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Cover: Atmospheric scientists and aeronautical engineers have banded together to produce a new type of unmanned research plane, designed to study previously unexplored parts of the sky. One target destination is the middle of the Antarctic ozone hole — a region (depicted in this schematic painting) too high and remote for other planes to penetrate. (Image: Aurora Flight Sciences/ Joe Spatola)

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Letters

Octahedral illusion

Raymond Bareiss' fascinating column ("Leaning' column creates optical illusion," SN: 1/12/91, p.23) appears to be a close relative of a much older fascinating shape, the octahedron.

When an equilateral octahedron resting on one face is rotated about its vertical axis in 30° increments, its profile changes from a rectangle to a parallelogram leaning almost 20° in one direction, then back to a rectangle, then to a parallelogram leaning in the opposite direction, and so on, repeating the sequence.

When, on each of the two semicircular faces of a Bareiss column, the two endpoints of the diameter are each connected by line segments to the midpoint of the semicircle to form a right isosceles triangle, the vertices of the two triangles can be connected by line segments so as to form a nonequilateral octahedron. The relationship between the two shapes is made

apparent in the accompanying illustration, showing the silhouette of a 1 X 2.06 rectangle inclined 14° from the vertical.

I constructed a model of the Bareiss column depicted in your article and one of the octahedron shown here. The illusion of leaning is even more pronounced in the octahedron than in the column.



Jeffrey D. Mueller
Finksburg, Md.

Child abuse: A vicious cycle?

Correlation does not prove causality. Thus, in interpreting the observations described in

"Charting the aftermath of child abuse" (SN: 1/12/91, p.29), one must also consider the possibility that children with naturally "high levels of aggression" and "deficient social skills" are capable of eliciting abusive responses from previously nonabusive caretakers. Further studies are called for to determine where the abuse cycle starts — particularly studies investigating why certain children experience abuse in consecutive foster homes even when other children in those same homes are not abused.

C.E. Wright
Reno, Nev.

Sticking points

I enjoyed Ivan Amato's sense of humor in "Stuck on Mussels," (SN: 1/5/91, p.8), and the excitement of the biomaterials field was well conveyed.

Letters continued on p.143

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Taking Control of Arthritis offers a wealth of help and hope to the 40 million arthritic Americans in the form of concise, straightforward answers to their most common questions about the disease. Authoritative, up-to-date coverage of the subject includes causes, symptoms, tests and, above all, treatments. Exhaustive in scope and positive in tone, *Taking Control of Arthritis* offers medically sound, plainspoken advice to help anyone who must live with arthritis live a substantially better life. Dr. Kantrowitz's expertise in both research and treatment makes him qualified to evaluate all the latest that mainstream medicine has to offer the arthritis sufferer — new surgical techniques, breakthrough drugs and so forth. But he also gives full and fair assessments of the curative promise of a wide variety of alternative arthritis treatments — everything from diet and nutrition to copper bracelets to hydrotherapy.

With its optimistic outlook, valuable insights and useful information about the myriad causes and remedies of arthritis, *Taking Control of Arthritis* is absolutely essential reading for anybody whose life is affected by the disease.

— from the publisher

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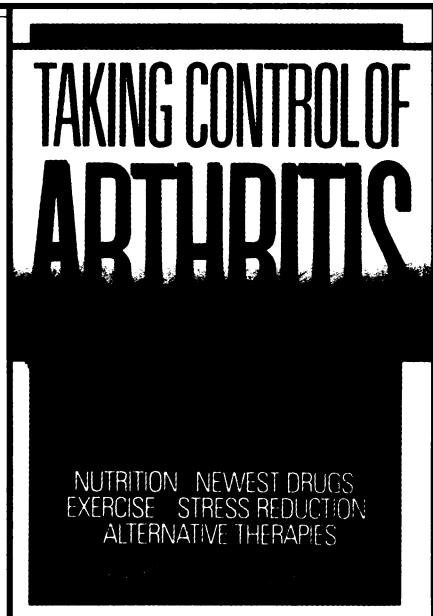
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Letters continued from p.131

Three inaccuracies, though not fatal errors, caught my eye. The fiber in the byssus is collagen, not keratin. The enzyme catecholoxidase is not used to tan leather, although the chemical oxidation of catechols is. Finally, the caption describing the cross section of the byssal thread should read "polyphenolic resin coating or cortex," not core.

*J. Herbert Waite
Marine Biochemist, University of Delaware
Lewes, Del.*

Bellyache or boredom?

Colposcopist Mark Behar (Letters, SN: 1/5/91, p.3) speculates that the coprophagy he witnessed among elephants at Milwaukee Zoo was an attempt to alleviate "gastrointestinal discomfort . . . by reintroducing enteric flora from a comrade's feces."

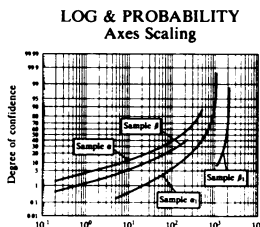
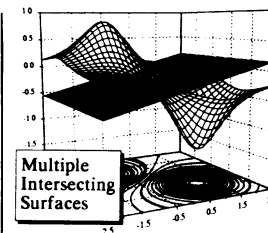
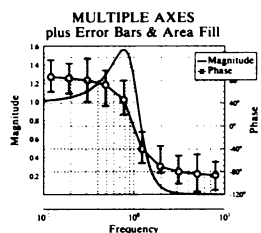
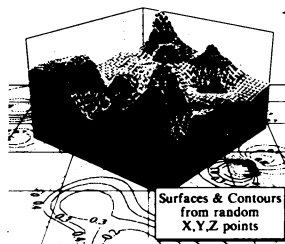
Could it be an occupational hazard for him to go looking for the answer in the wrong place?

Coprophagy is not unusual among zoo animals. Indeed, in some species, and especially social animals with high intelligence, it is distressingly common. There is no complete understanding of the reasons, but the problem is much more likely to be found in deprived environments, where the animal has little or no opportunity to manipulate or interact with objects, especially natural ones.

In short, it probably isn't bellyache so much as unmitigated boredom that generates this aberrant activity.

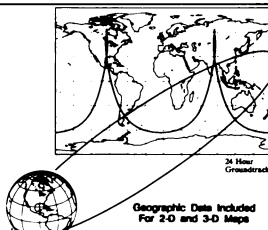
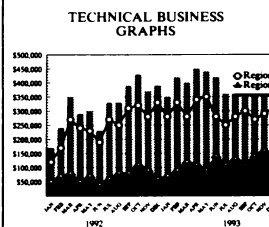
*David Hancocks
Director, Arizona Sonora Desert Museum
Tucson, Ariz.*

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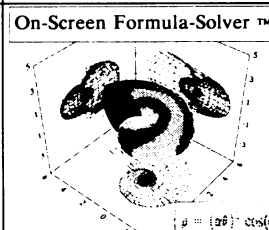


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