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Letters

Cheetah fertility, diversity, niche

I am content to let the scientific community judge whether our work on male cheetah fertility is merely "anecdotal," as charged by Steve O'Brien ("Cheetah Countdown," SN: 9/25/93, p.200). Our objective was to test O'Brien's hypothesized cause-effect relationship between an apparent low rate of genetic diversity for the species and a low reproductive rate (less than 20 percent) in the captive population.

O'Brien has suggested that the decline of cheetahs in both wild and captive populations results in part from effects of inbreeding, such as low sexual interest on the part of males and borderline sterility in those that do mate. In our published work we reported that 11 of 12 males in our captive sample mated and that 10 of them produced offspring — despite the fact

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Cover: Treetop research appeals to students as well as scientists. Studies from walkways and platforms such as this one in Hopkins Forest in western Massachusetts are showing just how important canopies are to forest ecosystems. (Photo: Paul Clermont)
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Science Service, which publishes SCIENCE NEWS, is a nonprofit corporation founded in 1921. It gratefully accepts tax-deductible contributions and bequests 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 Programs 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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that 67 percent of their sperm, on average, were malformed.

We do not rule out an adverse effect of inbreeding on cheetahs, but we have *cautiously* proposed that many of the problems attendant on captive breeding should be sought in the people who manage the cheetahs rather than in the animals themselves. We believe the absence of any evidence indicating that fertility is impaired in wild cheetahs is consistent with this alternative explanation of their low reproductive rate in captivity.

Donald G. Lindburg
Center for the Reproduction
of Endangered Species
Zoological Society of San Diego
San Diego, Calif.

The cheetah is one of those species that fits a narrow ecological niche. Its being the fastest land animal alive is integral to its survival.

Such specialization means that the species cannot have much diversity, for any animal a little off the perfect model won't be able to survive. A half-step-slower lion may have extra strength to compensate, but a half-step-slower yet stronger cheetah may starve.

It could very well be that the greater the degree of species specialization to fit an ecological niche and the longer the time in that niche, the greater the degree of genetic homogeneity.

David Shen
St. David's, Pa.

CORRECTION

The total energy unleashed by the fragments of Comet Shoemaker-Levy, expected to crash into Jupiter next July, would equal 100 million megatons of TNT, not 100 megatons, as reported in "Crash course on a comet bound for Jupiter" (SN: 10/23/93, p.260).

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