*’ which expresses in motionless manner in the individual is ‘*Parā*’. Sound is four fold such as *parā, paśyantī, madhyamā* and *vaikhari*.

**The order of creation**

During deluge, the universe became absorbed in *brahma* and souls existed there without knowing or experiencing anything. The state in which *brahma* stays in union with ‘*māyā*’ separates from *karma* is called ‘*ghanibhūta*’ (the state which makes clear how and when is the beginning of creation). The state of this group of *karma* which begins to mature is known as ‘*vicikīrṣā*’ (finalized state of creation). When *karma* gets matured due to the development of *Māyā* - then that is known as ‘*avyaktā*’ (the completed state of creation). This ‘*avyaktā*’ is the place of origin of creation. *Avyaktā* is ‘*Triguṇātmikā*’. This *Avyaktā* is also known as ‘*Karanabindu*’ since it is the sprout of universe. ‘*ghanibhūta*’ becomes *Bindu* due to the desire to creation.
At the beginning of creation from the ‘Kāraṇabindu’, ‘KāryaBindu’ which is ‘Parā’. ‘Nāda’ which is suksma and ‘Bija’ which is stūla is formed along with Brahma of sound. Parā is in terms of importance ‘cidrūpam’, sūkṣma is ‘cidacitrūpam’ and stūla is ‘acit’.

The origin of Vaikhari in individual

It is when the movements similar to the process of creation in the universe occur in the individual, thoughts and words get originated.

In an individual, the power which is seen close to the Kāraṇbindu is the Kuṇḍalinī which is in the mūlādhārā position. When the all pervading Brahma of sound by the wish of life firstly expresses itself motionless in mūlādhārā, then it is called as ‘Parā’. That movement when develops and rises to reach maṇipūra cakrā (up to Svādhiśṭāna, opinions of other scholers), then it is called as ‘Paśyantī’. Paśyantī has the position of kāryabhindū of Brahmaṇḍā (Universe). Paśyantī is vibration which is in only one form or general vibrations. This vibration having grown again to reach Anāhata cakrā (heart) and joins buddhitatvā, becomes known as ‘Madhyamā’. Madhyamā equal to the nāda in creation of Universe, is with special vibrations. The power again rises from there passes Visudhi cakrā (kaṇṭhaśāstānam), the places of throat, lips etc.
to become audible to the sense of hearing. This stula sound (Pro-
nunciation) is known by the name vaikhari. Vaikhari which is
equal to the ‘Bija’ sound of creation of universe, is with vibra-
tions of ‘Spaṣṭatara’.

Parā, Paśyanti, Madhyama -Audible to Yogi-s

We have acquaintance only with worldly vaikhari. But it has
been proved beyond doubt that yogis know the three stages
such as para, paśyanti and madhyama. It is impossible to prove
this by using physical symbols. It could be experienced only by
the God motivated brain in the very subtle state of mind. That is
the proof of those who have experienced it.

“Mūladhārē parā prōktā paśyanti nābhīsamśtatāh
Madhyamaṁ buddhīsamyuktā āstastānēṣu vaikhari”

Preceptors who have clearly experienced the three stages have
stated the above point without any disagreement of opinion. In
‘Saṣṭhīgyabhāṣṭra’ this nādā is discussed in minutest detail.

In Nītyātana :-

“Mūladhārē samutpannāḥ parākṣyo nādasambhavah
sa ēvordhvatyā nītah svādhiṣṭāne vijrmbhitah
paśyantyākhyāmavāpnoti”

In Mūlādḥārā itself nādā manifest in the name of ‘Parā’.
That itself goes upward and enters svādhistānā. It is named as Paśyanti.

"tatheivōrdhvam śaneih śaneih anāhatō .
buddhitattvasamētō madhyamābhidhah" 36

That itself, having slowly gone upward and reaching anahata, increases and reaches anāhata, increases and expands there, is Madhyamā.

"Prāṇēna vīkharākhyēna prērita vaikhari punah" 37

Nādā, is the union of clear and colorful letters. Woken up by prāṇā named 'Vikhara', is called 'Vaikhari'. How clearly and in detail the Indian preceptors have analyzed the inner Universe. 'Parā' is considered as the most sublime form of sound. In Tripurānta Siddhānta 38, the following meaning is given.

1. Para is pleased with 'Paramanandanatha' (i.e.Guru).
2. Para - Since, it is praised in the book 'Parananda'.
3. Para - Since it is the ultimate stream of compassion.

What is 'Parā' 39 - is stated here. That itself is 'Nādā'. That too is the state of Śuksamatamā. In scientific books like Sāīkhya, vēdā etc.. it is accomplished that the nature which is desirous of creation of five elements like, bindu, nādatattvam, mahatattvam, ahamkāram, sabdatanmatrā, antarikṣam,
sparśatanmatrā, vāyu, rūpatanmatrā, tejas, rasatanmatrā, water, gandhatanmatrā, prthvī etc. in the nature - the māyā, is called as ‘Parāśakti’.

Suksmatara - Paśyanti

Suksmatara, the second state of nāda is explained.

The least form of nada which get multiplied/ solidified due to motion, rise a little upward through like- breath, start spreading to heart. That start spreading after beginning to change to wave form and in a way suitable to the minute particle (of nāda), the order of speed of waves which is the cause for the formation of frequencies of nāda. The state of that movement of atoms (nādānu) which begin to attain wave form and also which spreads a little upward from Nābhicakrā is equal to whatever peculiar state occurs to the nature, which have been transformed to ‘Bindurūpa’ and become transformed to Nādarūpa. The state of nada named by the ancient preceptors as paśyanti as it more towards each waveforms, in the second one - the state of suksmatara.

Paśyanti - Nābhīstānā

The state by looking at the wave frequencies such as low, medium and high - is Paśyanti.
“Paśyanti nabhisamstitāḥ”

To say in accordance with six cakrā-s, the place of this state is in the **Manīpūra cakrā**⁴² i.e., the navel cakrā. The **manīpūra cakrā** is also called **nābhi cakrā** i.e., the navel lotus as it is located around the region of the root of the navel. That is why it has conveniently been named as the navel cycle. The name ‘**Manīpūra**’ is explained in a round-about way. It is said in the **Gautamiya tantra** that owing to the presence of the fairy tejās (brillians), this centre is lustrous as a gem (maṇi) and so it is called **Manīpūra**.⁴³ It is suggested by Sir. **John Woodroof** that the gross body is evolved out of the power involved in these three (mūlādhāra, svādhistānā and **manīpūra**) centres. The higher centres are concerned with mental development, that is the subtle body or the thought body etc. During the waking state attention is ordinarily centred on either of these three centres.⁴⁴

In **Lalitā Sahasranāmā**, it is said that Devi has two more names as ‘**Paśyanti**’ and ‘**Uttirṇā**’. All that is seen is Dēvi - hence **Paśyanti** by name. Since it shines as ‘**Jñānamayi**’ above th **karma mārga** ‘**Uttirṇā**’ by name.⁴⁵

**Sūksmā - Mádhyamā**⁴⁶

The nature of **Sūksmā** which is the third state is being described.

**Madhyamā - anāhatā - Hṛdayastānā**

That movement spreads to the heart attaining the form of waves.
It spreads depending upon the frequency of waves which are responsible for the formation of ‘Nadaviṣeṣarūpa’ and ‘Sphoṭaviṣeṣarūpā’ such as low, medium, high, Udāttā, Anudāttā and Svarītā. This nada which sets out from inside having reached the heart, can be heard even by the sense of hearing by yogī-s who have practised of hearing by Yōgā. Science of Yōgā proclaimed that if prāṇāyāmā is practised by chanting pranava properly, that pranava nada can be heard by oneself.

Madhyama-pranavastāna

In ‘Ṣaḍcakranirūpaṇa’, the seat where pranava is to be chanted is said as Anāhata cakrā. In ‘Saṅgitaratnakara’ Sarangadeva observes:-

"Hṛdaye f nāhatam cakram śivasya pranavākṛtēh
pujaśtānam tadiccanti daleirdvādaśabhiryutam
laulyaprāṇaśah prakatō vitarkō f pyanutāpita
āśā prakāśaścintā ca samīha samatā tataḥ
kramena dambho vaikalyam vivekō f hamkṛṭistathē
phalāṇyātāni purvādidalastasyātmano jāgūḥ.”

In the heart is located the psycho-physical centre called the ‘cycle of the unmanifest’ (anahata cakrā), with twelve petals which is considered to be the place of worshiping Lord Śiva in the form of ‘Aum’.

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The anāhata cakrā is the psycho-physical centre where in manifests ‘śabda-braḥman’ a concept which can best be conveyed in English by the expression “the absolute manifested as the articulate word”. This centre is said to be the seat of the embodied consciousness i.e., jīvātman. Anāhata nāda or unmanifest sound is associated with this centre which is considered to be the pulse of life. It is said in the Saḍcakranirūpaṇam, that one who meditates in this centre becomes a master of speech and gains the power to create and destroy. This lotus is the seat of Śiva and the residence of Hamsā. Śiva is the symbol of Praṇava- ‘śiva ōṁkāra ēva’.

**Mandra - madhya - tāra stānā-s**

This ‘Praṇavadhvani’ cannot be heard by laymen with their sense of hearing. Even then they can meditate on it differentiating the low, medium and high frequencies. Only by meditating in such a way, each of these such as voice, song, pronunciation of veda-s etc. and even musical instruments like vina etc. could be manifested in their own form.

**Mandra - Heart, Madhya - Kantha, Tāram - Mūrdhā**

Nāda is three fold in gītā (music) say in Saṅgītaratnākara:-

"vyavahāre tvāsau tṛēḍha hṛdi mandrō ṣ bhidhiyate
ekante madhyō mūrdhni tārō dvigunaścottarottaraḥ"
In actual practice (gitā- the tonal aspect of music) the nāda is three fold, called mandrā in the heart, madhyā in the throat and tara in the head and is successively double in pitch. The three fold classification of nāda into the low, medium and high, this is devised from a purely practical point of view.54

The same nāda when produced from the heart is called mandra, when produced from the throat is called madhyā and when produced through the head i.e. the cerebrum, it is known as tara, and each successive nāda is double in pitch than the proceeding one, i.e. the three aspects stand in the ratio of 1: 2: 4. The above kārika gives another significant interpretation for this idea. According to him, if the effort involved in the articulation of sadja and other notes of the lower register (mandrā) is taken as the standard unit measure, then the effort involved in producing sadja and the other notes of the middle register is twice as much and the effort required for producing the same notes of the high register (tārā) is double than that (i.e. that of the middle). That is, how madhyā is double the mandrā and tārā is double the madhyā.

