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Letters

Questioning AIDS findings

In "AIDS viral burden far exceeds estimates" (SN: 7/22/89, p.54), you report that, according to a recent paper by Schnittman *et al.*, the "viral burden" of AIDS patients exceeded previous estimates by about 100-fold. Further, you point out that "the new findings may help settle the contentious issue of how such a serious syndrome could be triggered by what seemed so few infectious particles."

Yet they don't settle the issue. First, Schnittman's group did not measure "viral burden" but instead measured the burden of mostly latent and a few transcriptionally active proviruses. Second, the fraction of T-cells carrying latent proviruses in AIDS patients was shown to be about 1 in 1,000 using the polymerase chain reaction, and was extrapolated based on certain standards to actually be 1 in 100. No corrections were made for the notorious false positives due to amplification

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of nonviral sequences. Almost the same estimates — namely 1 in 1,000 lymphocytes of AIDS patients carrying latent proviruses — have been reported from Gallo's and other labs since 1984. Latent proviral genes, like all other latent genes, cannot be pathogenic because they are not biologically active. Indeed, all healthy vertebrates, including humans, carry latent proviruses that are just as inactive as HIV, many of which — namely the endogenous retroviruses — are found in every single cell, not just in 1 out of 1,000. Schnittman *et al.* further report that certain fractions of T-cells express HIV RNA in 1 out of 1,000 cells and other fractions in 1 out of 100,000 cells. Gallo's and other labs studying unfractionated T-cells have reported that 1 in 10,000 to 100,000 cells express viral RNA. In fact, I estimated that the ratio of latently to actively infected lymphocytes is about 100:1 in AIDS patients, based on this previous work.

Thus, there is nothing new on the AIDS front, and HIV continues to be very, very

quiet, and in fact latent, there. Indeed, what used to be described as the very basis of AIDS pathogenesis, namely the infection of T-cells by HIV, is now described in your article as a model "reservoir" for dormant HIV proviruses — a model with which "researchers hope to learn how to maintain viral latency indefinitely in infected individuals."

Peter Duesberg
Professor of Biochemistry
and Molecular Biology
University of California, Berkeley
Berkeley, Calif.

Who sets the terms?

Your decision to follow EPA's lead in calling daminozide a pesticide (Letters, SN: 7/15/89, p.44) is understandable, as that agency seems to be a primary voice about all environmental chemicals. It does raise a concern, however.

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ing rainy stretches, creating transient ponds or lakes.

Archaeological sites in the survey represent short-term stops by very small groups of people, Wendorf argues. In his opinion, this confirms that prehistoric water sources in the Eastern Sahara could not support sustained human use.

The USGS scientists charge, however, that Wendorf's survey was conducted in an area where the sand is too thick for radar penetration and thus it sheds no light on the relation of prehistoric sites to the radar-exposed channels.

In a flurry of recent publications, including the winter 1988 *JOURNAL OF FIELD ARCHAEOLOGY*, the Feb. 24 *SCIENCE* and the June *ANTIQUITY*, McHugh and USGS scientists present further evidence for an early occupation of the African desert's ancient valleys. Uranium-series dating of carbonate found along the edges of the valleys indicates the rock was deposited in three episodes — about 45,000 years ago, 141,000 years ago and 212,000 years ago. These deposits apparently were generated by groundwater present during phases of wet weather, the researchers contend.

McHugh's 1984 excavations, they add,

uncovered stone hand axes from the 212,000-year-old carbonate deposits, providing a minimum age estimate for human occupation of the valleys. In McHugh's view, these early inhabitants were hunters and gatherers, drawn to the game and vegetation near the riverbanks. A long succession of people followed, culminating with groups that raised cattle in the ancient valleys between 7155 and 2900 B.C.

Around that time, according to the USGS group, the drying up of the Sahara reduced water-carrying channels to a few separate water holes, much as the billabongs of the Australian desert now lie along the courses of defunct ancient rivers.

More support for some form of prehistoric water connection in the Sahara, although not necessarily a vast river network, comes from a report soon to appear in *QUATERNARY RESEARCH*. Excavations conducted in 1987 at a wind-formed basin near the radar-exposed channels yielded several thousand remains of fish, amphibians, reptiles, birds and small mammals, say zoologist Kazimierz Kowalski of the Polish Academy of Sciences in Krakow and his co-workers — including Wendorf. The fossils came from sediment dated at about 135,000 years old.

Animals uncovered at the site, including crocodiles and water turtles, indicate a large lake was once present, the researchers contend. Annual rainfall at the time was at least 20 inches, they add.

