INTRODUCTION

Is music a science or an art? The answer to this question naturally depends on the meanings we give to the word music, science and art. Music is said to be highest of the fine arts and that is true. According to the Hindu conceptions there are 14 Vidyas and 64 Kalas. Vidya is primarily knowledge of God and by implication it also means branches of knowledge leading to this goal. Kala means presentation of knowledge artistically. It is worth noting that music is included both under Vidyas and Kalas, as Gandharva Vidya and Sangeet Kala. It may therefore be safely inferred that Eastern conception of music was and is that it had two aspects, one spiritual and the other aesthetic. The purpose of music is to have the knowledge about God by worshiping. The ultimate purpose of Vidya and Kala is to have knowledge about human being, the world and the God.

Science is essentially related to intellect and mind and Art to emotion and intuition. But all the same Science is Science and art is art; their methods are different, though one can help other by giving a balanced background. In the development of musical art it is the Lakshya that is the soul of the art and Lakshan comes in only for purposes of the codification. Lakshna should not dominate Laksha because it will hamper the creativity and emotional feelings of the art. In case of Tal and Laya also same principle applies; it should not hamper the ultimate purpose of music.
In music Swara has lot of importance. The application and expression of Swara, while singing any raga should maintain proper melody, Bhav and delicacy, Rasa and emotions. So that singer will enjoy himself and it will touch the heart of the listeners. Now a days singers are singing mechanically and mathematically. Pt. Venkatamakhi initially mentioned 72 mela ragas as a theoretic possibility, he did the classification of ragas in 20 mela ragas, thereafter someone has written more male ragas and added to Chaturdandiprakashika. Pt Vishnu Narayan Bhathdkande did the classification of Ragas in 10 Thaats.

The Music is essentially an Art, but it uses the methods of Science for its own purposes. The use of science should not spoil the basic purpose of music. Indian music satisfies the heart as well as mind and goes deeper down into realms where emotion and intellect coalesce into intuition. Its appeal is primarily to the emotions; but sublimates these emotions into impersonal experiences where the dualities merge into a great synthesis, where joy and sorrow merge into ineffable bliss.

**SOME ASPECTS OF MUSICOLOGY**

Musicology means to cover all knowledge relating to music except actual performance. It has a very wide range and covers topics of great cultural and aesthetic interest. Generally Musicology means only the theoretical aspects of music such as the Shrutis, Thaat or mela scheme, derivation of Janya ragas and so on.

This is only a minor part of Musicology. There are some other aspects covered by Musicology such as:
Historical: Among the living organisms in the nature human being is supposed to have lots of feelings, ideas and thoughts. A human being always tries to achieve and develop these things and gets ever-widening experiences and so its concepts of right and wrong, beautiful and ugly, justice and injustice also evolve. Of course there are certain fundamental basic truths which are eternal and unchanging. Human being used to express his thoughts and feelings by using different voices. The idea and existence of music was from the existence of human being. To have the knowledge about particular thing, a common principle is to give hundreds of examples about the thing and make a Rule. According to principle from the effect of different voices and sounds, human being developed the idea of music and music came in existence.

Anything if you want to put it properly and scientifically in writing, one has to experience it for long time and make a Rule. This is an empirical knowledge obtained from the experience. The science means properly organised knowledge (systematized knowledge) obtained from the study of empirical knowledge. The science of music is developed by the same process. The music of today is certainly different from what it was in Vedic period or Ramayan and Mahabharat; but the today's progress in music is due to / depends on olden days music.

Mathematical: Mathematics has been always useful to study shruti, shruti intervals and frequency. Mathematics is also useful for the development of various Ragas and Talas,. How many Ragas will be possible from 12 swaras? Tala system of Bhartiya sangeet, can be explored or derived from mathematics by permutation and combination methods. We have to see how many combinations of swaras or talas are useful for music.
Mathematics and Music have gone hand in hand in ancient Greece.

Plato insisted on a knowledge of music and mathematics as the part of any one who sought admission to his school. Similarly Pythagoras laid down the condition that would be pupil should know Geometry and Music. Music and mathematics together lead to true mysticism. We have to observe one thing that mathematics should not disturb the melody of music.

**Scientific (Acoustics) :-** Music is based on sound and a knowledge of sound. From a scientific standpoint will be an advantage. For a performance to be completely effective several factors need to be considered and utilised.

**Voice production:-** Of the kind required for the particular system of music in view can be done scientifically more quickly than otherwise. The concert hall has to satisfy certain conditions if the music performed is to come out at its best. Especially in dealing with musical instruments and their structure some scientific knowledge comes in handy. A knowledge of the quality of the material used, of the principles underlying resonance, of the laws of vibrations of strings and air columns and such other matters, is very valuable. Of course some people deal with instruments in an empirical way, but scientific approach will save time and ensure correctness.

**Geographical:-** Some persons may wonder where Geography comes in music? But a little thought will explain the point. It is a well-known fact that climatic conditions of a place have a great influence on the voice and the materials used for instruments. It has been observed that in certain areas the voice has a natural tendency to be nasal; the climate at times influences even vocal inflexions. The language spoken in these areas bare the stamp of
Similarly in some climates the average voice is subdued, soft and mellow while in some places it is bold, vibrant and forceful.

