A STUDY OF THE REVOLUTIONS IN THE SCIENCE OF BIOLOGY AND ITS EDUCATIONAL STRUCTURE AS IT SPANS THE GAP BETWEEN SCIENCE AND THE LAYMAN'S UNDERSTANDING OF SCIENCE

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One of the factors which has influenced the modern developments in the teaching of biology has been the realization that there was a widening gap between the functions of science and the understanding of science by the layman. In an attempt to understand the historical significance of this gap, a survey of both the history of the science of biology and the history of biological education in America is presented in Chapters I and II and evaluated in Chapter III. This research reveals that this gap can be attributed directly to the lack of unity between the science of biology and its educational framework. Theorists believed that biology could best be taught in a series of related concepts, but neither educators nor scientists seemed able to provide those necessary unifying concepts. The devastating significance of this condition was dramatically revealed during the decade of the 1950's when a careful study of biology curricula illustrated that sound educational theory advocated as early as 1900, had not yet been incorporated into the functions of the science curricula. In addition, much of the important biological research that was performed during the 1930's and 1940's had still not found its way into most texts.

The urgent need for a unified program of biology instruction that would inform and interest the layman, and that would also be based on sound scientific knowledge is the realization of Chapter IV. A major understanding upon which this is based is that the concern of science is now viewed not as a closed pattern but rather as changing and expanding

with each successive breakthrough of scientific knowledge. Science instruction which is concerned with the memorization of isolated facts is outmoded and must be replaced with an understanding of the processes of science. The Biological Sciences Curriculum Study (BSCS), which was developed jointly by scientists and educators in an attempt to provide a workable framework for fruitful interaction between the science of biology and its instructional system is, therefore, surveyed.

The urgent need for a bridge that will successfully close the gap between science and layman is the challenge which the BSCS program accepts as its major objective. That this challenge be met successfully is stated, finally, as the major goal which must guide all present curricula and future programs of scientific instructions.