

The Journal  
of  
The Music Academy  
Madras.

A QUARTERLY

DEVOTED TO THE ADVANCEMENT OF THE SCIENCE AND ART OF MUSIC.

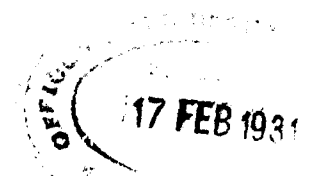
VOL. I.

JULY 1930.

No. 3.

नाहं वसामि वैकुण्ठे न योगि हृदये खौ ।  
मन्त्रक्ता यत्र गायन्ति तत्र तिष्ठामि नारद ॥

"I dwell not in Valkuuta, nor in the hearts of Yogis, nor in the Sun ;  
(But) where my Bhaktas sing, there be I, Narada."



MR. T. V. SUBBA RAO, B. A., B.L. (Editor).

*Published by*

THE MUSIC ACADEMY, MADRAS.

323, Thambu Chetty St., G. T. Madras.

*Annual Subscription :—Inland : Rs. 4 ; Foreign : 8 sh.*

*Single Copy Re 1-4-0 ; Post paid.*

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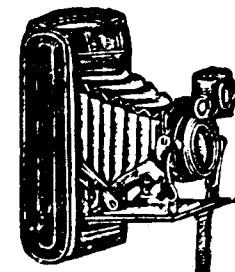
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VOL. I.]

JULY 1930.

[NO. 3.]

**THE INDIAN MUSICAL SCALE: ITS DEVELOPMENT AND CONTINUITY.**

BY

HULUGUR KRISHNACHARIAR, BHARATIYA SANGITA SALA, HUBLI.

Many scholars have written on the subject and tried to prove the continuity of the development of the Indian Musical Scale. In attempting to show this continuity many have had recourse to arguments drawn from their imagination; some have tried to analyse the actual notes used at present in singing *Sama* chants and to record them. But whether the present mode of singing them is a true reproduction of the ancient method may be questioned in the absence of sound and satisfactory evidence. However there is a persistent tendency to believe that the Indian art of Music is derived from the *Sama Veda*. This statement is unanimously made by every ancient Sanskrit writer on Music, such as *Bharata* and *Sarangadeva* in their *Natya Sastra* and *Sangita Ratnakara* respectively. While modern scholars have found out all the references to music in the *Vedas* and other Sanskrit works, which point to various stages in the evolution of the art, they have not distinguished the successive periods so as to

show distinctly the continuity of the development nor drawn the lines of demarcation between one period and another. Thus though we have many references from the *Vedas*, *Brahmanas*, *Upanishads* and *Pratisakhya*s and from the ancient works of *Panini*,

meaning shows, श्रु, to hear, श्रुति, that which is heard; and स्वर may be applied to a श्रुति (sound) which is heard unchangingly flowing to a certain extent of time. So स्वर is musical sound and श्रुति is musical sound and ordinary sound both. But the ancients have chosen the word श्रुति for स्वर of the later period and used it in the same sense. To denote all possible musical notes in a scale this word is used in a technical sense and out of such settled श्रुतिस a few are chosen to form a Raga, only the notes so chosen are named as स्वर; the rest are श्रुतिस which are not used in the same raga. Properly there is no distinction between श्रुति and स्वर as adopted by all classical authors. Out of the definitely settled श्रुतिस those chosen as being essential to form a raga are agreeable to the ear, while the others are not, but may play the same part in any other raga. Hence the agreeableness of a set of श्रुतिस in a particular raga is later on described by the word स्वर on account of its contribution to the formation of a raga and its pleasant effect on the ear. स्वतः रञ्जयति श्रोतृचित्तं स स्वर उच्यते । (सं. रं. १ अ.)

So whenever the word श्रुति occurs in connection with music it is not distinct from स्वर which is simply used with respect to the notes of any particular raga.

We can now take up the 1st stage of development. Vedic literature is the most ancient authority we can find in order to trace the sources of all kinds of Indian learning. If we look at the hymns of the Rigveda, the most ancient of the Vedas, we find that there are three different sounds used to recite or sing the Richas and they are named as the उदात्त, अनुदात्त and स्वरित. The middle or fundamental note is स्वरित, the

higher is उदात्त and the lower अनुदात्त. Looking to the development of the use of musical sound, it is not possible to conclude that the authors of the Richas originally composed all of them with the rising and falling sounds as at present. The Riks are the prayers to different Gods of that age and the composers of the Richas felt that they become more audible and agreeable by reciting in consonance with one fixed note than otherwise and that this fundamental note should be common to all persons who join in the prayer service at the same time. And as the lengths of the syllables of the Richas had been definitely classified into ह्रस्व, दीर्घ and प्लुत they were able to perform their services most harmoniously. The effect of this harmony encouraged them to make further investigations into the subject and they fixed on the mode of reciting the verses in three different notes as already stated. This system was unanimously accepted by all the Vedic writers of the subsequent periods. So we arrive at the following conclusion:—

