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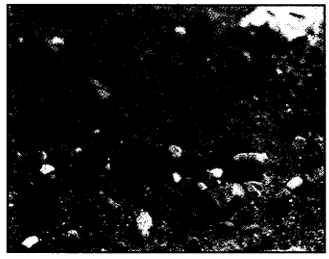
LETTERS

Desert Ants

The Random Sample item "Hot ants" (14 Apr., p. 207) featured a recent article by W. J. Gehring and R. Wehner describing a remarkable thermal adaptation of desert ants (*1*). It is suggested that these animals may synthesize heat shock proteins (Hsp's) for protection even before leaving their nests to forage in the desert heat, that is, that they prepare "a pre-emptive strike." It is important, however, to distinguish experimentally between the normally abundant and essential heat shock cognate (Hsc) proteins (Hsc70) and the heat inducible Hsp70 family members. Hsc70 is more highly constrained evolutionarily than Hsp70, suggesting that they are functionally distinct (*2*). An alternative interpretation of the data of



D. AGOSTI

Hotfooting it. How does this ant, *Cataglyphis bombycina*, survive the desert heat?

Gehring and Wehner is that the ants have unusually high levels of the normal housekeeping protein Hsc70, which appears to be only modestly augmented at high temperatures by inducible Hsp70 in these animals. There must be more to the desert adaptation, as the characteristic in question is shared by another ant species from temperate woodlands. Perhaps desert ants are smart enough to return to the nests before their proteins melt down, and perhaps Hsc70 makes a contribution to their high critical thermal maximums and thermal resistance of protein synthesis reported. Such a response would be less amazing than the mental image of ants turning on their heat shock genes in anticipation of "hotfooting it" across the desert sands, but interesting nonetheless.

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References

1. W. J. Gehring and R. Wehner, *Proc. Natl. Acad. Sci. U.S.A.* **76**, 2994 (1995).
2. C. N. White, L. E. Hightower, R. J. Schultz, *Mol. Biol. Evol.* **11**, 106 (1994).

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Oak Ridge's Strengths

Andrew Lawler's article about the Galvin report, "Report to stress research over close ties to industry" (News & Comment, 27 Jan., p. 446), includes a table describing DOE's multipurpose laboratories. The table indicates that the research focus of Oak Ridge National Laboratory (ORNL) is "nuclear physics, ion-beam, neutron scattering." This description does not reflect the scientific and technical competencies of ORNL as presented to, and used by, the Galvin task force. While ORNL has long-standing and pioneering research activities in the areas listed, it also addresses a wide range of scientific and technical challenges as directed by DOE and other federal agencies. The five broad programmatic themes of ORNL's research activities are energy production and end-use technologies; biological and environmental sciences and technology; advanced materials synthesis, characterization, and processing; neutron-based science and technology; and computational science and advanced computing.

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Performance of Text Retrieval Systems

In his article "Gauging similarity with *n*-grams: Language-independent categorization of text" (10 Feb., p. 843), Marc Damashek states that his *n*-gram information retrieval system, Acquaintance, performed "on a par with some of the best existing retrieval systems," on the basis of results of the third Text Retrieval Conference (TREC-3) (*1*).

The TREC Program Committee objects to this conclusion. On the basis of average precision (the generally accepted measure