Udāatta, Anudāatta and Svarita55

These are the aspects of sphoṭā which are somewhat similar to mandrā, madhyā, tārā-ucceirudāttah, niceirudāttah, samāharasvarītaḥ.
Opinion of other authors.

In Prapancasāravacana it is said like this.

ʻUcčerunmārgagō vāyuudāttam kurute svaram
niceirgatō f-nudāttam ca tiryak svarita visṛtīha
adhika dvītri saṅkhya bhūmātrabhūrīpyah kramāt
sa vyaṇjana hrasvadīrgha plutasaṃjña bhavanti tathā.\(^{56}\)

Ragavibōdha, a music book observes:

"ḥṛtcanthamūrdhanādāḥkramādānmandramadhyaārākhyāh
dvigunā yathōttaram ca śrutīnām svaratam ca
vacāmyēsām"\(^ {57}\)

In ‘Saṅgītasamayasāra’ of Pārśvadeva:-

“ Antarēṇa yadābhyaśam rāgavyaktinibandhanam
sarīreṇa sahoṭpannam sarīram tatsamīritam
caturvidham bhavēttacca kaṭāṭam madhuram tathā
pausalam bahubhaṅgīti ceisām lakṣaṇamucyate
trīsu stāneṣu madhuram kaṭāṭam parikīrttitam
mandre madhyē ca mādhuryaccārīram madhuram matam
jñēyam pausalāsaṅāram tāre ragaprakāsakam
tacchārīraguṇa miśrā yatra tad bahubhaṅgikam”\(^ {58}\)

The voice produced from the body is four fold and the pleasure experienced which it gets echoed striking in different places and
their varieties.

In ‘Sāṅgitamakaranda’- Nārada says the following:-

“Ākāśa sambhavō nādō yah so f nāhatasamjñītakah
tasminnāhanatē nādē virāman prāpya dēvatāh
yōgino f pi mahātmānastadanāhata sajnake
mānō niksipyā samyānti muktim prayata mānasāḥ”

In Sāṅgīta Damōdarā:-

“nabherūrdhvam hṛdistānānmarutāḥ prānasajñākāh
nadati brahmaṁandhrānte tena nādāḥ prakīrtitāḥ”

In Sāṅgīta Pārijāta by Ahōbalā:-

“Urdhvastitāḥ trinādiśu nātyastiryakhrdi stitāh
dvāvimśatirmitaścēdi prācināmunayorabrūvan
pūrvam nabhisatō hṛtyāt pāścaktāṇthah prakīrtitāḥ
atha mūrdha tathāsyam syāditi stānani mēnire
hṛdyanahatacakrē f sminnanilānlayōgatah
āhatastatra nādāḥ syāditi śāstre prakīrtitam
kaṇṭhē visuddhacakram syāt sahasrārastu mūrdhāni
mandra madhyamatarākhyām bhavēyustēṣu tu kramāṭ”

Madhyama

The aspect of Nāda in between the distinct and indistinct nādas, named by the ancient preceptors as Madhyama, is the third state of nāda. In Lalitasahasranama, Devi has given the name
as ‘Madhyama’ meaning the one who situates between Paśyanti and Vaikhari Nādā-ś.

### The origin of stūla nādā

The three states explained above are the three fold states of Sūkṣmanādā. After describing the three fold state of Sūkṣmanādā the nature of origin of stūlanādā is described.⁶³

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### Vaikhari

Vākprabheda and their frequencies cannot be told to an end. We have only the knowledge of sound which is based on transactions. Only a portion of it will not end even after chanting it for thousands of divine years. The great discoursed commentator Bhagavān Patañjali had pointed out this.

> “brhaspatirindrāya divyam varṣa sahasram
> pratipadōktānām śabdānām sābdapārāyanam
> prōvāca na cāntam jagāma”⁶⁴

Once, Dēvaguru Bṛhaspati had been advising words one by one to his disciple Indra for thousand divine years. Even then it never came to an end. Then how could one who only lives to a maximum of hundred years understand that infinite nature of sounds that exist with ‘Parā’ etc..

In Rīgvēdā it is said that Parā, Paśyanti etc. are hidden in the
cave of heart.

"catvāri vākparimitā padāni tāni vidurbrahmanā ye mānīsināh
guhaśtriṇī nihita nēṅgayanti turīyam vāco manusyaṁ vadaṁ
t" 65

Maharṣis and Brahmaṇī-ś who know all these have achieved control over their minds. The fourth one is transacted by men. But Bhartrhari through his ‘Vākyapadiya’ makes it clear as ‘vācaḥ param padam’

"Vaikharyā madhyamāyāśca paśyantyaśceitadatbhutam
aṅkaṭirthaḥ dāyāḥ trayyā vācaḥ param padam" 66

Describing the nature of the origin of Stūlanāda. 67

The Śūksmanāda which is set to the order already mentioned then spreads upwards from the heart, reaches near the throat and in respective frequencies vibrates the nerves there which are the carriers of sound, and flows outward through throat. Then it becomes the stūlanāda which is clear and which could be heard by all. It is this state of clear transformation occurs thus in the throat, which is named by the ancient preceptors as vaikhari.

In his ‘Prapañcasūrasvācana’ Saṅkarācārya mentioned this in the following way :-
The term ‘iti’ used in the sūtra denotes that the description of the nature of stūla and suksmanāda-s has been over.

Śāriṅa nādā and Viṇā nādā

Though there is the order of suksma and stūla in the origin of nādā and of voice as said above, it is said to clear the doubt as to how apt the said order would be in the cause of origin of nādā in Viṇā, tamburu etc. Likewise, there is a vibration followed by waves of vibrations which become stūlanādā, audible to us. In this book ‘Viṇāprakāśa’ says vina are classified into as sakalaviṇā, niśkalaviṇā and sakalaniśkalaviṇā according to the speciality of nādā which occurs in viṇā.

Niskala viṇā

“dvividhāpi viṇā nādasvarūpabhēdannīskalā, sakalā, sakalaniśkala cēdi pratyēkam trividhā jivabandharahițō niraṇjanānanda-prada niśkāla brahmavannīskalā tantriṣu jivabandhayuktā gurūnada sakala sakalabrahmasamā
mandrānumandrānyataramatrē śrutitantryanya
tara mātrey va sa jīvabandha
sakalaniśkalamadhyagata sakalā niśkālā
sakalā niśkālā brahmavat”

The description of **niśkalabrahma** is as:-

“Mayanirāpeksam saccidānantasvarūpam niśkālam”.72

**Niśkalabrahma** independent of avidyā and vidyā associated with māyā, is Satyasvarūpa, Caitanyasvarūpa and Anandasvarūpa and which comes through the jīvabandhā of the kakubhā (drum of gourd shall at the bottom of Vīṇā) ; which makes pure pleasure naturally without ‘rāgasphuraṇāpeksā’ and which is long lasting than the nāda of sakalavīṇā and niśkalavīṇā.

**Sakalavīṇā**

**Sakala brahma** is defined as

“Mayanirikṣanāpeksāvigraham sakalām viduḥ”73 is the form of God that has assumed the body that is appropriate to worldly life which is illusory. There are six human aspects: Jayate, Asti, Vardhate, Viparīnatmatē, Apeksyate and Naśyati are reflected in **Saguṇa Brahmad**. How sakalā brahma can be compared to sakala viṇā is examined here. Sakala viṇānādā, produced by placing a blanket between kakubha and the strings or by distorting the metal film or by manipulating all the strings, has
a mixture of various svarās starting with ‘Repha’ (Rṣabha). The sound thus produced in a sakalāvīṇa is lesser in length but of greater depth than the niskalā vīṇā. Niskalā Brahman is related to niskalā vīṇā just as, Sakalā vīṇā compared to the manifold expressions of Sakala Brahma are related to the avatarā-s like Krṣṇā. *

**Sakalāniskalavīṇa**

“Mayasannidhimātrenavidyāt sakalaniśkalam”

Sakalāniskalavīṇa is the one in which there is ‘Jīvabandha’ in only one of those strings such as mandrā and anunmandrā or one among the sruti-s, and hence with regard to the length of nāda sūkṣmā svarā-s such as nābha, gāndhārā etc. are produced as anunādā-s when plucked the sadja string; and which has a status between sakala vīṇā and niskalavīṇā.

**Reason as to why Suksmanada cannot be heard.**

When a vīṇā string is plucked it is felt that immediately stūla nādā is produced. It may be felt that no order as said above will happen here. Because it is given in sūtra as tadajñamapi in reply to the criticism that if the origin of stulānādā is after the formation of suksamanādā, stulānādā could be heard only after a while after plucking the string. It is due to the over abundance of speed in the order of origin of nada that the fact that
siulanāda is formed after suksmanāda-s as said above cannot be understood. In case of sārīranāda also we feel that stulanāda is produced. Similarly, when nāda of voice or viṇā or any other sound is formed, we generally feel that we are hearing it as and when it is formed. The duration which it takes to reach our sense of hearing is not known to us. In the same was as how those things happen due to abundance of speed of their order, we cannot understand the suksmastulanāda at the origin of nāda in viṇā etc., due to over abundance of speed.

To show as an instance at the place of nāda of voice, the sound tadajñāṇāpi is used in the api. 76

Different opinions of others

The opinion of some ancient preceptors on this subject of nāda is described 77.

Atisūksma, Sūksma, Puṣṭa, Apuṣṭa, Krtrimā

Ancient preceptors like Niśsāṅgasārnagadēva says that Nāda is five fold as atisūksma, puṣṭa, apuṣṭa and krtrimā.

Sarngadeva says as:-

"Atisūkṣmaśca suṣkṣmaśca puṣṭaśca puṣṭācch ca kṛtrimā iti pāṇcabhidham dhatē" 78 and the same is also said by Pārśvadēva, the author of ‘Samayasāra’. In Place of puṣṭa and apuṣṭa, Sage Mataṅga substitutes as vyaktā and avyaktā

256
(clear and not clear). According to *Nissāngaśārṅgadēvā*, the five fold *nādā* is stationed in these five places, *nādā* takes on five different names are associated with them respectively, viz; extremely subtle, subtle, loud, not-so-loud and artificial.

*Sārṅgadēva* quotes *Matatga* who gives slightly a different set of nomenclature viz; subtle, very subtle, manifest, unmanifest and artificial. It is significant that *Sārṅgadēva* has reversed the order of the first two; and the reason is not far to seek. *Matatga* says that the *nādā* called subtle resides in the cave (i.e. the navel), very subtle in the heart, manifest in the throat, unmanifest in the serebrum and artificial in the mouth. It is not clear why *Matatga* should locate the very subtle *nādā* in the heart; for the natural order of manifestation up to the throat is such that the lower the place the less manifest the *nādā* must be. The progress should be from to the subtlest to the gross.

