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Letters

Soluble dropouts

In your reply to Keith Vinson about Erebus and ozone (Letters, SN: 9/5/92, p.147), you claim that volcanic chlorine-containing gases released into the troposphere cannot rise into the stratosphere except after rare, vigorous eruptions. You also claim that natural and industrial chlorine-containing compounds released at the bottom of the troposphere can rise into the stratosphere, apparently without a need for a special energy source.

I would expect some volcanic gases, like hydrogen chloride, to be significantly more buoyant than the heavy chlorofluorocarbons simply because of their molecular weight. I therefore fail to see why the volcanic gases are generally confined to the troposphere while other natural and industrial gases are not, unless it is for political reasons.

Ed Holroyd
Arvada, Colo.

The key difference between hydrogen chloride

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Cover: Trapped in amber approximately 30 million years ago, this stingless bee now provides researchers with DNA fragments that reveal details of its evolution. (Photo: Raul J. Cano)

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Science Service, a nonprofit corporation founded in 1921, gratefully accepts tax-deductible contributions and bequests to assist its efforts to increase the public understanding of science, with special emphasis on young people. More recently, it has included in its mission increasing scientific literacy among members of underrepresented groups. Through its Youth Program it administers the International Science and Engineering Fair, the Science Talent Search for the Westinghouse Science Scholarships, and publishes and distributes the *Directory of Student Science Training Programs for Precollege Students*.

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and chlorofluorocarbons is that hydrogen chloride dissolves in raindrops and cloud particles in the troposphere, while chlorofluorocarbons do not, says Malcolm Ko, an atmospheric chemist at Atmospheric and Environmental Research, Inc., in Cambridge, Mass. Because it takes approximately two years for chemicals emitted in the troposphere to reach the stratosphere, only non-soluble compounds can make the journey. Other chemicals get washed out of the troposphere before they reach the stratosphere.

— R. Monastersky

Unsung pioneers

“‘Hearty’ Vitamins” (SN: 8/1/92, p.76) offers exciting confirmation of a point of view long held by pioneers of nutrition as therapy. However, there is no mention in the article of the Shutes, M.D. brothers from Canada who treated heart-disease patients with mixed tocopherols more than 30 years ago. Good scientific practice suggests that these clinical pioneers be recognized. Jialal, Grundy, Esterbauer, and their colleagues may all have independently thought up the idea that oxidative modification is central in heart disease, but I

was taught the use of antioxidants at least 30 years ago — and I was a Johnnie-come-lately then.

Science begins and ends here in the clinical trenches. We are pleased that our academic brothers are beginning to look beyond their noses.

George von Hilsheimer
Maitland, Fla.

Noncommunicating neurons

Regarding “Clues to the brain’s knowledge systems” (SN: 9/5/92, p.148), the subject’s inability to say an animal’s name even though she remembers others of its characteristics could be explained by the engram model of the brain. Say, for instance, that a million complexly interconnecting neurons describe an animal in such a way that neurons 1,2,3 ... constitute an engram that describes its color, 1,3,5 ... its size, 2,4,6 ... its name, and so on. If one of these lines of communication is broken by a lesion, that aspect of the subject’s description is lost, but all others remain.

Glenn H. Cochran
Kensington, Calif.

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