

References and Notes

1. *Journal of Political Economy* (since October 1980); *American Economic Review* (since September 1980); *Journal of Monetary Economics* (since October 1980); *Econometrica* (since November 1980); *Review of Economics and Statistics* (since November 1980); *Quarterly Journal of Economics* (since November 1980); *Brookings Papers on Economic Activity* (since 1980, No. 1).
2. R. A. Gordon, *Am. Econ. Rev.*, 66 (No. 1), 5 (1976).

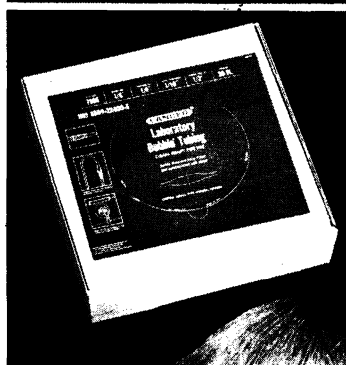
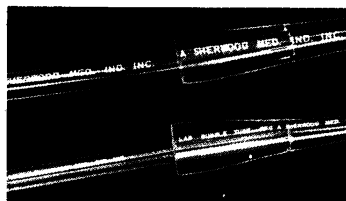
Sheep Deaths in Utah

R. Jeffrey Smith's News and Comment article "Scientists implicated in atom test deception" (5 Nov., p. 545) presents a depressing picture of government bureaucrats and unethical scientists whitewashing effects of weapons tests to deceive sheepmen. The bias may only have reflected the judge's ruling in the case described, but one would hope that *Science* might present a more balanced analysis, devoid of scare headlines.

It is a matter of record that the rigors of the winter range have taken heavy tolls of ewes and lambs before and since the era of above-ground testing; this might have been mentioned. The availability of pertinent research data from Hanford Laboratory studies might have been attributed to the Atomic Energy Commission's (AEC's) commendable foresight in sponsoring these studies, rather than to "extraordinary luck." The full disclosure of all results from these studies in reports from the Hanford Laboratory to the AEC might have been commended as proper scientific reporting rather than described by the term, "curiously." And the selection of data for court presentation on the basis of scientifically evaluated relevance might have been defended as a proper exercise of scientific judgment. Had all these things been done, the story would have been less exciting but more in accord with the realities as we (former colleagues of Leo Bustad and Harry Kornberg at Hanford Laboratory) remember them. We were not involved with the sheep studies at Hanford Laboratory, but we will not accept as true any allegations of impropriety, let alone fraud.

In our view, the defendants in the 1956 civil suit brought by sheepmen were guilty of no breach of scientific ethics. They brought to the court their relevant data and their best scientific opinion. Unfortunately, their testimony is not even available now to serve in their defense because transcripts of the 1956 court proceedings were destroyed by the Utah court. If, under such circum-

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stances, scientists can be convicted (or harassed with threats) of fraud, few capable scientists will be willing to lend their expertise to the judicial process.

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On the three alleged points of bias, the facts are as follows:

1) Sheep deaths may not be unusual on the winter range, but, as the AEC's official 1954 report stated, they were unusually heavy in the spring of 1953, when fallout levels were particularly high.

2) As indicated in Leo Bustad's report, the Hanford studies were begun in anticipation of radiation leakage from onsite nuclear production efforts, not the nuclear testing program. Sheep happened to be the principal grazing animals nearby.

3) As for disclosure of the Hanford results, Paul Pearson and Bernard Trum—two former AEC employees—acknowledged in recent court documents that Bustad's public, written report was misleading because it omitted important facts. Bustad himself testified last year that it lacked crucial details.

4) Although the original trial transcript is missing, virtually everyone involved in the original AEC investigation was invited to testify at the recent hearing and given ample opportunity to recollect the facts. It was after hearing such recollections that Judge Christensen decided that a fraud had been "practiced upon the court" in 1956.

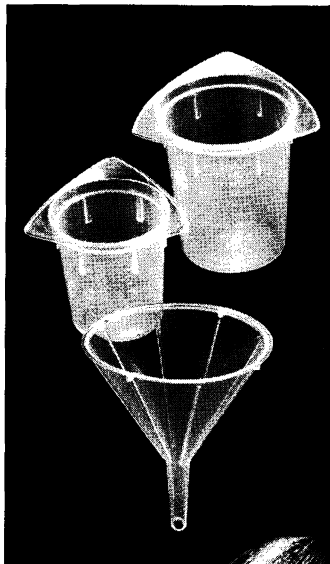
—R. JEFFREY SMITH

Erratum: In the article "Wyngaarden sets policy agenda for NIH" by Barbara J. Culliton (News and Comment, 4 Feb., p. 470), two sentences were garbled. On page 470, the last sentence in the first full paragraph of column 3 should have been "Howard M. Temin, of the McArdle Laboratory at the University of Wisconsin, Madison, on the other hand, commented that, inasmuch as research grants are the 'engine' that drives the whole enterprise, it makes sense to treat them so favorably." On page 471, the last sentence in column 2 should have been "Given the research community's general opposition to creating institutes disease-by-disease, it would not come as a complete surprise if the IOM were to take a position that matched Wyngaarden's own."

Erratum: In the report by A. E. E. Rogers *et al.* in the 7 January issue (p. 51), the ordinate of figure 1 was incorrectly labeled; it should have read: "Baseline length -3,928,881.60 (m)." In table 1, the source pairs were difficult to decipher because of lack of space around dashes; they should have been, for example, "0355+508 -0851+202." Finally, in table 2 the number of individual experiments (16) in which Haystack participated was omitted; in addition, the last sentence of the footnote to the table should have read: "We believe, but are not certain, that these differences are due to the uncorrected effects of the ionosphere on the Mk I observations which involved X-band frequencies only."

Erratum: In Arthur L. Robinson's article "CERN reports first vector boson evidence" (Research News, 4 Feb., p. 480), the fifth sentence in the fifth paragraph should have read, "The annihilation of a quark with charge +2/3 and an antiquark with charge +1/3 produces a W⁺, for example."

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