

## RECENT BOOKS

### THE SCHILLINGER CASE

#### CHARTING THE MUSICAL RANGE

THE difference between the sounds produced by a trained composer and by a gifted child at play among the piano keys lies in the fact that the composer sets his sounds in order, organizes them in accordance with some definite scheme of relationship. Innumerable starting points exist for a musical composition, of course, and each initial musical idea is susceptible to organization in more than one way. Whatever skill is involved is developed by conscious examination of the possibilities and by practice in handling them.

A composer functions in still another way, however, avowedly mysterious: he makes a series of choices among these possibilities. *Each choice is a creative act*; in this the composer shows himself to be an artist. The selection of his initial idea may be perfectly unconscious, but once this starting point has been established, the composer must again function as an artist, make decisions about keeping some things, discarding others. The reasons for his choice can never be more than partly objective, but the range of possibilities offered to him may surely be entirely so.

Joseph Schillinger's *System of Musical Composition* (Carl Fischer, Inc., 1946), which explores these possibilities, begins by applying the element of rhythm to time duration in the

familiar way. He then extends it to all other phases of composition: to the way in which block harmonies change, to intervals in scale and melody, entrances of counter-themes in counterpoint, distribution of parts through a score, and other processes of composition. For the first time, complete theories of rhythm and of melody writing are offered. Schillinger systematizes musical relationships by expressing them methodically in mathematical formulas. Nicolas Slonimsky has said of him that he has done for music what Mendeleev did for chemistry: he has provided an exhaustive periodic chart of all its elements, making possible the discovery of those that have not yet been used. The principles which Schillinger establishes can be made to cover all styles of music known. The theoretical systems of Hindemith and Schönberg are now seen to be equally logical and find their places within Schillinger's organization of musical theory, along with the tonal systems of India, Persia and Africa, sixteenth century counterpoint, classical harmony, dissonant counterpoint, harmony based on fourths or on seconds.

Einstein has turned our world into something about whose reality scientists believe we can know nothing final. We cannot know *what it is* but only *how it acts*. Nature then con-

sists of movement and relationship, that is to say, of rhythm. Any natural phenomenon becomes an event in this modern rhythmic conception of the universe; Einstein found that the only objective way of studying these events was to chart their periodicities, with their reinforcement or interference, on a graph. Schillinger believed music might be included among the natural phenomena which can be examined in this way. His system uses a comparatively simple form of Einstein's graph, with its time-space co-ordinates.

If the arts consist of a series of relationships, then their patterns might be expected to reproduce the actual processes of nature: growth, motion and evolution. And since mathematical formulas are the expression of these patterns and their performance, Schillinger wondered whether mathematical analysis of great works of art would not show that they imitate natural processes very closely. Confirmation was dramatic, for he actually found in works of the masters the same patterns, expressible in the same formulas which are used to describe the formation of crystals, the ratios of curvature of celestial trajectories, and the division and multiplication of cells, for instance. He concluded that great artists had intuitively realized the mathematical logic of structure and movement, just as early philosophers and scientists had prefigured intuitively the Einsteinian concept of the universe.

### III

The prime advantages of the graphic method of presentation for music are, first, a clarity and exactness which cannot be approached by

any other method of notation and, second, its capacity for infinite orderly expansion to conform to systematic phenomena. Since a graph is no more than a symbol which stands for the behavior of things, however, music is not written out graphically by Schillinger pupils except to simplify a problem. Instead, the formulas are used as a kind of shorthand which may be translated into ordinary score writing at will. The composer produces a plan for a composition whose parts *cannot* be anything except logically inter-related. He need do only the actual creative thinking; a copyist trained in certain elementary aspects of the method can accurately follow the formulas, in which every detail is implicit, and clothe the composer's skeleton in conventional musical notation.

A talented student of composition will inevitably want to select his own material, to use it in ways of his own devising. Until now there has been no method to enable this natural tendency of the creative mind to function successfully, while at the same time pursuing the objectives commonly held by teachers of composition. The study of technique should inform the composer about the extent of possible musical materials and how they may be classified and used. He cannot expect to learn to handle every possibility. But he does need to be shown a plan by which he may discover, organize and use whatever type of material it pleases him to investigate. It is just such a plan that Schillinger has devised.

Many have criticized the confusion of style and taste with "law" in music, as being a holdover from nineteenth

century religious thinking. Schillinger felt the trouble lay in a limited and faulty idea of what music is, which resulted in the old anachronistic dichotomies of art and science, art and life, art and nature. Once these sets of apparent opposites were understood to share the pattern-in-movement, or rhythmic, nature of things,

the arts fell into their natural place. Schillinger's perception of this, and the exceedingly comprehensive and practical application he made of so broad a philosophical concept, must have a revolutionary effect upon the relationship between composers and their craft.

*Sidney and Henry Cowell*

### FALLACY OF THE MECHANISTIC APPROACH

THE Schillinger *System of Musical Composition* will most likely arouse considerable feeling, especially among those who have not seen this type of book before. The point of view comes straight out of middle Europe in the early twenties when the application of a mechanistically conceived scientific method to the arts was all the rage. In this respect Schillinger's work closely resembles the Bauhaus books and the prose writings of Eisenstein on the movies. An elaborate show of scientific language, of schematic exposition that apes mathematical texts, plenty of graphs and pseudo-algebraic formulas, all do about as much to confuse as to clarify.

For this form of exposition is really a rhetorical method not particularly aimed at careful scientific rigor but at a kind of surprise and shock effect. Violent invective, dogmatic assertion, repetition of ideas and phrases and a certain megalomania are combined with apparently dispassionate and rigorous analysis. Old-fashioned, "intuitive" methods are ridiculed, mistakes of the great composers are shown up in the light of the "new, objective and scientific methodology." Any of the subtler forms of persuasion, like those found in regulation scientific

treatises which substantiate generalizations with verifiable facts, are omitted; the reader is browbeaten. Schillinger's book even has a rather hermetic and cultlike quality because of its lack of regard for the reader. The terminology is unfamiliar and musical terms are alphabetized: letter symbols are used which even a generous glossary at the back does not always clarify, because their significance changes from chapter to chapter.

But this is all a bitter coating for a book that makes many interesting contributions. The system aims at the all-inclusive, under the one aspect of mathematical patterning. Within the covers of these two volumes one finds the most comprehensive tabulation of musical elements, devices and procedures that probably has ever been made, certainly within the limits of such a relatively short work. For a book that is to include a systematization of rhythm, scales, melody, harmony, counterpoint, fugue, composition, orchestration and musical expression, must necessarily be brief on many scores. Although it is presented as comprehensive and self-explanatory, the book seems really a manual to supplement actual lessons in which principles are more elaborately and convincingly expounded. Thus the