NEWS AND COMMENTS

CONFERENCE ON THE ORIGIN OF LIFE

The Third College Park Colloquium on Chemical Evolution was held September 29 to October 1, 1976, at the University of Maryland. Under the direction of Dr. Cyril Ponnamperuma the colloquium attracted interested scientists from many parts of the world. A.I. Oparin of the Bach Institute of Biochemistry in Russia, considered the father of the chemical evolution theory of the origin of life, delivered the opening address, "The Problem of the Origin of Life in a Cosmic Context."

Of special interest was a preliminary report of the Mars Viking Lander "Life Detection" (biology) experiment and the gas chromatography-mass spectrometer (GCMS) experiment search for organic compounds on the surface of Mars. The "Life Detection" experiment actually consisted of three separate experiments in which aliquots of martian soil were treated in different ways to detect possible biological activity of organisms in the soil.

To the surprise of some of the investigators, the results of the biology experiments on Mars were positive, and the initial feeling among many scientists was that life had been found on Mars. The comment was made that if the same results had been obtained on a terrestrial soil, there would have been unanimous agreement that living organisms had been detected. However, the crucial experiment using the GCMS failed to detect any organic compounds in the martian soil.

Evidently carbon is only present as carbon dioxide in the martian atmosphere. On terrestrial soil samples, positive results on the biology experiments were always accompanied by the detection of organic matter in the soil by GCMS. Lack of confirmation by the GCMS experiments raised doubts about the presence of living organisms in the martian soil and led to a number of plausible suggestions that inorganic chemical reactions, such as the presence of peroxides in the soil, could have given the "positive" results of the biology experiments.

Two full days of presentations covered such diverse topics as "Composition of the Cores of the Terrestrial Planets," "Properties of the Primitive Solar Nebula," "Volatile Outgassing on Earth and Mars," "Water in the Martian Regolith," "Possible Chemical Reactions on the Surface of Mars," "Precambrian Molecular Fossils," "The Asymmetric Photolysis of DL-Leucine," and "Prebiotic Oligonucleotide Formation."

In spite of the attempt to put the field of chemical evolution on a firmer experimental base, it continues to be highly speculative.