



that the occultation will take place where you are. The moon will be in a gibbous phase, three days after first quarter. Since the dark edge of the moon is the one away from the sun, and since the moon moves through the sky from west to east, it is the dark limb that is ahead.

Consequently, the star disappears behind the moon's invisible edge, and does so instantaneously, because of the fact that the moon has no appreciable atmosphere. This makes it particularly interesting to watch. When it reappears, it comes out from behind the moon's sunlit limb, and with the glare it may be a bit difficult to see. A pair of binoculars will be a help, however.

Astronomers are particularly interested in observing occultations and timing them accurately, because they make it possible to check up on the moon's motion. It might seem easy to predict the wanderings of the moon for years to come, but to do it with great precision

is one of astronomy's most difficult problems, because the moon is pulled by so many different bodies. Consequently, these calculations have to be checked from time to time and occultations, not only of bright stars, but of fainter ones as well, offer an excellent opportunity of doing so.

Celestial Time Table for January

Jan.	EWT	
2	1:00 a.m.	Earth nearest sun; distance 91,447,000 miles.
4	6:06 a.m.	Moon passes Mars.
6	8:00 a.m.	Moon nearest, distance 221,600 miles.
	8:37 a.m.	New moon.
7	6:58 a.m.	Moon passes Venus.
	6:00 p.m.	Moon passes Mercury.
8	5:00 p.m.	Mercury farthest east of sun.
13	3:48 a.m.	Moon in first quarter.
16	3:23 p.m.	Moon passes Saturn.
	Evening	Occultation of Aldebaran; see text.
19	7:00 p.m.	Moon farthest, distance 252,510 miles.
20	8:19 a.m.	Moon passes Jupiter.
21	6:48 a.m.	Full moon.
29	4:13 a.m.	Moon in last quarter.

Subtract one hour for CWT, two hours for MWT, and three for PWT.
Science News Letter, December 26, 1942

concern. Dr. Holmes suggests tests to determine whether workers exposed to tetryl have lowered amounts of vitamin C in their bodies. If so, daily doses of the vitamin should be given, Dr. Holmes advises.

The zinc oxide fume given off when brass is melted is causing symptoms somewhat reminiscent of lead poisoning which, Dr. Holmes states, suggests that vitamin C in the workers' bodies is being destroyed. He and Dr. Kathryn Campbell some years ago found that dust of lead and its compounds destroyed vitamin C in the bodies of workers and that daily doses of this vitamin in most instances resulted in great improvement in health.

Value of vitamin C in preventing heat prostration, to which soldiers in the tropics and North Africa as well as war industry workers are exposed, has already been reported.

Shock from injury and surgical operations, allergic shock as in hay fever patients, and benzene and toluene poisoning are other military and war industry conditions that might be effectively warded off by vitamin C.

The vitamin plays a part in promoting healing of wounds, lessens some of the uncomfortable effects of arsenical treatment of syphilis and has recently given good results in treatment of insomnia. This last use of the vitamin mentioned by Dr. Holmes as of military value was reported by Dr. Louis J. Karnosh of Western Reserve Medical School.

Science News Letter, December 26, 1942

MEDICINE

Frequent Short Vacations Advised for Test Pilots

➤ TEST PILOTS should be given frequent short vacations with at least one week of rest in each seven weeks, to prevent chronic exhaustion, Dr. Jan H. Tillisch and Dr. Maurice N. Walsh, of Rochester, Minn., urge in a report to *War Medicine* (Dec. 4), published by the American Medical Association in cooperation with the Division of Medical Sciences of the National Research Council.

Chronic exhaustion occurs more often in test pilots than in transport pilots, these doctors discovered, a finding which they point out is not surprising in view of the nature of the test pilot's work.

Most common symptoms of chronic exhaustion in the test pilot are: chronic fatigue, a feeling of inward tension and

NUTRITION

"Oranges for Victory"

➤ "ORANGES FOR VICTORY" might be adopted as a new slogan by citrus fruit growers and nutritionists after reading the eight military uses of vitamin C including treatment of T.N.T. poisoning reported by Dr. Harry N. Holmes, of Oberlin College (*Science*, Oct. 23).

