

mologists have testified to Congress on these matters. Lynn Sykes and Paul Richards (Columbia University) have given opinions agreeing with ours and thus accepting a large  $m_b$  bias between NTS and Semipalatinsk. Charles Archambeau (University of Colorado) has given similar testimony. Though the details of their analyses may differ slightly from ours, they reach similar conclusions as to bias and yields of Soviet tests.

Our position appears to be "extreme" only in that it disagrees with that of Bache, Romney and Ryall, not in that it disagrees with that of nearly all other investigators. Even this disagreement is nearly nonexistent, as Bache and his coauthors appear to accept bias values of 0.35 for Novaya Zemlya (see below) and thus at least equivalent values for Semipalatinsk. At no place do the authors suggest a proper value of bias between NTS and Semipalatinsk.

There have been a variety of problems in interpretation of the  $M_S$  values of the "150-kiloton" events at Semipalatinsk. What we pointed out was not the detailed agreement of yield estimates for these events by  $m_b$  and  $M_S$  (these estimates average 175 and 115, respectively, as one can read from our figure 3d using an  $m_b$  bias of 0.45), but the agreement on average of these two modes of estimating yields at Semipalatinsk when using a 0.45  $m_b$  bias. Numerous explosions at Semipalatinsk show little tectonic release, and it has been documented since at least 1976 that the discrepancies between estimates of yield based on  $M_S$  and uncorrected  $m_b$  values are as great at nearly all Soviet PNE (peaceful nuclear explosion) sites as at Semipalatinsk and Novaya Zemlya. Consistent estimates of yield for these explosions are obtained based on  $m_b$  and  $M_S$  via use of large  $m_b$  bias corrections controlled by the phenomena described in our article, thus establishing that resort to tectonic release as a truly confusing factor in yield estimation is out of the question. Bache and his coauthors make no comments about Novaya Zemlya, as there never has been evidence of pronounced stress release there, giving them no recourse but to accept our conclusions. Thus their comments relative to tectonic release are irrelevant. It would appear that when the smoke screens are dispersed, the only issue between them and ourselves is simply whether to use 0.35 or 0.45 as the  $m_b$  bias for Semipalatinsk.

The authors don't believe the results of the US study of the  $m_b$  bias between the eastern United States and western Nevada are pertinent to

Semipalatinsk. We couldn't agree more, and thus saw no reason for mentioning the study. All discussion of the pertinence of this old exercise to Semipalatinsk is now moot as Kenneth Priestly and coauthors, using Natural Resources Defense Council data obtained from stations in the general area of Semipalatinsk, report an  $m_b$  bias between western Nevada and the Semipalatinsk area of  $0.45 \pm 0.05$ !

It is true that we ignored numerous references. Ours was a short review article, not an original contribution, and we cited what we deemed the most pertinent references.

Though these authors ignore our nonseismological arguments bearing on the proper value of the  $m_b$  bias, we wish to reiterate that we feel those arguments are both pertinent and powerful.

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## High-Altitude Physicists

It is well known that physicists and mountains have long had an affinity. Many of us have trekked and climbed, with great pleasure, in Nepal. On my last trip—in the spring—to that beautiful country, I made the acquaintance of the Nepal Physical Society. This entity publishes a small journal and generally reflects the interests of Nepalese physicists and physics teachers. While in Nepal on this last trip, I gave a lecture to a group of teachers and students on, of all things, the width of the  $Z^0$  and the number of neutrino flavors, a subject that had been discussed in the journal. I had an audience of some 50 people. I am writing to encourage all of you who plan to go to Nepal to contact the Physical Society and perhaps also give such a lecture. (The address is Nepal Physical Society, Department of Physics, Tri-Chandra Campus, Ghantaghar, Kathmandu, Nepal.) Nepal is a very poor country, so do not expect any material rewards. However, it will add greatly to your *sōnam*—"merit"—and, apart from what this may do for you in the next life, you will meet some delightful people and have a more meaningful, less touristic visit to that country.

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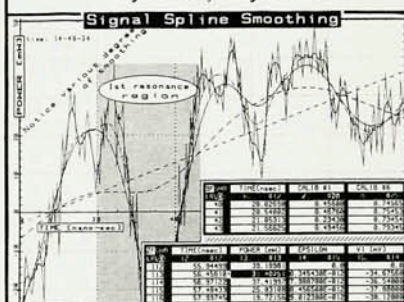
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