

Germs from space?

Showers of red rain following a meteor explosion have scientists searching for an explanation.

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On July 25, 2001, puzzling particles fell on central India. Now, one scientist studying these particles thinks they could be germs from space. On that monsoon-laden morning, widespread reports filtered in to authorities in central Kerala, India, of a loud boom in the air accompanied by a flash of light. According to India's Center for Earth Sciences Studies, an eastward-traveling meteor exploded over the small town of Changanassery around 5:30 A.M. Scientists estimate the explosion injected 2,200 pounds (1,000 kilograms) of fine dust into the atmosphere, triggering a chain of events right out of *The Twilight Zone*.

Authorities received reports of "red rain" 3 hours later. Intermittent rust-colored rain showers occurred for 5 to 6 weeks after the event. Godfrey Louis, one of the authors of an *Astrophysics and Space Science* paper published last October, contends the color was due to "the suspension of microscopic red particles having the appearance of biological cells."

The particles were not geometric enough to be desert dust, and various forms of algae have been ruled out. The tiny spheres, each about 10 microns across, have a "cell-like structure" and are about the size of a human red blood cell. The globes have no internal nucleus, but, remarkably, they seem to be replicating.

Astronomer Chandra Wickramasinghe of the United Kingdom's Cardiff Astrobiology Centre says, "The samples we were given contained cells evidently in different stages of replication from within. Some had one daughter cell, others 2, 3, and 4 daughter cells. Some others were in the process of breaking open a cell wall and unleashing their progeny." Wickramasinghe's team was unable to detect DNA yet. However, he is optimistic. "I personally believe that there has to be DNA, but how different the DNA turns out to be from terrestrial sources remains to be seen."

The cell-like structures replicate even at high temperatures. Some critics cite this as evidence the structures are not biologically related. However, Wickramasinghe says this argument may not be valid, as the high pressure associated with the tests "could compensate . . . in inhibiting molecular break-up."

Biologists, ecologists, and even an Indian government report have offered more mundane sources for the mysterious rain. The suggestions range from reddish algae that proliferate in ponds to a fog of blood cells from an unlucky flock of bats struck by the meteor. More work must be done if the mystery is to be solved. "We need to confirm the presence of DNA and find sequences that are significantly different from sequences found in known terrestrial algae," says Wickramasinghe.

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