Eureka! Daily discoveries for the scientifically bent

by Scott_LaFee

VERBATIM

PRIME NUMBERS - A scurrying cockroach goes 2.9 mph. CNS Photo. WHAT IS IT ANSWER - This is a low-power scanning electron microscope image (magnified 20 times) depicting the fourth lumbar vertebra of an 89-year-old woman. CNS Photo. SUGAR HIGH - To eat, the long-tailed nectar bat Glossophaga soricina must swoop down upon a flower, then hover like a hummingbird while its long, thin tongue scoops out nectar. CNS Photo. POETRY FOR SCIENTISTS - Digging for fossils, old Ned, A geologist, sadly is dead. His shovel hit bone. 'You leave that alone,' Said a dinosaur, biting Ned's head! CNS Photo. The perfect computer has been developed. You just feed in our problems, and they never come out again.

- Al Goodman

BRAIN SWEAT

Here are five words: her, ion, or, if, to. By adding the same three letters in the same sequence to each of these words, you can create five new words. What are the three letters?

JUST ASKING

Which came first: the orange fruit or the color?

PRIME NUMBERS

360: Material, in millions of tons, that the sun burns off each day

300: Number of kangaroos living at the Kangaroo Conservation Center in Georgia, the largest assemblage of such animals outside Australia

2.90: Speed, in miles per hour, of a scurrying cockroach

Sources: Smithsonian; "The Sizesaurus" by Stephen Strauss (1995); Nexus Research Group

ANTHROPOLOGY 101

In ancient Athens, if someone died owing money, his debtors could seize the corpse and refuse its burial until the debt was paid by kin.

A SUGAR HIGH

To eat, the long-tailed nectar bat Glossophaga soricina must swoop down upon a flower, then hover like a hummingbird while its long, thin tongue scoops out nectar.

It's exhausting work that requires a lot of energy, so much so that researchers say the nectar bat appears to burn up sugar faster than any other mammal, completely metabolizing it within minutes.

By comparison, the best humans can do is fuel up to 30 percent of their metabolism directly from liquid power drinks.

Most animals convert most carbohydrates they consume into fats or a type of sugar known as glycogen, which can be stored for later use. Hard-working nectar bats can't wait. They convert nectar almost immediately into usable energy.

"Metabolizing these sugars immediately as they are consumed saves the costs of converting them to and from storage," said scientists from the Leibniz Institute for Zoo and Wildlife Research in Germany and the University of Aberdeen in Scotland, in a paper published in the journal Functional Ecology.

Sugar keeps the bats flying. And they need a lot of it: They can drink up to 1.5 times their body weight in nectar each day.

ANECDOTAL EVIDENCE

The American psychologist B.F. Skinner is famous for his pioneering theories of stimulus-response behavior. He also liked to bring his work home. Upon the birth of his second child, he built a glass crib so that his daughter could observe and be observed.

BRAIN SWEAT ANSWER

MOT: mother, motion, motor, motif, motto.

POETRY FOR SCIENTISTS

Digging for fossils, old Ned

A geologist, sadly is dead.

His shovel hit bone.

"You leave that alone,"

Said a dinosaur, biting Ned's head!

WHAT IS IT? ANSWER

A low-power scanning electron microscope image (magnified 20 times) by Alan Boyde depicting the fourth lumbar vertebra of an 89-year-old woman. The bone is heavily eroded in places by osteoclasts, a kind of cell that resorbs bone. Too much resorption leads to osteoporosis, a disease that results in reduced bone mass and density and a higher risk of fractures and breakage.

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