

SCIENCE NEWS®

The Weekly Newsmagazine of Science

A Science Service Publication
Volume 142, No. 16, October 17, 1992

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SCIENCE NEWS (ISSN 0036-8423) is published weekly on Saturday, except the last week in December, for \$39.50 for 1 year or \$68.00 for 2 years (foreign postage \$6.00 additional per year) by Science Service, Inc., 1719 N Street, N.W., Washington, DC 20036. Second-class postage paid at Washington, DC, and additional mailing office. **POSTMASTER:** Send address changes to SCIENCE NEWS, P.O. Box 1925, 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, DC 20036
(202-785-2255)
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Subscription Department:
P.O. Box 1925, Marion, OH 43305
For new subscriptions only, call 1-800-247-2160.
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Letters

And to all a good night

"Weeping over sleeping" (SN: 8/1/92, p. 78) leaves the impression that Japanese children who share the "family bed" go to sleep without a peep.

Because Japanese men often return home from work at 10 p.m. or later, most parents retire later than their infants and toddlers. Friends report that it is poor manners to telephone a home having small children after 8 p.m., as mothers usually sit with their children until they fall asleep—for as long as an hour. An interruption can result in great wails and cries. Sharing a bedtime as well as a bed seems to be the key to a peaceful end to the day.

Jill Holmgren
Fairbanks, Alaska

The article notes only that parents and children experience less conflict surrounding bedtime in Japan than in the United States, not that Japanese youngsters nod off "without a peep." But I agree that "sharing a bedtime" can be important. I use this approach with my son and find that it

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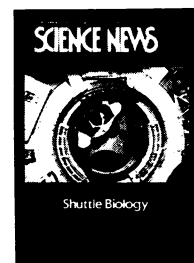
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Cover: Astronaut Mark C. Lee floated last month through the tunnel that connects the science module of Spacelab J to the cabin of space shuttle Endeavour. Twenty biomedical experiments aboard this mission add to our growing knowledge about life on the ground. (Photo: NASA)



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Science Service, a nonprofit corporation founded in 1921, gratefully accepts tax-deductible contributions and requests to assist its efforts to increase the public understanding of science, with special emphasis on young people. More recently, it has included in its mission increasing scientific literacy among members of underrepresented groups. Through its Youth Program it administers the International Science and Engineering Fair, the Science Talent Search for the Westinghouse Science Scholarships, and publishes and distributes the *Directory of Student Science Training Programs for Precollege Students*.

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makes his transition to sleep much smoother for the entire family.

— B. Bower

Coral reefs and climate change

The proposed relationship between coral reefs and atmospheric concentrations of carbon dioxide ("Old idea may solve climate conundrum," SN: 8/29/92, p.131) in recent ice ages was puzzling in several respects.

Lowered ocean levels would no doubt destroy reefs, but destroyed reefs would result in less carbon dioxide being drawn from the atmosphere for reef building (calcium carbonate synthesis), thereby tending to raise atmospheric carbon dioxide levels. Later, when ocean levels rose during deglaciation and reefs redeveloped on continental shelves, more carbon dioxide would be drawn from the atmosphere to generate the calcium carbonate in the reefs, thereby lowering atmospheric carbon dioxide levels.

Further, I don't see how changes in reef calcium carbonate could initiate ice ages. The reefs couldn't erode from exposure to the air and wave action until ocean levels had

dropped as the result of ice sheet development. Finally, if carbon from the exposed reefs were deposited in the deep sea, such a carbon sink would certainly have an extremely long-lasting effect on the carbon cycle.

J. Alden Lackey
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According to the coral reef hypothesis, the growth of carbonate reefs releases carbon dioxide to the atmosphere through the reaction $\text{Ca} + 2\text{HCO}_3^- \rightarrow \text{CaCO}_3 + \text{CO}_2 + \text{H}_2\text{O}$. Reef changes don't initiate ice ages; variations in Earth's orbit are widely believed to trigger the onset and ending of ice ages, although that theory has recently been questioned (SN: 10/10/92, p.228). The coral reef hypothesis just explains why carbon dioxide levels varied so much. The waxing and waning of carbon dioxide concentrations would in turn explain how the relatively puny effects of orbital variations could cause such large changes in climate.

— R. Monastersky

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