The first stage of usage of musical sound synchronises with the first period of the Rigveda and this period according to the researches of the late Lokamanya B. G. Tilak and Pandit V. B. Kelkar is about 4500 B. C. The musical system of this period is described by writers as एकस्वरी-गायन or आर्चिक-गायन. Vide आश्वलायन श्रौत सूत्र १-१-१. एकश्रुत्यम् = एकश्रुतिसन्त मनुष्यात् । परःसंनिकर्षः ॥ also संगीत रत्नाकर अ. १—आर्चिको गायिकश्चैव सामिकोऽथस्वरांतरः । आर्चिकः = एकस्वरीगायन.

#### The second stage.

The second stage is गायिक or the singing of Richas in the manner customary at present. The period of this coincides with the

completion of the Rigveda and is therefore nearly 3500 B. C.

#### The third stage (सामिक).

The period as proved by the above mentioned scholars falls at about 2500 B. C. because it has been proved that Taithiriya Samhita must

1st is कृष्टतम which means the highest  
2nd is the 1st of the remaining  
3rd is the 2nd " " "  
4th " 3rd " " "  
5th " 4th " " "  
6th " 5th " " "  
7th is अंत्य the last of the Scale.

In the above passage there is no means of proving the relationship existing between the notes. As this passage is a portion of a *Brahmana* composition it falls in the period of about 1000 years (2500-1400 B. C.). Now, progress in experimenting with various notes and building up the *Sama* scale must have been made with some definite process they knew, which unfortunately is not mentioned. The unanimous practice of the *Sama* would be unintelligible unless we assume that there was some reason to terminate the progress by the 7th note. If the number 7 was only a matter of arbitrary choice or individual taste it would not have been so generally accepted by all *Samayas*. We can however prove from the later writings that they had a definite process.

There is a passage in the *Chanlogya Upanishad* put into the mouth of a Guru and a Sishya, Dalbhya and Shalavatya respectively which is as follows:

Question. शालवत्य उवाच । का साम्नां गतिः ।

Answer. दालभ्य उवाच । स्वर इति होवाच ।

The above question may be translated as: What is the measurement for *Sama*? And the answer is that it is measured by means of a स्वर; in other words सामिक is equivalent to स्वरांतर (सं. र. १-४-३८). This particular interval represents a harmonious relationship and is composed of three intervals between the 4 notes, 3 of the *Gathika* and an additional one. So the scale of 4 to

7 notes is *Samika*. There are some exceptional examples *fraises* of scales in *Vedas* which take more than 3 notes of the *Gathika* system and more examples of these may be found in *Yajurveda* than in *Rigveda*. This fact shows that during the time of the composition of the *Yajurveda*, *Sama* singing was developing. In course of time as stated above *Sama* scale was completed with 7 notes. The explanation is as under:—

When this चातुःस्वरी or the sympathetic chord of 4 notes was observed it was used as a unit of measurement of *Udatta* and *Anudatta* limits. So the scale of *Sama* was built of two chords the extreme notes of which bear the ratio of 3:4, one chord of rising notes and another of falling notes in place of *Udatta* and *Anudatta* which were approximately equal to the modern major or minor tones during the previous period.

When this was fixed, further modifications in fixing the intermediate notes followed in accordance with the principle to be explained below. Previous to explaining the further development it is necessary that some technical terms be clearly understood. The Archika mode “यत्प्रयोगेष्टुचामेकस्वराभ्य-यत्वात्तत्संबन्धादाचिकः” (कल्लिनाथ सं. र. १-४-३८) has been explained in the first stage. The गायिक mode is thus defined गायसंबन्धादाचिको द्विस्वरः । Here द्विस्वर means using one other note above or below स्वरित the fundamental i.e., 2 notes including स्वरित + (उदात्त or अनुदात्त). And *Samika* is defined: सामसंबन्धाच्चिस्वरस्थानः सामिकः । 3 tonal scale i.e., 3 notes including the fundamental स्वरित+उदात्त+चुतीय or additional higher note or *vice versa* in case of अनुदात्त. When the scale consists of only one chord of 4 notes, the extreme notes being in the relation mathematically represented by the ratio 3:4, it is called

### The fourth stage—Aranyaka and Grama gana.

This period falls between 1500 & 500 B. C. The first half i.e., 1500 to 1000, B.C. may be taken as *Aranyaka Ganakala* and the second half i.e. 1000 to 500 B. C. may be taken as *Gramu Ganakala* or *Pauranikiya kala*. The *Aranyaka* literature begins immediately after the Brahmana compositions and ends in the *Upanishads* and *Pratishakhyas*. वर्णः स्वरः । मात्रा बलम् । मंद्रेण स्वरेणाधीयते । मंद्रया वाचा प्रातःसवनेशंसेत् । उरसाधीयत इति । (*Rik Prati Bhasya*) etc., these sentences from the *Tait. Upanishads* show that the *Upanishads* do not merely contain philosophy but that they treat scientific principles of all the subjects enumerated in the *Vedas*, while *Pratishakhyas* mostly deal with details of the technical subjects that are necessary for *Vedic* studies.

