ASTRONOMY

Jupiter and Saturn Have Atmosphere of Deadly Gas

Life Would be Impossible There as On Outer Planets, Mars is Only Hope, Arizona Astronomers Conclude

LIFE on the other planets, with the possible exception of Mars, is absolutely impossible. This has been shown by observations at Lowell Observatory on Jupiter and Saturn which show their atmospheres to consist largely of methane and ammonia, deadly gases not widely found in nature here on earth.

Dr. V. M. Slipher and Arthur Adel of the Lowell Observatory, Flagstaff, Ariz., have clinched the argument by use of evidence gathered by planetary spectrum photographs taken through telescopes and laboratory spectra of the gases.

Ammonia is the familiar stifling, strongly odorous gas, and methane is the deadly hydrocarbon gas often called firedamp or marsh gas. Violent explosions in coal mines result from methane. Ammonia is used in artificial ice machines. The atmospheres of Jupiter and Saturn may be visualized as like the interior of a gassy mine mixed with an exploded ice factory, all at the immensely low temperature of some 220 degrees below zero Fahrenheit.

If an earth creature could take an impossible Jules Verne trip to ringed Saturn or enormous Jupiter, the great cold and the deadly gases would snuff out his life. And if oxygen were taken along for breathing purposes, there would be a terrific explosion as soon as it arrived. This fact is proof that no oxygen exists upon the two planets.

Although Uranus and Neptune, the two planets next beyond, are too distant and small to allow as detailed telescopic inspection, their light makes the astronomers feel sure that they too have methane-ammonia atmospheres, with no possibility of life. This eliminates four out of nine planets as abodes of life.

Pluto, most distant and most recently discovered planet, is without atmosphere because like the earth's moon, and Mercury, the sun's nearest neighbor, it is too small and has too little gravity to hold onto gases.

Venus, with much atmosphere, can not have life unless it is an extremely strange sort that would exist without water or oxygen and thrive upon carbon dioxide, the waste product of respiration here on earth.

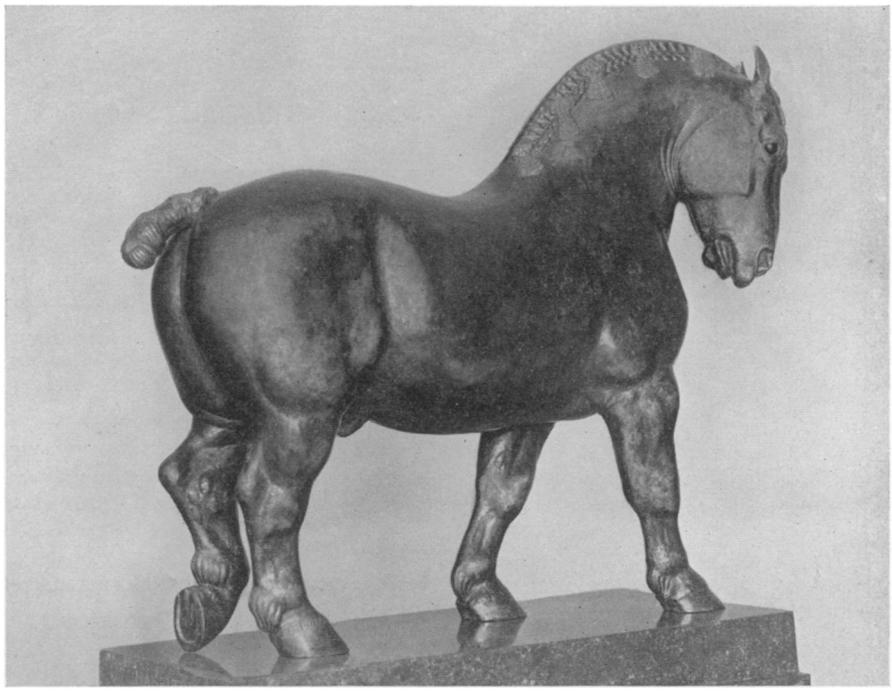
Mars is the best bet for life elsewhere in the solar system because it has visible clouds somewhat similar to those on the earth. The question of the existence of life-supporting oxygen is in dispute. It has water, but less than on earth. There seem to be seasonal changes. The temperatures vary from about 65 to 70 degrees Fahrenheit at midday to far below zero at night. Man could not live under such conditions, but some sort of odd lichens or fungi or strange Martian germs might.

The ammonia-methane composition of the atmosphere of the giant and distant planets was first hinted over two years ago by computations of Dr. Rupert Wildt of Goettingen, Germany, using Lowell Observatory spectrographic observations. More recently, Dr. Theodore Dunham, Jr., of Mt. Wilson Observatory demonstrated conclusively the existence of ammonia.

Dr. Slipher used the rich photographic data of Lowell Observatory, which specializes on observations of the planets. These he compared with laboratory work at the University of Michigan on the way light is affected by high concentrations of methane. This gas was compressed so greatly that the light has a path equivalent to over a mile in length.

It is possible that Jupiter and Saturn may not have solid surfaces. Because of the great cold upon them the ammonia gas may freeze out in beautiful white crystals. One theory is that the different light-colored markings upon the two planets are due to great geyser-like wellings of the sub-frigid ammonia crystals.

The idea that the gigantic disturbances on the surfaces of Jupiter and Saturn are periodic and are in some way set off by the same unknown cause that influences the sunspots and the aurorae of the earth is advanced by Dr. E. C. Slipher, of Lowell Observatory,



IN A MUSEUM NOW

The horse, or a statue of one, has already found its way to the museum. The sculpture by Herbert Hazeltine, made one-fourth life size in bronze plated with gold and ornamented with lapis lazuli, ivory, and onyx, is one of a group of British champion domestic animals recently placed on exhibit at the Field Museum of Natural History. It is the portrait of Sudbourne Premier, a Suffolk Punch stallion.