Pluto story

The discovery of extraterrestrial life was the key event of the third millennium.

Robert Silverberg

The discovery in AD 2668 of life on Pluto brought about humanity's greatest re-evaluation of its place in the Universe since the time of Copernicus, more than a thousand years before. It was Nicolaus Copernicus (1473–1543) whose astronomical calculations overthrew the ancient Ptolemaic theory of the heliocentric Solar System and demonstrated that the Earth was not the centre of the Universe but actually moves in orbit around the Sun.

Copernicus's work undermined the primacy of the Biblical view of the Universe and helped to weaken the religious establishment's power over scientific thought in mediaeval Europe. But the failure to produce evidence of life on any world but ours, even after the beginning of the age of space exploration, gave continued strength to the belief in the uniqueness of Earth.

The twentieth-century discovery of organic compounds in meteorites originating on Mars suggested that the red planet might once have been capable of sustaining life, but subsequent exploration offered no confirmation of this. The discovery late in the same century of a global ocean beneath the frozen surface of Jupiter's moon Europa aroused speculation that it might contain primitive life-forms, but this, too, proved untrue. And the numerous reports of visits to Earth by intelligent extraterrestrial beings, commonplace since the mid-twentieth century, have so far proved to be nothing

more than manifestations of popular irrationality.

Thus, by the middle centuries of the present millennium, most of us once more were convinced that Earth was the only place in the Universe where the miracle of life had ever occurred. There was no revival of the old churchly view that there had been a special act of creation: instead, it was generally thought that a unique and wildly improbable random event had taken place here on Earth — the blind shuffling of free molecules into a biological structure capable of persisting and reproducing itself. But this alone was enough to generate a kind of pre-Copernican mystical belief in the specialness of life on Earth. Though some iconoclasts warned that such thinking could lead to excessive complacency and an ultimate decadence, the absence of countervailing evidence robbed their arguments of any real force. Further exploration of space therefore seemed pointless, and hardly any took place in the deplorable 200-year period that began about 2400.

Then came the so-called Second Renaissance of the twenty-seventh century, bringing with it great prosperity and a revival of scientific curiosity. The inner planets of the Solar System were revisited after an absence of four centuries, and then the first voyages to the outer ones were made, culminating in the Pluto expedition of 2668 and the stunning discovery of living creatures there. "Pluto bears life", was the astounding, unforgettable message from the voyagers, who described crab-like creatures visible by the

thousand in the cold, glinting light of Pluto's day, scattered, as motionless as stones, along the shore of a methane sea, with thick, smooth, waxy-textured, grey shells and a great many jointed legs. No sign of life could be observed in them, even when they were prodded. But a few days later the bleak Plutonian night arrived, bringing with it a drop to two Kelvin, and they began to crawl slowly about. Evidently a state of dormancy was their norm except at temperatures of a few degrees above absolute zero.

Dissection of one captured specimen indicated an interior made up of rows of narrow tubes composed of silicon and cobalt lattices. A fluid flowing through these structures was identifiable as helium-2, the strange, friction-free form of the element found only at the extremely low temperatures typical of Pluto's night. Helium-2 makes possible the phenomenon known as superconductivity: the indefinite persistence of electrical currents flowing through a resistance-free medium. The obvious conclusion was that the energizing principle of the Plutonian creatures was superconductivity: that they were a life-form that could exist only on Pluto and function only during the Plutonian night.

But were these in fact life-forms? In the aftermath of the discovery it was widely argued that the crab-like things were nothing more than machines — mere signal-processing devices designed to operate at supercold temperatures, left behind, perhaps, by explorers from some other part of the Galaxy. Further study, however, indicated that the creatures performed the metabolic functions characteristic of life. They could be observed feeding on methane and excreting organic compounds. Apparent instances of reproduction by budding were also observed.

Today we have no doubt that the Plutonian creatures meet our definitions of true living beings. The myth of Earth's uniqueness in the Universe has been destroyed forever, and we are all familiar with the social and philosophical consequences. But are the Plutonians truly native to the frozen world where they were discovered, or are they sentinels posted there by some superior species from another star, which will return to our part of the Galaxy some day? Three centuries later that question remains unanswered, and we can only watch and wait.

Robert Silverberg has been a science-fiction writer for the past 45 years. His most recent books are *The Alien Years* and *Lord Prestimion (Voyager)*.

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