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Cover: Two new studies suggest that doctors may someday be able to foretell Alzheimer's disease decades before senility sets in. In one study, researchers relied on brain scans and genetic tests to predict dementia. The other team analyzed linguistic ability from writing samples to forecast the disease. (Illustration: Chris Grandstaff)

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Letters

Nonsolar warming sources

"The Case of the Global Jitters" (SN: 3/2/96, p. 140) suggests that widespread climate cooling could be caused by changes in solar output. Perhaps the focus should be more on mechanisms that could trigger warm pulses.

E.G. Nisbet of the University of Saskatchewan in Saskatoon has suggested that the periodic release of methane from icy gas hydrates on the seafloor, in permafrost, and under retreating glaciers could accomplish such greenhouse pulses. Methane is a far more potent greenhouse gas than carbon dioxide, and it oxidizes into carbon dioxide rapidly. There are plenty of methane-rich gas hydrates around to accomplish such warming; moreover, the gas hydrates contain 20 to 30 times the amount of carbon dioxide in the atmosphere.

A similar mechanism, though on a vastly greater scale, may have produced the mass

extinction at the end of the Permian period. With Siberia then at far northern latitudes, such hydrates would have been common in permafrost and on Siberian continental shelves. The heat from the main pulse of Siberian Traps volcanism, considered to have occurred at the same time as this catastrophic extinction event, could have released globally lethal amounts of methane and carbon dioxide.

The Paleozoic biota would have been largely extinguished, and a new fauna and flora would have had to evolve to deal with the new conditions of the Mesozoic, with its higher concentration of atmospheric carbon dioxide.

Dan Dorritte
Davis, Calif.

Complex cancer-cholesterol link

"Cholesterol and Cancer" (SN: 3/2/96, p. 136) seems to imply that there are no human

studies to support the possibility that lowering cholesterol may increase the risk of developing cancer. Several studies indicate that the lower the cholesterol level, the higher the death rate from cancer.

One of the earliest reports (1974) was that of Geoffrey Rose and his colleagues, who found a positive correlation between fat intake, cholesterol level, and cancer deaths, with one exception: More fatal cases of colon cancer occurred in men with lower cholesterol (LANCET, vol. 181, p. 1). Numerous other studies since then have also found some connection between lower cholesterol and cancer incidence and mortality.

None of these studies proves cause and effect, but the possibility that lowering cholesterol may somehow promote the growth of cancerous tissue from some other cause should not be ignored.

David B. Gordon
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