

## BIOLOGY

# Studies Show Martian Life

The possibility that living matter may exist on other planets becomes increasingly important to man as he prepares for an age of space travel.

► **NEW EVIDENCE** that life exists on Mars has been found by Dr. William M. Sinton, presently at Lowell Observatory, Flagstaff, Ariz.

Spectroscopic studies of Mars, made in 1956 when the red planet was close to the earth, show there is matter on Mars absorbing the same wavelengths of radiant energy as some forms of plant life on earth.

Just what this matter is Dr. Sinton is not certain.

He has suggested that it may be bacteria. In any case, the scientist told *SCIENCE SERVICE*, "it is organic and regenerative, that is, living and reproducing."

This is the first time that such a study has been reported. Heretofore, theories of life on Mars have been primarily founded on the fact that dark and light changes can be observed on the planet. These are thought by many to be seasonal changes, deriving their contrasting tones from the recurrence of vegetation.

Dr. Sinton explained that as the south polar cap melts on Mars the darkness moves across the planet's equator to the other hemisphere. The opposite occurs on earth where vegetation regenerates from the equator up and down toward the poles.

This might mean that vegetation on Mars is controlled by variations of moisture in the air, rather than temperature as is the case on our own planet.

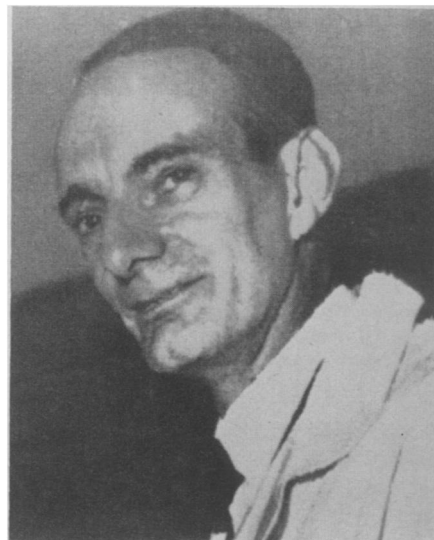
In his spectroscopic studies, made when he was at the Smithsonian Astrophysical Observatory in Cambridge, Mass., Dr. Sinton compared the wavelengths being absorbed by matter on Mars with those recorded for lichens on earth.

He reports that "although the lichen spectrum was used for comparison, the agreement does not, of course, imply that lichens are present on Mars; it indicates only that organic molecules are present. It seems unlikely, however, that organic molecules would remain on the Martian surface without being covered by dust from storms or being decomposed by the action of solar ultraviolet, unless they possessed some regenerative power.

"I hope next year to observe Mars again with a larger telescope," Dr. Sinton said, "and compare the light with the dark areas."

Dr. Sinton reports his findings in detail in the *Astrophysical Journal* (Sept.).

*Science News Letter*, November 2, 1957



**PRIZE WINNER** — Dr. Daniel Bovet, 1957 Nobel Prize for medicine.

## MEDICINE

## Nobelist Developed Synthetic Curare

► **DEVELOPING** the first useful synthetic form of curare, the deadly South American arrow poison now used to make surgical operations safer, helped win the 1957 Nobel Prize in medicine for Dr. Daniel Bovet, a Swiss-Italian pharmacologist.

The 50-year-old medical scientist was also honored for his pioneering work with anti-histamines. (See p. 278.)

Until 1946, the parent curare drug, chemically known as d-tubocurarine, was difficult to get since it had to be extracted from fresh stems of several South American vines and plants.

Dr. Bovet, now at the Italian Health Institute, Rome, and his associates succeeded in synthesizing a drug which was chemically similar to the natural curare and had the same powerful effect on the nervous system.

It was produced in this country by Lederle Laboratories, Pearl River, N. Y., under the trade name of Flaxedil.

Curare and curare-like compounds are now widely used for relaxing muscles during surgical operations, and for overcoming the muscular spasms that occur during convulsive shock therapy.

It has been used for centuries by South American Indian tribes to coat poisoned arrows for killing animals and humans.

The ancient poison attacks the nerves at the point they connect with the muscles of the body, and it is reported to have been introduced into Europe by Sir Walter Raleigh in 1595.

It was not until 1942, however, that it was used for the first time in a patient under anesthesia.

Since Dr. Bovet's development of Flaxedil, other curare-like drugs have been developed for surgical use. One of the most recent and effective is succinyl choline, also a muscle relaxant.

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## GEOPHYSICS

# Sunspot Record Reached

► **THE HIGHEST** number of sunspots in 200 years has been recorded during the present cycle that began in 1954, the National Academy of Sciences reports in its *International Geophysical Year Bulletin* (Oct.). (See SNL, Aug. 17, p. 102.)

It was expected that sunspot frequency would reach a cyclical maximum between July, 1957, and December, 1958, and this factor determined to a large degree the choice of this time for the IGY.

By January, 1957, the U. S. National Committee for the IGY says, a smoothed sunspot count of 169.6 had been reached.

"Data reaching as far back as 1755," the Committee states, "show no peak as high." The highest previous peak occurred in 1778 when a count of approximately 160 was recorded.

The peak in the sunspot cycle is still in the future, scientists at the National Bureau of Standards believe. They base their expectations of the coming peak partly on the fact that September had one of the highest smoothed sunspot numbers ever recorded, 244.

Sunspots are still little understood. So are the many solar phenomena associated with sunspots. Freak television reception, as well as aurora displays, jumpy compass

needles and interference with radio waves are believed sunspot-caused.

In addition, when the sun erupts with black spots, flares that shoot for tens of millions of miles from the sun's surface also often occur.

The *Bulletin*, which has nothing to say about the Russian earth satellite sputnik, also reports the following:

The U. S.-IGY rocket program includes the firing of 194 rockets, principally from Fort Churchill, Canada. Five types of rockets are being used, including the Aero-bee-Hi that carries 150 pounds to altitudes more than 150 miles; the Nike-Cajun that can carry 40 pounds to a height of 100 miles; the Rockoon, a Deacon rocket carried to an altitude of 70,000 to 80,000 feet by a "Skyhook" balloon before the rocket is fired, carrying 40 pounds, 60 miles above; a standard Aerobee that carries 150 pounds up about 60 miles; and the Nike-Deacon or Dan that carries 40 pounds up 75 miles.

One level of the atmosphere known as the tropopause exists over Antarctica and is being studied there. Evidence has also been found to confirm the tendency for a deep cold cyclone to exist at high levels above Antarctica.

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