prophet is asked to provide concepts whereby advances in—say—extrasensory preception could be exploited, sharper forecasting methods than any now available would be needed. Should it be shown that ESP is physico-chemical in nature, an immense amount of applied research would have to precede the invention of transmitting, receiving, and translating devices. . . .

Essentially, methodical technological forecasting calls for a better, sharper image of the future then we now have. It is curious that we have today a fairly clear set of requirements for making the moon habitable, as well as many concepts of the properties and characteristics to be incorporated into moon structures; the image of the future as regards planet Earth is less well defined. Research and development might be greatly benefited by improved statements of future requirements, complemented by technological forecasts of the general course that science and technology will take to fulfill them.

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Congress and the Fermi Prize

The Congress is composed of elected representatives of the people and is concerned with many and weighty decisions. Science is something few of its members understand, as is frequently pointed out in your columns. The actions of the Joint Committee on Atomic Energy in connection with the Fermi Prize [see News and Comment, *Science*, 20 Mar., p. 1305] are a prime example of their ignorant dabbling. Have they so little understanding of the devotion which is being shown by the many scientists who have consented to serve on such time-consuming bodies as the General Advisory Committee of the Atomic Energy Commission? Have they really the desire to keep good physicists from serving on it so that they may not become ineligible for some recognition?

I seriously suggest that the best action the General Advisory Committee of the AEC can take is simply to cease awarding the prize. If the Joint Committee cares, itself, to make an award to someone, presumably someone who has never worked for the government, perhaps (in order to avoid any suggestion of favoritism) not to a scientist at all, I suppose it is within its legislative ingenuity to do so. But I repeat, for the GAC the only dignified and proper action is to cease making the award.

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New High School Biology Course in the Light of Experience

In his fine review of the Biological Sciences Curriculum Study publications (*Science*, 14 Feb., p. 668), J. K. Brierley, one of Her Majesty's Inspectors of Schools, British Ministry of Education, voices some objections that others who have not actually used these books may share. We were among the high school biology teachers who evaluated the first revised Green Version textbook in their classes in 1961–62. Each of us evaluated in actual use one of the laboratory blocks (*Plant Growth and Development* and *Animal Growth and Development*). This year we have both been using the commercially prepared Green Version (*BSCS Green Version—High School Biology*, Rand McNally, Chicago, 1963), and we are currently evaluating a newly written laboratory block on *Metabolism*. We should like, in the light of this experience, to comment on some of the objections expressed in the review.

First, Brierley regards some of the concepts presented in the texts as too sophisticated and too difficult for high school students. Our experience is that all these concepts can be taught *to some extent* to all our students. The slower learners are taught them without certain refinements of detail. New aids to teaching biological concepts to the slow learner have been developed by the BSCS under the heading of "Special Materials." We have found that population dynamics, taxonomic theory, energy relationships, genetic continuity, and a host of other so-called "difficult" ideas of biology can become a part of a student's understanding even though he has reading or learning difficulties.

We think, with Jerome Bruner, that "it may be that nothing is intrinsically difficult," that "We just have to wait until the proper point of view and corresponding language for presenting it are revealed," and that "The trick is to find the medium questions that can be answered and that take you somewhere" (*The Process of Education*, Harvard Univ. Press, Cambridge, 1962, p. 40). It seems to us no disadvantage to have intricate diagrams in the textbook on which to base our questions for the more able learners; it is easy enough to ignore a diagram, a paragraph, or a whole section if it is not appropriate to the learner's ability. We are finding that it is not beyond the ability of the average student to extract and analyze chromatographically the purines and pyrimidines of yeast nucleic acids. The hydrolysis and synthesis of polysaccharides, autoradiography in photosynthesis studies, and the role of ATP in energy transfer are becoming first-hand experiences for our biology students. We have been amazed ourselves at what they have been able to do in what could reasonably be called "high level" biology.

Second, Brierley seems to misunderstand one premise of BSCS. He says that school courses should be complete in themselves and assumes that BSCS has prepared its curricula with this in mind. This is not quite true. It is true that for many students the high school course is the first and last formal presentation of biology; but to behold in the BSCS publications an effort to open and close the subject within the course of an academic year is to misunderstand our aim. The most basic attempt in science teaching is to prepare students for the great advancements that will come in the future. As a corollary, we must also rebut Brierley's conjecture that the BSCS includes too much physics and chemistry for average 15- and 16-year-olds. By and large, we find that our students are able to understand those bits and pieces of chemistry and physics that are introduced for clearer understanding of some of the biological concepts. We contend that the more relationships we can show among the natural sciences as well as among the specialties within biology, the better.

Our third comment is that the BSCS courses are *not* too difficult to teach even when one's formal education ended 20 years ago. Brierley says, "The impact of this new work on older teachers whose university courses were finished, say 20 years ago, and whose body of knowledge . . . may be largely inadequate and as obsolete as notions 'of body humors, the ether, or the impenetrable atom,' would be to break their backs and perhaps destroy the solid work they are doing in the