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COVER: This is the evidence of gluons, the configurations of three jets of particles that indicate the production of two quarks and a hard gluon. A hard gluon is one that is momentarily not holding quarks together. A gluon busy with that task is called a soft gluon. See p. 268. (Illustration: CERN Courier)

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LETTERS

The intelligence of cells

That mutations in "silent," regions of genes can alter protein production is not as surprising as claimed in "Puzzling out the cell's power plant" (SN: 9/15/79, p. 185). These "intervening" sequences are quite likely more important than the sequences which merely code for the final "output" of what may be a lengthy computation.

The cell is more than a mere protein factory, and control of its processes can hardly be dependent just on variations in the concentration levels of chemicals floating around inside of it. A more compartmentalized form of memory is required to record the state of specialization of a cell, for example. This may be associated with some of the "intervening" regions. Gene expression is usually thought of as controlled by simple on/off switches associated with regions adjacent to the gene. More powerful control strategies seem to be called for.

We lack a language for describing how DNA "computes" a cell, or, indirectly, the whole organism. While rapid progress is being made in sequencing of genes, few concepts can be used to discuss higher-level processes ultimately controlling which proteins are synthesized. Maybe the "gaps" contain the programs which direct the cell's operation.

Berthold K. P. Horn
Cambridge, Mass.

Common rarities

I would like to question the claim that only two other hurricanes this century — Camille in 1969 and Labor Day 1935 — have been as powerful as David, with its 150 mph winds (SN: 9/8/79, p. 166). The statement is relevant to the paradoxical question, "Why are rare events so common?" One can recall other hurricanes this century with winds 150 mph or higher, such as Donna (1960), Ethel (1960), Audrey (1957), Janet (1955), and so on back. One reason for the commonness of rare events is that we are now watching so many different arenas of nature that something extraordinary is likely to occur in at least one arena almost every week. This is healthy and adds to the excitement of life. Another reason for the commonness of rarities is that it wouldn't be much fun to think that David was only 1 of the 20 most powerful hurricanes of the century. We deserve at least 10 once-in-a-hundred-years snowstorms per century, don't you think?

Paul Lyrene
Gainesville, Fla.

(Record-keepers tend to split hairs, which may be one reason for the apparent "commonness of rare events." We should have said that David was one of the century's three strongest hurricanes to enter the Antilles. *The others mentioned — many of which were stronger than David — reached their peaks elsewhere. —Ed.)*

Arms and the UNCSTD

"Vienna: Where North Meets South" by Janet Raloff (SN: 8/18/79, p. 126) gives us a vivid and dramatic description of the current dialogue between the rich and the poor in our modern world. In the introductory remarks, however, one gets the impression that there is no deep relation between the UNCSTD (United Nations Conference on Science and Technology Development) and SALT II, both meeting in Vienna.

I think both are intimately connected; both deal at different levels with survival of the current civilizations. This survival seems to me to be contingent on two requisites. We must prevent global war in the next few decades and simultaneously achieve social justice of a higher kind. In this sense those two meetings in Vienna could as well be called: "For the Salvation of Mankind, Stages I and II."

Jose Barbosa
Minneapolis, Minn.

Physics tour: Reeperbahn to Tijuana

The article "Bare Bottom; Naked Charm; Booms-a-Daisy Physics" (SN: 9/22/79, p. 196) leaves me feeling totally refreshed at the diligent and intrepid research our fearless physicists are working towards.

That is to say, I was euphoric at the technical details of the search and discovery: "... when evidence of unveiled beauty began to show up, the charm search was temporarily shelved. It is not surprising that bare bottom should show up in a search for naked charm... whether this... is in fact 'beauty uncovered' remains for future and much closer investigations."

Reminds me of the nights in San Diego after leaving Camp Pendleton with my fellow Marines ... but then again, I could probably show them how to shave off expenditures.

Randy L. Benson
Commerce, Tex.

A slip on heavy oil

I would like to correct a minor error in your report on heavy crude oil price decontrol (8/25/79, p. 135). Your report stated that oil with a specific gravity of less than 16 would be price decontrolled. Heavy! I suspect this should have been 16° API gravity or less (specific gravity = .96 and above; °API = [141.5 − 131.5 × SG.] ÷ S.G.).

John Rhoads
Wichita Falls, Tex.

Correction: Living tissue does not contain right-handed molecules as reported in "Life and a lump of clay" (SN: 9/22/79, p. 200); living systems contain only left-handed amino acids.