

as the invitation, but it seems that rarely if ever is an invitation canceled on the basis of information brought to light by the bias statement.

The bias statement, the second in line of the academy's safeguards, asks scientists to declare, among other things, their consultancies and whether they have ever taken any public position on matters within the committee's purview. But the bias statement also failed to elicit the information about Gross's relationship with Reserve Mining, and for reasons for which Gross is not entirely to blame. First, the question about consultancy does not define what is meant by a consultant, so that Gross, since he is not on retainer to Reserve Mining, does not consider himself a consultant in this sense, although he agrees that he is a consultant in a more general sense. Second, Gross did not mention that he had given testimony on behalf of Reserve Mining. The question about public positions seems clearly to have called for such a declaration, but Kramer, the subcommittee member who testified on the government side at the same trial, says that he never thought to mention the fact on his bias statement. If Kramer's inadvertence be attributed to innocent oversight, which it clearly was, the same allowance must be made for Gross. For whatever reason, the bias statements failed in this case to elicit the information the academy believed it was getting. The frequency of such failures cannot be determined, because the academy chooses not to make bias statements public.

The third safeguard in line is for the bias statements to be shown to the chairman of the committee. The academy's descriptions of its procedures state, "Each of our committees and other similar bodies is asked to discuss the matter of potential sources of bias at its first meeting and once annually thereafter." In the case of the Subcommittee on Particulate Contaminants, the chairman was not shown the bias statements, and the bias discussion was never held. Had the announced procedure been followed, Gross would presumably have stated explicitly his relationship with Reserve Mining, about which he seems to have made no particular secret, and at least some elements of the present situation might perhaps have been avoided.

A fourth safeguard is that the membership of a committee should be constituted so as to include representatives of both sides of any issue that might be the subject of biased opinions. In the case of the subcommittee and its parent Committee on Safe Drinking Water, an obvious imbalance exists. Not only was

Gross the one pathologist on the subcommittee, but the only pathologist (not counting a nutritional pathologist) on the full committee is an employee of an asbestos company, the Johns-Manville company of Denver. The member in question, Paul Kotin, is a former director of the National Institute of Environmental Health Sciences and a distinguished scientist who nobody believes would twist conclusions to fit a company line. But for both the pathologists on the main committee and its subcommittee studying asbestos to have tie-ins with asbestos companies is a situation that raises questions as to how carefully academy committees are structured.

Whether Gross's opinion (if mistaken) about the harmlessness of short asbestos fibers in drinking water would have prevailed in the committee's final report can only be a matter of speculation, and his views may indeed turn out to be correct. As Gross sees it, the subcommittee had come round to accepting his arguments that there is no proof of harm, and Kotin, the only person with similar expertise to his on the full committee, would have agreed with this conclusion. Kotin confirms that he does. Academy officials say that a decision had been taken to send Gross's written contribution out for review before the discovery of the memorandum.

No amount of red tape can assure that a committee is free of bias, but the present episode suggests ways in which the academy's existing procedures might be improved on. There could be no better guarantee that bias statements are assiduously filled out than to publish them. And the chief danger of the type presented by the relationship between Gross and Reserve Mining—that Reserve Mining might have gained an unfair advantage in its access to the subcommittee's deliberations—could be instantly nullified by making all academy committee meetings open to everyone.

—NICHOLAS WADE

RECENT DEATHS

Sidney Axelrad, 63; professor of sociology, Queens College; 1 February.

Adolph G. Anderson, 62; president, Hartwick College; 5 April.

Joseph A. Babor, 80; former professor of chemistry, City College, City University of New York; 10 February.

Franz K. Bauer, 59; former dean, School of Medicine, University of Southern California; 10 February.

Samuel Belkin, 64; chancellor, Yeshiva University; 18 April.

Wiley D. Forbus, 81; former chairman of pathology, Duke University; 3 March.

Alexander Haddow, 69; professor emeritus of experimental pathology, University of London; 21 January.

John Hastings, 100; professor emeritus of anthropological and economic geography, City College, City University of New York; 24 January.

Vivian W. Henderson, 52; president, Clark College; 30 January.

Walter R. Hepner, 84; former president, California State University, San Diego; 13 January.

Francis W. Kearney, 63; former president, St. Bonaventure University; 30 January.

Gennady M. Kosolapoff, 66; professor of chemistry, Auburn University; 1 January.

Harold Lampert, 67; research professor of physiology and biophysics, Mount Sinai School of Medicine, City University of New York; 27 December.

Roy E. Langfitt, 81; professor emeritus of education, New York University; 31 January.

F. S. Kilmer MacMillan, 47; biochemist and director of concept development, Bristol-Myers Company; 20 January.

John A. Madigan, 76; former professor of physics, College of St. Thomas; 5 January.

Boyd R. McCandless, 60; professor of psychology, Emory University; 5 December.

Fred R. McCrumb, Jr., 50; special assistant to the director, Fogarty International Center, National Institutes of Health; 5 January.

Robert F. Mehl, 77; former professor of metallurgy, Carnegie-Mellon University; 29 January.

William I. Meyers, 84; dean emeritus of agricultural economics, Cornell University; 30 January.

William H. Michener, 79; former professor of physics, Allegheny College; 10 August 1975.

Rudolph Minkowski, 80; professor emeritus of astronomy, University of California, Berkeley; 4 January.

George H. Whipple, 97; first dean, School of Medicine and Dentistry, University of Rochester; 1 February.

Paul A. Witty, 77; professor emeritus of education, Northwestern University; 11 February.

James W. Zahnley, 91; professor emeritus of agronomy, Kansas State University; 21 February.

Paul D. Zimskind, 44; professor of urology, Jefferson Medical College; 2 March.