

## Letters

### Anonymous Charges

M. B. Mittleman (Letters, 8 Jan., p. 127) states that a "proposed guideline of the National Conference of Lawyers and Scientists (NCLS) for 'bringing charges anonymously' of scientific fraud is disturbing and contrary to basic legal principles. As the American Bar Association liaison to the NCLS and one who has attended all recent meetings of the NCLS as well as the Workshop on Fraud in Science, let me assure Mittleman and others that no such guideline has been proposed by the NCLS.

The report in *Science* (AAAS News, 6 Nov., p. 813) stated that one individual indicated his experience as a whistleblower had extremely unpleasant consequences and that "NCLS workshop participants agreed that establishing guidelines, including the provision for bringing charges anonymously, is critical to protecting the whistleblower. . . ." Some workshop participants did favor such a guideline, but the workshop did not agree or attempt to agree upon any guideline. It was a wide open discussion exploring many facets of the problem in which the participants attempted to establish some basis for further consideration. It is hoped that there will be two more workshops considering the same matter, and whether guidelines will be proposed or approved by NCLS has not yet been determined.

As a lawyer with many years of experience, I agree that there are grave dangers in acting upon anonymous charges. However, I would not presume to predict what the NCLS may ultimately decide to do with respect to this problem, if anything. Expressions of viewpoints such as that of Mittleman are useful, but alarm about the content of prospective guidelines is unwarranted at this time.

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### Stratospheric Ozone

The Upper Atmosphere Research Program of NASA recognizes the importance of both measuring and interpreting trends in stratospheric ozone. Kenneth Bowman, one of many researchers supported by this program, reports (1 Jan., p. 48) a trend in global ozone based on TOMS (Total Ozone

Mapping Spectrometer) data from the Nimbus-7 satellite. Donald Heath of Goddard Space Flight Center has publicized, but not yet published, similar trends in ozone derived from satellite observations. Unfortunately, the TOMS and SBUV (Solar Backscattered Ultraviolet) instruments used in both Bowman's and Heath's analyses are known to suffer from a drift in the absolute calibration, as noted in Bowman's report. The slow degradation of the instrument in space, the magnitude of which is uncertain, leads to the apparent measurement of a downward trend in total ozone that may or may not coincide with true atmospheric change.

A major review of trends in ozone as observed by different satellites and ground-based programs is currently under way and will be presented to Congress and the Environmental Protection Agency on 15 March 1988. This study will assess not only the magnitude of recent trends in global ozone but also the uncertainty of any such trends. An important part of this assessment involves analysis and modeling of the possible causes of perturbations to ozone over the past few decades, including both natural cycles and human activity.

At present, the TOMS data set can be

used to discern large changes in ozone, such as a 30% decrease in Antarctic ozone, but it cannot be used to detect smaller trends on the order of 1 to 2% per year, without cross-calibration involving other satellite and ground-based instruments.

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*Response:* I learned of the NASA review of the various satellite and ground-based ozone data sets shortly before my report appeared. Had I known of the forthcoming trends panel review, I would have awaited their results, instead of using NASA's older estimates of the instrumental drift cited in my report. A new comparison of SBUV data with the Dobson network (1) has yielded estimates of recent changes in global total ozone that are slightly smaller than mine. Reinsel *et al.* found that during the period from November 1978 through September

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