द्वीणि मंद्रं मध्यममुत्तमं च । स्थानान्याहुः सप्तयमानि वाचः ॥

अनंतरश्चात्र यमाऽविशेषः ॥

सप्तस्वरा ये यमास्ते ॥

पृथग्वा ॥

This example from the *Rik Pratishakhya* supports the fact of the completion of the scale with 7 fixed notes in the Brahmanical period. The progress of this period consists in the usage of 3 voice registers in singing and for different modes of recitations from the *Sama chants*. Another remarkable point of progress is the introduction of additional notes into the large intervals. The scale consists of 7 notes only, but the five full tones in the scale allowed for the introduction of new notes which were substituted for the corresponding ones whenever required. This marks the limit of *Aranyaka Gana*. This fact is justified by Panini and

Yajanavalkya who give clearly a reference to scales that were then commonly used. The following passages have been quoted from Panini and Yajnavalkya Shikshas—

उदात्ते निषादगांधारौ अनुदात्ते ऋषभधैवतौ ।

स्वरितप्रभवान्नेते षड्जमध्यमपञ्चमाः ॥ पा. शि.

उच्चौ निषादगांधारौ नीचौ ऋषभधैवतौ ।

रोषास्तु स्वरिता ज्ञेयाः षड्जमध्यमपञ्चमाः ॥

या. शि.

Both writers admit that there are in use 3 notes स, म and प as fundamental notes, which produce three beautiful scales or modes. A gradual extension in the significations of the three terms उदात्त, अनुदात्त and स्वरित should here be noticed. In the beginning the interval represented by *Uda-tta* and *Anudatta* was one tone, then it was 2 tones, then 3 tones i.e., a *samvada* and immediately before Panini it was one whole octave. And *Swarita* was one fixed note up to the *Sama* period but later it stood for either स, म or प during the *Aranyaka* period. The three voice registers were thought of as अनुदात्त (मंद्र), स्वरित (मध्य) and उदात्त (तार). It was because they knew of the repetition of the same scale in different registers that it was possible for them to fix only 7 notes in a scale and yet to adopt 3 different modes by changing the fundamental to म and प which are separated from स by an equal distance during







































उल्लासितान्तैरिह वर्णपंक्तिस्तथा प्रसन्नादिमुखैस्त्रिषष्ट्या ।  
तं वर्णसन्दर्भविशेषमेव अलंकारमाहुर्मुनयोऽपि षष्टिम् ॥ ३६७ ॥

— स्थायिगतालंकाराः —

तस्य त्रिषष्टिः कथिताः प्रभेदास्तत्राऽपि च स्थायिगतान्वदामः ।  
आद्यन्तयोः स्यात्स्वर एक एव येषां हि ते स्थायिगता भवन्ति ॥ ३६८ ॥  
एतादृशाः स्थायिगताः किलालंकाराः पुनः सप्तविधा भवन्ति ।  
आद्यः प्रसन्नादिरिह प्रतीतो भवेत्प्रसन्नान्त इति द्वितीयः ॥ ३६९ ॥  
ततस्तृतीयः कथितः प्रसन्नाद्यन्ताभिधानश्च ततश्चतुर्थः ।  
प्रसन्नमध्यः क्रमरेचितस्तु स्यात्पञ्चमस्तत्र भवेत्षष्ठः ॥ ३७० ॥  
प्रस्तारनामा प्रथितः प्रसादः स्यात्सप्तमः स्थायिगताः किलैते ।  
अत्र हलङ्कारनिरूपणे तु यो मूर्छनायाः प्रथमः स्वरः स्यात् ॥ ३७१ ॥  
मन्द्रः स उक्तो द्विगुणः स एव तारोऽथवा स्याद्विह पूर्वपूर्वः ।  
मन्द्रोऽथ तारस्तु परः परः स्यान्मन्द्रः प्रसन्नश्च मृदुः समर्थः ॥ ३७२ ॥  
तारश्च दीप्तश्च तथा समर्थौ मन्द्रं लिखेद्विन्दु शिरस्कमत्र ।  
तयोर्वरेखा शिरसस्तु तारस्वर स्त्रिरुच्चारणतः 'लुतः' स्यात् ॥ ३७३ ॥  
मन्द्रं द्विरुच्चार्य सकृच्च तारे गीते प्रसन्नादिमुदाहरन्ति ।