**Characteristics of Nādā-s**

Describes the character of *Nādā* which is five fold. Of this *nādā*, which resides at the navel portion is very subtle, that which stays in heart - *sūksmā*, which reaches the throat - *pustā*, high pitched one which is made to resound with the effort of head - *apusṭā*. The *nāda* which is made to resound by contracting, opening, twisting and expanding the palate, cheeks, tongue, upper lip etc. in the mouth or which is nasal oriented is artificial.
This artificial nāda is used much more in northern part than in southern part.

"nābhiḥṛtkaṇṭhamūrdhāsyēsvāvīrvhāvayati dhvanīm
iti paṃcābhidhādhatē paṃcastānastitāḥ kramaṁ"\(^\text{82}\)

In the said subject Ratnākara completely agrees with the opinion of Matanga. But for the knowledge of disciples, the author of Sangitacandrika differs from others.\(^\text{83}\)

**Matakhandanam**

Ancient preceptors say that mandranāda comes from the heart, madhyanāda from the throat and the tāranāda from the head.\(^\text{84}\)

Here sūksma is the nāda which has entered the place of heart. Sūksma is the low pitched nāda, puṣṭa is medium pitched, and apuṣṭa is high pitched nada. This is the opinion of the preceptors already mentioned.

But this is not correct. Firstly, it is said that the places of mandra, madhya and tārā are heart, throat and head respectively is only means that it is in those respective places the abundant effort is needed to produce the corresponding nāda and it does not mean that each of them need no effort in other places. It is not suitable either to science or to experience to imagine such meaning that all kinds of nāda comes from 'Brahmagrandhi'\(^\text{86}\) as shown earlier.
Not only that, the ancient books only command that nādā of low pitch needs abundant effort at the heart etc. since no nādā of any pitch including low pitch (manda stāyi etc.) are not produced to be heard outside without the vibration of sound carrier veins near the throat.

Secondly it is not proper to classify artificial nādā considering it as a separate mode as very subtle, subtle, ‘pusta’, apusta and kṛtrimā (artificial) since artificial nada also has classification. Such as mandra (low), madhya (medium) and tāra (high) if the suksma (subtle) pusta and ‘apusta means mandra, madhya and tāra respectively. It would be absurd like classifying human as - men are of four types man, women, Brāhmin and Kṣatriya.

Therefore, it is assumed by ancient preceptors that it is being told that the nādā which reaches the heart is suksma (subtle), reaches the throat is pusta, which reaches the head is apusta as it loses its strength, which reaches the mouth is artificial irrespective of the pitch. It is pointed out that in Saṅgītaratnakarā, nādā is not included into the said category of mandrā (low), madhya (medium) and tārā (high) pitch.

Siddhāntamata

As the said five kinds are included in the second category of
śūksma and stūla, the said author after showing that it is only as a guideline for the knowledge of the disciples that the said division by ancient preceptors and also pointing out that the divisions of nāḍā is uncountable, shows how all those nāḍā come under the said two categories.

What is shown above as very subtle nāḍā is the nāḍā in the states of parā-paśyanti. Both the states have been mentioned together. Sūkṣmanāḍā is the one which has reached the state of madhyama. As the three states of pūṣṭa, aṇuṣṭa and artificial are the inner divisions of nāḍā which has reached the vaikharī state, they come under the stūlanāḍā which is clear. Nāḍā still has many varieties. Nāḍā of voice which is clear may have different variations depending upon the variations in the state of air, bile, phlegm of the body.

“ucceiruccatarō dhvanirūkṣo vijñēyō vātajō budheīḥ gambhīrō ghanalīnaśca jñatavyāḥ pitajō dhvaniḥ”

That means clear nāḍā has different varieties also due to stānavaiguṇyaṃ of throat etc., which are innate or uncertain (āgantukam). Therefore it is included to be more proper by generally counting all as a single class of stūlanāḍā and dividing it into śūksma and stūla.
As an evidence to show that to have the knowledge of stūlanāda which is clear, the comparison of speed of waves of nādā and comparison of the strength of the vibrations are ‘Sahakārikāraṇā’, it is said that stūlanāda itself has two inner divisions with regard to the power of sense of hearing of the common people.\\n\\nThe stūlanāda which is formed as said above, is of two types as ‘Sravanayōgyam’ (suitable to the ear) and ‘Sravanāyōgyam’ (unsuitable to the ear) depending upon the strength and weakness of vibrations which is the cause of that nada and also by the comparison of the speed of nada waves thus formed. Sravanayōgya is audible and ‘Sravanāyōgyam’ is not audible. ‘Mūrtītābhīghātā’ - makes a slight motion of the tongue, softly touch the strings of a vīṇā as if it has been plucked - even though few vibrations are formed by this and a small sound wave is formed in turn, we cannot hear that sound due to the weakness of the vibrations and the low frequency of the sound wave.
The creator has decided a rule for the power of our sense of hearing like the power of other sense organs. Even in stūlanāda, we can hear nāda only subject to the power of that rule. Similarly the ear is created subject to the rule that we can hear the sound only if the vibrations and sound waves are of such and such speed.

**Limitations of hearing capacity of men and animal**

96 We cannot hear the sound waves which is having more speed or less speed than the stipulated speed rule. It is due to the difference in those rules with regard to the power of hearing in each animals that animals can hear the sounds which are not audible to human.

Fig: Hearing range in Animals 97

As the variation in speed are according to the duration of frequency (Kālaparimāṇam). 98 For a general knowledge of the comparison of speed of sound waves, the rules of 'Kalaparimāṇam' with regard to this science is firstly described.

**Kālamanakramam**

In order to measure time;

The time is taken to spell a letter, when pronouncing some single syllabled letters speedily and without gap like ka, ca, ta, ta, pa is called 'Nimesa'. 'Laṅghuakṣara' (syllabled letter) used
Hearing range of Animals

<table>
<thead>
<tr>
<th>TYPE OF ANIMAL</th>
<th>Hertz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bat</td>
<td>100,000</td>
</tr>
<tr>
<td>Cat</td>
<td>10,000</td>
</tr>
<tr>
<td>Dog</td>
<td>1,000</td>
</tr>
<tr>
<td>Dolphin</td>
<td>100</td>
</tr>
<tr>
<td>Grasshopper</td>
<td>10</td>
</tr>
<tr>
<td>Human</td>
<td>0</td>
</tr>
</tbody>
</table>
in the sutra means those like $ka, ca, ta, ta, pa$ and the like. Even though much time is needed to spell single vowel continuously like $ah, a$, the duration needed to spell a single letter is not $nimesa$. Such eight $nimśha$-s together form one $kāśṭā$, thirty $kāśṭa$- one $Kalā$, thirty $kalā$- one $ksanam$, twelve $ksanam$- one $muhūrttam$ (i.e. two $nāzhika$), thirty $muhūrttam$ forms one $ahorātra$ (only day). This is the order of measuring time in this science. Even though other type of measurements are mentioned in some other sciences, this type of measurement is appropriate and useful here.

Thus ‘One $nimśa$‘ is the $1/8$ th of a second according to the modern measurement of time. With regard to this method of measurement, the speed of vibrations and sound waves and the suitability in hearing the $nāda$ is shown:  

If the frequency of vibrations and sound waves come within numbers ranging from 4 to 5000 in a $nimśa$, then that sound will be suitable for hearing. If the frequency of vibrations formed in a $nimśa$ is either below 4 or above 5000, we cannot hear the sound since the power of our sense of hearing is limited.

**Nature of Vibrations of sound waves (Mūrttaparikamba)**

The bond between the particles of solid object should be very strong in order to produce continuous vibrations to produce
sound waves in turn (already mentioned), when the strings of a 
\(\textit{vina}\) is loose, the frequency will be below four and when it is 
much more lightened the frequency will be four and it is much 
more lightened will be below four and when it is much more 
lightened the frequency will be above four thousand. Then that 
sound cannot be heard.

\textit{Sutra-s} thirtyfour to thirtyfive show the relations between the 
speed of vibration (parikamb\(\bar{\text{i}}\)) and the state of \(\textit{nada}\). \(^{103}\) The 

pitch of \(\textit{nada}\) is directly proportional to the speed of \(\textit{parikamb\(\bar{\text{i}}\)}\). 

It is the comparison of speed to vibrations and wave due to 
which high and low pitch are formed.

\textit{Unilarities and differences of N\(\bar{\text{a}}\)da} \(^{104}\)

There is another speciality with regard to the formation of \(\textit{N\(\bar{\text{a}}\)da}\) 
due to the gradual increase in the number of vibrations in a \(\textit{vina}\) 
of sound carrier nerves as said above. The \(\textit{N\(\bar{\text{a}}\)da}\) formed by the 
first vibrations and which of doubled number of vibrations by 
increasing the bond between the particular string is of the same 
kind.

Each state of nada can originate some subtle feelings or sensa-
tions in our heart. Not only the \(\textit{nada}\) but the sounds which are 
colourful, cry, roar etc. could also make sensations depending 
upon the nature of high and low frequencies. If a thing, which is 
to be told with range, is told in low tone, then it will not be much
effective. Taking this nature into consideration, the preceptors call nāḍā in different names (nomenclature) such as dīptā, karuṇā, āyata, mṛḍvi and madhyā.\textsuperscript{105}

In this order, nāḍā formed by a number of vibrations and which is formed by double the number of vibrations and which is formed by double the number of vibrations (feelings) even though they have variations in tone as high, low. Thus the nāḍā formed of vibrations in the order like 50, 100, 200, 400, 800.. are similar (sajāṭiya).\textsuperscript{106} The nāḍā-s formed by the number of vibrations other than those numbers are different from it (vijāṭiya-s). In this way, the nāḍā formed of any number of vibrations, its double and its double the numbers irrespective of the number (60, 120, 240 etc.) will be 'sajāṭiya' and which is produced of different number will be different from that nāḍā.

**STAYI-S**\textsuperscript{107}

It is the doubled number of vibrations which produces similar nāḍā-s and also the basis for pitch/tone and thus the state of low, medium and high tones, in the continued succession of infinite flow of high and low sounds.

