LETTERS

Handicaps and Careers

Geerat J. Vermeij (Letters, 1 Dec., p. 930) expresses objections to the symposium, "Handicapped scientists: Some of their current contributions to biological and medical research," which I have arranged for the 1979 AAAS annual meeting in Houston. Let me assure him that having papers of some handicapped scientists grouped in a separate session does not represent a general policy of segregation by the AAAS. Any symposium proposal submitted by a handicapped scientist would receive the same consideration as those from other scientists. Indeed, there would be no way for the program planners to identify the scientist as disabled by reading the proposal. Similarly, it is impossible to state whether handicapped scientists have or have not been integrated into the other sessions simply by reading the program. Handicaps, like race or eye color, are not revealed by the printed word.

In the symposium I have organized, the label "handicapped" has been deliberately placed on the program because we wish to increase public awareness that a severe physical limitation need not preclude a productive career in science. None of the scientists who have consented to participate in the symposium requires a sheltered forum. All have presented papers at scientific meetings within their own scientific discipline. Some of the speakers are relatively prominent scientists. We are holding this particular symposium because we think it is important to provide role models for young people who might otherwise assume that a scientific career was not an attainable goal. We are emphasizing the participants' scientific work both because we want to show what handicapped scientists are capable of doing and because the scientists involved derive greater personal satisfaction from talking about their work than about their handicaps. We also hope to influence the attitudes of educators, counselors, and physicians who work with and determine the aspirations of the handicapped. To improve science education for the handicapped we must have teachers who believe that teaching science to the handicapped is not a waste of time.

I agree with Vermeij that there are other ways of doing this. One would be to increase the number of handicapped scientists taking part in the AAAS annual meetings by having individual handicapped scientists organize symposia. May I suggest that Vermeij help us by submitting a proposal for the 1980 AAAS annual meeting? In his letter Vermeij neglects to mention that he is blind. There are many who believe categorically that a career in biology is impossible for a person who is blind. This attitudinal barrier can be diminished.

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Nitrosamines in Animal Feed

The briefing about the detection of nitrosamines in laboratory animal diets (News and Comment, 13 Oct., p. 192) is of interest but of far less significance than is suggested. Use of the more sensitive analytical methods now available for detecting nitrosamines indicates that they are ubiquitous. The potent carcinogenic activity of many of them is well known. Low concentrations of some nitrosamines have been detected in some kinds of human food (frankfurters and fried bacon, for example) and, while not insignificant, these findings have not moved anyone to panic, even though occasional concentrations of 100 parts per billion (ppb) have been found. However, for safety's sake, measures are being taken to reduce these concentrations and, thereby, lower exposure to these carcinogens.

In contrast, the concentrations of nitrosamines found in the animal diets by Edwards and his colleagues present no measurable risk to experimental animals that live only 2 to 3 years. Dose-response studies have shown that nitrosodimethylamine (NDMA) had no measurable carcinogenic effect when fed to rats in doses of 2 parts per million (2000 ppb) in their diet for a lifetime (*1*); the one rat of 13 in that group which had a liver tumor could have developed it spontaneously, a limitation of all such carcinogenesis experiments.

The 50 ppb of NDMA found in the animal feed corresponds to an intake of 1 microgram per day by a rat. A higher dose (12.5 micrograms per kilogram or approximately 5 micrograms per rat per day) of the somewhat more potent nitrosodiethylamine failed to evoke a tumor response (*2*). The suggestion has been made that this quantity of NDMA could have a synergistic action with other carcinogens. There is little evidence of a detectable synergistic effect of nitrosamines in carcinogenesis, even when much higher doses are given, in my own experiments and in those of others.

I suggest that a study of chemical carcinogenesis and its literature would enable the scientists who made this report to place their findings in perspective. Such perspective will, I believe, show that, while 50 ppb of NDMA might be of some significance if present in human food consumed by millions of people for as long as 70 years, its presence at this concentration in the diets of rats or mice could have no bearing on the outcome of any test.

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References

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The Effectiveness of NEPA

Sally K. Fairfax, in her article on the National Environmental Policy Act (NEPA) entitled "A disaster in the environmental movement" (17 Feb., p. 743) basically attempts to refute what she calls the "external reform" thesis on NEPA effectiveness, with which Friesema and I, among others, are associated (*1*). I suggest that her interpretation of case law in a key attack on the thesis is misleading and that she fails to note the logical relationships of the thesis.

At two important points in her argument, Fairfax neglects to describe the important interrelationship between the National Environmental Policy Act (*2*) and the Administrative Procedure Act (APA) (*3*). First, she argues that NEPA's intraagency environmental analysis goals had already been accomplished by the *Scenic Hudson I* decision (*4*). Second, she argues that NEPA did not contribute to the environmentalists' "standing to sue." A key provision of the APA specifies that persons are entitled to judicial review of agency actions only "within the meaning of a relevant statute" (*3*, section 702). Thus a part of the test for standing is that the plaintiff argues that the "injury" done to the plaintiff's interest is "arguably within the zone of interests to be protected" by the statute which the plaintiff alleged the respondent agency violated. And, in deciding the case, the courts review whether the agency decision is "arbitrary, capricious, . . . or otherwise not in accordance with law," (*3*, section 706), that is, with respect to the *relevant statute*. The *Scenic Hudson I* decision has nothing like the legal value (as a precedent) of NEPA