



POISON FROM ALGAE—Green plants, like the algae shown in the large flat tank at center right, secrete a deadly carbon monoxide gas when injured. Dr. Syrrel S. Wilks, physiologist at the School of Aviation Medicine, Randolph Air Force Base, suspects that algae, if used as a source of food and oxygen during space flight, might poison the space ship's air supply.

PHYSIOLOGY

Injured Plants Can Poison

► **INJURED FLOWERS** and vegetables can poison the surrounding air with carbon monoxide, the deadly gas found in automobile exhaust fumes.

This discovery, with its implication that future space travelers might be menaced by their own air and food supply, was reported to the American Physiological Society meeting, Iowa City, Iowa, by Dr. Syrrel S. Wilks of the School of Aviation Medicine, Randolph Air Force Base, Texas.

The evidence leading Dr. Wilks to study the plant material came from bits of green vegetation found in muscle tissue taken from the body of an aviator killed in an Air Force crash. The tissue was being examined for clues to any abnormal conditions that might have caused the accident. Dr. Wilks found carbon monoxide in the tissue, although the gas was not involved in the accident.

Since there was no reason to think the crash victim had been exposed to carbon monoxide before his death, Dr. Wilks suspected the plant material might be related to the gas found in the tissue. He collected samples of greenery and analyzed their chemical components.

Carbon monoxide ranging from a mere trace to as much as one part in 35 of plant material, with the highest concentration in alfalfa leaves, was found.

Enough gas was extracted from a pint or so of alfalfa to asphyxiate mice. From two pounds of flour made with dried alfalfa

leaves, Dr. Wilks extracted sufficient carbon monoxide to kill an average man.

The gas was released only when the alfalfa flour was exposed to sunlight in a container with water and oxygen. The scientist concluded it was released during photosynthesis, the conversion of carbon dioxide and water into oxygen and carbohydrates.

No carbon monoxide was released by healthy plants in their natural state. Damaged plants might accumulate carbon monoxide instead of using it in photosynthesis.

The amounts of gas released might be lethal in such enclosed places as silos as well as future space ships. One method often proposed for furnishing space travelers with oxygen and food is a sealed cabin containing algae, or green water plants, suspended in a liquid solution and exposed to sunlight.

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PSYCHOLOGY

Long Continuous Work Causes Hallucinations

► **WORKING** 30 hours without sleep produced hallucinations and delusions in Air Force volunteers in an experiment at the U. S. Air Force School of Aviation Medicine, Randolph Air Force Base, Texas.

The study was reported by Drs. G. T. Hauty and R. B. Payne to the American

Psychological Association meeting in New York.

The volunteers worked continuously for 30 hours on a complex task involving perception and accurate movement. They left the job only for short and infrequent periods. They were not allowed to sleep.

Tests showed little or no psychological change, but proficiency dropped off in a very regular pattern of change.

As proficiency started to drop, the men started seeing and feeling things that were not there. The visions were brief and occurred irregularly but every one of the men had both the hallucinations and delusions, which continued to the end of the 30 hours.

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