Vitamin C, or ascorbic acid, of course, is found in many other fruits and vegetables besides oranges, and is also made synthetically. Annual output in the United States of the synthetic ascorbic acid may soon reach 100 tons, with our allies getting much of this, Dr. Holmes reports.

Latest military use for ascorbic acid is in treatment of T.N.T. poisoning. The physician in charge of a T.N.T. plant in Britain has reported confidentially to Dr. Holmes that tests have convinced him that T.N.T. destroys vitamin C and that he has successfully treated 57 cases of severe poisoning with rapid response to treatment. A number of T.N.T. plants in this country are now following Dr. Holmes' advice to give daily doses of vitamin C to their workers to prevent poisoning. Results have not yet been reported.

Poisoning due to tetryl used as booster charge in shells is now causing medical



uneasiness, anxiety, difficulty in concentration, insomnia, irritability, headache, gastrointestinal disturbances and a generally increased awareness of and a pre-occupation with bodily processes.

Flying, even high altitude flying, is not enough by itself to cause the chronic exhaustion. Long hours of hard work and the emotional strain of flying a new and at times hazardous airplane are the factors that bring on the exhaustion in the test pilot.

"Several things can be done to prevent this chronic exhaustion state," the doctors report. "Good physical condition should be assured by frequent medical examinations and corrections of defects. At least eight hours of sleep a night should be obtained. A pilot should keep himself in good physical condition by regular exercise.

"More than two or three high alti-

tude test flights in succession should be avoided.

"The importance of hobbies in securing mental relaxation should be emphasized, and a pilot should be encouraged to cultivate some. The most satisfactory hobbies are those which are not related to one's everyday occupation and which involve making something with the hands or forming collections, so that a person can enjoy the feeling that he has created something worth having. The indiscriminate use of sedative agents by pilots in an effort to dissipate nervous tension cannot be condemned too strongly. A sedative should be taken only when it is prescribed by a physician, and while under its influence a pilot should not fly. The continued use of stimulants, such as alcohol or amphetamine sulfate, is dangerous, as either one may lead to errors of judgment."

Science News Letter, December 26, 1942

ENGINEERING

Good Camouflage or None

► CAMOUFLAGE has been developed into a complex art and science to conceal vital points from enemy detection, Greville Rickard, camouflage specialist of the Office of Civilian Defense, reported to the American Institute of Chemical Engineers meeting in Cincinnati.

It is much more than painting a weird design on a battleship or putting some

branches over a gun emplacement. Better no camouflage, or merely a tone-down than too much badly done, he warned. A design detected as probably camouflage makes that spot an immediate target of suspicion.

Electric light barrages, smoke, blackouts, and structural effects are some of the methods revealed by Mr. Rickard as

● RADIO

Saturday, January 2, 1:30 p.m., EWT

"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Louis I. Dublin, third vice-president and statistician of the Metropolitan Life Insurance Company, will forecast "What's Ahead in Health."

Monday, January 4, 9:15 a.m., EWT; 2:30 p.m., CWT; 9:30 a.m., MWT; and 1:30 p.m., PWT

Science at Work, School of the Air of the Americas over the Columbia Broadcasting System, presented in cooperation with the National Education Association, Science Service and Science Clubs of America.

"Worlds Begin" will be the subject of the program.

under study by U. S. camouflage specialists.

"Blackout in practice has come to be a field apart, yet it is definitely a form of camouflage," Mr. Rickard said. "Masses, shapes, planting materials, straightness of line, continuity of line, regularity, symmetry, repetition, shadows, reflections, contrasts of water and land, all have degrees of visibility on all but the blackest of nights. We are assured from England that whatever serves successfully as camouflage by day, outside of color, serves well also for camouflage by moonlight. Furthermore, it is during the hours between twilight and dawn that smoke as a screen has been found of especial value in many areas."

Science News Letter, December 26, 1942

One-fifth of the 3,072 counties in the United States lack hospital facilities.

Chicory, which some people like to mix with coffee, can be grown wherever sugar beets are grown.

Lice, according to new experiments, prefer living on animals suffering from a Vitamin B₂ deficiency; rats fed with riboflavin had no more attraction for them.

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