

clockwise. At certain moments, when the picture is 90° or so from normal, the crater appears to be a great mass of rock completely detached from the ground. With somewhat more rapid rotation, and very steady fixation of the white area in the center of the crater, I tend to develop an amusing semblance of vertigo.

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### The High Cost of Reading

To read is to learn, and to know is to foresee and be strong. All this is easier if one has books of one's own, the more of them the better. But scholarly books are expensive, painfully so for those who need them most, the young and the unlearned.

New books are expensive because they are costly to produce, they sell in small numbers, and publishing houses must remain solvent. Financial aid in their distribution might make it possible to sell scholarly works at prices all those who wished them could afford. If more copies of a book would sell, unit production costs would decrease. Once such a program got started it might be that small sums of money would greatly increase the number of books made available to those who want them.

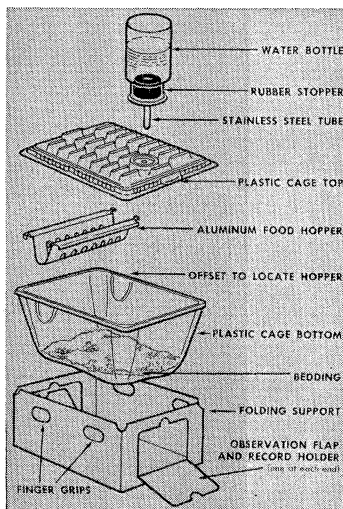
This new form of aid to the education of scholars and scientists seems to be a natural extension of the role of philanthropic foundations. Continuing a tradition of specialization, and in order to provide some measure of long-range effectiveness, a foundation interested in such a program might select a definite field of knowledge in which to help books reach their destined readers. Large foundations might choose large fields: virology, nutrition, cellular biology, linguistics. Less wealthy foundations could establish their identity by supporting more circumscribed fields: psychology of perception, history of biology, philosophy of science.

Financial aid in the publication of scholarly books is not a new idea, but heretofore such help has not been notably effective in making books cheaper. What is needed is some form of aid that would let a \$6 book sell for \$3, a \$10 book for \$4; perhaps no scholarly book should cost an interested individual more than \$5 or \$6. The selling price ought to be a test of serious interest and not a test of ability to pay. Anybody willing to spend \$5 on a book on the chemistry of amino acids, or on comparative linguistics, deserves to have the book.

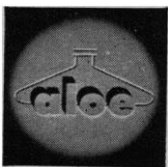
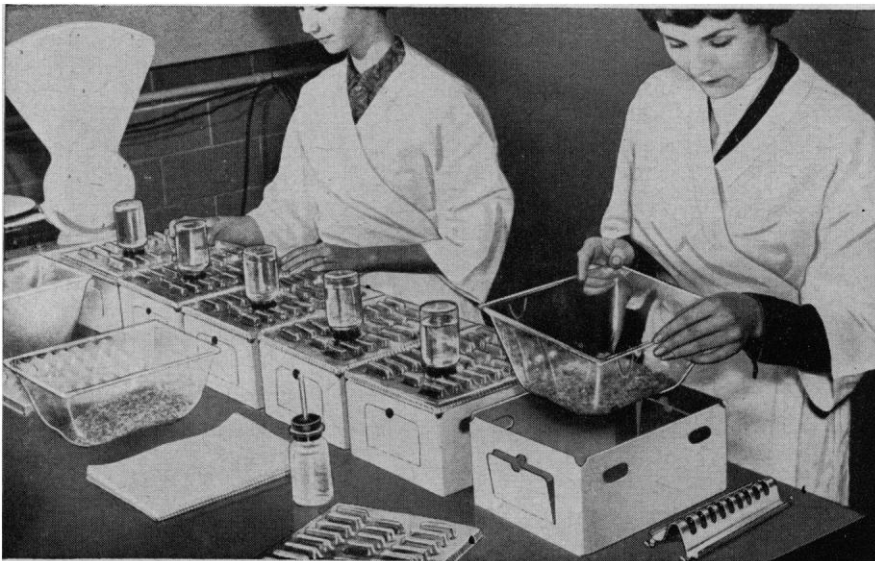
A system would have to be found which would preserve the tradition of

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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

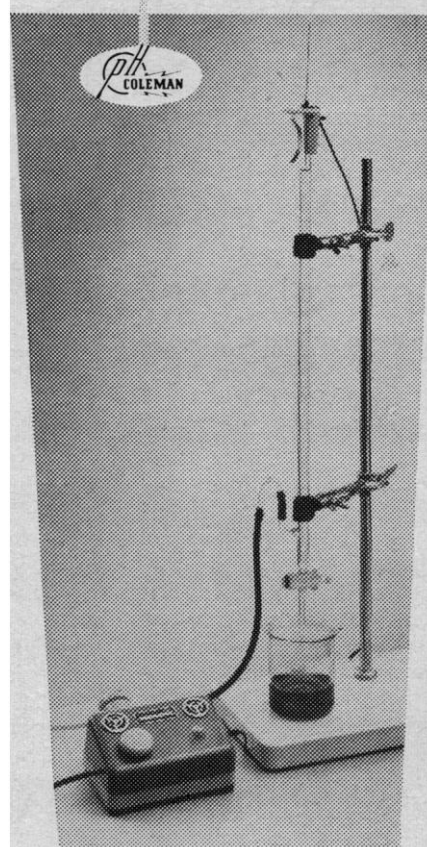
The report by Howard E. Gruber, "Science teachers and the scientific attitude" [*Science* 132, 467 (19 Aug. 1960)], focuses attention on a critical problem in the preparation of science teachers.

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.

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