Psychological: All fine arts directly act on human emotions and music especially has profound influence on our inner nature, feelings and thoughts. This has been recognised all times. Ragas or melody mould are unique aesthetic entities each with its characteristic influence and emotional effect. The vibrations set up by music do not stop with the ear; they induce vibrations in our subtle nature, the entire human nature is affected by them. There are many yet unrecognised effects of music whose study will yield wonderful results. The power of music to cure diseases has been recognised in ancient times. A Chinese book speaks thus of good music "under the effect of music, the five social duties are without admixture, the eyes and the ears are clear, the blood and vital spirits are balanced, habits are reformed, customs are improved the Empire is in complete peace".

Pedagogy: The teaching of music is another interesting branch of musical studies. There is no point in bemoaning the passing away of the old Gurukula system. We cannot bring it back. An intelligent system of musical instruction related to the nature of the musical art on the one hand and the psychology of the learner on the other has to be evolved. Now a days some people study music are not all out to become professionals; many study the art in the college stage with a view to acquire the power of intelligent appreciation of the art and help its cultural growth or to get degree. Hence the accent in such cases is on the cultural rather than an
The scheme of musical studies has to be planned so as to meet the needs of the various groups of people who come to study music.

Musicology deals with all these aspects and many more. The musicology should be used to make the progress and the development of the art. The artist and musicologist should come together and think for the progress of art. Those who learn music and deliver the same as it is are called Gayak (singers). Those who learn the music and have the knowledge of musicology are called Nayak. Those who know the art, musicology and the poetry of music are called Vageyakar. The purpose of any art is with minimum possible efforts, to make maximum effective. Many times we observe in music the artist delivers his art with lots of efforts but still it does not achieve the expected best effect. The artiste should know his limits and knowledge and then he should deliver his art which will have good effect on the listeners.

The artist should think about all these above mentioned points. He should try to understand the arrangements, the listeners mental ability, liking etc. He then can make the listeners spell bound and forget all other things but music. The art to be effective and beautiful and progressive science is definitely required.

DEMOCRACY AND CREATIVE MUSIC

There is a liking and appreciation of the art music developed in people because music gives them enjoyment. In a way this is healthy sign, at the same time we have to see that standard of music should not go down. One of the most effective expressions of the soul of a nation is through her
When there is a general renaissance in the life of a nation this is evidenced also in her musical expression. Music (as well as other fine arts) was in the past a privilege of a chosen few, kings, zamindars and rich people patronized music and musicians. The musician had no anxiety about his livelihood. He was free to pursue his art and keep it pure and high, irrespective of the demands of the people. It was as it were, only by sufferance that the masses had occasion to listen to these masters. But all that now has changed. As many other things, music also has passed on from the hands of the aristocratic few to the general mass. Music Sabhas, Mahaotsav and other similar organisations have made it possible for the common man to enjoy as much and as heartily as the zamindars or maharajas of the old. Musicians are much in demand and one may say their needs in life are assured, at least in most cases.

But...and it is a big "but".... what is the effect of this democratisation on the art of music? Now the patronage has shifted from the few to many. The average musician of today cannot entirely depend upon the patronage of the aristocracy. He looks for his support to the people at large, and so has to keep in good relation. However intense and sincere the desire of the public for encouraging music may be, the moment the standard of high class music is left entirely to be determined by the mass of listeners, the art is bound to deteriorate. An honest musician, who on the one hand desires to be true to the ideals of traditional Indian Music and on the other wishes to please the listeners has to live a life of compromise between the ideals and the actual necessities of life. Whether the public has the capacity to know the subtleties of the art music? So that they can describe the standard of music. People should know that the purity and standard of music should not
Melody, Bhava and Rasa which give the satisfaction of enjoyment to listeners heart should not be lost.

DISCIPLINE AND FREEDOM IN MUSIC

Some of the deepest truths of life are best expressed only in paradoxes, in apparently contradictory terms. When we talk of Freedom and Discipline at the same time it may sound strange. But a little thought will indicate that not only these two are not inconsistent but complementary to each other. Absolute freedom is an impossibility in the manifested Universe. If everyone claimed absolute freedom the result will be chaos. Our freedom in the world is conditioned by the freedom of others. Disciplined freedom alone will lead to stability and progress. In fact any cultural achievement is the result of self imposed discipline. Only discipline is also not proper because then cultural progress will not take place and music will be monotonous.

Nature is full of charm and beauty, but in what may be called random distribution. It is the privilege of the artiste to select from the abundance of nature's gift in of beauty sound, color, form and so on and give a new shape which will enhance that beauty a thousand fold. Nature is full of pleasing sounds but the musician selects such of these as can be prepared beautiful garland of sounds. That is music!

There is a science in music also. Sound, the properties of sound, frequency shruti, Nad, Swar etc. When shruti becomes swar and by arranging different swaras in Aroha and Avaroha different Ragas are
Different Bhava, Rasa and Melody is expected and accordingly nature of the swara should be.

If we imagine Shadja of particular frequency then as per mathematics Komal Rishabh, Komal Gandhar, Teevra Madhyam etc will have frequencies and their sthan accordingly. The sthan of the same note in different Ragas will not be as per mathematics but it will be as per expected Bhava Rasa and Melody i.e. the same swar will have different frequencies in different Ragas. The importance of swara in Raga is always accepted. Here the effort is to prove the importance of swara and the sthan of same swara in different ragas is different.