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Letters

The unsolved problem

"Games Mathematicians Play" (SN: 9/20/86, p.186) was generally excellent. However, there is one inaccuracy that I wish to correct. It is in fact relatively easy to find a non-periodic tiling of the plane that uses copies of only a single tile, though in various orientations. The unsolved problem is whether there is a single tiling figure that *can* tile the plane in a nonperiodic way but *cannot* tile the plane periodically. (What Penrose discovered was a pair of tile shapes that can tile the plane non-periodically but not periodically.)

Solomon W. Golomb
Los Angeles, Calif.

Seeing redshift

Regarding "Spectral variations on a universal theme" (SN: 9/13/86, p. 166), I was not sur-

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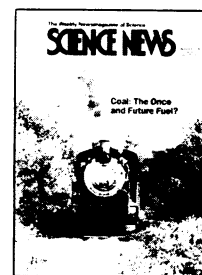
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Cover: Reputedly the last traditional steam locomotive in revenue service in the United States, the Crab Orchard and Egyptian Railroad's No. 17 blasts her way out of the woods. Planners and developers now propose a return to coal-fueled locomotives, in both modern and somewhat traditional forms. (Photo: Christopher D'Amato)



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prised to see that this possible mechanism for a non-Doppler redshift emerged from outside of the astronomy community. The vast majority of extragalactic astronomers have made up their minds on this project. They have decided that the conventional picture is the correct one, irrespective of evidence to the contrary. In fact, they have decided that we should not have access to telescopes capable of making the observations!

Will Wolf's suggestion actually explain our experimental results? It is impossible to tell from what he has published so far. It is encouraging to see that the proposed effect is intrinsic to the source. The "tired light" approach, which involves an extrinsic origin for the redshift, does not correspond with what is observed. I think we would require an effect that varies with the compactness of the source (this probably means with age as well). Thus the quasars would show the largest intrinsic

redshift and various classes of peculiar galaxies would show a lesser effect.

We have begun to make detailed spectroscopic measures of some of the discordant redshift systems. Previous work rested, to a large extent, upon analysis of direct images. With the new generation of telescopes and electronic detectors, we can probe these objects in much more detail. What we see suggests that objects with difficult redshifts are associated.

The best is yet to come. We have submitted to *ASTROPHYSICAL JOURNAL* an extensive spectroscopic analysis of NGC4319 and Markarian 205. This is the best-known example of a galaxy and quasar that appear to be connected. The results there provide impressive evidence that the objects are at a common distance.

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Whether Wolf has the answer or not, it is exciting to see that someone is working on a physical mechanism that might explain our observations.

Jack Sulentic
Institute of Astronomy
University of Padova
Padova, Italy
(on sabbatical)

IQ: Don't bet on it

With regard to Ceci and Liker's research on expert handicappers ("Bad day at the races for IQ," SN: 9/27/86, p. 200), I cannot imagine why anyone would *only* predict that experts' performance would be related to IQ. Certainly, this research shows that IQ is not a very good predictor of performance by experts at real-world tasks. But that is not surprising. IQ tests were not and are not designed for such uses. What I would predict is that a person's IQ would say something about the ease with which they acquire their expertise. Research that follows in Ceci and Liker's footsteps should examine such more informative hypotheses.

Robert R. Hoffman
Associate Professor of
Experimental Psychology
Adelphi University
Garden City, N. Y.

Soy source

I have a bone to pick with "Reasons for boning up on manganese (SN: 9/27/86, p. 199). The impression we are left with is that dairy products are the only good source of calcium since they contain not merely calcium but also the manganese necessary for the absorption of it. But the same could be said of soy products, and what's more, they contain no cholesterol.

John Shannon
Racine, Wis.

Dairy products were compared with the calcium supplements because the University of Nebraska studies by Constance Kies yielded comparable data for both, including their effects on manganese bioavailability. Because such data do not exist for soy, Kies says, there's no way of knowing how any calcium in soy might affect manganese uptake. However, she notes, the high fiber and phytic acid content of many soy products suggests they may in fact inhibit manganese uptake. Moreover, research by nutritionists with the Agriculture Department has shown that fiber can also adversely affect the body's uptake of calcium. — J. Raloff

Dinosaur defamation

"These aren't the stereotypic dinosaurs portrayed in the movies as always killing each other," according to a noted paleontologist quoted in "Brushing Up On Dinosaurs" (SN: 10/4/86, p. 216). "There were a lot of tender and gentle moments."

In view of this new, less prejudiced view of our extinct reptile brothers and sisters, I suggest a major revision in nomenclature. Let's replace the negative term "dinosaur" (terrible lizard) with "empathosaur" (feeling lizard). Rather than *Tyrannosaurus rex*, we should call that noble and misunderstood creature *Assertosaurus*.

Despite the unavoidable cost of reprinting a lot of textbooks, a reform of terminology will achieve long-overdue justice for animals that are no longer around to defend themselves against defamation.

Mike Markowitz
Mission Viejo, Calif.

While looking at Ron Séguin and Dale Russell's interpretation of a hypothetical "dinosauroid" evolved from a *Stenonychosaurus*, I was surprised to see that it had what appears to be a navel. Weren't all dinosaurs (lizards) egg-laying creatures?

Carl Panek
Lakewood, Ohio

Most if not all dinosaurs are indeed believed to have laid eggs — but who knows what might have hatched if dinosaurs had been given another 60 million years to evolve? — S. Weisburd

A better way?

In describing the DEEPS telescope ("Starting at the Poles of the Sky," SN: 10/11/86, p. 236), you state, "The whole arrangement would rotate around its axis as indicated by the arrow behind the camera." It seems to me it would not be necessary to rotate the telescope, only the camera.

T.R. Specht
Sharon, Pa.

If only the camera rotated, light from a given object would come through different parts of the optics at different times. That would complicate the data analysis. — D.E. Thomsen

Suicide: Setting the record straight

"Age, Depression, Drugs Linked to Suicide" (SN: 10/11/86, p. 228) contains a number of factual errors. First, in England and Wales, people over 45 are *more* likely to commit suicide than people under 45. Your article suggests the opposite. In the United States about 1965, the suicide rates in teens began to increase rapidly until they now are three times as high as they were. No such tripling has occurred in England and Wales. Teenage rates in England and Wales are about one-half to one-fourth of those in the United States.

Second, I am quoted as saying the rates of suicide in teenagers have declined since 1977. I probably did say that, but did it carelessly. The fact is they haven't changed a lot. The suicide rates of others in the less-than-30 group have changed a lot, which is the basis for my predictions that teenage suicide rates will decline.

I really liked the article in general, especially since it is the only report that dealt with the substance of what I said.

Richard D. Wetzel
Associate Professor of Medical Psychology
Washington University School of Medicine
St. Louis, Mo.



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