CHAPTER V.

EFFECT OF ACCOMPANYING INSTRUMENTS ON

THE TONALITY OF A SINGER.
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A SONG

Almost all musicologists in India express their views that for producing the desired raga effect a singer (or artiste playing an instrument) should follow shruti scales.

But it has been noticed that even a reputed artiste singing classical music is quite often accompanied by a harmonium, a tempered scale instrument. And the listeners do not feel (or say about) a mismatch in notes of vocal and instrument music.

It was therefore decided to set up a technique for analysing this problem. The experimental set up is shown in the figure 5.1.

In room No. 1 the artiste is asked to sing using a tambura. The key note of the tambura is adjusted with keynote of harmonium, used. The vocal tones of the artiste are picked up by means of a contact microphone in order to isolate the sound of the tambura from the vocal music sung by the artiste. The output of the contact microphone is amplified and recorded on one track of a stereophonic taperecorder. The harmonium player listens to vocal music by earphone and plays the harmonium
**ROOM 1.**

*Artiste singing with Tambura*

*Notes of the artiste are picked by contact microphone*

**Amplifier**

**ROOM 2.**

*Harmonium player listens vocal music through earphone and plays on the Harmonium.*

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**FIG 5.1**
accordingly. The notes of the harmonium are recorded on the other track of the tape recorder.

On listening to the recording on two tracks simultaneously it has been noticed that there is a mismatch in some of the notes. This mismatch is much more in case of artists who do not use harmonium for regular practice and sings with tambura accompaniment only.

The same experiment is then carried out in one room only i.e. the artiste singing listens to the harmonium accompaniment, the harmonium player observes the artiste singing and plays on the harmonium. Under these conditions the mismatch in the notes (vocal and harmonium) is much less as judged by the listeners. This must be due to the effect of accompanying harmonium on the tonality of the singer. The harmonium accompaniment has large volume and so it is predominant and the singer seems to adjust his/her tone to match the harmonium notes.

Few measurements of frequency have been done of vocal and harmonium notes in both parts of the experiment, by oscillographic method, which confirm the above observations. For each measurement the wave forms are given pulse shapes. Oscillogram 5.1 shows pulse trace (a) produced by harmonium note (b) due to vocal tone. (Harmonium notes continue, even if singer takes a pause). This exploratory experiment
has been tried with few artists only and definite conclusions can be drawn by repeating the above experiment with more artists.

To facilitate the measurements it is proposed to develop a device with which the difference in frequency of vocal and instrumental tones can be displayed and recorded accurately and the time lag/lead in the notes of the accompanying instrument can also be determined.
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