mentioned by Abelson. Moreover, the competitiveness of U.S. exports is critically dependent on their prices. Because energy is a major component in the manufacture of most U.S. exports, not only would the American oil consumer lose in the oil tax scheme but the United States would essentially be exporting its higher energy costs in the form of finished products. American competitiveness in the international marketplace would diminish, and the protectionist argument gets turned on its head. Certainly, the protectionists would not argue for a tax on U.S. exports.

TODD A. WATKINS
John F. Kennedy School of Government, Harvard University, Cambridge, MA 02138

Science Unfettered

Barry D. Greenberg's enlightening etymological explanation of "Mazel tov" (Letters, 14 Nov., p. 803) is indisputable if incomplete. The Babylonian Talmud teaches "Ayn Mazol L'Yisrael." The careless translator renders this: "The people of Israel have no luck." The careful student correctly translates: "The people of Israel have no constellation," meaning that they are not idol worshippers—not even of heavenly idols. Here then, a harbinger of science unfettered.

ELY E. PILCHIK
1025 South Orange Avenue, Short Hills, NJ 07078

Berry's Phase: Other Observations

One of the fascinations of physics is the frequent appearance of the same idea in widely divergent subdisciplines. A beautiful example is Berry's phase (Research News, 24 Oct., p. 424) with import for the quantum Hall effect, gauge theories, molecular physics, and optical physics. An unfortunate consequence of the diversity is that followers of one discipline may be unaware of closely related work in another.

Not only were the fractional pseudorotational quantum numbers associated with Berry's phase predicted by Longuet-Higgins in 1958 (*1*), but consequences of fractional quantization were observed within a few years of that prediction in experiments on color centers in alkali halides (*2, 3*). More extensive results were reported on transition metal impurities in a variety of hosts during the late 1960s and 1970s (*4*). The color center work (*2*) involved optical studies of the R center, a cluster of three F centers forming an equilateral triangle. The F center, an electron trapped by the positive charge associated with an anion vacancy in an ionic crystal, is a solid-state analog of the hydrogen atom. The R center is thus the solid-state analog of the H_3 molecule; it is amusing that Na_3, another analog of H_3, was the free molecule in which Delacrétaz *et al.* (*5*) established the fractional quantization in the experiment discussed in the Research News article.

ROBERT H. SILSBEE
Department of Physics, Cornell University, Ithaca, NY 14853-2501

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