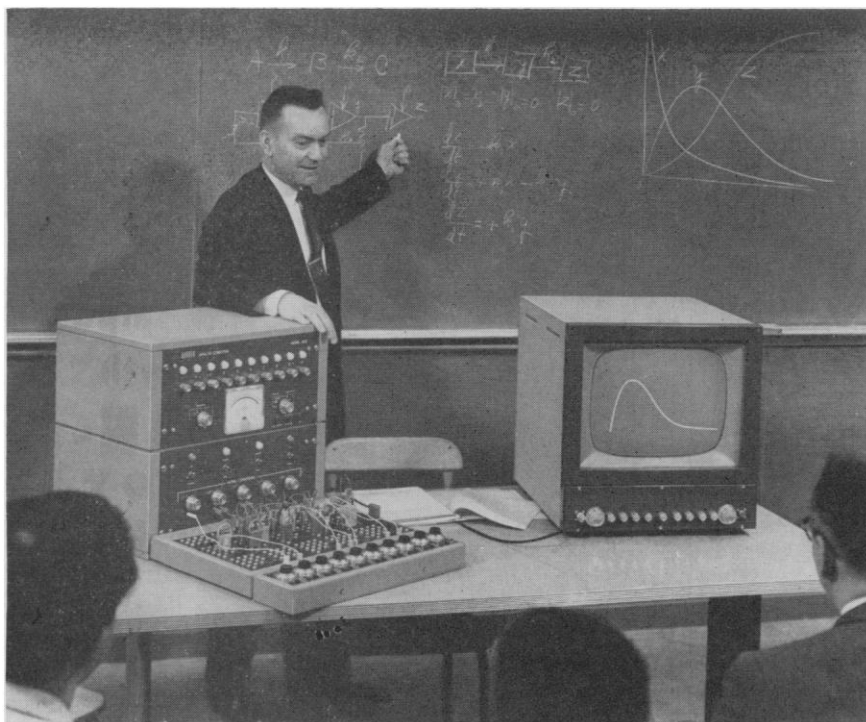




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Dept.; 506

Letters

The Responsibilities of Biologists

In *Science* of 7 February [127, 293 (1958)], Ileen E. Stewart presents excerpts from an address with the above title given by the retiring president of the American Institute of Biological Sciences, H. Bentley Glass, at the Stanford meetings last August. Lest readers of *Science* infer that biologists all approve his rallying call, a response seems in order. At least some of us consider Glass's position confusing, if not confused.

"Responsibility" is predicated upon ethical or philosophical reference points for which definition is essential. Spinoza would have been amused at Glass's equivocations, "the true welfare of humanity" and "social progress." No doubt Stalin stood for these also.

"Our first responsibility as biologists," says Glass, "is really to be biologists." But also, our "fundamental primary obligation" is "the stern duty to teach—to spread as widely as possible . . . comprehension of the bases of a scientific civilization." The possibility of conflict between detachment and evangelism is ignored.

Concerning the "revolutionary and potentially devastating" powers arising from research, he says, "it is a frightening responsibility . . . to see that these powers are used for good and not for harm." He deplores the fact that "so few biologists endeavor to make their biology count outside the laboratory and the classroom." He fears that what "we have gained through centuries of struggle . . . we may lose in a few months if we fail to defend stoutheartedly the freedom of the mind." He decries authority as "the inveterate foe of scientific inquiry." He worries about control of the purse strings of research and is pained that "the people and the representatives of the people feel that science is a useful servant or slave to minister to the needs of society as bidden." The distillation of such ideas may well be interpreted as a credo that scientists should run things since they should know what is "best." But, alas, Glass "would feel no confidence in asking the profession of biology to take over regulation of our government and our society," because of inexperience in politics. Considering the plethora of biological societies and how efficiently they operate, inexperience is an odd charge here; but at any rate, it appears that while condemning authority he really would not object to some sort of benevolent aristocracy or technocracy.

The plain fact is that scientists are only human, with the usual foibles and inconsistencies. We formulate the law of gravity but long to repeal it; the utility of death is abhorrent to us individually;

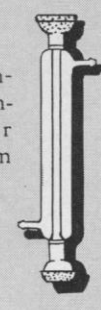
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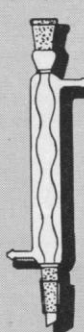
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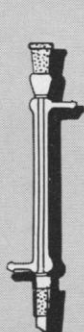




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and the regimentation elucidated in physiology is forgotten when we demand freedom. Biologists are shocked by polygamy, prefer fried chicken to raw, and calculate means for bimodal distributions. We teach evolution, if we can, but sing peace on earth and want our kids to be "normal." We know that symbiosis can lead to parasitism, yet we seek "grants" and favors.

How can Glass expect people so afflicted with professional schizophrenia to make our biology "count" outside the laboratory and classroom? Too often it "counts" very little even there. If we had the drive and acquisitiveness to practice our knowledge, we would soon be classed as tycoons or subversives, not placid members of the Society for Mycobryology in Pharmacological Pediculture.

Pragmatically our responsibilities are fixed by our agreements with others, notably those who provide us with support. As citizens we are bidden, as Glass puts it, to minister to the needs of society, but voluntary do-gooding is an assumption of responsibility not yet in the contract, and it can be our own undoing.