The 1987 excavations also uncovered remains of deep-water fish, now under study by paleontologist Wim Van Neer of the Royal Museum of Central Africa in Tervuren, Belgium. Only through direct water connections can these creatures colonize new areas, Van Neer says. McCauley and his USGS colleagues suggest that around 100,000 years ago, streams represented by the radar-exposed channels hooked up with water sources in the Nile Valley nearly 200 miles to the east.

Wendorf, however, still doubts humans inhabited the area for extended periods. He says the archaeological sites unearthed by McHugh probably represent remains of tool workshops used intermittently over tens of thousands of years.

Although McHugh and his co-workers noted in the January 1988 *GEOARCHAEOLOGY* that their research "has literally only scratched the surface," exploration under the Saharan sands will resume in 1991, when three new space shuttle radar flights are planned. Remarks USGS geologist Carol S. Breed, "We want to map the distribution of ancient river channels across all of northern Africa." □

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The EPA is neither the guardian of the English language nor our authority on scientific terminology. If they wish to consider all "bad things" as "pests" and all means of stopping those things "-cidal," then that just illustrates their scientific illiteracy. Designating daminozide a pesticide just because that fits their legal scheme of things is nonsense. Daminozide is a plant-growth regulator, and this is true even in the case you cite of its use in the peanut industry. Preventing rank vine growth to reduce the moisture-holding capacity of foliage, and thus to discourage fungal infection, is hardly an active killing of fungal tissue. We could just as well, with the same false logic, say that low-nitrogen fertilizers are pesticidal because they discourage development of lush, juvenile plant tissues that invite fungal infection.

The ivory towers of sciencedom do need some realignment now and then from the ranks of us who are far enough removed from the bureaucratic self-protection to see their glaring goofs.

Richard W. Ikenberry
Kearney, Neb.

More on headlines

As I read the Letters column in your July 8 issue, I felt that certain letters were selected so that those who objected to the "cutesy" titles would be written off as literary scrooges and those who thought the titles were great were the good guys.

I never thought to write to you about such an issue until I realized how many others had strong opinions on the subject. But *SCIENCE NEWS* is one of the important magazines I read

in my all-too-busy life, and I would appreciate it if your writers, in their efforts to be light and clever, would at least be primarily influenced by the idea that the headline should let the reader know what is in the article.

Sometimes all one can do is scan headlines to see what to get at later. A headline may, of course, be humorous, light, clever, etc., but not at the expense of being informative. Sometimes when it's obvious that someone has bent over backwards to be cute at the expense of being informative, I can see why some readers get miffed.

Michael Safdiah
New York, N.Y.

In selecting letters on headlines, we intended no slant. All critical letters arriving in time for publication were included, as were most of the supportive ones. Your point, however, is well taken.
— the editors

Closeting sexual statistics

Perhaps the real reason the government is trying to prevent a full-scale survey of U.S. sexual behavior ("Desperately Seeking Sexual Statistics," SN: 7/8/89, p.28; Letters, SN: 8/5/89, p.83) is not the purported concern about privacy. As the preliminary research you describe already indicates, normal human behavior spans a much broader spectrum than the currently powerful right-wing ideologues and religious fundamentalists wish to acknowledge. It would be very upsetting to their agenda if our society ever faced up to the realities that almost 30 percent of us have had homosexual experiences, that hiring prostitutes is a mainstream event and that sodomy is a common practice. The political

hacks seem to feel that when their world view conflicts with reality, the best strategy is to suppress the truth.

Steven E. Miller
Cambridge, Mass.

Beyond knowing?

J. Eric Triaou (Letters, SN: 7/15/89, p.35) states that "by using an active verb, Wickelgren seems to imply that evolution has a purpose, which it has not." How does Mr. Triaou know whether evolution has or has not a purpose?

John H. Hall Jr.
Houston, Tex.

CORRECTION

In the photo depicting forest damage at Mt. Mitchell, N.C. ("Where Acids Reign," SN: 7/22/89, p.56), most of the dead trees are Fraser fir, not red spruce as stated. The distinction is important, according to entomologists Robert G. Hollingsworth and Fred B. Hain of North Carolina State University in Raleigh, because the most dramatic episodes of tree mortality in the southern Appalachians are associated with the presence of a small, sucking, aphid-type insect called the balsam woolly adelgid, which attacks only fir. At Mt. Mitchell, scientists first detected this introduced pest in the mid-1950s; infested fir trees have been dying rapidly ever since, according to Hollingsworth and Hain. A 1988 U.S. Forest Service evaluation of spruce-fir mortality in the region states that "patterns of tree death . . . are consistent with accounts of balsam woolly adelgid infestation."