

Advanced Biological Science in Large Secondary Schools

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Within the past decade increased attention has been focused on advanced level courses in the secondary school curriculum. Of these, advanced biology has received much consideration.

What is meant by advanced biology? A host of interpretations have been given to it. Journal, magazine, and newspaper articles most commonly use the term to denote a second-year course having General Biology as a minimum prerequisite. Some schools have additional requirements, such as: a grade average of A or B, teacher recommendation, student interest, and completion of a course in chemistry.

There are, however, other meanings. Through the use of the track system, an enriched first-year course is sometimes called advanced biology. Courses such as human physiology, health, and conservation, which may serve to broaden the surface but not to probe the depths, also use the term. Finally, some senior science courses where the student may emphasize biophysics or biochemistry may use the title of advanced biology.

The results of a survey just completed on the prevalence of advanced biological science course offerings are most interesting. This was a nationwide survey of all public secondary schools with enrollments exceeding 1000 students and all non-public secondary schools having 70 or more graduates as listed in an Office of Education bulletin.¹

Ninety-four per cent of the 1217 secondary schools surveyed responded by postcard to the question, "Does your high school offer an advanced biological science course (such as Advanced Biology, Microbiology, College Biology) which *requires as a minimum prerequisite* the successful completion of a course in General Biology?" Table 1 shows the affirmative response to this question and the

number of such courses offered by each secondary school.

TABLE 1
NUMBER OF ADVANCED BIOLOGICAL SCIENCE COURSE OFFERINGS PER SCHOOL

Number of Courses	Frequency
1 course	227
2 courses	36
3 courses	10
4 courses	2
5 courses	1

It is apparent from Table 1 that 276 large secondary schools representing 22.6 per cent of the schools sampled include at least one advanced biological science course offering in their science curriculum. The majority of schools offer only a single course but the range is from one to five courses.

A wide variety of advanced biological science course offerings was reported. Table 2 lists the courses most frequently given and the number of large secondary schools that offer each one.

TABLE 2
ADVANCED BIOLOGICAL SCIENCE COURSE OFFERINGS IN LARGE SECONDARY SCHOOLS

Title of Course Being Offered	Number of Schools Offering the Course
Advanced Biology	106
Physiology	40
Zoology	35
Biology II	28
Botany	22
Biology 3 & 4	13
College Biology	13
Biology III	11
Human Physiology	10
Human Biology	9
Anat. & Phys.	9
Lab. Techniques	8
Bio. Techniques	4
Life Science 2	3
Other titles	31

In addition to the 14 courses listed in Table 2, 21 courses with other titles were offered by 31 schools. These included Landscaping,

¹Mabel C. Rice, *Directory of Secondary Day Schools*, U. S. Department of Health, Education, and Welfare (Washington: U. S. Government Printing Office, 1957).

Marine Biology, Nature Study, Health, Bacteriology, Field Biology, Biology Seminar, Home Technology, Conservation, Microbiology, or other very closely related titles.

Regardless of whether their school offered an advanced biological science course of any type, biology teachers across the nation expressed much interest in them. Hundreds of comments were voluntarily penciled on the margins of the reply cards. Teachers repeatedly said they favored addition of a second-year biology course or that their students had often requested it. Lack of space resulting from 100 per cent scheduling of rooms was frequently given as a reason for not being able to offer it. A score of secondary schools reported that an advanced biological science course was either going to be offered for the first time next fall or was in the planning stage for future inclusion in the science curriculum.

The following are typical of other comments made by teachers when answering the question posed to them on the reply card.

Minnesota: "All well planned schools should have Advanced Biology."

West Virginia: "School officials are not interested—a terrible handicap."

Michigan: "I gave one last year after school for no credit."

New York: "We did not find results warranted continuing Advanced Biology."

Pennsylvania: "Have been offering Advanced Biology for 25 years."

Illinois: "Our junior college course is open to qualified seniors."

South Carolina: "Plan to add it next year."

Connecticut: "No! Reason? Why specialize?"

Wyoming: "Had to drop Advanced Biology due to crowding of facilities."

There are five courses listed in Table 2, being offered by 171 large secondary schools, that are of particular interest to the author. These are Advanced Biology, Biology II, Biology 3 & 4, College Biology, and Biology III. By title it would appear that they include some truly second-year courses exploring many areas of biology in much greater depth. Some of these are of college calibre; for example, the Advanced Placement Program courses. Some are not. Nevertheless, over 14 per cent of the nation's large secondary schools offer them.

As a result of their prevalence a study is now underway to ascertain the status of these courses. Such areas as aims and purposes, principal textbooks used, course content, teacher preparation, and student research are being surveyed. This study should be completed in the fall of 1960 and the results will then be made available to teachers of biology.

S.O.S.

The article by David Kraus and Eugene Stern in the February issue of ABT on "Carrot Tumors" mentioned that the required bacteria were available from the New York Botanical Garden. This is not the case. They have been swamped with requests for these cultures, but they are available from the American Type Culture Collection, Washington, D. C. as well as from commercial biological supply companies. Here is another evidence that the readership of the ABT is indeed a wide and alert one as the New York Botanical Garden cannot keep up with the demand for the cultures which have been requested as the result of this article.

New Stamp

This is a black and white reproduction of the 4-cent water conservation stamp now on sale at post offices throughout the country. The stamp, printed in three colors, went on sale in Washington, D. C., at the Seventh National Watershed Congress.

The unique two-part stamp portrays a close-up view of a drop of water falling from a leaf, which symbolizes the influences of land and vegetation upon water supply. This design leads the eye into a right-hand panel depicting an actual small watershed panorama. People and industries in the town in the foreground are dependent for their water upon the watershed above, which ideally includes conservation-managed farm and forest lands and small dams for flood prevention and water storage.

