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Letters

Cholera clarification

"Behind the scenes" (SN: 10/18/86, p. 252) contains an inaccuracy that bears correcting. In describing our study examining the incidence of diarrhea among people coming to the ICAAC meeting in New Orleans, I was misrepresented as stating that the majority of locally caught oysters contain the cholera bacteria or other diarrhea-causing organisms.

The organism responsible for cholera seen during this century in the United States is toxigenic *Vibrio cholera* 01, serotype Inaba. This organism has never been cultured from oysters in Louisiana. Other *Vibrio* species, such as *V. vulnificus* and *V. parahaemolyticus*, are commonly cultured from raw oysters; one of the goals of our study was to estimate the incidence of diarrhea caused by these organisms. Although we are interested in a possible

This Week

- 308 EPA Estimates Major Long-Term Ozone Risks
- 308 Early trials of Alzheimer drug positive
- 309 Bigger and better quasicrystals
- 309 Spinning a large telescope from glass
- 310 Personality linked to immunity
- 310 One-cell origin for atherosclerosis?
- 310 Salting away guest molecules
- 311 Firefly gene sets tobacco plants aglow
- 317 Gains from cutting tap-water lead

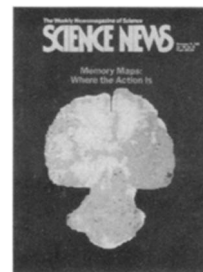
Research Notes

- 316 Chemistry
- 316 Science & Society

Articles

- 313 Million-Cell Memories

Cover: Two radioactive markers and computer imaging are used to trace elevations in glucose use in a cat's brain solely related to the memory for a visual cue. Significant increases are coded in orange and red. Data from this and other images indicate that millions of brain cells may participate in a single, simple memory. (Photo: E. Roy John)



Departments

- 307 Letters
- 318 Books

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relationship between diarrhea and oyster consumption, we have no data to suggest that "the majority" of oysters consumed in Louisiana harbor other "diarrhea-causing organisms."

Philip Lowry
Medical epidemiologist
Louisiana Dept. of Health & Human Resources
New Orleans, La.

On strings and freedom

After reading your various excellent articles concerning string theories, it occurs to me that one aspect is more confusing to laymen than it has to be. Referring to 10 "dimensions" rather than 10 "degrees of freedom" leads to this confusion.

It makes good intuitive sense to an "ordi-

nary" person that it takes 10 characteristics to describe a string in addition to the "normal" four (three XYZ locations, plus time). Since the string could be rotating along any of the three XYZ directions, each of these rotations can take up a degree of freedom. Additionally, the string has an actual physical size in each of the three XYZ directions which could be presumed to vary. This would account for the remaining three degrees of freedom.

With respect to "curling up" the dimensions, the six degrees of freedom noted above are all of the type that would not be directly measurable except down at the level of the string itself. That would not have to mean, however, that they could not be detected — we might be observing them at the macro level as "density," or physical state. We might also be

Letters continued on p. 318

NOVEMBER 15, 1986

307