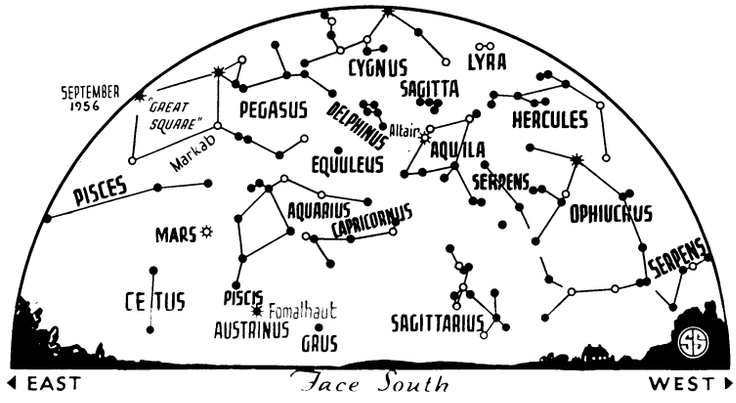

on the dark side it may drop as low as 150 below zero. The mean temperature would be in the neighborhood of 10 degrees, as compared with about 60 on the earth.

Mars has an atmosphere, although at the surface it is only about an eleventh as dense as the earth's at sea level, that is, about the same density as ours would be at an altitude of 11 miles. It contains little if any oxygen, certainly less than one percent of the proportion that we enjoy.

There is about twice as much carbon dioxide as we have, and perhaps nitrogen as well. Clouds sometimes appear in the Martian air. They are of several kinds: white clouds, probably similar to cirrus clouds on earth, which consist of ice crystals; a peculiar bluish cloud, believed to consist of much finer ice crystals; and others that are yellow in color—perhaps sand or dust storms.

Lichens Might Exist

One kind of vegetation known on earth might be able to exist under Martian conditions, namely, the lichens. Actually there are two different plants—algae and fungi living together, in "symbiosis," the biologist calls it. They share the labor; the fungus protects from cold and holds moisture, while the algae build up organic substances and supply oxygen to the system.

On our planet they grow where no other plant can survive, on rocks in the Himalayas as high as 16,000 feet, for example. So it might be that lichens, or some comparable form of vegetation, make up the greenish areas on Mars.

Higher life, especially animal life, seems very unlikely. The chief evidence for any such, in the past, was the so-called canals. These were discovered, when Mars made a close approach in 1877, by an Italian astronomer named Schiaparelli.

He saw what seemed to be a network of straight lines crossing the planet, and called them "canali," which is Italian for "channels." However, the word was translated into English as "canals," and that is what they are now generally called.

Doubtless this mistranslation has had a lot to do with the idea that they are some sort of artificial structure, since "canal," unlike "channel," connotes a waterway made by man. But a famous astronomer, Percival Lowell, who founded the Lowell Observatory at Flagstaff, Ariz., where some of the most important studies of Mars have been made, did propose a theory that they form a complicated network of actual canals, dug by intelligent beings to carry water supplies around an arid planet.

Few Believe Man-Made

Very few authorities hold to this theory now, and the nature of the canals is still a puzzle that has not been solved. Some think they are merely illusions, for under some conditions, when not seen very clearly, irregular chance markings may look as if they formed straight lines. Others believe that something is there, although they do not know what.

Perhaps, as one astronomer, Dr. Robert S. Richardson of the Mt. Wilson Observatory, has suggested, when we find out some day just what they actually are we will be disappointed. They may turn out to be something of which we already have some general knowledge, and we will wonder why nobody ever thought of that.

A full explanation may not come until interplanetary exploration has made it possible to go to Mars and see what the canals really are.

On the other hand, at some earlier stage of space travel we may be able to establish an observatory above the earth's atmosphere, where astronomers can use enormously powerful telescopes without the difficulties now encountered as we try to look from the bottom of the earth's ocean of air. And then, on some future close approach of Mars, the puzzle may be solved.

Celestial Time Table for September

SEPT.	EST	
1	7:29 a.m.	Moon passes Venus.
2	11:00 p.m.	Moon nearest, 224,300 miles distant.
4	11:00 a.m.	Jupiter on opposite side of sun.
	1:57 p.m.	New moon.
6	12:00 midnight	Mars nearest, distance 35,120,000 miles.
10	2:01 a.m.	Moon passes Saturn.
	5:00 p.m.	Earth between Mars and sun.
11	7:13 p.m.	Moon in first quarter.
14	12:00 p.m.	Moon farthest, distance 251,700 miles.
19	9:02 a.m.	Moon passes Mars.
	10:19 p.m.	Full moon (Harvest Moon—for several nights about this date rises at nearly same hour).
22	8:36 p.m.	Sun directly over equator, beginning of autumn.
26	8:00 a.m.	Mercury between sun and earth.
27	6:25 a.m.	Moon in last quarter.
30	8:51 p.m.	Moon passes Venus.
	9:00 p.m.	Moon nearest, distance 227,400 miles.

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, August 25, 1956

MEDICINE

Throw-Away Kidneys

➤ THE LATEST THING in life-saving artificial kidneys will be a throw-away job in a tin can with garden hose connection.

It was designed by Dr. Willem J. Kolff, the "father" of artificial kidneys, who made his first model secretly during the Nazi occupation of Holland. Working with him on the newest model were Drs. Bruno Watschinger and Victor Vertes at the Cleveland Clinic Foundation in Ohio.

Artificial kidneys, some of them large and costly, are used to "wash" the blood of patients suffering kidney failure. Poisons usually eliminated by the kidneys are removed by running the blood through a dialyzer.

The new canned artificial kidney consists of a stationary coil or cellulose tubing separated by Fiberglas screens. Layers of screen and tubing are sewed in large rolls and coiled around a 10-ounce fruit can. This is set into a larger can with the garden hose connection for the rinsing fluid at the bottom. The larger can is sealed for shipping and can be opened when needed with an ordinary can opener.

After use, this whole unit can be thrown away, thus eliminating the usual cleaning, sterilizing and setting up which takes much time. Pumps for the blood and rinsing fluid and a tank are still needed. The initial investment need not be more than $800, Dr. Kolff and associates state.

The dialyzing tin can unit complete with tubing for connection with patient will be mass produced by Baxter Laboratories, Morton Grove, Ill.

The new disposable artificial kidney and results of its use in several cases are reported in the *Journal of the American Medical Association* (Aug. 11).

Science News Letter, August 25, 1956