

RABINDRA BHARATI UNIVERSITY
VOCAL MUSIC DEPARTMENT

COURSE - B.A. (Compulsory Course) (CBCS) 2020

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Teacher - Sri Partha Pratim Bhowmik

History of Western Music

Development of musical scales in Europe

In the 8th century B.C., The musical atmosphere of ancient Greece introduced its development by the influence of then popular aristocratic music. That music was melody-based and the root of that music was rural folk-songs. In each and every country, the development of music was rooted in the folk-songs. The European Aristocratic Music of the Christian Era had been inspired by the developed Greek music.

In the 5th century B.C. the renowned Greek Mathematician Pythagoras had first established a relation between science and music. Before him, the scale of Greek music was pentatonic. Pythagoras changed the scale into hexatonic pattern and later into heptatonic pattern. Greek musicians applied the alphabets to indicate the notes of their music. For the natural notes they used the alphabets in normal position and for the deformed notes, the alphabets turned

upside down [deformed notes= Vikrita svaras]. The musical instruments, they had invented are – Aulos, Salpinx, pan-pipes, harp, lyre, syrinx etc.

In the western music, the term 'scale' is derived from Latin word '*scala*', ie, the ladder; scale means an ascent or descent formation of the musical notes. Each and every scale has a starting note, called 'tonic note' ['tone - tonic' not the Health-Tonic].

In the Ancient Greece, the musical scale had been formed with the help of lyre , a string instrument, having normally 5 or 6 or 7 strings. Later, Piano had been invented and the scale turned to octatonic. In the heptatonic scale, the 7 notes were indicated as A,B,C,D,E,F,G and natural scale was A-B-C-D-E-F-G and the tonic note was A. Later , at the time of octatonic scale on Piano, natural scale turned to C-D-E-F-G-A-B-C and the tonic note became C.

According to the number of notes scales are of 4 types -

A)Pentatonic, B)Hexatonic, C)Heptatonic and D)Octatonic.

Each and every scale has two parts- Lower tetra chords (first half of the scale, consists first 4 notes) and upper tetra chord (second half of the scale, consists next 4 notes).

Again scales are of 2 types according to the category of notes-

Natural scale (natural notes are applied) and Deformed scale (deformed notes ,ie, sharp or flat notes are applied).

And again, scales are of 2 types according to the volume of notes-

Diatonic scale (two types of notes with their different notes volumes, are applied) and chromatic scale (notes, having a particular notal volume, are applied).

Diatonic means two types of notel volumes, ie , tone and semitone. According to Piano , C,D,F,G,A, these 5 notes consist tone volume, and E,B these 2 notes consist semitone volume. The Diatonic natural scale is C-D-E-F-G-A-B-C ; with its tone-semitone notal volume, it may be expressed as

C - D - E - F - G - A - B - C
 — — — — — — —
 T T S T T T S

Now, Tone is the double of semitone, i.e., Tone= 2 semitone; so the aforementioned scale, with its notal volume , may be expressed as-

C - D - E - F - G - A - B - C
 — — — — — — —
 2 2 1 2 2 2 1

Here we got the formation condition of Diatonic natural scale , ie, 2-2-1-2-2-2-1.

Chromatic scale means a scale constructed by only semitones. In the Diatonic formation, the measurement between C and D is 1 tone, ie, 2 semitones. If we want to establish the note C as a 1 semitone-note, we have to put any other note between C and D. According to the western notal system, that particular note will be either C^\sharp or D^\flat . To form, a chromatic scale, we have to put C^\sharp or D^\flat between C and D; D^\sharp or E^\flat between D and E; F^\sharp or G^\flat between F and G and so on.

Thus the chromatic scale will be formed and that will proceed as – C-(C^\sharp / D^\flat) - D - (D^\sharp / E^\flat) - E - F- (F^\sharp / G^\flat) - G - (G^\sharp / A^\flat) - A - (A^\sharp / B^\flat) - B – C. And it shows that chromatic scale has total 13 notes.

Diatonic scale are of 3 types according to the volume of notes-

A)Pythagorean, B)Just intonation, and C)Equal temperament.

The first two types are now obsolete, because they constituted ancient system as being formed with the help of ancient string instruments; where as, the third one is a later invented scale with the help of piano and a lots of facilities are awarded by it. It helps to perform various types of songs, instrumental ensembles, co-ordinations etc.

Equal temperament Diatonic scale is of two types according to the position of notes- Major (consists the notal structure 2-2-1-2-2-2-1) and Minor (3rd,6th and 7th note are flat).

Equal temperament Major Diatonic scale is as follows → C-D-E-F-G-A-B-C and the condition of notal structure is 2-2-1-2-2-2-1. To determine the structure of other major scales, two formulas are applied and they are 'Cycle of 5th note' (to determine sharp major scale) and 'Cycle of 4th note' (to determine flat major scale).

Equal Temperament Major Diatonic scale is as follows → A-B-C-D-E-F-G-A. Here the condition of notal structure is 2-1-2-2-1-2-2.

A - B - C - D - E - F - G - A
 — — — — — — —
 2 1 2 2 1 2 2

This minor scale is also called Relative Minor scale, because, it has a relation with major scale. Actually, each and every Major Diatonic scale provides a Relative Minor Scale by its 6th note. For example, C Major Diatonic scale is → C-D-E-F-G-A-B-C. In this scale, the 6th note is A. Now the scale, which proceeds the same condition of notal structure but starts from A, is called Relative A-minor scale. In the same way, G Major Diatonic scale is G-A-B-C-D-E-F[#]-G. In this scale, the 6th note is E. Now, the scale, which proceeds the same condition of notal structure but starts from E, is called Relative E Minor Scale. But, A-Minor or E-Minor. Whatever it may be, has different notal structure and that of 2-1-2-2-1-2-2.

To determine the structure of other minor scales, two formulas are applied and they are 'Cycle of 5th note' (to determine sharp minor scale) and 'Cycle of 4th note' (to determine flat minor scale).

Equal Temperament Minor Diatonic scale is divided in to two type , according to the different types of notal position – Harmonic Minor and Melodic Minor.

When a Minor Diatonic Scale promotes an extra semitone to the 7th note, ie, leading note, the scale earns a new proceeding , ie, A-B-C-D-E-F-G[#]-A, having a new notal structure, ie,2-1-2-2-1-3-1. This new scale is called Harmonic Minor scale. This new notal structure remains unchanged in both ascending and descending.

When a Minor Diatonic Scale promotes two extra semitone, one for 6th note and the other for 7th note, the scale earns a new proceeding, ie, A-B-C-D-E-F[#]-G[#]-A , having a new notal structure , ie, 2-1-2-2-2-2-1. This new scale is called Melodic Minor Scale. In this scale , the new proceeding effects the ascending only. During descending the scale returns to the original position of relative minor scale.

A scale is very essential to produce the music properly, and it helps to compose music with structural beauty. Scale also provides the conditions to create melody and harmony in music.