

New evidence for lichens on Mars

The argument about the possible existence of simple life on the planet Mars has been revived. Ten years ago the world was thrilled when two United States spacecraft programmed to search for life landed on the planet. A mechanical arm scooped Martian soil into experimental containers and the mixture of gases released was interpreted as showing signs of primitive life. However, another Viking experiment, to search for organic molecules, the expected waste products of life, was negative. This second result led Nasa scientists to conclude in 1976 that life was absent and a hitherto unexplained inorganic mechanism was responsible for the nutrient uptake and apparent respiration.

What Nasa scientists failed to consider in 1976 was that life on Mars could be ticking over at such a slow rate that little in the way of organic debris would be present in the Martian soil. Three years later a test of the Viking experiment carried out by Dr K. Biemann, using a soil sample from the Antarctic (in which micro-organisms were known to exist) produced results almost identical to those actually obtained on Mars. Two years later, Dr G.V. Levin and Dr P.A. Straat announced that all attempts to recreate the positive results in the Martian gas release experiment, using inorganic models, had failed. At a meeting held in Washington recently, Levin and Straat announced that it is much more likely than not that life was detected on Mars in 1976. After a decade of extensive experimentation carried out in the laboratory, it was confirmed that no inorganic explanation of the Viking results was possible.

The most intriguing claim concerns the nature of living systems that might have been detected on Mars. Dr Levin and Dr Straat showed that there is evidence of lichens. Photographs of a Martian rock taken some years apart by a camera on one of the Viking landers showed changing patterns of greenish patches similar to the behaviour of terrestrial lichen-bearing rocks.

K. Biemann and J. Mol. (1979) Evol. 14: 65

G. V. Levin and P.A. Straat (1981) Icarus 45: 494.

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