**Doubleness of Vibrations**

In the 36th and 37th Sūtra, the doubleness of vibrations formed by plucking a vīṇā string is made clear.\textsuperscript{108} There is a point to
join in the middle in the large series of vibrations which divide into two equal parts, the string of a vina from this ‘Kakubha’ to meru, which is vibration occurring in the whole length of that string the two portions of the joining point vibration separately is double that of vibrations occur in the whole length of the string is middle pitched ṣadja, then the nāda which came from that great joining point will be ‘tarastāyi ṣadja’. Thus that great joining point differentiates ‘madhyatāraṣṭāyi’.

Svayambhunada

As the whole length of the string is divided into two and both the divisions as above, even if the string is plucked with keeping a finger or anything at that joining point in order to obstruct the vibrations of the total length. Nāda of tārṣadja is produced clearly from there since no obstruction is effected to both the part in vibrating in doubled number of vibration. The Nāda thus set out is symbolized by the ancient preceptors as ‘Svayabhūnāda’ meaning self-illuminating like the self-illuminating lights etc. There should be two joining points to divide the length of the charm of general vibrations into three equal parts. Those three parts will vibrate separately along with the general vibration and the number of vibrations will be produced due to separate vibrations even though there arise obstruction to general vibration.

266
That nāḍā divides the chain of vibrations into two and also would be the nāḍā of tārā. Pañcama much higher to the ‘Tāraśadjanādā’ which is ‘Svayambhū’ in the mid joining point of the series of vibrations which are higher to the ‘Tāraśadjanādā’ which is ‘Svayambhū’ in the ‘tārapañcama’ point of the series of vibrations which could able to vibrate those two parts double the number of general vibrations. The reason for it is that the pitch of nāḍā increases with increase in the number of vibrations. Like three joints which divide the series of vibrations into four equal parts are formed along with general vibrations and each of those four parts vibrate separately four times the general vibrations. The self illuminating nāḍā which is formed in those joining points as alone will be ‘Tarataraśadjanādā’.

But, since the seat middle point of those three joining points is the ‘Mahāsandhistāna’ which also divides the series of vibrations into two parts, the ‘Taraśadjanādā’ which is considers ‘Svayambhū’ is heard here. Tarataraśadjanādā’ gets absorbed in it.

Thus, there are joining points to divide the series of vibrations into four, five, six, seven, eight and nine parts. That means, there are four joining points which divide the series of vibrations
into five equal parts and which vibrate each of those nine parts separately in five times more than the total number of vibrations. In this way, antaragāṇḍhārā, Tāratara pañcama, Tāratara kaisiki niśāda etc. are self shining and become too subtle.

Such explanation helps to describe generally the nature of 'Stāyinādā' and the nature of nādā comes within the 'Stāyī'\(^\text{113}\). One stayi is the series of nādā from the nādā formed by double the number of that vibrations which are called 'Antaranādā'. Each nādā formed by a number of vibration to the nādā formed by double the number of vibration in the stāyī is to be adjusted as 'Ṣadjasvarā'. In such state, the series of nādā from one ṣadja. Nādā to one stāyī suppose it is considered that the beginning of the Stāyī is the nādā formed of fifty vibrations that is ṣadja. Series of nādā from that ṣadjā to similar ṣadjanādā formed of hundred vibrations is one stāyī and the nādā with number of vibrations is one stāyī and the nādā with number of vibrations ranging from 55 to 99 is its inner nādā-s. Now suppose 52 is considered as the beginning ṣadjā of a stāyī, then its 104th vibration is it similar ṣadjā and the nādā which is in between those are inner nādā-s.

**The way to know the Ṣadja**

But, the series of nādā-s, which after considering a nādā as
ṣadja and considering the corresponding riṣabhā or gāndhārā as the beginning note and the similar riṣabhā or Gāndhārā formed by double the number of vibrations, cannot be counted as stāyi. Any nāda considered as the beginning note will be ṣadja only.¹¹⁴

In this way, counting the beginning made of stāyi as ṣadja which is formed of 50 vibrations is as follows.

<table>
<thead>
<tr>
<th>From</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>50 to 100</td>
<td></td>
<td>Mandrastayi</td>
</tr>
<tr>
<td>100 to 200</td>
<td></td>
<td>Madhyastayi</td>
</tr>
<tr>
<td>200 to 400</td>
<td></td>
<td>Tarastayi</td>
</tr>
<tr>
<td>400 to 800</td>
<td></td>
<td>Taratarastayi</td>
</tr>
<tr>
<td>800 to 1600</td>
<td></td>
<td>Taratamastayi</td>
</tr>
</tbody>
</table>

In nāda of voice only three stāyi can be used generally. They are mandrastayi, madhyastayi, tārastayi and taratarastayi respectively. On the other hand i.e. vina it can be seen from anumandrastayi to taratamastayi.

Series of Nāda in a Stāyi

¹¹⁵The series of nāda comes in a stāyi, especially the number of vibrations of svarā-s is described below. In this order of vibration mainly seven vibrations are formed. There are sa, ri, ga, ma, pa, dha, ni and the order of these and their parikambasaṅkhya and the way to find them are explained here.
## The Frequency Ratio of 22 Sruti-s

<table>
<thead>
<tr>
<th>Sruti</th>
<th>Stanasajna (name of the position)</th>
<th>Svara</th>
<th>Frequency ratio</th>
<th>Base-240Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sadja</td>
<td>Sa</td>
<td>1</td>
<td>240</td>
</tr>
<tr>
<td>2</td>
<td>Ekasrutirisabha</td>
<td>Ri 1</td>
<td>256/256</td>
<td>252.8</td>
</tr>
<tr>
<td>3</td>
<td>Dvisrutirisabha</td>
<td>Ri 2</td>
<td>2187/2048 OR 16/15</td>
<td>256</td>
</tr>
<tr>
<td>4</td>
<td>Trisrutirisabha</td>
<td>Ri 3</td>
<td>262144/236190 OR 10/9</td>
<td>266.6</td>
</tr>
<tr>
<td>5</td>
<td>Catusrutirisabha</td>
<td>Ri 4</td>
<td>9/8</td>
<td>270</td>
</tr>
<tr>
<td>6</td>
<td>Komalasadharanagandhara</td>
<td>Ga 1</td>
<td>32/27</td>
<td>284.4</td>
</tr>
<tr>
<td>7</td>
<td>Sadharanagandhara</td>
<td>Ga 2</td>
<td>19683/16384 OR 6/5</td>
<td>288</td>
</tr>
<tr>
<td>8</td>
<td>Andaragandhara</td>
<td>Ga 3</td>
<td>16384/13122 OR 5/4</td>
<td>300</td>
</tr>
<tr>
<td>9</td>
<td>Cyutamadhyaamgandgara</td>
<td>Ga 4</td>
<td>81/64</td>
<td>303.75</td>
</tr>
<tr>
<td>10</td>
<td>Suddhamadhyama</td>
<td>Ma 1</td>
<td>4/3</td>
<td>320</td>
</tr>
<tr>
<td>11</td>
<td>Tivrasuddhamadhyama</td>
<td>Ma 2</td>
<td>177147/131072 OR 27/20</td>
<td>324</td>
</tr>
<tr>
<td>12</td>
<td>Pratimadhyama</td>
<td>Ma 3</td>
<td>1024/729 OR 45/32</td>
<td>337.5</td>
</tr>
<tr>
<td>13</td>
<td>Cyutapanjarnamadhyama</td>
<td>Ma 4</td>
<td>729/512 OR 64/45</td>
<td>341.72</td>
</tr>
<tr>
<td>14</td>
<td>Pancama</td>
<td>Pa</td>
<td>3/2</td>
<td>360</td>
</tr>
<tr>
<td>15</td>
<td>Ekasrutidhaivata</td>
<td>Dh 1</td>
<td>128/81</td>
<td>379</td>
</tr>
<tr>
<td>16</td>
<td>Dvisrutidhaivata</td>
<td>Dh 2</td>
<td>6561/4096 OR 8/5</td>
<td>384</td>
</tr>
<tr>
<td>17</td>
<td>Trisrutidhaivata</td>
<td>Dh 3</td>
<td>65536/39366 OR 5/3</td>
<td>400</td>
</tr>
<tr>
<td>18</td>
<td>Catusrutidhaivata</td>
<td>Dh 4</td>
<td>27/16</td>
<td>405</td>
</tr>
<tr>
<td>19</td>
<td>Kaisikinisada</td>
<td>Ni 1</td>
<td>16/9</td>
<td>426.6</td>
</tr>
<tr>
<td>20</td>
<td>Komalakaisikinisada</td>
<td>Ni 2</td>
<td>50048/32768 OR 9/5</td>
<td>432</td>
</tr>
<tr>
<td>21</td>
<td>Kakalinisada</td>
<td>Ni 3</td>
<td>4096/2187 OR 15/8</td>
<td>450</td>
</tr>
<tr>
<td>22</td>
<td>Cyutasadjanisada</td>
<td>Ni 4</td>
<td>243/128</td>
<td>455.6</td>
</tr>
<tr>
<td>23</td>
<td>Tarasadja</td>
<td>Sa</td>
<td>2</td>
<td>480</td>
</tr>
</tbody>
</table>
Calculation of 24 śruti-s & their frequency level

Relative Frequency

\[
\begin{array}{cccccccc}
24 & 27 & 30 & 32 & 36 & 40 & 45 & 48 \\
\end{array}
\]

Intervals

\[
\begin{array}{cccccccc}
27 & 9 & 30 & 10 & 32 & 16 & 36 & 9 \\
24 & 8 & 27 & 9 & 30 & 15 & 32 & 8 \\
36 & 9 & 40 & 10 & 45 & 9 & 48 & 16 \\
24 & 8 & 32 & 9 & 40 & 10 & 45 & 15 \\
\end{array}
\]

Interval: The ratio between the frequencies of two notes is called musical interval. It is equal to one or more than one, it is never less than one.

In an equally tempered scale, there are ‘13’ keys and ‘12’ intervals.

The intervals are equal and each interval = \(2^{1/12}\)

<table>
<thead>
<tr>
<th>C</th>
<th>C#</th>
<th>D</th>
<th>D#</th>
<th>E</th>
<th>F</th>
<th>F#</th>
<th>G</th>
<th>G#</th>
<th>A</th>
<th>A#</th>
<th>B</th>
<th>C1</th>
</tr>
</thead>
<tbody>
<tr>
<td>20/12</td>
<td>21/12</td>
<td>22/12</td>
<td>23/12</td>
<td>24/12</td>
<td>25/12</td>
<td>26/12</td>
<td>27/12</td>
<td>28/12</td>
<td>29/12</td>
<td>210/12</td>
<td>211/12</td>
<td>2</td>
</tr>
</tbody>
</table>

It consists of a series of notes having certain relation to one another as regards the frequency of vibration. The human ear can distinguish a number of notes of definite frequencies between a note and its octave. The note of lowest frequency at such a series is called key note or tonic.
The musicians prefer the pitch based on frequency ‘264’ cycles per second while physicists, ‘256’ c/s as a key note.

