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Letters

Elements of extinction

"Extinction Wars" (SN: 2/1/86, p. 75) was quite interesting, and I'm pleased that you mentioned our concept of selective trace element toxification of biota from meteoritic elements. It's clear that the global biogeochemical cycles operative 65 million years ago were altered substantially, by large-body impact or volcanism (maybe both), and that the real cause of extinctions was probably an eclectic collection of several environmental pressures.

However, one aspect of the article is incorrect. The author states, in describing our idea, that "as long as the acidity of the oceans was high," the trace element toxification hypothesis would be applicable. The acidity of the world ocean does not have to change at all from steady-state for trace elements to be dissolved from aerosols in seawater.

The solubility of trace elements in the sea is certainly pH-dependent, but there is substantial dissolution of trace elements from aerosols in seawater at a pH of roughly 8. In a man-

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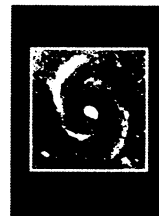
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Cover: Like most galaxies, M81 is actually seen by terrestrial observers at a fairly steep angle. A computer — as in this case — can be taught to deproject the image and show the galaxy face-on. The computer also alters the colors, emphasizing the blue and deemphasizing the red, enabling astronomers to study aspects of the galaxy they might not otherwise see. For an unaltered picture of M81, see p. 188. (Photo: Philip E. Seiden/IBM Watson Research Center)



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uscript submitted to NATURE recently, we couple mass balance calculations with experimentally derived solubilities to show that the trace elements from a C1 chondrite, in and of themselves, are sufficient to cause the selective mass extinctions at Cretaceous/Tertiary time. If the pH of the oceans were to fall, à la Prinn or Officer, the trace elements might become even more soluble, yes; but the change in pH is not a prerequisite for our theory, since there is substantial solubility of lead and other trace elements in seawater. Ninety percent of lead in seawater is dissolved in open-ocean regions right now!

David J. Erickson
Graduate School of Oceanography
University of Rhode Island
Narragansett, R.I.

I've looked in vain for an unponderous explanation for the disappearance of the dinosaurs. After all the shouting and tumult by the scientific theorists, an absurdly simple answer is usually the correct one.

It's far more likely that the smarter mammals found ways of digging up and eating their

eggs faster than the dinosaurs could lay them. Or anything else just as simple, obvious and unprovable.

William B. Elmer
Andover, Mass.

Jumping to conclusions

"Sensory surprises in platypus, mantis" (SN: 2/15/86, p. 104) brought to mind a classic story. Author J.A. Miller noted, "To locate the 'ear' responsible, the scientists used a process of elimination. They removed a mantis's legs and coated various parts of its body with a heavy layer of petroleum jelly or melted wax." The classic story is investigation of the hearing mechanism of the frog. A frog was taught to jump on command and then its rear legs were removed. When the order "jump" was issued, the frog failed to jump, thereby proving that its hearing mechanism was in its rear legs.

B. J. Luberoff
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