

# SCIENCE

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## EDUCATION BY AUTHORITY OR FOR AUTHORITY? ARE SCIENCE TEACHERS TEACHING SCIENCE?<sup>1</sup>

By Professor OTIS F. CURTIS

CORNELL UNIVERSITY

I FIND it rather difficult to discuss the teaching of science as I wish to discuss it without first discussing some of the more general aspects of teaching and education. So perhaps by way of introduction we should first consider the question as to what constitutes an education and what are to be its aims. This may be a controversial topic, but it is necessary to formulate at least tentative objectives before one can effectively discuss attainment or methods.

With some of the many subjects taught in the elementary schools, as well as in the trade and technical schools, the answer as to purpose and accomplishment may seem relatively obvious. The pupil learns to read, to write and to do simple problems in arithmetic. He obtains information and rules that he uses in daily

<sup>1</sup> Condensed from the address of the retiring president of the American Society of Plant Physiologists, at Richmond, Va., December 28, 1938.

routine. But in increasingly large numbers, young people are taking high-school and college subjects for, as they say, their "general educational or cultural values," not fitting themselves specifically for a vocation or trade. But why should a high percentage of the population study higher mathematics, ancient languages, modern languages, English literature, history, economics, chemistry, physics, geology, botany, zoology, etc.? Are these subjects or fields of general educational or cultural value? If so, why? And are they of equal value? Is a man educated or cultured because he has spent one to four years in studying or can read or speak a half dozen or more languages? Is he educated because he can solve intricate problems in mathematics, or can determine the chemical composition of a rock or a plant, or can synthesize some important compound? Is he educated because he can

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