Suppose :  

\[
\begin{array}{l}
C & 256 \\
D & 256 \times 9/8 = 288 \\
E & 288 \times 10/9 = 320 \\
F & 320 \times 16/15 = 1024 = 341.33 \\
G & 1024/3 \times 9/8 = 384 \\
A & 384 \times 10/9 = 1280/3 = 426.6 \\
B & 1280/3 \times 9/8 = 480 \\
C^\dagger & 480 \times 16/15 = 512 \\
\end{array}
\]

The above scale there are five notes have been introduced. They are C*, D#, F#, G# and A#. The main advantage of this scale is that the interval is the same between the consecutive notes and a singer can conveniently use any key as his fundamental.

According to musicians, between \textit{madhya s\=adj}a to \textit{t\=ara s\=adj}a (a \textit{st\=ayi}) contains ‘22’ musical intervals. The frequency of these key notes and their technical names are given below.

\[
\begin{array}{l}
C & 271
\end{array}
\]

Only in \textit{v\=in\=a} they can be reflected clearly. As there is no logic or proof in the fact that in \textit{n\=ada} of human voice there is joining point in the series of vibration in sound caused never as said above, how the variations in tone inner \textit{n\=ada} of \textit{st\=ayi}
(stāyantaranaṇādāḥ), is formed is stated here.¹²⁰

**Divisions of stāyi and their innernāda-s**

It is due to the vibrations in sound carrier nerves that the voice becomes *Nadasvarūpā* (nādā in nature). Vibration occurs due to the hardness of the vocal nerves and also due to the forward pushing of life breath in them.¹²¹ Due to the forward pushing life breath just the opposite of *śphūtā* the places such as heart, throat, palate and head. Here also, as in *vīnā*, the vibrations occur depending upon the tightness of the nerves. If life breath is more, then the vibration would be less and so also the tightness of the nerves where there is inspiration of life breath is more in different ways, the number of vibrations will be more there. Thus.

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<tr>
<th>Heart</th>
<th><em>Mandrastāyi</em></th>
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<tr>
<td>Throat</td>
<td><em>Madhyastāyi</em></td>
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<tr>
<td>Palate</td>
<td><em>Tarastāyi</em></td>
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It has been mentioned earlier in detail. It is due to the difference in nature of the vocal nerves due to the variations in blending of air, bile and phlegm that some nada of voice are smooth or soft and some others are dreadful and rough.¹²²
Sravanayōgya stayi-s used in music

Nimisā in the order of four

All the variation of nāda formed due to vibrations ranging from 4-5000 in a Nimisā are suitable for hearing. In that way any number of stayi can be formed. Even though, if a particular number of vibration is considered as the beginning of nāda, twice that number of vibrations create nāda as stayi. In this order, which ever may be the beginning of stayi, there can be no more than 10 stayi in a series of nāda. How is it that :

Ten Stayi-s

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<td>2048</td>
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Thus ten stayi-s a little more may be formed.
### Nimisā in the order of five in a second\textsuperscript{125}

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### Nimisa in the order of six\textsuperscript{126}

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In any way, there will not be more than ten stayi, in high and low nature which are suitable for hearing in any orderly series of nāda. Of the ten stayi-s only five exists in between are suitable for hearing. In vīṇā these five are scarcely (hardly) apt for usage. Here also only the last portion of first stayi and first position of last stayi is used generally. Owing to the reason stated above others will have less recounseling properly. Only three stayi will be there in śārīranāda. The person who could use voice in there stayi is to be considered as a good musician.

**Name of stayi-s**

Stayi which are used in music are anumandra, manda, madhya, tāra and tāratara respectively. Of these, the lowest pitch is anumandra and then manda, madhya, tāra and so on. The reason for stayi, mantra and anumandra are the doubling of vibrations.

If thirtytwo vibrations in a second are considered as anumandrasadja, then five stayi such as 32, 64, 128, 256, and 512 in an order will be clear. Thus the stayi-s are ‘Nādasvarūpāpeksā’ which starts from anumandra, the said five stayi different from each other will be formed.
Conclusion of Nādapraṇāšā

From the point that collision of solid objects is the cause of ahata sounds to everything related to ahata is analysed here. Collision of solid objects is only a cause of āhatā sound. Which is the root cause of anāhata nādā.

“mūrttābhihatō vāyusahakṛto f nāhataḥ”

By this sutra almost everything has been explained. There is the saying ‘anāhatādāhataḥ’, of saint Nārada which bears ample proof for the above. Here, the said author shows that the opinion of some authors are improper.

Ahata nādā is formed due to the burning of inner fire in the air which has reached the twelve petalled lotus (anāhata cakrā), which is the heart. One author says that the intention of the saying of Nāradamuni is that, since the place and time wherein a cause formed has the causation about that cause, anāhata cakrā has the cause of anāhata nādā. Ahōbala in his book:-

“ḥṛdyanāhata cakrē f sminnanilānala yōgataḥ
āhatastatranādasyāditiśśāgtrē prakīrttitam”

Of the different states of sūkṣmanādā such as parā, paśyanti and madhyamā which is the varieties of āhatanādā, the
madhyama state formed when it reaches the heart alone is happening now while there is also the formation of anāhata nāḍā.\textsuperscript{134}

Siva who is to be worshiped in the state of adhiṣṭāna in the anāhata is the cause of all āhatanāḍā. Hence some people interpret the words of Rṣi Nārāda as attainment of cause āhata nāḍā to the Pranavarupananda.

“ḥṛdaye f nāhatam cakram śivasya praṇavākṛteḥ
pujāstānam tadiccanti daileirdvādaśabhiryutam”\textsuperscript{135}

-and refer the book Saṅgītaratnakārā of Nissāṇgasāṅgadēvā.

“tasmādanāhatam nādām munayassamupāsatē”\textsuperscript{136}

Isvara has ‘Pranavarūpa’ and anāhata nāḍā which is in the nature of praṇavā has ‘Jagatkāraṇatvā’ which is entitled as Nāḍabrahma. Since the saying of Nārada establishes that-

“caityanam sarvabhūtānāṁ vivṛttam jagadātmanāṁ
nāḍabrahmatadānāntamadvitiyamupāsmahē”\textsuperscript{137}

as anāhata nāḍā is the cause of all beings, it is also established that it is the cause of āhata nāḍā too.

Still, the interpretation that in the sutra- “anāhatādahato
maruta nunnassarati vidyutāḥ”,\textsuperscript{138} the statement that anāhata

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has the reason of \( \text{āhata} \) sound by considering the reason of that ‘samānyakāraṇa of jagat’ is not acceptable. It is only to express such illfeeling and displeasure that it is said in the first sūtra as ‘Kaścit’\(^{139}\) and in the said sūtra as ‘Anyē’.\(^{140}\)

**Svamatam**\(^{141}\)

_\text{Anāhata nāda}_ which has been said by Rṣi as the part and parcel of ‘\text{āhata nāda}’ is spreading every where, and like the group of water molecular it fills the centre of ocean when there is no sound, and like the group of the ‘paramāṇu of tejas’, which are all prevading but with subtle and natural character of movement. It is the _vivartta_ of _ṣūkṣmabhuṭa_ of nadabrahman into sound molecules. It consists of five elements and all peryding like ‘Gandhatanmātra’, ‘Rūpateranmātra’, ‘Sparśanmātra’, ‘Sabdhanmātra’. That is why it is carried by _vidyut_. This _anāhata_ sound is called _ākāśa_ and atmosphere.

In Sangīta Makarandā:-

\[
\text{“Akāśa sajñito nādo yassō f nāhata īritāḥ}
\]
\[
tasminnannāhatē nādē vilayam yānti devatāḥ
\]
\[
yōginō f pi mahātmanastādānāhata sajñakē
\]
\[
\text{manō nikṣipya samyānti muktim prayatamānasāḥ”} \quad \text{\(^{142}\)}
\]

It has already been explained that when a collision occurs, those _anahata_ sound atoms unite in a particular shape with the help of
air to become waves and spread the surroundings like water current and gradually separate and contract to attain the former state. It is proper to interpret the sayings of Rṣi in such ways. ‘Iti’ in the sūtrā shows the conclusion of ‘Nādapraṅkāśa’.

Nādā and Sūryā

The similarity between Nādā and Sūryā is described in the Sukla- Yajurvedā. Just as the sūrya shines in the sky, so is the Nādabrahmaṇ in the broad and beautiful horizon of Saptasvarā.

Like Sūryā, which has deity Udayam (rise), Ārōhaṇagati (ascent), Uccastiti, Saṅcāram (movement), Avarōhaṇagati (descent), Kālapramāṇam (time-span), Raktimā (redness), Layam (sublimation) etc. Each rāgā of the sound based on music has also the same pattern of rise, growth and decline. The sun makes the world brighten by lighting it from morning to evening while Nādā imparts happiness through its magic spell.

Through its routine Uttarāyaṇā and Daksināyaṇā courses, the sun fulfils its spiritual (religious)-material obligations to the dependents by eliminating Ajñāna. Similarly, the Nādā endeavours the same by addressing the religious sacrifice and material aspects by dividing itself into Mārgā and Deśī.

While sun travels on a ratha by seven horses through the sky,
# Gayatri Mantra and Vina Nada

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the *nāḍā* made of seven *svarās*—*Gīta, Varṇa, Kīrtana-s, Pāda* and others, is drawn by several works of different sorts.

Just as innumerable *varṇa-s* lits each spark of *Sūryā* nicknamed as *Sahasrakirāṇa-s*, with the *Saptavarṇa-s* like red, yellow, green etc., in the music also (as per *ananta vai rāgāh*) the countless *rāgās* fill it with *ṣadja, rṣabha* and the other *svarā-s*.

In the *Sūryagāyatri* (based on—‘*Gāyatri caturvimsatayakṣarā tripāda satkukṣiḥ*’) there are 24 letters, 3 *Pāda-s*, 6 *Kuksi-s*, in music also there are 24 *Sruti-s* and 3 *Stayi-s*.

As per—‘*ārogyam bhāskarādiśced*- we worship *sūryā* for physical and mental health, the practice of music strengthen us to avoid problems in life.

