ences. If it is found that this education is indeed not generally satisfactory, the study group might then examine various formal and informal remedies.

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Scientists in Public Affairs

In your "News and Comment" for 4 October 1963 (*Science* **142**, 34), Dan Greenberg reviews with his usual felicity the reaction to Snow regarding the scientists' role in public affairs. It prompted me to reflect once again, however, how badly this important issue has fared in the public debate, at least that portion of it which has received the most notice.

Snow must bear some of the responsibility for the present state of the discussion. He maintains that the scientist must play a larger and more decisive role in public affairs because the scientist is by ability and especially by training better suited to make major decisions and better equipped with foresight. He also has expressed despair at the present situation in which administrators with little or no knowledge of modern science make decisions involving science—a dangerous situation which he believes will not be righted until we have administrators who have received a first-rate scientific education. This is a fairly naive analysis of the situation, but it has unfortunately established the basis of the debate and determined the direction of the responses. So we have Leavis's intemperate attack on Snow which really starts off from a low opinion of Snow's novels but extends this judgment to imply disapproval of his failings in other respects; Hutchins, rousing his wit once more to fight again the old battles with his faculty at the University of Chicago; and Lilienthal countering with the observation that scientists tend to transfer improperly to other fields the confidence they cultivate through their success in their laboratories. This line of argument follows, of course, from Snow's notion that the scientist is specially gifted for administration of public affairs in today's world by virtue of being a scientist, thus inviting the *argumentum ad hominem*, which gets us nowhere.

In most cases of public decisions of great significance which have involved science in recent years, the real difficulty was not that the administrator did not know enough science or failed to listen to the best scientists or that he lacked foresight. The decision was rendered difficult either because of a lack of adequate scientific or technological knowledge required for the decision, or—the more common and significant situation—because disagreement developed among scientists concerning the conclusions to be drawn from the scientific knowledge available. A good scientific background would not have been much help to President Truman in deciding between those who sided with Teller and those who sided with Oppenheimer, and he probably would have had a hard time finding an equally eminent scientist who would have been above the battle and able to resolve his dilemma.

What renders particularly complex the decisions in the public domain that involve science is that, in the final analysis, they are not scientific in nature. Is the risk of some increase in leukemia in the next generation too big a price to pay for scientific progress and the national security? Eminent scientists have argued inconclusively over this question, but is it basically a scientific question? Whether we can land a man on the moon within this decade is a question for scientists and engineers to decide, but whether we should is no more their special province than that of lawyers or doctors or toolmakers. How much of the national income should be devoted to scientific research, and what possible areas of research should be favored? Scientists are very much interested in this question, but so much more is involved than science that all of the related factors do not lie within the range of the special competence of scientists. There exists, moreover, the subtle danger that, although scientists must of necessity play a major role in providing the basis for sound judgment in such matters, the scientist as an individual is subject to a serious conflict of interest which may color his view of the political and social implications of his conclusions.

These considerations are not meant to imply that public administrators today are better off if they are ignorant of science, and speaking as a nonscientist, I would hope that something better is done for the scientific education of nonscientists than is generally available now. Nor are they meant to imply that individual scientists are unlikely to possess the talents required to provide leadership in public affairs or the character to set aside their private interests in reflecting on large issues of national policy. They are meant to suggest, however, that unless the realities of the situation are taken seriously into account, the debate over the place of the scientist in public affairs today and his fitness to play a decisive role therein is not likely to rise above the confused and contentious level represented by the summary of opinions in your review.

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Jargon Addon

I respectfully submit that in his "Jargon of genetics" [*Science* **143**, 195 (17 Jan. 1964)] the glorious Fulton should have included the following two units:

Fion: unit of disapproval.

Knownon (nonon): unit of ignorance or nonsense.

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Metric System: Small Quid for a Large Quo

When I read Joseph Mayer's letter about the "metric question" [*Science* **142**, 1123 (29 Nov. 1963)], I recalled the course in "pharmaceutical arithmetic" my colleagues in the United States had to take because of the antiquated systems of measuring still in use in your otherwise certainly very progressive country. In continental Europe every child is able to understand the measures because they are simple and logical.

Here we live in a country deeply rooted in traditions: on our century-old city hall the Lucerne "foot" and "cubit" are still shown on an iron bar. We are very grateful that our forebears were nevertheless willing to abandon cherished traditions in favor of a rational and scientific system.

Frost and Weber in their letters in the same issue have replied very well to Mayer. I would add only this: The