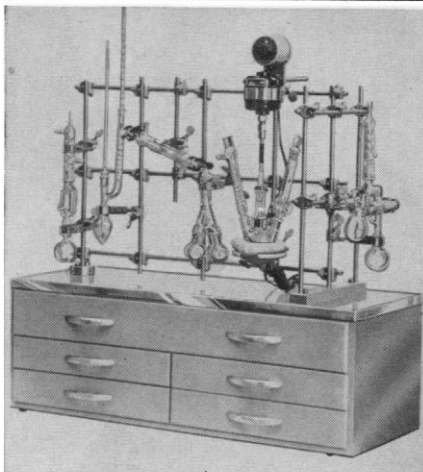


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Letters

Philanthropy

The letter of P. W. Hutson [*Science* 129, 1369 (1959)], condemning the editorial which suggested increased philanthropy and argued its advantages from the federal income tax viewpoint, is amazing indeed.

Granted that private philanthropy may be irresponsible and wasteful, so may our tax-supported philanthropy. But while the private philanthropist possesses direct control over the uses of his gifts, the taxpayer can stop paying otherwise compulsory taxes only by becoming a private philanthropist. Thus, the use of permissible deductions, plus expressions of opinion to his elected representatives, constitute the only indirect controls available to the taxpayer over the ultimate uses to which his tax monies will be put.

I disapprove of vast federal expenditures to enable us to send Mr. Smith to the moon and blow his family to smithereens while he is gone, and I take advantage of every legal provision available to reduce my federal income taxes. This is possible because of the deductions and exemptions permitted, and I intend to continue to give till it hurts.

It doesn't hurt, really, and it probably does much more good for all of us than sending anyone to the moon ever will. I urge my fellow scientists and citizens to do much more of the same.

C. H. LUSHBOUGH

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Science Teaching

Since the advent of the first Russian sputnik, Americans have indulged themselves in some very tardy, and much-needed, criticism of their educational system. Much has been found wanting, many ideas have been discussed, but very little has been done to alleviate the crucial deficiencies thus brought to light.

To judge from personal experience at three different collegiate establishments, the greatest impediment to the improvement of college courses in biology and botany seems to be a dogmatic and narrow-minded view of heads and chairmen of departments as to what such courses should include and how they should be taught.

What I am saying is that the "academic dry-rot," so well described by William Morton Wheeler several decades ago, in the meantime has decayed the structure of our educational system so thoroughly that the system collapses almost of its own weight under the con-

tinued onslaught of the specialists whose minds are sharp as razor blades and just about as broad.

Elementary courses are still taught as if the majority of students were to be science majors rather than citizens of a democracy. In contradiction to the essence of science, there is an abhorrence to experimentation, presumably on the assumption that Louis Agassiz and Asa Gray knew all there is to know of college teaching.

Within this adolescent frame of reference, course improvement means "cramming" the lecture with more subject matter and the laboratory with more experiments that repeat the material of the lecture, at the same time restricting the entire scope of the course to plodding through the textbook.

According to this pedagogical outlook, lecturing in an elementary course is delegated to the newest and least capable member of the faculty, and the laboratory sections are handed over to well-meaning graduate students whose only qualification for teaching is that they are promising candidates for the Ph.D.

Apparently, the practical implications of general education, as well as the dire need for all citizens of a democracy to have a general knowledge of science at this time, are still not recognized by the great majority of biologists in general, and by those in charge of instruction of elementary courses in particular. And in fact, among the orthodox, the instructors of courses in general education are automatically relegated to an inferior status in the academic hierarchy.

I do not doubt that there are intelligent heads or chairmen of departments of biology and botany to be found, but in 9 years of searching I have encountered only one who had the guts to advocate an elementary course which was frankly experimental and openly oriented to general education. Nowhere, it seems, is the spirit of science so dead as in elementary biology and botany courses.

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The growing pressure from our government to improve and extend science teaching in the high schools has raised serious questions concerning the best ways to attract and hold the interest of high-school students with respect to science.

The common method has been either to specialize—that is, give courses in physics, chemistry, and so on—or to give science survey courses that offer a little bit of each science. Would it be feasible to teach high-school science in terms of a *connected theme* of common interest that would serve to link in a meaningful way the various areas of the sciences (and mathematics)?