**Nādamahima**

"*Na nādēna vinā gītam na nādēna vinā svarah*  
na nādēna vinā śrutiḥ tastmāt nādātmakam jagat  
nāda rūpah smṛto brahma nadaruśo janarddanah  
nadarūśo parāśaktih nādarūśo mahēśvarah" \(^{145}\)

There can be no *Gīta* without *Nāda*, no *svarā-s* without *Nāda*, no *Śrutiḥ* without *Nāda*; the source of music *Gītam, Vādyam,*
nṛttam- enemates from Nādā. Brahmā, Viṣṇu, Mahēśvara, Parāśakti are Nādarupah. Brahmā always sings the nādā of ŚāmaVEDa, while Kṛṣṇa does the same with his murali, Śiva stands taṇḍava posture while Pārvati immerses herself in Lāsyā. Yakṣa, Kinnara, Gandharva, Tumburu, Nārada etc. are fully indulged in the NādabraHman. The Trimūrti-s like Brahma, Viṣṇu and Mahēśvarā are being worshiped by Nādōpasaka as they are Nadātmakah.

“Nādōpāsanayā devaḥ brahmaviṣnumahēśvarā
bhavantyupāsita nūnam yastmādēte tadātmkāh”146

‘NādabraHmanandā’:

The name give to Sri Tyāgarājasyāmikal the great musicologist, when he took to sanyāsaśrama towards the close of his life. (When a person takes to sanyāsaśrama, it is tantamount to a new birth, therefore a new name is given to him.) One who cultivates nādayōga is called ‘Nādayōgi’. Tyāgarāja is a unique example of Nādayōgi.

Thyāgarāja proclaims that both musicians and the other devotees of God are doing the same thing. He had fully internalised the fact of NādabraHman in his Cittaraṇjini rāgā kirtanā as ‘Nādatanumaniśam’ when he says that he worships Paramēśvarā as ‘Nādarūpi’.

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Raga - Cittarangini  Arohanam- $S \ R \ G \ M \ P \ D \ N$
Tala - Adi  Avarohanam- $N \ D \ P \ M \ G \ R \ S$

Pallavi

Nādatanumanisām śāṅkaram
namānimē manasā sirasā

Anupallavi

mōdakara nigamōttama sāma-
vēdasāram vāram vāram

Caranam

sadyōjātādi pañcavaktraja
sarigamapadhani varasaptasvara
vidyālōlam vidalitakālam
vimalahrdaya tyāgarajapālam

meaning

I bow to Śaṅkarā, the embodiment of Nāda with my mind and body. To him, the essence of blissful Śamavedā, the best of vēda-s, I bow everytime. To him, who is delighting in the art of seven svarā-s, sa, ri, ga, ma, pa, dha, ni, born of his five faces, Sadyōjātā etc., I bow; to him, the destroyer of ‘Kālam’, the protector of pure-hearted Tyāgarājā, I bow.
The ragas and terms related to Nāda

1. Nāda brahma - a janya rāgā derived from the 37th mēlakartā, Salagam.
   "ārōhanaṃ. S G R G M P D N
   avarōhanaṃ. D P M G R S N
   (S.S.P.S)

2. Nāda brahman - a janya rāgā derived from the 64th mēlakartā, Vācaspathy.
   "ārōhanaṃ. S P M P D N S
   avarōhanaṃ. S N D P M G S
   (S.S. P.S)

3. Nāda cintāmani - a janya rāgā derived from the 22nd mēlakarta, Kharaharapriya
   "ārōhanaṃ. S G M P D N S
   avarōhanaṃ. S N D P M G R G S

4. Nāda dhvani - a bhāsaṅga rāgā mentioned in the Sagīta Ratnakaram

5. Nāda gupti - a janya rāgā derived from the 37th mēlakartā,
6. *Nāda hindōlam* - a janya rāgā derived from the 33rd melakarta, Gāṅgēyabhūṣaṇī.
   ārōhanam. S G M P S
   avarōhanam. S N D P R G S

7. *Nāda mūrti* - a janya rāgā derived from the 22nd melakarta, Kharaharapriyā.
   ārōhanam. S G M D N S
   avarōhanam. S N P M R G S
   (S.K - S.Cantrika)

8. *Nāda nāli* - a janya rāgā derived from the 8th melakarta, Hanumattōḍī.
   ārōhanam. S R G M N S
   avarōhanam. S N D P M G R S
   (S.S.P.S)

9. *Nāda rāmakriyā* or *Nāda nāmakriyā* - a janya rāgā derived from the 15th melakarta, Māyāmālavaṃgūla.
   ārōhanam. S R G M P D N S
avarōhanaṃ. S N D P M G R S

10. Nādantari - a bhasānga, sampūrṇa rāgā in the 'Sāṅgīta Samayasārā' of Pārvavā. This rāgā is also mentioned in the 'Sāṅgīta Cantrika'.

avarōhanaṃ. S N D P M G S (SK)

12. Nāda rūpa - God who is in the form of Nādā. In the kṛiti "Nammi vachchina nannu" (Kalyāṇi rāgā), Thyagaraja addresses God as Nāda rūpā.

14. Nāda rūpini - a janya rāgā derived from the 44th mēlakarta, Bhāvapriyā.
ārōhanam. S G R G M P D N S
avarōhanam. S N D P M G R S
(S.K)

15. Nāda taraṅgini - a janya rāgā derived from the 22nd mēlakarta, Kharahara priyā.
ārōhanam. S P M R G R S
avarōhanam. S P N D P M G R G S
[In this rāgā, the ārōhanā does not touch the tāra sadja as is usually the case with janya rāgās. (The niṣādāntyā, dhaivatantyā, pāṇceamatyā and madhyamāntyā rāgās also do not touch tāra sadja). It is an ubhayavakra rāgā. Thyāgārājā’s “Kripalavāla kalādharā sēkharā” is a well known kriti in this rāgā. It is also one of the vinta rāgās conceived of by him.]
The S.S.P.S. however, gives the following ārōhanā and avarōhanā for Nādataraṅgini.
ārōhanam. S R G M P N S
avarōhanam. S N D P M G R S
(There is no composition in this rāgā)

16. Nāda varāli - a janya rāgā derived from the 4th mēlakarta, Vanaspathi
ārohaṇam. S R M P D S
avarāhaṇam. S N D N P G R S

(S.K)

17. Nada varaṇgini - a janya rāgā derived from 22nd mēlakarta, Kharaharapriyā.
ārohaṇam. S P M R G R S
avarāhaṇam. S P N D P N G R S
(Same as Nadatarāṅgini mentioned in the above)

18. Nada vinodini - a janya rāgā derived from the 27th mēlakarta, Sarasāngi.
ārohaṇam. S R G M P M D N S
avarāhaṇam. S N S D P M G M R S
(S.K)
It is an ubhayavakra rāgā

ārohaṇam. S R M D N S
avarohanam. S N D M R S
(S.S.P.S)
a janya rāgā derived from the 33rd mēlakarta, Gāṅgēyabhūṣanī.
ārohanam. S R G M N S
avarōhaṇam. S N M G R S

(S.S.P.S)

20. Naḍīparṇam - a janya rāgā derived from the 38th mēlakartā, Jalārṇavam.

ārōhaṇam. S R G M D N S

avarōhaṇam. S N D M G R G S

21. Nādasvarūpi - a janya rāgā derived from the 27th mēlakartā, Sarasāṅgī.

ārōhaṇam. S G M P M D N S

avarōhaṇam. S N D P M G M R S

(S.K)

22. Naḍā - the tone of a musical instrument. We say the nāḍā of one vīṇā is superior to that of another vīṇā. Music is styled Brahmanāḍa or the voice of God.

23. Naḍā Brahṇā - God, conceived as the embodiment of absolute music.

24. Naḍai - same a gati; the distinctive rhythm underlying each count of a tāla avarta. The nāḍai may be tīṣra (3), caturaśra (4), khanda (5), miṣra (7) and saṅkīrn(9). According the unit-time-measure in each ease will admit of 3 sub-divisions of time,
4 sub-divisions of time, 5 sub-divisions of time, 7 sub-divisions and 9 sub-divisions of time.

25. Nādamaya form - the form of the rāga as revealed through its svara manipulations, phrases, gamakā-s, subtle śruti-s, ālāpanā-s, tāna-s and musical compositions. This is also the nādatmakarūpa of the rāga. The opposite of this is Devamayā form, which consists of the visual representation of the rāga through charming pictures delineating its mood, rasa, gaṇa, kala etc.. This classification is mentioned by Somanadha in his Rāgavibōdha. (1609 A.D)

26. Nādasvaram - the same as Nāgasvaram. The name nādasvaram for this instrument is a recent innovation.

27. Nādātanarūpa of rāga - the sound picture of the rāga. This is the audible form of the rāga as opposed to the Devatatmarūpa of rāga which is the pictorial form of the rāga. This is the visual form of the raga. The Rāg-Ragni pictures pertaining to Hindustani music are the visual examples of such rāga-s. The term Nādamaya and Devamayā forms of rāga-s also signify the same concept.

28. Nāda vidyā - It is an art of music.
29. *Nādi* - pipe or a flute; a reed flute mentioned in the *Rgveda*.

30. *Nādi yantra* - an instrument of the pipe class or species.

31. *Nādōpāsaka* - one who meditates on absolute music or *Nāda*.

