

SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication
Volume 137, No. 15, April 14, 1990

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SCIENCE NEWS (ISSN 0036-8423) is published weekly on Saturday, except the last week in December, for \$34.50 for 1 year or \$58.00 for 2 years (foreign postage \$6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, D.C. 20036. Second-class postage paid at Washington, D.C., and additional mailing office. **POSTMASTER:** Send address changes to SCIENCE NEWS, 231 West Center Street, Marion, OH 43305. Change of address: Four to six weeks' notice is required — old and new addresses, including zip codes, must be provided.

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Editorial and Business Offices:
1719 N St., N.W., Washington, D.C. 20036
(202-785-2255)

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Subscription Department:

231 West Center St., Marion, OH 43305
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Cover: By incorporating the finite speed of light into a computer-graphics technique known as ray tracing, researchers can explore the geometry and visual appearance of objects moving near the speed of light. In this computer-generated image, each gleaming ball moves to the right at a different fraction of the speed of light. That relativistic motion distorts the way a given ball reflects the surrounding scenery, producing an eerie, surreal effect. (Image: © Ping-Kang Hsiung and Christopher B. Cox/Carnegie Mellon University)

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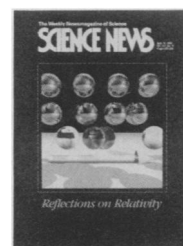
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Letters

Counterclockwise conjecture

"Turning Back Time" (SN: 2/10/90, p.91) raises a question in my mind. What if the Renaissance Germans had "turned the clocks back" for the winter as we do today? If they had, then in order to "fall back," they would need only have filled the bowl of the Schissler sundial with water. In the spring, they could have "sprung forward" by draining the bowl. As a bonus, the evaporated water would have humidified the air during the dry winter months.

J. K. Richard Weber
Wheeling, Ill.

I fail to understand why the calibration of Christopher Schissler's antique sundial is considered a puzzle. All he would have had to do was make one prototype test bowl and leave it aligned in his backyard for a year. He could then determine the time by some independent means and manually mark the position of the shadow on the bowl. Once the bowl was

marked, it would be simple to make copies.

Demetrios Matsakis
Takoma Park, Md.

Schissler's sundial Moorish figure holds a halberd or a poleax, but not a pike as stated in your article.

John Wanda, Jr.
Brookfield, Ill.

Thanks for the clarification. For those unfamiliar with these terms, Webster's New Collegiate Dictionary defines the pike as "a weapon formed of a long wooden shaft with a pointed steel head," the halberd as "a weapon . . . consisting typically of a battle-ax and pike mounted on a handle about 6 feet long," and the poleax as "a battle-ax with a short handle and often a hook or spike opposite the blade." — I. Peterson

Who gets the bends?

In "Reopening Old Wounds" (SN: 1/20/90, p.40), physician Bruce Rothschild tentatively

describes the vascular necrosis found in monosaur vertebrae to decompression syndrome. My last recollection of this subject was that the "bends" requires the artificial rebreathing of air during the dive. It does not occur in whales, for instance, despite some very deep dives of long duration ending with rapid ascent.

Ralph Pacini, M.D.
Grand Junction, Colo.

Free divers can develop decompression syndrome, Rothschild says. He notes that Polynesian pearl divers sometimes suffer this condition if they repeatedly descend to depths greater than 30 meters with only 3- to 4-minute rests between dives; a 10-minute wait between dives seems to prevent them from developing the bends. Rothschild says he would like to test the assumption that whales do not develop decompression syndrome. However, he adds, X-raying a single set of whale vertebrae would cost about \$300, so it would be quite expensive to test a sufficient number of whale skeletons. — R. Monastersky

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