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## Letters

### Shot down

I was interested to learn in "Drinking While Pregnant Risks Child's IQ" (SN: 2/4/89, p.68) that "the concentration of alcohol in one glass of wine, one bottle of beer and one shot of hard liquor is approximately the same."

Either the composition of alcoholic beverages is very different back there in the Eastern flatlands, or your writer meant to say that the *amount* of alcohol in each of these drinks is approximately the same.

However, if the concentration of alcohol in a Washingtonian bottle of beer *can* be shown to be approximately the same as that in a Washingtonian shot of hard liquor, your flatland beer halls may shortly begin receiving many more tourists. Unless, of course, you're peddling Dr. Koop's New Improved 6% "Safety-Hard" Liquor, in which case we hinterland taxpayers must reformulate our hy-

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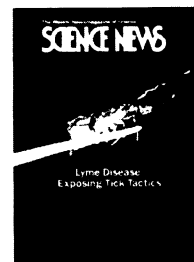
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Cover: A tick of the species *Ixodes dammini*, the primary perpetrator of Lyme disease, lies in wait for an unwitting host. While dining on an animal's blood, the tick may donate or receive Lyme-causing bacteria. To fight the disease, scientists are struggling to tackle the booming and spreading tick population. (Photo: Bernard Furnival, Fran Heyl Associates)



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potheses concerning standard congressional behavior.

Whatever — good luck on the Beltway at rush hour!

J.C. McLoughlin  
Ranchos de Taos, N.M.

Thanks for your concern — sometimes I lose my concentration.

— B. Bower

### Regrettable reform?

I am a voice crying in the wilderness, but I deplore the National Academy of Sciences report ("Reforming math education," SN: 2/4/89, p.70) calling for a "a shift in mathematics education at all levels away from pencil-and-paper exercises and rote memorization toward using calculators and computers and solving more realistic problems." I am already getting students in college classes who have been told by their teachers, "don't bother memorizing the multiplication table

or the rules for adding fractions — just use a calculator."

Do these students use their calculators to solve "more realistic problems"? They do not. Many elementary math problems involve a dozen or more simple arithmetic operations. To do every one of these operations on a calculator takes so long and is so subject to error that the students quickly give up, and do no mathematics at all.

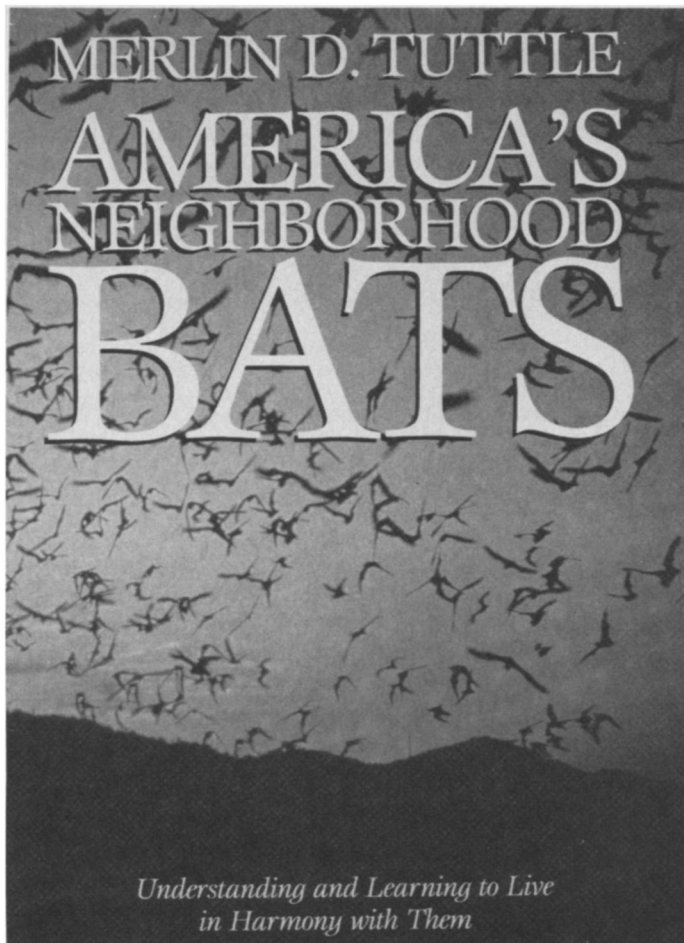
Perhaps the NAS did not mean "don't teach children mental arithmetic," but that is how "a shift away from . . . rote memorization" will be interpreted. And the results will be disastrous.

Rick Norwood  
Professor, Department of Mathematics  
East Tennessee State University  
Johnson City, Tenn.

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This book is intended to dispel the myths and fears long associated with bats. Spectacular color photographs throughout the book offer a close-up look at this fast flying mammal and illustrate some of the 1,000 species of bat found in the world. Written by a biologist and bat lover, the book serves as a field guide to bat species of North America and touches on the natural history of bats, how our fear of them developed, what to do when you encounter bats, where to find them if you are looking, and how to get them out of your house if they happen to get in.

Univ. of Texas Press, 1988, 8½" x 6", 96 pages, paperback \$9.95. ISBN 0-292-70406-2

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**Letters continued from p. 179**

Is math to go the way of English, with "forget the phonics" education producing a generation of poor spellers and near illiterates? The function of education is to develop the mind so that the educated can use *this* to solve problems. Without the fundamental concepts of math firmly understood, a math student using a calculator or other tool is only playing a game someone else thought up. How much better if they could invent their own game from understanding all the basic facts.

No, I was not a math teacher. I don't really recall liking the subject much. But I can add (and use a calculator and computer too!).

Margaret N. Smith  
Palmetto, Fla.

**Configuration clarified**

In "Ripples in a crystalline copper bed" (SN: 1/28/89, p.62), the atomic structure of copper is described as having a copper atom at each corner of a cube and one atom at its center. This configuration incorrectly identifies copper as having a body-centered cubic atomic structure. The correct structure for copper is face-centered cubic, in which a copper atom resides at each corner of the cube and one atom on each face of the cube.

James C. McMahon  
Temecula, Calif.

**CORRECTION**

Polar stratospheric ice clouds develop when stratospheric temperatures fall below -85° C. An error omitted the minus sign of this number in "Fate of Arctic ozone remains up in the air" (SN: 1/21/89, p.37).

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