32. *Nādōpasana* - the *yōgic* meditation of music.
UNIT - I

1. Saṅgītacandrikā- Nādaprakāśa- marigalaślōka- P.1
2. Supra P. 131 to 133
3. Supra P. 164
5. Saundaryalahari by Saṅkarācaryah, mantra- 8
6. A leading exponent of Samayācāra, the author here worship Devi (samayārūpa). There are two types of pūjā: One in Kulācāra which is external worship and the other is Samayācāra which is inner worship. Śrīcakra is also called ‘Viyatcakra’ because it is an elevated or viyat form of worship. Viyat worship is further divided into two, one is Kaulapūjā (bahyākāśājām) which denotes the drawing of Śrīcakra in gold and silver. The second is called Samayapūjā (Daharakaśājam), which is the inner worship of Śrīcakra.
7. Lalitā sahasranāmā- ver. sudhāsāgaramadhyastā, kāmākṣi kāmadāyini. Saundaryalahari by Saṅkarācaryah- Kandiyur Mahādevaśastrikal ver.8
8. Saṅgītakalpadrumām - L. Muttyābhāgavatār P.30
   “tannādāt svaranispatīḥ saptadā prathate bhūvih”
9. Saṅgi tasamayāsaḥaram. Pārsvadevā - Prathamānandhiḥkarānam ver.8
   “avyaktah sīrāṣiyuktah kaiścittannūpa padyate binduruptadyate nādāntannihila vaṁmayam”
10. Prapaṅcasāravacanam, Prathama paṭalam - (above mentioned)
11. Prapaṅcasāravacanam, 2nd paṭalam, ver. 61 to 68
   “Bhūdeirahadyeih śaṃtantecirbhidyeat śaṭabhiḥ prthak
   Akāśacapyukaraṭaśca makāro bindurēva ca
   nādaśaktiśca śaṃtasca tarabhādassamāritāḥ
   hakaraerēphamāyāśca bindu nādāu tatheciva ca
   śakti śantau ca samprōkṭāḥ saktērhēdāśca sapatha
   anigēbhyaḥ sapathē bhidyate jagat
   lōkadrīdviṣapatala śindhu grahamiśvarcēḥ
   dhuttāvibhisṭāthānīciśca saptaśaṅkhyāprabhēdakāḥ
   yadāṣṭathā sa gunītāḥ tadā prakṛtiḥbhēdini
   aṣṭakṣarāḥ hi vavīśā māṭrā mūrtiḥbhēdini
daśadā gunītāḥ nāḍī marmasadi vibhēdini

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dvādaśatmikyāpi yadā tadā rasyārka mūrtiyuk
mantram ca dvadasarpākhyamabhidhätte svaranāpi
tatsaṁbhāyam ca tadā yantram śaṅkṣetṛgunitātmakāṁ
pañcasadamsa gunitavya yadā bhavet sa
dēvi tatmatmavīṁśita divyabhaṁ
saŗśumāṁvaṁśa susīṛdoṁī ṇādā saṅgat
pañcasadirayati paṁkīśa ēva varṇān”

12. Saṅgītaratnakara of Saṅgadēvā, 3rd chapter, ver.1,2.
13. The bliss which is one without the second, which is incomparable, absolute, i.e., not relative. Karika takes ‘Advitiyam’ as directly qualifying Nādabrahmam.
14. ‘Caitanyam sarvabhaṁtānam’- literally means the sentience in all the creatures. It has already been explained that ‘Nādabrahman’ refers to the undifferentiated state of manifestation and as such it is all-pervading, without any limitations of individuality. Caitanya is the essence of ‘being’ without implying any opposite. Sentience for example, implies inert matter as non-sentience. It is in this light that Caitanyā has been translated as intelligence. Caitanyā is the life - essence inherent in all the creatures.
15. ‘Saṅgītakarandam’ by Nāradā - Maṅgēsh Ramakrishna Telang, II padam, Saṅgīta dēhanirūpaṇaṁ.
16. As intelligence and bliss, Nādabrahman is immanent in all the beings. This immanance indicates the state of non-differentiated consciousness as the universe in the relationship of the seer and the seen, the subject and the object. Thus the Nādabrahma is the cause of the manifest universe.
17. Saṅgīta ratnākarakā of Saṅgadēvā Ch: III - The genesis of Human embodiment.
Samskrita Saṅgīta Sarasamgraham - Saurindra mēhana takur, Prathamapariccēdam, page 5.
26. Saṅgītadarpaṇaṁ - Caturadāṁodaṁ, Prathamah- svarādhyaṁ
27. Samskrita Saṅgīta Sarasamgraham - Saurindra mehana takur, Prathamapariccedam, page 5.
28. Saṅgīta makarandam - Nārada, Prathamapadah, ver .4
29. Anāhatatvahatasceiva sa nādo dvividhō mātah, yatra bhayostayormadhye niḥ ato pi nirupayate
34. It shows the range of intensity per metre square.
36. Practical Anatomy- Cunningham- Organs of hearing and equilibrium, page 319 to 320.
40. Octave - here the musical interval - 2.
41. Saṅgītacandrikā, N.P. Su. 3
42. Saṅgītacandrikā, Sutrā - 3
43. Saṅgītacandrikā, Bhāsyam page -
44. Saṅgītacandrikā, N.P Su. 4
45. Murttaviśeṣavighēdāhatah
47. Ibid - 175
48. Ibid - 175
49. Ibid - 175
50. Ibid - 175
51. Vicitarāṅganyayā Yaḥ
   The maxim of wave-undulation. This is used by the author of the 'Bhasaparicceda' (ver. 165, 166) to account for the production of sound.
   He says - "Saṃvah sabdō nabhovrttiḥ śrotṛotpamastu gṛhyate. Vicitarāṅganyayene tadupattistu kīrttā. Kadambakōraka nyāyāduḥpattih kasyacinmatē".
   Almost the same words are used by Vedantin Mahadeva in his commentary on Sankhya Sutra ver.103:— "Kintu sabda ēva
"Vicitaranganyayena kadambamukula nyayena śrotradēsam gatah śrotrēna geḥyate".

(means sound comes to the seat of hearing in the same manner as the undulating waves of water, or as the authors of a Kadamba flower and is thus apprehended bu the ear.) (Translation is by Dr. R. Garbe’s)


50. Supra. P. 194

51. Kadambamukulanyayam.

The maxim of the buds of the Kadamba tree. They are said to burst forth simultaneously. As for example, in Hemacandra’s Pariśistaparvāṇi, 241:—"Pitrā svapānipadmēṣa spryamūno f vanīpatiḥ.

Utkūrakakadambābhā badhuvā pułakāṅgureiy".

In the Nyayamanjari, pages 214 and 228, and in the Bhāṣāparicceda (ver.166) this Nyāyā is given as an illustration of the way in which sound is produced. “Vicitaranganyayena taduttapātistu kīrttiṭā. Kadambakūrakanyayadauttātattāh kāsyācinnatē”.

The commentary, Siddhāntamuktavali, explains ‘Kadambagolakasya’ and this is the form given to the maxim in the ‘Vācaspatyam’ which explains it as ‘Kadambagolakasya gōlākārakadambasya sarvāvayaveṣu yathā yugapadpuspōtgamā ēvam sarvaprādēṣeṣu yugapadyatra prasaratatrasya pravruttīḥ’.

In Vedantin Mahadeva’s comment on Sankhyasutra ver. 103, ex plains a third form ‘Kadambamukula nyayah’.

52. Sangitacandrika - N. P Bhāsyam P.5.


54. Vakyapādīya - Brahmakāṇḍam ver. 107

55. Bhāṣāsāstratattvadarśanām - Dr. K. Chandraśekharan Nair, P. 218.


57. Vākyapādīya - Bhartṛhari, ver. 110.

58. Bhāṣāsāstratattvadarśanām - Dr. K. Chandraśekharan Nair, P. 220.

59. Ibid - P. 220.

60. Sangītacandrikā - Nādapraṅkāśā, Sūtra. 6.

61. Sangītacandrikā - Nādapraṅkāśā, P. 5


63. Bhāṣāsāstratattvadarśanām - Dr. K. Chandraśekharan Nair, P. 221.

64. Sangitamakaranda - Nāradah, ‘Prathamapādāḥ’

Nāradisīka by Nāradah, ‘Sabdakāṇṭāḥ’

‘Anahāssamāhṛṣya saaptanāmāni yojitāḥ
tam nādam saptaḥakṛttva tathā sadjādibhi svareiḥ’.
65. Sangitacandrika - Nadaparakāśa, P. 5
70. & 71. Bhagavat Gīta - Ch.III, Karmayōga, ver.42.
74. Ibid - P. 6.
78. Brhadāraṇyakopaniṣad - Vyākhyaṇam - Nityacaitanya Yati, P. 419.
79. Ibid - P. 420.
80. Ibid - P. 420.
81. Ibid - P. 420.
82. Bhagavat Gīta - Ch.XVII, Śraddhatrayaṁbhāgayoga, ver.8 to 10.
85. Ibid - P. 7.
86. Ibid - P. 7.
87. Ibid - P. 7.
88. Ibid - P. 7.
89. Ibid - P. 7.
90. S. R. N. S.ver 10. 'Pindotpattiprakaranam' ver. 3.
   "Ahato f nahataścēdi dvidhā nādo nigadyate
   Sūryam prakāśate pinde tasmad pīndō f bhidhiyate"
93. Brhatāraṇyakopaniṣad - 'Prākṛtau sphōte bhavah prākṛta - 'Hrasva, dirgha, pluta' are the characters of prakṛtadhvani. Prākṛta dhvani reflects sphotah.
   'Sphōtasya grahane hetuḥ prākṛto dhvanirīṣyate
   vṛttibhedē nimitattvam vaikṛta pratipadyate -
   Vākyapadīya. P. 178.
94. Vaikṛtadhvani - 'Vaikṛto vyaktivisistāh stirastāyī. Druda, madhyanā, vilambitam' are the characters of vaikṛtadhvani. It is too long and different from prakṛt dhvani.
96. & 97. Brhatāraṇyakopaniṣad - Vākyapadīya. ver. 103, 104.
99. Ibid page : 8
100. S.C. - N.P. - Sūtra 11.
102. Bhartṛhari - Vākyapādiya. ver. 81.
103. ‘Taparasūtrabhāsyam’ - cf Bhaṣātattvadarsanam, p. 184
104. ‘Pariṣṭilī’ Comparitive study
109. Ibid. - Sūtra 14.
111. Ibid. Bhāsyam - P. 10.
112. Ibid. - Sūtra 15.
113. Ibid. Bhāsyam - page: 10
114. Supra P. 2 0 5
116. Vaiścīsikamatam - cf Bhasatattvadarsanam - Dr. K. Chandrasekharan Nair, P. 211.
117. Naiyayikamatam - cf Bhasatattvadarsanam - Dr. K. Chandrasekharan Nair, P. 211.
120. Ibid. - Sūtrā 17.
121. Ibid. - Bhāsyam, P. 12.
122. Saṅgitaratnakaram - N. Śāṅgadeva, section. 3.
Musical Sound and Noise. 7.16.
124. Ibid. P. 168.
125. Ibid. P. 168.

UNIT II
This Nor That But AUM'. Nityacaitanya Yati.

Saradatanaya, who is almost a contemporary of Śāṅgīnadeva (cf. Introduction to Bhavaprakāśa, GOS. No. XLV, Baroda. P. 76, where he is placed between 1175 to 1250 AD), and whose work mainly concerns poetics and deals with music as a subsidiary art of dramatics, also mentions in the beginning of the VIIth chapter, the process of creation according to the ‘Kāśmir Saivism and Tantra’, the process of human embodiment and voice production in the body.


Sangitaratnakara of Śāṅgīnadeva - Section III, Nada, Sruti & Svara. Ver. 6.

Matanga - Sangitadamodaram.


