SCIENCE NEWS ®

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This Week

Research Notes

Articles

Cover: Recreational mathematics is full of puzzles that entertain and enlighten. The figure shown here is the best known answer to the problem of arranging matchsticks so that four sticks meet at each vertex. No one knows whether the problem can be solved using fewer matchsticks. This was only one of many puzzles and games that stumped and challenged participants at a recent recreational mathematics meeting. (Illustration: Arnis Peterson)

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Letters

Two steps forward, one back

Instead of using a large, implantable, electromechanical device to read a diabetic's blood sugar levels, then stimulate another device to correct those levels by injecting insulin, a simple biochemical means of using the glucose molecule itself to stimulate the release of the needed insulin is certainly two steps forward ("Planting the Seeds for Better Drug Delivery," SN:7/19/86,p44).

It appears, however, that the delivery of these benefits by surgical implantation of an insulin bead pouch is another step backward.

Why not a simple injection into the skin to deliver the polymer beads, using a bead that could be disrupted with an ultrasonic system or with time be absorbed after the insulin supply is used up?

Diabetics could receive an injection in a rotated site every three to six months without the trauma of the surgical implants. This would allow them to eat and exercise as normally as anyone else without the risks of insulin overdosage or the resultant health complications of normally widely fluctuating blood sugar levels. The benefits to diabetics alone would be tantamount to the discovery of insulin itself.

Steven R. Owens
Alamagordo, N.M.

What's so special about Smiths?

I was sorry to see that you devoted space to the pseudomathematical topic of Smith numbers ("In search of special Smiths," SN:8/16/86,p.105). Being a Smith number, like being a palindrome, is not so much a property of the number as it is an accident arising from the base in which the number is expressed. I am reminded of an amateur mathematician who offered a number theorist a frequency table of primes which contained no even digits. The number theorist suggested that the compilation would have been easier if the numbers were written in base two.

L. Paul Gilden
College Park, Md.

I did a little bit of number juggling myself and found that the Smith numbers were getting progressively less interesting. Except for a few small numbers, it seems that every composite number can be made into a Smith number by a proper choice of number base. This being the case, it becomes decidedly uninteresting to try to find the largest Smith number. Given any composite number and the respective prime factors, it becomes a fairly simple task to find an appropriate number base. (Some numbers are Smith in several number bases.)

Rev. Martin Buote
New Bedford, Mass.