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Editorial and Business Offices:
1719 N St., N.W., Washington, DC 20036
(202-785-2255)

Subscription Department:
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This Week

Research Notes

Articles

Cover: If a meteorite smashed into Earth 65 million years ago and wiped out the dinosaurs, where is the crater? For more than a decade, geoscientists searched high and low for the ancient scar, without any sign of success. But many researchers now think they've got the crater in their sights. (Illustration: Don Davis)

Departments

Letters

Spasm or sludge?

Perhaps what Dr. Yeung observed ("Stress puts squeeze on clogged vessels," SN: 11/16/91, p.309) was blood "sludging" rather than spasm of the vessels. The late Professor Melvin Knisely showed that red blood cells clump when vessel narrowing slows blood flow. The layering of this "sludged" blood may appear in the angiogram as an aggravation of stenosis, a narrowing of the artery. Stress produces adrenaline, which can induce sludging.

The therapeutic importance of this concept is that anticoagulant therapy can prevent the sludging phenomenon, which otherwise might lead to thrombosis with permanent blockage of the vessels. The heart is not the only organ affected by arterial stenosis, and I have seen the benefits of anticoagulant therapy in preventing and even reversing blood sludging in the brain. Strokes and even dementia can be prevented or even reversed in some patients.

It would be interesting if Dr. Yeung could demonstrate the effect of anticoagulant therapy on the flow through the coronary arteries and be able to separate the spasm from the blood-sludging phenomenon.

Arthur C. Walsh
Geriatric Psychiatrist
Pittsburgh, Pa.

Cricket rhythm

I find it hard to believe Warner Clements' suggestion that all those crickets are moving their limbs in *perfect* synchrony (Letters, SN: 11/23/91, p.323). I have heard that they move their limbs proportional to temperature, which suggests close but not perfect synchrony. Perhaps the perceived rhythm is not due to Rockette-style coordination, but is rather an example of the beating phenomenon that arises from adding periodic signals at slightly different frequencies. For example, the sum of two sine tones at 49 and 50 hertz will cause a "beating" to be perceived at 1 hertz. The beat frequency is proportional to the small differences in the individual cricket rhythms. Surely someone must have tested this hypothesis?

Rosalind W. Picard
Cambridge, Mass.

Our speculation is that the frequency of the chirps is a function of the cricket's rate of metabolism. This would be a function of temperature. The metabolic rate would determine the frequency with which the appropriate muscles could be resupplied with energy, and ready for another stroke. An alternate guess is that the speed of nerve conduction could be temperature-dependent.

As to the crickets modulating their sound, we believe Mr. Clements may be referring to the practice of some insects of chirping in cycles. The sound rises in a crescendo, peaks in a few seconds, and diminishes into a period (probably a resting state) of silence. The question, then, is what initiates the cycle and why would there be a synchronism? Noise-making animals of like kind tend to answer to one another.

This recalls an old country-boy trick: If one got lost outdoors at night, barking like a dog would soon get the real dogs barking in response. Thus, one could locate the nearest farmhouse.

John R. Harvey
Sterling, Va.