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General Education and Secondary School Biology

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In recent months the General Education emphasis has come to have increased importance in educational considerations. It is an emphasis that must necessarily be of interest to teachers of secondary school biology. One of the questions commonly asked concerns effects that the program of General Education may have upon the teaching of biology. It is our present purpose to consider some of the possibilities. Let us begin by defining two terms.

We shall assume that "secondary school biology" consists of the biological facts and concepts commonly included among instructional materials of grades seven to twelve. Such materials may appear in a number of different courses, but tend to be concentrated in those designated as "biology," "general biology," "general science," and "advanced biology." Some might question the inclusion of general science in this group, holding that the biological content of *some* courses, as taught by *some* teachers,

is not sufficiently representative. They sometimes indicate that such courses have become creatures of the physical scientists. Be that as it may, it is evident that general science has prospered to the extent that it can no longer be ignored by biologists. If *some* general science courses are unsatisfactory to the biologists, it may be because the latter have at times adopted an attitude of critical opposition, and have absented themselves from the council tables.

The second term we shall wish to identify is "General Education." It is not easy to define, even upon an arbitrary basis. Perhaps we can best approach the matter by considering some of the forces and events which seem in part responsible for modern educational trends. There has been considerable unrest ever since the turn of the century. Aims, objectives, courses-of-study, curriculums, and teaching methods have presented a rapidly-shifting scene at times. Various educational trends have developed, each to hold

the stage for a few brief months or years, then to be superseded by something different. Dozens of catch words or phrases have been coined or re-defined, to bewilder the teacher with a language that is often obscure, and sometimes suspect of being largely meaningless.

The writer does not feel that this has merely been an expression of desire to do something new or different at any cost. Far more fundamental concerns and forces have been at work. Chief among these has been the rapidly-changing character of the secondary school population. In 1900, the high school had a highly-selected pupil group. Since that time, however, the selective action of the lower school has diminished, thus giving rise to a modern high school population that is markedly heterogeneous in many cases. Teachers and administrators often complain that the "old subjects" are too difficult for pupil-comprehension. Many "new subjects," some said to be rather dilute, have been added to secondary school curriculums.

Moreover, there have been numerous public utterances to the effect that the educative process has not been producing desired results; that pupils often emerge with far too little understanding of the world in which they live. One wonders why the school should be singled-out as the only possible agency at fault, but is shocked and sobered by the apparent effectiveness of directed education in certain totalitarian states.

These are some, but by no means all of the considerations that form a background for the General Education emphasis. Its frank purpose is to provide education for citizenship in a democratic social order. It focuses attention upon the common affairs of everyday life. Its

primary concern must necessarily be the common needs and interests of average pupils, but it does not propose to limit its attention to this group.

One interesting feature of General Education work is that much of the pioneering effort has been expended in the area of science education, and that extension into other fields of learning is now in progress. Slightly more than two years ago the General Education Board made a grant to Teachers College, Columbia University, for a General Education project in science, to be carried out under the direction of Professor S. R. Powers. This made possible the Bureau of Educational Research in Science.

The latter organization has concerned itself with two general projects. First, various specialists in subject-matter fields have been assembling research findings that have apparent relationships to everyday affairs. Emphasis has centered upon the more recent discoveries; the materials that often do not get into textbooks until some time has passed. These assemblages of apparently significant facts and concepts are being incorporated in *Source Books*. The Source Books are not textbooks, but are more nearly books of reference. It is hoped that they will be used by teachers of science, and by those who prepare course-of-study materials.

A second phase of the work has to do with evaluation. Instructional materials have been and are being prepared in the light of the Source Book contents. They are being tried out in school situations, in an effort to determine what outcomes are associated with the learning experiences.

The foregoing description of this Bureau's activities necessarily is brief; it would be impossible to present all perti-

ment details in the space available. A fairly complete account of the work, however, may be found in the January, 1939, issue of the *Teachers College Record*.

Let us now give some thought to ways in which the General Education program may be expected to influence secondary school biology. We may anticipate some standardization of a *General Biology* course, of such difficulty that it is acceptable for the majority of pupils, and whose emphasis is upon the facts and concepts that relate intimately to common experiences. Presumably it will be a beginning course in biology for anyone. It may be expected to feature revitalization and modernization of subject-matter. The latter would clearly be of greater significance in some teaching situations than in others, for secondary school biology is not a uniform commodity; various courses as taught by numerous teachers might today be termed "modern" and "vital," whereas others lag behind frontiers of progress. Extension of the General Education emphasis also gives evidence of fostering a situation in which greater measure of attention will be given to instruction in life science.

In our enthusiasm for mass education, however, we should not forget the pupils who possess more than average ability and are motivated by more than normal interest, for it is from this group that the leaders of tomorrow will undoubtedly come. For them, a year's work in General Biology may only be acceptable as a beginning. It is here suggested that their needs may be met by an advanced biology course on the eleventh or twelfth grade levels. Another possibility is the development of a two-year sequence in biology. In either eventuality it is presupposed that the content materials of the courses would be those of general biology; that

the second year courses would not be limited to a few phases of the subject as suggested by some current practices.

The writer has attempted to anticipate possible ill effects that may be concomitants of the General Education emphasis. If one assumes that adequate provision will be made for the needs of gifted pupils this is not easy to do. One warning note may not be amiss, although it is no more appropriate in this case than it would be in any other. All educational fronts acquire a lunatic fringe of self-appointed, often earnest, but likewise unintelligent advocates. Their pronouncements obscure many important issues, and often inhibit worth-while progress. There is another group who, under the protective impetus of a new trend, will attempt to align curriculums or courses-of-study with their own vested or projected interests.

Happily, any such unwanted tendencies have not appeared in General Education circles to date. Perhaps, indeed, we may not be called upon to face such eventualities. If they do materialize, however, we should be quick to recognize them, and to oppose them vigorously. General Education involves many inherent possibilities for progress. It must not be diverted from its appointed course.

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Due to the rapid growth of our Association during November and December it is possible that a few members have failed to receive one or two copies of the journal. There is available a small supply of the first three numbers of our journal. These will be sent to members who failed to receive their copies, as long as the supply lasts. All requests for back copies should be sent to P. K. Houdek, Secretary-treasurer, Robinson, Illinois.