

BIRKHOFF ON AESTHETIC MEASURE

Aesthetic Measure. By George D. Birkhoff. Cambridge, Harvard University Press, 1933. xvi+226 pp., 23 plates, 10 in color. \$7.50.

Every reader of this Bulletin will find this work thought-provoking. Its first appeal is to the analytically-minded aesthetician; but there are questions and implications far beyond any specialist's domain. The reviewer will therefore examine *Aesthetic Measure*, firstly, as to how well it solves its self-imposed problem, and, secondly, as to the relevance of its contribution to aesthetics, this term being used in its broadest sense.

In Chapter 1, Professor Birkhoff presents the following mathematical formulation of the fundamental problem: "Within each class of aesthetic objects, to define the order O and the complexity C so that their ratio $M=O/C$ yields the aesthetic measure of any object in the class." In subsequent chapters, this problem is solved for various simple classes of aesthetic objects in great detail. The author distinguishes between "formal" and "connotative" associations, and explains that "our attention will be directed almost exclusively toward the formal side of art, to which alone the basic formula of aesthetic measure can be quantitatively applied," but with "no intention of denying the transcendent importance of the connotative side in all creative art."

In Chapters 2, 3, and 4, the author elaborately applies his theory to polygonal forms, ornaments and tilings, and vases—that is, to the more elementary fields. The reader stands amazed at the author's thoroughness. Here minor criticisms are beside the point; for the author does seem to establish the validity of his formula. In Chapter 2, there is recorded the aesthetic measure of 90 polygonal forms, pictured in colored plates. In Chapter 3, five interesting full-page plates illustrate species of one- and two-dimensional ornaments. But the discussion preliminary to application of the theory, though a neat piece of analysis, is sufficiently mathematical to become formidable reading. In Chapter 4, we meet a difficulty. That the theory "here is to be regarded as more questionable than the theories of polygons and ornaments" suggests that the more abstract vase form has higher expressiveness. And we sense trouble ahead in dealing with an art so abstract as music. The author himself concedes, in closing the chapter on vases: "It is an interesting question as to how the explicit knowledge that these simple relations exist in a given case affects the aesthetic judgment. In my opinion, the effect is slightly adverse, for, in all fields of art, it is the intuitively felt relationships which are the most enjoyed."

In Chapters 5, 6, and 7, we come to music. In these chapters on chords, harmony, and melody, we recognize the author's perseverance in acquainting himself with the many technical matters involved and his patience in enumeration. We gain the impression that the author, willing to admit the "almost transcendental expressive power" of music and its "deep and almost universal appeal," has yet a tendency to pass lightly over certain features which, although irrelevant for him, are, for many, vital. There is a wide-spread conviction that an art-work is significant because of what it "means" rather than what it "says." We hold, with Birkhoff, that Gurney's point of view—that