

TO CONQUER NEW TONAL REGIONS

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THE problem for which ultrachromaticism is a solution is that of enriching music today through the introduction of new sounds and tonal aspects. Composers are still largely confined to the tempered scale and most music of importance takes form within the narrow world of its twelve tones. Now although tone fractions and the finer subdivisions of the octave have been discussed since the middle ages, it is only recently that they have been recognized as possessors of peculiar and pressing significance. As the nineteenth century has finally exhausted the resources of the traditional tonal system, contemporary musical energy, in a desperate search for new fields, frets at the barriers set by the tempered scale and has come to recognize it as the chief obstacle to progress.

Unfortunately, ultrachromaticism, which has found propagandists among theorists and composers alike, has been confused from the very outset with a quite extraneous matter—the restoration of the perfect scale. Our division of the octave into twelve tones, as is well known, creates intervals that are mathematically, acoustically, incorrect or “out of tune.” This however has been a cause of concern only to the theorists, who dream of reforming the scale to achieve ideal correctness of intervals. Several solutions have been propounded, but the professors and experts have not been able to agree on any. One theory dealing with overtones calls for the addition of these to the scale, taking into account the order of their acoustical priority. It holds that since the old music possessed only five overtones, the time has arrived to utilize all the others beginning with the seventh and ending, perhaps, with the nineteenth.

It is undoubtedly the domination of theory in this field which explains the extraordinary delay in applying ultrachromaticism

practically. To musicians this worry over "priority of overtones" and "perfect key" has never seemed compellingly real. Music appears as little dependent on acoustically correct intervals as painting is on "spectral colors." This too great refinement has not proved aesthetically acceptable, for intervals sterilized in their exactitude are apt to sound bloodless and schematic. And, moreover, performers on the violin and other stringed instruments often deliberately use the impurities of key for purposes of expression. It is here indeed that we find the real germs of ultrachromaticism developing organically—the ultrachromaticism of expression.



Many acousticians have been occupied with the formation of non-tempered scales whose intervals should be unequal and acoustically exact. Such an idea inspired the Russian professors, Rosenoff and Leiberg, to base their scales on overtones of the harmonic order, but their theories bore no fruit in musical creation. Other scholars have been supporters of "even temperament," maintaining that equality of intervals was an indispensable condition to any reform. Still others have favored the acoustically logical tempered scale of fifty-three sounds in an octave or even those, less rich, composed of thirty-one and forty-one sounds; at one time the writer, convinced of its many advantages, was an adherent of the fifty-three tone scale.

Musicians, as a rule less sophisticated in acoustic matters, have generally preferred a simple division of the already existing intervals into equal fractions, and so there have appeared octaves of twenty-four and forty-eight tones. They conceded the "soundness" and "correctness" of the intervals in the scale of fifty-three but preferred simplicity. Purity of intervals in actual music appears to be of minor significance; what really matters is the dynamic power in their juxtaposition, which can give to an incorrect interval the effect of purity and can rob correctness of all aesthetic quality.

What is of utmost importance to the composer, however, is to acquire a practical knowledge of the richer, more detailed scales, a problem which is properly related to the construction of instruments that give a more subtle key. For this end the composer must make an alliance with the master-constructor and acquire some insight into his technic. It is necessary for him to have actual physical contact with the new tonal material in order to determine how it can be creatively handled. This is impossible without the instruments in which the new scale development has already been materialized.

But the construction of these advanced instruments unfortunately lags far behind theoretic speculation. Nor is it sufficient merely to make the instrument; the latter should live and lend itself to the creation of music. It must survive the struggle for existence, that is, accommodate itself to musical developments and make a reality of the music written for and played upon it, otherwise it degenerates through non-usage and dies out.

Ultrachromatic instruments are very doubtful assets when they have no connection with previous musical history, composition and technic. However new and radical, music always represents a continuity with the past, and, like that of natural history, its record reveals no skips. At the present time of formal interest in art, with the general acceptance of all that is strange and surprising, arbitrary experiments are more likely to be undertaken than ever before. But little of value has as yet been accomplished. Trials made with the harmonium have long since demonstrated its aesthetic mediocrity. Ultrachromatic stringed instruments—for instance the one named polychrom, planned and constructed by Avraamov, a Moscow theorist—have a shaky key intonation that is felt in the twelve-step scale, to say nothing of the subtler tempering. Experiments with the quarter tone piano and quarter tone string quartet by Haba proved so dry and academic and required such a break-down of previous performing technic that the zeal of the innovators seemed to die before our very eyes.

Perhaps, after all, the old organ, whose peculiar construction qualified it to bear the burden of all the experiments of the past, will bring ultrachromaticism into reality. Through its pos-

session of several manuals it can accommodate itself with a very slight structural change to old and new sounds alike. The organ is the historical instrument of musical science and new discoveries are always expected in its tonal world.

Much less promising are the experiments to attain sound through the new electric and radio methods (vibrations of interfering currents, etc.) Here there is a complete break with tradition not only in the tonal plan; the production of sound itself would be carried into a world hitherto alien to musical development.

Creative efforts with ultrachromaticism reach as far back as 1840, in Russia, to the music of Prince Odoyevski, the possessor of an ultrachromatic instrument. In 1910, Arthur Lourie, another Russian pioneer, wrote in quarter tones but his music was extremely poor. Later, Busoni conceived the idea of thirds of tones but, being a poor mathematician, he evolved these from the already existing semitones and was apparently unaware that what he invariably achieved were sixths of tones. Haba's quarter tone quartet was just one more proof that mediocre music may be written on a twenty-four step scale as easily as music of genius may be confined within a seven step scale. In fact Haba's academic music would have elbow room within the twelve step scale. Recently in Moscow Mr. Shishoff has come forward with new ideas of "melodic ultrachromaticism," but he has not advanced beyond the stage of dilettantism, while Vishnegradski, another Russian composer in Paris, has written quarter tone music with the same success as Mr. Haba.



The chronic failure of the ultrachromatic idea after fifteen years of testing leads to the conclusion that something is fundamentally wrong with it. Apparently it is not easy to enrich music through a purely theoretical departure. However the writer believes that insufficient emphasis has been given to the more natural experiments with ultrachromatic melody. It

seems obvious that the introduction of new fractional sounds must be linked to older and related melodic colors—first as timid passing notes, then as neighboring notes, finally as jumps and unprepared sounds. Their very nature demands a gradual reception; any attempt to conquer this new tonal world at one leap belongs to the dilettant. And the beginning should be made with melody, not harmony, as Scriabin and others have wished. This was the historic development of chromaticism and so it must be for ultrachromaticism.

Melody will be enriched by new fractional sounds, which in turn will probably simplify the harmonic forms. One already feels this longing for simplification and yet a direct retreat is impossible. It is more likely that melody will gradually absorb the new sounds and in the meantime the way will be cleared for a new instrumental technic that will materialize them. A continuity of methods is inevitable as there is a “hidden tradition” in art of which the creative artists, themselves obedient exponents, are often unaware.

Ed. Note:—Mr. Sabaneyev, whose experience is largely European, is apparently unaware of the extensive experiments undertaken by Julian Carrillo, the Mexican composer. His fractional tone music has been presented at the New York concerts of the League of Composers and the Philadelphia Symphony Orchestra, a striking feature of these performances being the use of a large number of specially constructed, ultrachromatic instruments.