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Cave Painting Hazard?

The art, sophistication, and mystery of ancient cave and tomb paintings fascinate modern society (M. Balter, News Focus, 12 Feb., p. 920). Yet little has been written about an obvious hazard that must have bedeviled the artist: Light required fire; the

Cave paintings in Grotte Chauvet, France.

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artist had to be exposed to carbon monoxide (CO) fumes. CO was a mystery to our ancestors because they instinctively associated odors and danger. No instinct warns us of CO poisoning. We know from medical histories of miners that low levels of CO produced visions and hallucinations.

Every society has ancient myths of demons who come on cold nights to take the lives of the young and elderly. Poorly vented charcoal fires lead to heart disease, mental health problems, and death. Scientists who investigate the mystery at Pont D'Arc may want to consider that some artists may have died for their art.

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Aging and the Genome

Cynthia Kenyon (E. Pennisi, News of the Week, 30 Oct., p. 856) is quoted as saying that "it's inescapable that aging is regulated deliberately by genes [and because] it happens in both worms and fruit flies, you have to be crazy to think that it won't happen in vertebrates."

There is no convincing evidence that age changes, as distinguished from longevity determination, are governed even indirectly by the genome. In the report to which Kenyon refers (Y.-J. Lin *et al.*, 30 Oct., p. 943), the mutant drosophila gene reveals increased longevity and a reduced mortality rate when compared with the parental strain (figure 1); however, the rate of aging is unchanged. What has been shown in these experiments is that because the slopes of both sets of curves are identical, longevity determination changed, but the rate of aging remained unaffected.

Two alternative conclusions, of several that could be given, are that either the control population is expressing a gene that negatively affects longevity and this has been overcome by gone selection in the experimental population, or the selected population has reverted to the status of feral drosophila, whose longevity may be greater than the controls used.

Longevity is determined indirectly by the genome. Age changes (the increasing disorder in formerly orderly molecules) are stochastically determined and occur as the forces of natural selection diminish after reproductive success. There is a useful analogy with inanimate objects. The longevity of an automobile, like that of an animal, is determined by elements ot design (genes) and manufacture (development). What occurs after the car leaves the show room floor and after the animal attains reproductive success is aging—the increase in molecular disorder that eventually exceeds the capacity of repair processes and increases vulnerability to the ultimate causes of failure or death. The determination of longevity in both cars and animals is manipulable, but the role of the genome in directly modifying increasing molecular disorder has yet to be demonstrated.

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Peptide Bond Formation: Retraction

We recently reported that *N*-acetylphenylalanylphenylalanine (AcPhe-Phe) was produced from the peptidyl-transfer RNA (tRNA) analog N-acetylphenylalanyl-tRNA (AcPhe-tRNA) and phenylalanyl-tRNA (Phe-tRNA) in the presence of the entire 23*S* ribosomal RNA (rRNA) or with domain V alone prepared by in vitro transcription (Research Article, 31 July, p. 666) (*1*, *2*). However, we subsequently discovered that there were problems with the identification of the products by thin-layer chromatography (TLC). We (*3*) and Khaitovich *et al.* (*4*) found independently that the spot on the TLC plate that we pre-

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