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This Week

Research Notes

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Letters

Ethics and infertility

"Zona Blasters" (SN: 12/15/90, p.376) describes the use of high-tech equipment to enable sperm of questionable viability to fertilize ova, but blithely dismisses the ethical questions raised. The ethical implications of interfering with infertility are enormous.

Attempting to understand the mechanism by which a sperm penetrates the zona barrier may be interesting science, but utilizing technology to overcome that barrier is very different. Why do certain sperm penetrate the zona barrier? Why do others fail? Is it because there is some characteristic from which the species is being protected? Is there some subtle incompatibility between that ovum and that sperm which we don't understand? Why do certain ova repel all sperm, notwithstanding their apparent viability? Is it because those ova somehow detect that conditions are not favorable to procreation? Two researchers cited in your article respond to these concerns by saying there have been no signs of genetic abnormality so far. That is a facile answer to a question that can be answered only after many generations have passed. I do not believe that anyone has the knowledge to predict the impact of assisting a sperm to penetrate the zona barrier. It may mean nothing, or it may mean a great deal.

Science and medicine must address the ethical implications of the use of technology at the outset rather than after the damage is done. The difficulty of the questions should not deter the asking, nor allow the blithe answer.

Stuart McElhinney
Morro Bay, Calif.

In a severely overpopulated world, I find it almost obscene that so much effort should be directed toward allowing a few middle- and upper-class couples to have children. There are plenty of children who need adopting, if one is willing to take an older, nonwhite or handicapped child.

Jana Hollingsworth
Seattle, Wash.

Shortcut strategy won't fly

Ivars Peterson's analogy for minimizing the length of networks by adding extra nodes ("Proven path for limiting shortest shortcut," SN: 12/22&29/90, p.389) misses the point. No airline will add an extra hub to reduce the travel distance between any two cities. In the example given, the fourth point in the center of the triangle increases the distance traveled between two vertices to $2 \times \sqrt{3}/2 = 1.73$ times the original.

Communications networks differ in two major ways from airline routes. First, air space does not have to be constructed, rented or purchased, unlike communications networks, in which a shorter total length reduces costs. Second, planes fly relatively slowly. An increase of 73 percent in travel time makes a difference to airlines (in terms of costs) and their travelers. Communications networks work with electromagnetic energy — electricity or light. An increase in the travel time

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