

The publication is marred by its format so that it is difficult to find the precise idea the reader wants to trace. There is an extensive bibliography. Should be useful in the project-centered course and for student reading in project work.
P. K.

MICROSCOPE EXPERIMENTS FOR ELEMENTARY AND HIGH SCHOOL, 60 pp., \$1.00, Testa Manufacturing Company, El Monte, California, 1960.

Every biology teacher seems to be anxiously looking for suggestions and helps for laboratory work and projects. This is another attempt to help in the field of microscopy. A small book but well written, it is full of information about simple microscope exercises divided into those concerning form, plants, animals, insects, and inorganic substances. The introduction is lucid and well done. A handy little booklet for the beginner.

P. K.

Science Teaching Aids

THE EFFECTIVENESS OF FILMED SCIENCE COURSES IN PUBLIC SECONDARY SCHOOLS, W. James Popham and Joseph M. Sadnavitch, 64 pp., Department of Education and Psychology, Kansas State College of Pittsburg, 1960.

This publication describes an experiment designed to evaluate the filmed physics course consisting of a series of 162 lectures and demonstrations by Professor Harvey White, and the filmed chemistry course of 160 lectures and demonstrations by Professor John Baxter. Briefly, the results indicated that (1) in *subject matter achievement*, the chemistry films were as effective as conventional methods but the physics films were not; (2) the film and non-film approaches fostered comparable *student interest* in physical science, and (3) the film approaches fostered *attitudes* more unfavorable toward physics and chemistry as school subjects than the conventional approach did.

This is one of several research reports which will help science teachers and others to reach decisions concerning the best ways of upgrading and achieving their teaching objectives in the face of ever increasing enrollments. It is the fifth reported research evaluating the filmed physics course and the first evaluating the filmed chemistry course. This publication briefly reviews these previous researches.

The filmed course approach has had an increasing emphasis in recent years and most science educators will want to keep up to date on researches such as this. However, as with all researches, the results of this experiment must be interpreted within its limitations; that is, such variables as the sample used, the validity

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of the measuring instruments, teacher competency, and utilization procedures must be considered.

This experiment by itself does not provide sufficient evidence to reach a decision concerning the effectiveness of these two filmed courses but is a valuable contribution to the growing fund of knowledge concerning them.

George Vuke
Audio-Visual Center
Indiana University

Education

SCIENCE AS THOUGHT, Howard E. Gruber, 30 pp., University of Colorado Behavior Research Laboratory Report No. 16, Boulder, Colorado, 1961.

News stories of the implications of this study for the expenditure of federal money for the training of science teachers appeared widely throughout the country. The author concludes after a survey of the participants of nine academic Year Institutes that only a negligible percent of these people teach science as a way of thought and that, if this is one of the purposes of AYI, the program is failing miserably. While one must agree, by the simple process of observation, with many but not all of the author's