

Conversation Pieces

Technically intriguing items
from TRW, guaranteed to add luster to your
conversation and amaze your friends.

Is anyone out there? The question of whether life is unique to planet earth has long fascinated the mind of man. As early as the 4th Century B.C., the Epicurean philosopher Metrodoros said, "To consider the earth as the only populated world in infinite space is as absurd as to assert that in an entire field of grain sown with millet, only one grain will grow." In the sixteenth century the heretic Giordano Bruno announced that "innumerable suns exist" and "innumerable earths revolve about these suns . . . Living beings inhabit these worlds."

Harvard astronomer Harlow Shapley approached the problem statistically. Of the 10^{23} stars in the universe, said Shapley, it is probable that 100 million have planets similar enough in composition and environment to earth to support life.

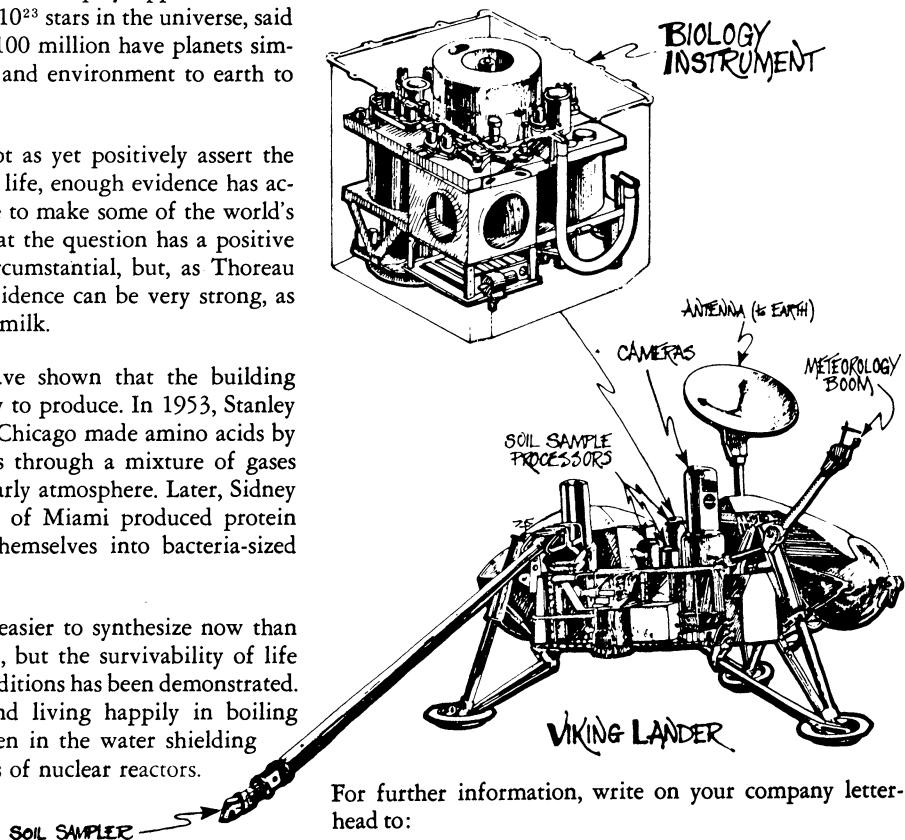
Although scientists cannot as yet positively assert the existence of extra-terrestrial life, enough evidence has accumulated in the last decade to make some of the world's leading scientists suspect that the question has a positive answer. The evidence is circumstantial, but, as Thoreau said, some circumstantial evidence can be very strong, as when you find a trout in the milk.

First of all, scientists have shown that the building blocks of life are rather easy to produce. In 1953, Stanley Miller of the University of Chicago made amino acids by passing electrical discharges through a mixture of gases that simulated our earth's early atmosphere. Later, Sidney Fox of Florida's University of Miami produced protein fragments which formed themselves into bacteria-sized spheres.

Not only does life seem easier to synthesize now than it did twenty-five years ago, but the survivability of life under presumably lethal conditions has been demonstrated. Organisms have been found living happily in boiling water, strong acids, and even in the water shielding the highly radioactive cores of nuclear reactors.

Recently, biologists have simulated the biologically rigorous conditions of the Martian environment in "Mars jars." Some of the organisms placed in the jars readily adapted themselves to the extremely cold carbon dioxide atmosphere.

As a subcontractor to Martin-Marietta, TRW Systems is at work on a NASA project which may shed some light on the question of extraterrestrial life. We are building the Viking Lander Biology Instrument, three tiny, fully automated laboratories, which will be landed on the Martian surface in 1976. On earth, these laboratories would occupy several rooms and a full crew of scientists. We are shrinking them into a single foot of space. We hope you're interested as we are in what Viking will find.



For further information, write on your company letter-head to:

TRW
SYSTEMS GROUP

Attention: Marketing Communications, E2/9043
One Space Park • Redondo Beach, California 90278