Ibid - Sutra - 20. SŪPRA. P. 158

Ibid - Sutra - 20.

Srṣṭiprakṛtyā - Tantra - chapter.


Sangitaratnakara of Sarngadeva - Section III, Nada, Sruti & Svara. ‘Dehe dhvanerāvibhavaḥ’. ver. 3, 4.
24. The region below the navel pertains to Anāhatanādā i.e. the unmanifest sound. (cf. ‘S’ on. 13 - 6)
The Nādā is two fold- Āhata & Anāhata- manifest & unmanifest- S. R. 1 - 2, 1 - 3 etc.

Rāgavibodham - Somanadha - Edited by M. S. Ramasvami Iyer.
‘Prathamavivēkam’ - ver.10, 11.


26. Sarīgitaratnakaram - Nissangasarngadeva
‘Ahato f nahataścēdi dvidha nādo nigadyate
Soffyam prakasate pinde tasmatpindo f bhidhiyate’
Sangitaratnakaram of Sarngadeva - Translation by R.K. Shringy and Premlehasarma.


‘Prathamavivekam’ - ver.10, 11.


‘Prapancasaravacanam - Sri Sankarah- Prathamapatalam - Vyakhyanam’. ver: 41 to 45

31. ‘Tripurasundari’ - another name of Kundalini.

32. ‘Tripurasundari’ - another name of Kundalini.

33. Sangitadarpanam - Chaturadamodarah
Prathamadyayam - Nadōtpatti V. 17 to 19.
‘tatsāṅkhyaṃ ca tādā yantram saktēstatgunitātmakam paṅcāsādamśa gunitavya yadda bhavēt sa
devī tadatmaviniśīta diyyabhāvā
Sausumnā vartmā susisorītā divyabhāvā
Sausumnavartmā susirōdita nāda’ saṅga-
pancāsadīrayati pankīsa eva varṇān’

34. Nityatantram - Saubhagya bhaskara vyakhyanam - P. 72.
cf. Lalita Sahasranam avyakhanam - by Thiruvallikkattu Narayana menon - P 243.

35. Ibid. P. 244

36. Ibid. P. 244

37. Ibid. P. 244


39. S.C. N.P. Sutra - 22

40. S.C. N.P. Bhasyam - P 14

41. ‘Nābhau daśadalam cakram manipuraka sajñītam
nabhīpadmam’ - cf Sangitaratnakaravyakhyanam - by Prem
Lathasarma - P. 89.

42. cf. The serpent power. Chapter - The centre of Lotuses (Cakra) P. 119.

43. cf. The serpent power. chapter, The centre of Lotuses (Padma - Cakra) - P. 120.

44. cf. Lalitasahasranamam - V. 368, P. 245.

45. S. C. N. P. Sutra 23.


47. Satcakra nirupanam-

\['\text{Sabdabrahamamayah sabdo\,nä\hat{a}hatatatradṛṣyate anahatākyam padmam tanmuni\,bhīh parikṛt\,tītām.}'\]

Dakṣināmūrttīc -

\['\text{Pingavarṇo mahavahnikalikabhani sammarēt}
\text{Kadithantāni varṇāni caturthō f nähatē priye}
\text{Mayātāntre - anahatām dvadāsāram raktabham hrdi svurate}
\text{tanmadhyē pāvanam padmam śatkoṣām dhūmravarnākam.}
\text{Gautamiyatantrē -}
\text{tanmadhyē bānalingantu sūryāyuta samaprabham.}
\text{Sabdabrahamamayah sabdō na hetustadahētukah}
\text{anahātākyam tatpadmam purusamadhiṣṭītām param.}
\text{cf. Ṣatcakranirūpanam.}
\text{V. 22 to 24.}
\text{P.35 to 36.}
\text{V.26, 127, 128.}

49. Sangita Ratnakaram of Śārīgadēva - Anāhata cakram

V.126, 127, 128.


P. 90.


Sangitadarpanam - 'Prathamadhyayam - nadotpattī. V.18.

\['\text{hrdayē f nāhatam cakram sivasya pranavākṛteh}'\]


55. Paniñīyam (Āstādhyayī) Sājñāprakaraṇam -

\text{Nādastānāsrutisvara jāṭikuladevicatārtśiccandōrasaparakaraṇam-}
\text{gītvavahṛc - tridhānādah - V. 7.}

54. Sangīta ratnakārāryā vyākhyānam - by Prem latha śarma.

Section -III. Nādā, Śruti and Svara. P 114

56. Prapañcasāravacanam - Sri Śāṅkarah - Paṭalām -III

V. 60, 61
57. Rāgavibōdhā - Somanadh - V. 12
58. Saṅgīta samayasāram - Pārśvavēva - Edited by Mahamahōpadhyāya.
       T. Ganapathy sastry.
59. Saṅgīta makarandam - Sri Nāradā. Nādōtpatti
       V. 5, 6.
60. Saṅgīta dāmōdaram - Dvītyastavakam - P. 15.
61. Saṅgīta pārijānam. Ahōbala.
       Edited by Sāradā prasada ghosh.
       Chapter- I - V. 34 to 37.
62. S.C. N. P. Bhāsyam P- 14
64. S.C. N.P. - sutra 24.
65. cf. Bhasasastratattvadarsanam by Dr. K. Chandra Sekhar nair
       - P. 258.
66. Ṛgvedam - aṣṭaka -2, adhyāyā. 3, varga. 22, mantra. 45.
67. Vakyapadiyam - Bartrhari - Brahmakandam.
       V. 143.
68. S.C.N.P. Sutra- 25
69. Prapāṇcasarasvacanam- Sri Sankarah- IInd patalam V. 44.,
       P. 21
70. S.C. N.P. Sutra- 25.
71. S. C. Vinaprakasam . P. 140. V. 34
72. Ibid. V. 35
73. Ibid. V. 36
74. Ibid. V. 37
       limitations of audibility.
76. Ibid. P. 16.
78. Saṅgīta Ratnakaram - by. Sarīgadēva.
       Chapter III, Nadastasrutisvara
       jatikuladevitarsicandorasaparakaranam.- V. 5.
       'Suksmō nādō guhāvasi hrdayē cadasuṣmakāh Kanthamadhīyē
       sitō vyaktāh avyaktāh taludeśakē
Krtrimō mukhadēse tu jñeyam paṅcavidhō budhēiḥ.
79. Sangitaratnakara - Translated by. Premlatasarma and R.K. Sringi
       - Section- 3, Nada, Sruti and Svara. P. 112.
80. cf. S.Raj. II 1.1.17 which follows S.R.
82. Sangita ratnakaram by - Sarngadeva.
   Chapter III - Dhvaniravirbhavah
   V. 4,5.


84. S.C. Bhasyam P. 16.

85. Ibid. P. 17.

86. 'adhārāt dvayāṅgulaḥ dūrdhvam mehanād dvayāṅgulāḥ
ekāṅgulam dēhamadhyam tapajambūnāda-prabham
tatras te f gniṣikha tanvī cakrātasmannavaṅgule'
   Two fingur- length above the base and two finger breadth below the
   genitals is the space of one finger - breadth is the centre of the body,
   shining like molten gold. Mehana literally means penis, best ever so the
   word is used in the generl sense of sexual organ. S.R. IInd
   Adhyayam. II Brahmagrandhi V. 145 to 146.


88. Ibid. P. 17.


90. Supra- Para, Pasyanti, Madhyama, Vaikhari.


92. Ibid. P. 18.

93. Ibid. P. 18.

94. Ibid. Sutra. 30

95. Supra

96. S.C. N.P. Bhasyam Page 19

97. A text book of sound by L. Subrahmanyam- Chapter VII
   Vibrations strings and air columns. Page: 168

98. S. C. N. P. Sutra - 31

   Sutra - 31


101. Ibid Chapter I, N.P. Sutra 30

102. Ibid. Bhasyam. P. 20

103. Ibid. Sutra. 34 to 35.

104. Ibid. Bhasyam. P. 20

105. Ibid. P. 20

106. Ibid. P. 20

107. Ibid. P. 21,and -Ragatattva vibodha, V.S. Desai, Sruti prakaranam - V:
   17 to 30.

108. Ibid. sutra - 36 to 37.


110. Ibid. P. 77

111. Ibid. P. 77
112. N.P in S. C. of this A.K.P. sutra 38
113. Ibid. Sutra - 39
114. Ibid. Bhasyam P. 23 to 24
Sangita darpanam, Chapter : 1, Svaradhyayah - Sruti vivekah, V: 54 to 61
115. Ibid. Sutra - 40
S.C. Srutiprakasa, Sutra. 23. P. 41 to 42.
116. A text book of sound - chapter 7, I. Subrahmanyam vibrations in strings
and air columns. P. 176, 177
117. Ibid. P. 177
Sangita makaranda, Chapter : 1, V: 78 to 92, Page: 8
118. Ibid. P. 178
119. A text book of sound - Dr. P. K. Mittal and prof. Jaidevanand, P. 532,
533, 534
Ragavibodham, translated by: M. S. Ramaswami Iyer,
Introduction, Page: 8 to 19.
S.C, Srutiprakasa - Sutra 25 to 30. P. 45 to 53.
120. N. P. in S. C. of Shri. A.K. P. Sutra - 11
121. Ibid. Bhasyam P. 25
Ragavibodham - Satika, Chapter : 1, V: 16 to 35
122. Ibid. Bhasyam P. 26
123. Ibid. P. 26
124. Ibid. Sutra. 42
125. Ibid. Bhasyam P. 27
Ragatatva vibodham, Sruti jati vivekaprakaranam, V: 17 to 30, P: 2 to 5
126. Ibid. Bhasyam P. 27
127. Ibid. Sutra 43
128. Ibid. Bhasyam P. 28
Sangita parijatam - Ahobala, V: 34 to 50, P: 4 to 5
129. Ibid. Sutra 45
130. Ibid. Supra
131. Supra
132. Ibid. P. 28
133. N. P. in S. C. of A.K.P. sutra 47
134. Ibid sutra. 48.
135. S.R. of S.D. -
Haṭhayoganusari nirupanam. part. IV. anahatam cakra.
Veras 126 to 128., P. 90.
137. S. R. of S. D. chapter III. Nadastanasrutisvarajatikula
daivatarsicandorasaparakaranam. Verse 1, 2.
138. Supra
139. N.P. in S. C. of A. K. P. sutra 48
140. Ibid - Bhasyam - P - 29
141. Ibid P. 29.
143. Ibid P. 30.
145. The Spiritual heritage of Tyagaraja by C. Ramanujacari with an introduction thesis by V. Raghavan.