as for all types of schools. The curriculum of a school should no longer be determined by a local school-board or by school boards in certain states; this is a national matter, and there must be nationwide direction. All these supervisory activities must be handled uniformly, in one central place.

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Actinomycetes

There has been, in recent years, a most unfortunate tendency to publish names of presumably new species of microorganisms, notably actinomycetes, without accompanying such names by proper descriptions. This tendency has been greatly aggravated by the growing interest in describing or in patenting new antibiotics, where a new name for an organism producing such an antibiotic might carry additional weight for priority for independent discovery, or for patentability. Enough problems are raised when names of organisms are published with insufficient descriptions; these difficulties are compounded when no descriptions are given at all. Often a new name is announced, accompanied by one of the following statements:

"This organism appears to be different from those reported in the literature."

"This organism proved to be a hitherto undescribed actinomycete and is named ———."

"Since the characteristics of this organism were not in accordance with those of any of the *Streptomyces* listed in Bergey's *Manual of Determinative Bacteriology*, it was given the name ———."

Sometimes no evidence is presented that a thorough search of the literature has been made, and frequently the new name is not even accompanied by a rudimentary description.

This practice of creating new species, not accompanied by valid descriptions, is to be thoroughly condemned. It violates both the botanical and bacterial codes of nomenclature. It is thoroughly unscientific.

I would like to recommend, therefore, that journals refrain from accepting papers for publication in which new species are listed without accompanying descriptions of the organisms or without references to prior publications of such descriptions.

Incidentally, while I am on the subject of scientific usage, attention should be called to the fact that many scientific journals have adopted the practice of avoiding the use of trade names for antibiotics in scientific papers but insist upon the proper use of scientific names in such papers. Thus, the name "chloramphenicol" is used in scientific litera-

ture and not the trade name "Chloromycetin"; "chlortetracycline" and not "Aureomycin"; "oxytetracycline" and not "Terramycin"; "neomycin" and not "Mycifradin"; and so on.

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"If You Ples"

With *waitresses* you're most correct;
You manage *businesses* with ease;
Your *weaknesses* we all respect—
But why on earth say *processēs?*

This current quirk in pronunciation might be brought to the attention of English-speaking scientists before the habit becomes too engrained.

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Science and Religion

In his recent article, "Science and the citizen" [*Science* **126**, 1225 (1957)], Warren Weaver makes the following statement: "I would suggest that an absolutely critical distinction between science and religion may be that science never will and never can actually reach the final goal of perfection, whereas religion can do so and has done so." No true scientist will disagree with the statement that science can never achieve perfection. The essence of science is the capacity for objective self-criticism and the realization that today's concepts must constantly be revised in the light of new knowledge.

But has religion achieved perfection? Assuming that the morals and ethics of human society are related to the practice of religion, can we claim "perfection" in this area? If so, why are we so concerned today about crime, social injustice, and world peace?

Religion, like science and all other human activities, undergoes change—it evolves. Julian Huxley, in *Man in the Modern World* (1948), traces the evolution of religion from primitive man's attempts to explain and abate the forces of nature, through polytheism, to monotheism. He concludes that the ultimate stage in this evolution will be a religion that is largely "a deep concern for the welfare of one's fellow man with God absent or merely in the background." Whether we like it or not, the principal religions of the world are steadily moving toward liberalism and humanism, and away from fundamentalism. For example, a survey of the religious beliefs of prominent scientists in the United States [H. J. Leuba, *The Belief in God and Immortality* (1916)] showed that only 21 percent believed in a personal God—that is, a God capable of interceding in the affairs of man.

How can anything that is changing and evolving be considered to be "perfected"? Is any human activity "perfect"? But suppose we concede that at some time and place in the world there was (or is) a "perfect" religion. Where does this concept lead? It means that the "perfect" object must be defended against all change, because any change is bad—it is away from perfection. We force ourselves into a position of defending the status quo at all costs. Further investigation, discussion, or criticism must be prevented because they lead not to improvement but to "heresy." This is the doctrine of infallibility based on authority. To such a model of "perfection" science is a real threat. The methods of science depend on the light of unbiased new truth, a devotion to self-criticism, and a capacity for change.

As Dr. Weaver points out, the layman is often concerned about the so-called conflict between science and religion. Einstein, in his essay on "Science and Religion" [*Out of My Later Years* (1941)], discusses the source of this historical conflict. It occurs chiefly in the area of interpretation of natural phenomena. According to Einstein, religion is incapable of establishing the cause-and-effect relationships of physical occurrences in nature, but its insistence on doing so has led to innumerable conflicts in the past, most notably the clashes that arose with the discoveries of Copernicus, Galileo, and Darwin. He further states that "the doctrine of a personal God interfering with natural events could never be refuted, in a real sense, by science, for this doctrine can always take refuge in those domains in which scientific knowledge has not yet been able to set foot. A doctrine which is able to maintain itself not in clear light but only in the dark, will of necessity lose its effect on mankind with incalculable harm to human progress."

How does this doctrine of "perfection" in religion affect the layman's understanding of science and religion? It requires the conviction that, in any conflict between science and religion, religion is right and science is wrong. It undermines confidence in the objective methods of science and in the validity of its accomplishments. The layman is apt to regard lack of agreement among scientists as a sign of weakness rather than as a source of strength. But, most of all, the layman is likely to mistake the enforced conformity of authoritarian religions for evidence of Truth.

One of the vital problems of the modern world is that progress in the social and political sciences has not kept pace