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

with progress in the physical sciences. We have atomic energy in a world not yet ready for peace. We are preparing to colonize other planets before we have solved the ethical and moral problems of this one. Perhaps scientists can perform a service in all areas of human activity by explaining to the layman the philosophy and methods of science—namely, an objective approach to all problems and a willingness to evaluate and accept the results without bias.

Science is incompatible with authoritarian claims to "perfection" by religionists, or political systems, or other groups. However, science is not a threat to an objective, liberal religion. Science and religion must work together toward the goal of humanism—a deep concern for the welfare of mankind here and now.

CLAUDE H. HILLS

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Warren Weaver's valuable article "Science and the citizen" [*Science* **126**, 1225 (1957)] was unfortunately marred, it seems to me, by the desire to show some deference to religion. The belief of the "average citizen" that "science has destroyed the element of faith in religion" is surely closer to the mark than the assertion that "science is itself founded on faith." In this context, the term *faith* merely begs the question. What is this "faith" on which science is founded? I would suggest that it takes two forms: in experimental science, the appeal to experiment and observation as the court of last resort; in mathematics and logic, the appeal to reason as the court of last resort. Certain esthetic considerations, which are difficult to characterize briefly, also exert their influence.

Neither form of "faith" attaches the slightest importance, except as a matter of convenience, to the weight of tradition and authority. As a consequence, neither is compatible with any form of revealed religion.

ERWIN KLINGSBERG

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I am most gratified that Claude H. Hills, Erwin Klingsberg, and several other correspondents have been interested in the highly condensed (and thus necessarily unsatisfactory) references which I made to religion in the paper "Science and the citizen." In response to these comments I have been writing out a fuller statement of my views on the points involved. Unfortunately I cannot meet the requirement of the editor of *Science* that the answer to a question contain no more words than the question does. My reply will be published before long in another journal, and perhaps, when this occurs, the editor will insert a brief notice and reference.

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Meetings

American Astronautical Society

The American Astronautical Society, founded in 1953 and incorporated in New York State in 1954, is a scientific organization dedicated to advancement of the astronautical sciences. The society considers manned interplanetary space flight a logical progression from today's high-performance research plane, guided missile, and earth satellite operations. The scope of the society is indicated by a partial list of the astronautic fields of interest: astronavigation, biochemistry, celestial mechanics, cosmology, geophysics, and space medicine, as well as space vehicle design, including communications, control, guidance, and propulsion.

Promotion of astronautics is accomplished by the society largely through its program of technical meetings and publications. The fourth annual meeting, held in New York City 29 to 31 January, was attended by over 600 members and guests. Forty-five original papers were presented, in technical sessions on "Space vehicle design," "Space exploration," "Guidance and control," "Man's environment in space," "Space vehicle communications," and "Astronautics research." At the Honors Night dinner, presentations were made to recipients of the AAS Space Flight award, the Melbourne W. Boynton award for space medicine, and the Annual Fellow awards. Plans are currently being formulated to hold the fifth annual meeting in Washington, D.C., at the end of December, in conjunction with the annual meeting of the AAAS. In addition, a West Coast regional AAS meeting will be presented in San Francisco in August.

Regional sections of the American Astronautical Society have been formed in New York, San Francisco, and Washington, D.C. Technical meetings, dinners, and field trips are among the activities arranged by these sections. Considerable interest has been expressed by AAS members and others in the formation of new regional sections in Los Angeles, Baltimore, Dallas, Philadelphia, Dayton, Boston, and Chicago. It is expected that most of these groups will be chartered as AAS regional sections during 1958.

Publications of the society include the *Journal of the Astronautical Sciences*, *Proceedings* of the AAS annual meetings, and reprints of technical papers. At the present time the *Journal* is published quarterly and incorporates the "Astronautical Sciences Review." Ultimately, it is planned to publish the "Astronautical Sciences Review" separately as a companion magazine which would contain articles of general interest, AAS news, abstracts, book reviews, and so on.

Membership in the society is com-