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Letters

New twist on helical crystals

I was intrigued by "The Curling Crystal Club" (SN: 2/25/89, p.124). As a geologist, I do a lot of field work, and I like to look for good walking sticks as I go through the woods. The ones I select are from saplings that vines have grown around so that the stick looks like a large wooden screw. I've noticed that the vines always grow around the sticks in a clockwise-upward manner. I've suspected that this might be a result of the Coriolis force and wondered if similar vines in the Southern Hemisphere might grow around trees in the opposite manner. It is interesting that the jolkinol compound in the article is a plant compound.

There is only one organism in all geologic history that actually grows in a helical shape: the Mississippian period bryozoan *Archimedes*, fossils of which look like corkscrews. After reading the article, I looked through a small box of *Archimedes* fossils from Oklahoma and Alabama. There was about a 2:1

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Cover: Scientists created this view of Venus' loftiest terrain by merging data from the U.S. Pioneer Venus Orbiter and the Soviet Venera 15 and 16. The elevation difference between the highest peak on an area called Maxwell Montes and the low plains of the north is nearly 9 miles. Yellows represent high elevations; darker reds signify lowlands. (Image: U.S. Geological Survey, Flagstaff, Ariz.)

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ratio of counterclockwise- to clockwise-upward spirals. However, this part of North America essentially straddled the equator in the Mississippian. I wonder if these fossils might be an aid to paleomagnetism in determining paleolatitude of Mississippian rocks throughout the world. Could the ratio of counterclockwise and clockwise spirals be related to distance north or south of the paleoequator?

Robert A. Baird
Department of Geological Sciences
Virginia Polytechnic Institute and
State University
Blacksburg, Va.

Many years ago, I grew simple crystals in a college course on X-ray crystallography. From a novice's point of view, I might wonder if the presence of light could influence the curling growth, whether in the Northern or Southern Hemisphere. Would the curling characteristic observed (also the fracturing, etc.) repeat if the crystals were grown in total darkness?

An even more far-out thought: Could the

vials be included in a relatively simple satellite experiment, where the effect of gravity is certainly different and where the Coriolis effect might be confused, if not negated?

Laymon N. Miller
Punta Gorda, Fla.

The Coriolis force has nothing to do with the direction a vortex takes down a drain. Even my 16-year-old grandson knows that. How come these educated doctors of chemistry wasted time and money on the experiment? The direction a vortex takes down a drain is a matter of chance; it goes right or left, regardless of the hemisphere.

James W. Franklin
Hopewell Junction, N.Y.

Your letter is well taken, and other readers have expressed similar concerns. It is more accurate to say that the Coriolis effect, which applies to motions occurring near rotating frames of reference such as the Earth's surface, has very little to do with the direction a vortex of liquid

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takes as it drains. The local conditions and forces acting on the draining water swamp the extremely small influence from the Coriolis effect. The consequences of the Coriolis effect are far more obvious in larger systems such as cyclones, which rotate counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere. The smallness of the Coriolis effect's influence on draining water, however, does not logically preclude its involvement there or in processes like crystallization. Since no explanation is yet available for the curling crystal phenomenon observed by Fuchs and his colleagues, no one can rule out a possible role for the Coriolis effect. — I. Amato

Out of sight and mind

"Environmental costs of keeping baby dry" (SN: 3/4/89, p.141) clearly illustrates the critical problem of solid waste disposal. However, one of the researcher's suggested alternatives — "flushable disposables" — would only relocate the problem.

The general misconception that sewage collection systems provide a simple disposal solution for anything flushable has been allowed to continue for too long. As any municipality operating a sewage treatment facility knows all too well, the introduction of such materials ultimately leads to expensive cleaning and repair of equipment as well as significantly increasing the sewage sludge that must be disposed — often in a landfill.

Flushable disposables would be even less desirable where conventional septic systems are in use.

Bryant Firmin
Boston, Mass.

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significant. Other researchers suggest low cholesterol is a marker for a protein or some element in the diet that may cause cerebral hemorrhage.

Because scientists have yet to demonstrate that low cholesterol actually causes hemorrhagic stroke, public health messages to Americans are unlikely to change. Adults in the United States have an average blood cholesterol level of 210 mg/dl, and it seems a reasonable goal to reduce that by 20 mg/dl, Blackburn says.

A National Research Council committee agrees. Its March report on diet and health urges Americans to reduce their dietary fat and cholesterol. Having reviewed the data on hemorrhagic stroke, the committee concludes that any risk seems confined to people with a combination of very low cholesterol levels and high blood pressure.

If researchers were indeed to establish a causative link between low cholesterol and cerebral hemorrhage, the next step would be to identify and treat these high-risk individuals, the panel says. For the rest of the U.S. population, it would still be a good idea to work toward reducing cholesterol levels. The result would be a reduction in heart-disease deaths — a benefit that far outweighs any possible risk of low cholesterol, the committee adds. □

EYE to EYE

How People Interact

Peter Marsh, Editor

All of us live for our relationships. All of us depend on them — ranging from the most cursory to the most intimate. Yet how many of us have taken the trouble to discover what makes them work — or fail? *Eye to Eye* is a guide to interpersonal behavior. It brings together 27 experts from all over the world to explain, in clear, nontechnical language, and numerous color photos, the complex ways in which we relate to and communicate with one another. Chapters examine the ramifications of physical appearance, body language, social skills, work relationships, family relationships, friends, marriage, childhood and many, many other aspects of human interaction. In all, 30 topics are covered in depth.

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