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It is all too easy to string together a few quotations taken out of context and so convey an altogether misleading impression of superficiality and inconsistency. Personal correspondence from W. F. Hollander, much milder in tone than his communication to *Science*, indicates that he read not merely the excerpts of my address which were printed in *Science* but the full text, which was printed in the *AIBS Bulletin*. I am therefore all the more surprised that he makes so false an interpretation of my views, which, being a personal credo, I certainly do not expect every biologist to accept. I can reply within brief space to only a few of the erroneous conclusions Hollander has drawn.

The original text will show that I spoke of the biologist's responsibilities on three distinct levels: to himself, to his profession, and to society. It was in regard to the first that I said, "our first responsibility as biologists is really to be biologists," and the entire context will show that this carried no inference about detachment from society. My point was simply that biologists should exert themselves to maintain a working acquaintance with the entire scope of biology—should be biologists first and specialists second. There isn't the slightest conflict in that thought with what Hollander pleases to call "evangelism" and which I called teaching. This falls on the third level of responsibility. My point here is

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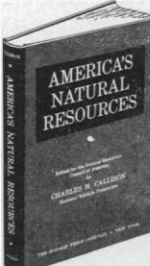
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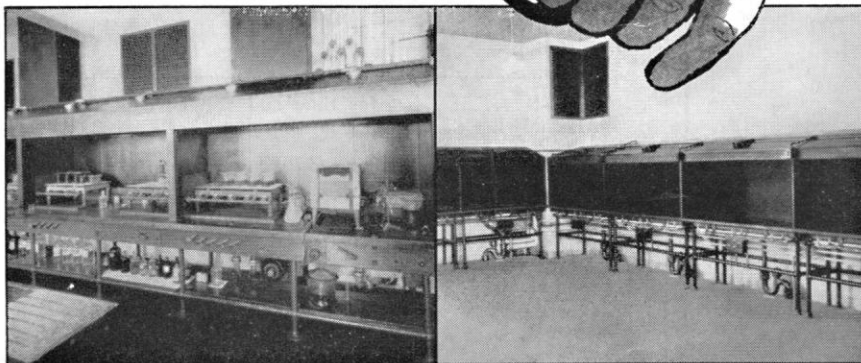
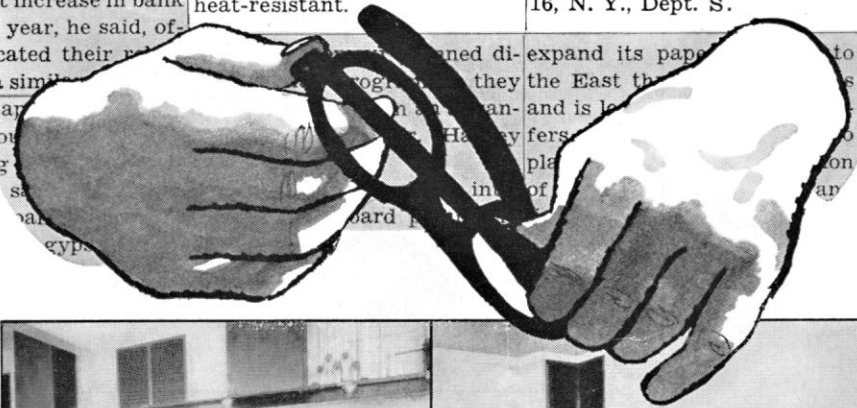


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a simple one: At the present tempo of social change and scientific advance, we cannot confine ourselves to teaching children, and only children, in the hope that when, 20 years from now, they become adults they will act and vote more intelligently in matters affecting the relations of science to government and to society. That will be very well, but it is imperative to attempt some education of present adults, including congressmen, governors, and even Presidents, if an understanding of science adequate for the framing of policy, especially in relation to the governmental support of basic research, is to become developed in time. The real difficulty is to distinguish between education in scientific understanding and the promotion of political views, as the debate between Linus Pauling and Edward Teller demonstrates. But however much Hollander might want to call the *Bulletin of the Atomic Scientists* "evangelism," I feel personally that it has been one of the most significant and influential developments of the postwar activities of scientists, and biologists might well emulate that example.

Second, to say of me that "while condemning authority he really would not object to some sort of benevolent aristocracy or technocracy" reveals very careless reading of my remarks, since I was at pains to point out the danger of oligarchy and tyranny if scientists were to continue to increase in power while the populace remained content to accept the benefits of science in superstitious awe and credulity. Hollander's next paragraph, on the "plain fact . . . that scientists are only human, with the usual foibles and inconsistencies," is an eloquent amplification of my own remarks to the same effect in the very address he is criticizing—remarks which were made to emphasize, just as he does, that biologists are hardly prepared to take over the reins of government and society. Political inexperience is but one reason; but that it does exist seems evident from the fact that, on the National Science Board, only three out of 24 appointees are biologists, and that Killian's Scientific Advisory Committee to the President likewise includes only three biologists out of 19 members. The growing influence of the American Institute of Biological Sciences is calculated gradually to bring about a more appropriate representation of biologists on important advisory boards. But lest I be misunderstood again, let me say emphatically that I do not advocate "voluntary do-gooding," whatever that is, but rather the responsible service of biologists in more numerous advisory and educational capacities.

BENTLEY GLASS

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