यथा,— स-स-सं ।

तारं द्विरुच्चार्य सकृच्च मन्त्रे गीते प्रसन्नान्तमुदाहरन्ति ॥ ३७४ ॥

यथा,— सं-सं-स ।

गीत्वा तु मन्द्रं प्रथमं ततस्तु तारं च गायेत्पुनरेव मन्द्रम् ।  
यस्मिन्नलङ्कारममुं प्ररुन्नाद्यन्तं तलङ्कारविदो वदन्ति ॥ ३७५ ॥

यथा,— स-सं-स ।

तारं समुच्चार्य ततस्तु मन्द्रमन्ते च तारं पुनरेव गायेत् ।  
प्रसन्नमध्यं तमुदाहरन्ति सर्वेऽथलङ्कारविदो मुनीन्द्राः ॥ ३७६ ॥

यथा,— सं-स-सं ।

कालत्रयाख्यः क्रमरेचितः स्यात्कालस्वरूपं प्रतिपादयामः ।  
आद्यन्तयो मूर्छनिकादिमध्मेत्तदन्तराले यदिमध्यमौ स्तः ॥ ३७७ ॥

तन्मध्यगः पञ्चम एष षष्ठः स सप्तमः तत्कथित

षष्ठं गायेत्क्रमशो यदा तमत्युच्चयास्यं मुनयो वदन्ति ।

यथा, सग-रिम-गप-मध-पनि ।

आद्यं सङ्गृह्य ततोद्वितीयं त्रिंशच्चतुर्थं चतुर्थतुर्यम् ॥ ३८९ ॥

तं पञ्चधा पञ्चममत्र षोढा षष्ठं ततोऽन्त्यं किल सप्तकृत्वः ।

आरुह्य गायेदसिताभिधानालङ्कारमेतं प्रवदन्ति सन्तः ॥ ३९० ॥

यथा,

स, रिरि, गगग, मममम, पपपप, धधधधध,  
निनिनिनिनिनिनि ।

आद्यं द्वितीयौ तदनु द्वितीयतृतीयकौ किञ्च तृतीयतुर्यौ ।

ततस्तुरीयं सहपञ्चमेन समन्वितं पञ्चमतश्च षष्ठः ॥ ३९१ ॥

षष्ठं यदागायति सप्तमेन स प्रेङ्खितस्तं क्रममाहुरेके ।

यथा, सरि रिग गम मप पध धनि ।

आद्यं तृतीयञ्च ततस्तृतीयं सपञ्चमं पञ्चमसप्तमौच ।

आरुह्य गायेत्क्रमशो यदा तमाक्षितसंज्ञं मुनयो वदन्ति ॥ ३९२ ॥

यथा, सग, गप, पनि ।

स्यात्त्रिस्वराद्या तु कला तदन्त्यं स्वरं समारुह्य भवेद्वितीया ।

तदन्त्यमारभ्य पराच सन्धिः प्रच्छादोऽतस्त्रिकलाम्बितः स्यात् ॥

यथा, सरिग, गमप, पधनि ।

कालत्रये त्रिस्वरभाजि यस्मिन्नावर्त्तित स्त्रिः प्रथमस्वरस्तु ।

संगीयते चेत्क्रमशस्तमेन मुद्रीथनामानमुशन्ति सन्तः ॥ ३९४ ॥

यथा, ससस सरिग । मम मपध ।

स्वरत्रयी भाजित(त)त्रयेऽस्मिन्नावर्त्तितो मध्यगतः स्वरस्त्रिः ।



























We take this opportunity of suggesting to the University authorities the extreme desirability of consulting before-hand such academic institutions in the country as the Madras Music Academy etc., in any choice of professors they may finally make with regard to their newly schemed Diploma course in Music and we will assure them that thereby they will be securing unto this course that measure of popular support that is justly due unto it.

**This Year's Conference:**— The Academy has resolved to hold this year's Conference on 1 December during the Xmas week. Papers are being called for from renowned scholars and musicians to be read and discussed at the conference. The task of settling the Ragalakshanas of the various

ragas so well begun in the Easter Conference of Experts has to be proceeded with. It is really gratifying to note that our efforts during the Easter Conference have borne fruit in setting up a sister institution viz. Raja Sir Annamalai Music College at Chidambaram to constitute a committee of scholars for the self-same purpose of settling the Ragalakshanas which, as pointed out above, has already been begun and trodden half way.

The conference proposes to arrange for a series of Musical concerts by renowned Musicians of the Presidency. Great credit is due to the Academy for arranging the Conference in the Xmas week and for making it possible for all Music lovers of the Presidency to take advantage of its session.

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MADRAS, INDIA  
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