

ASTRONOMY

Lichens Possible on Mars

Observations were made by infrared heat-light reflections from the planet which showed that there were no trees, flowers or ferns.

► IMAGINE a mountain peak twice as high as Mt. Everest, sticking up 10 miles in the stratosphere. That would be the earth's closest approach to a Martian landscape, as judged by the latest observations upon the planet Mars made at McDonald Observatory, Fort Davis, Tex.

No trees. No flowers. Not even ferns. The only possible life would be mosses and lichens such as cling to lofty, frigid peaks here on earth. There is no chance of the higher life forms such as the most primitive animals, much less anything like a man or a Wellsian monster.

Observations of infrared heat-light reflections from the planet, seen through the McDonald 82-inch telescope, are consistent with the existence there of mosses and lichens in the green areas of the planet.

With Mars 63,000,000 miles away and closer than at any other time in 1947, 1948 and 1949, Dr. Gerard P. Kuiper, director of the McDonald Observatory, used new heat-light measuring instruments to scan the magnified disk.

The polar cap is not "dry ice" or carbon dioxide snow as some astronomers suggested, but is probably ordinary ice or snow. This was indicated by the reflection of light in the spectrum beyond 1.5 microns, where the color was black as are water, snow and ice and not white as carbon dioxide snow would be.

Carbon dioxide does exist in the Martian atmosphere, as discovered at McDonald Observatory last October. Mt. Wilson Observatory observations have shown that no appreciable amount of oxygen exists on Mars, but its lack would not rule out the growth of mosses and lichens on the planet.

Another Martian mystery must be solved before even the lowest forms of life are indisputedly possible. Nothing in the Martian atmosphere has yet been found to filter out the ultraviolet rays of the sun that would be fatal to all life. Nevertheless something does cause the Mars "air" to be opaque so far as the ultraviolet light can be measured. Dr. Kuiper and his colleagues have found that it is not sulfur dioxide, which is a heavy gas produced by volcanoes and

meteoric impact. Small amounts of it could absorb the fatal ultraviolet. Very sensitive spectroscopic tests showed no trace of sulfur dioxide on Mars or the moon.

Ozone in the upper air keeps life on the earth from being killed by a super-sunburn but this form of oxygen cannot be a shield to Mars as no oxygen exists there.

The ultraviolet light may be stopped on Mars by fine dust in its atmosphere swept up by winds that are known to attain at least 30 miles per hour in some cases.

It never rains on Mars. There are no lakes or oceans, not even any liquid water. The water in the form of vapor or frost would be sucked up by lichens from the air.

The temperature rises to only a little above freezing during the day at the Martian equator and drops to 80 to 100 degrees below zero Fahrenheit by night.

Conditions on Mars are comparable to those on earth at an elevation of 50,000 feet.

This new picture of Mars may be a forecast of things to come for the earth itself. Mars is a worn-out planet with conditions that probably will prevail on earth many millions of years hence when most of our atmosphere has been lost and mankind has long since disappeared.

Science News Letter, March 6, 1948

GENERAL SCIENCE

Winning Science Project Puts Boy in Hospital

► SCIENTIFIC experiments on straw for insulation material won 17-year old Jim Richardson a trip to Washington to compete for a college scholarship—and the same experiment almost prevented him from coming.

Jim was one of the 40 winners of the Seventh Annual Science Talent Search. He attended the five-day Science Talent Institute where \$11,000 in Westinghouse Science Scholarships were awarded.

But the stuff that broke the camel's back, almost brought both fame and bitter disappointment to the local teenage scientist. His description of his work in converting wheat and oat straw into insulation material helped place him among the winners of the Science Talent



QUIZZING THE JUDGE—Dr. Harlow Shapley, director of the Harvard College Observatory and president of Science Service, is answering the questions put by some of the Science Talent Search winners.