free enterprise in the production and selling of books; our scientific publishers and booksellers are doing a fine job, and no one would want them disturbed. In fact, the type of program suggested here would strengthen the industry and the trade. The system should enable an individual to get the books he wants without much ado; there should be no test of the "need to have" or "need to know." To a layman in these matters, for booksellers simply to bill a given foundation for part of the price of each book sold from among those it supports would seem an acceptable solution; experts probably could think out something better, even if less simple. Public libraries, universities, and business firms would continue to pay the full price of supported books. The distribution of journals could be similarly helped; some of them, especially the ones in newer fields, are frightfully expensive. There is precedent for a journal's selling for less to individual subscribers than to organizations: subscription rates for the *Philosophical Review* of Cornell University are $3 per year for individuals and $6 per year for institutions. Regrettably this example is not widely followed.

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Science Teaching

The report by Howard E. Gruber, "Science teachers and the scientific attitude" [*Science* **132**, 467 (19 Aug. 1960)], focuses attention on a critical problem in the preparation of science teachers.

In what ways can teachers be equipped to change the pattern of science instruction from one involving the mere cataloging of isolated scientific facts to one which reveals how scientists make use of the power of the human mind to perceive, think about, and eventually integrate seemingly unrelated arrays of impressions into broad conceptual schemes?

With the rate of growth of knowledge constantly increasing, the teacher who tries to present a body of facts (biology, chemistry, physics) without evoking some degree of understanding and appreciation of unifying fundamentals is bound to lead his students into a morass of frustrating confusion.

Since teachers-to-be are influenced to a great extent by the ways in which they themselves are taught, instructors of science training courses should emphasize and illuminate the processes of science and give the future teachers as many firsthand experiences with them as possible.

Prospective teachers who, in this way, come to know the real flavor of the intellectual enterprise called science will be in a better position to transmit to their students the spirit of man's endless search to comprehend the world around him.

Teachers with such training will make sure that students do not get the impression that all the major discoveries already have been made; that the basic facts and principles of science are unchangeable; that there is nothing left for them to do but to learn about what others have done. Instead, these teachers will engender the feeling that there is always more to explore; that the road to discovery is wide open; that the horizons of science are unlimited.

Teachers with such training will know how to use curiosity to generate in their classrooms the kind of provocative stimuli that impel research scientists to pit their minds against the challenges of nature. They will know how to establish a free atmosphere in which individual initiative and ingenuity can flourish and in which each student is encouraged to express his own ideas no matter how far-fetched they may seem.

In *Walden,* Thoreau expressed the idea that "if a man does not keep pace with his companions perhaps it is because he hears a different drummer. Let him step to the music which he hears however measured or far away." What would be the impact on student interest and growth if this idea were to be adopted as one of the foundation stones of science instruction?

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Pseudo Science and Censorship

The letter by H. C. Dudley on "Pseudo science and censorship" [*Science* **132**, 378 (12 Aug. 1960)] requires additional comment in rebuttal. Dudley makes a plea for fair-mindedness and questions the right of anyone to censor another's pronouncements as being "preposterous" or "crackpot."

Although examples may be quoted wherein reputable discoveries were denounced by contemporaries, examples of the reverse are truly legion. For an excellent compendium of wild ideas, crazy machines, crackpot inventions and theories, and general "magic black box" hoaxes, one may well read *Fads and Fallacies in the Name of Science,* by Martin Gardiner (Dover, New York, 1957).

Gardiner sets up a rather useful group of ground rules for separating