ASTRONOMY

Venus Shows Same Face

Astronomer's ten-year study of planet's permanent markings shows its rotation period to be 224.7 days, which makes it the longest period of any planet in the solar system.

➤ VENUS, earth's twin sister planet, probably keeps the same face always turned toward the sun, as the moon presents the same face to the earth.

This is suggested from studies of the planet's permanent markings by Dr. Audouin Dollfus of Meudon Observatory near Paris.

Summarizing ten years' observations, both visual and photographic, Dr. Dollfus concludes Venus is covered with a high cloud layer through whose gaps dark, drifting, lower-lying clouds can be seen as well as dark surface markings.

From the semi-permanent nature of these markings, Dr. Dollfus believes the rotation period of Venus is 224.7 days, which is also the time the planet takes to make one revolution around the sun.

If the rotation period found by Dr. Dollfus is correct, then Venus has the longest period of any planet in the solar system.

Previous uncertainties concerning the rotation period resulted from the difficulties of finding definite and recognizable markings on the planet's surface.

To prepare a map of the surface features, from which the ever-changing low-lying dark clouds were eliminated, Dr. Dollfus copied all drawings made within a ten-day interval on cellophane. The dark markings were represented by stipplings of fine dots; the more dots, the greater the contrast. The cellophane representations, all the same size, were exactly superimposed and a photographic contact copy made using parallel light.

In this way, Dr. Dollfus reinforced the permanent surface markings, while temporary markings were smoothed out. Dr. Dollfus used the 24-inch telescope at the Pic du Midi Observatory for his series of more than 100 drawings.

He also took photographs in yellow, blue and ultraviolet light. Although all the photographs showed some dark markings, those in ultraviolet light gave the best results, often showing cloud bands such as reported by Dr. Gerard P. Kuiper of Yerkes Observatory from photographs taken with the 82-inch at McDonald Observatory.

Bright clouds and conspicuous mottlings appeared, Dr. Dollfus found, but these features changed so rapidly they could not be recognized from one day to the next.

Dr. Dollfus studied the personal, or subjective, factors entering his observations by investigating how Venus looked when viewed through telescopes ranging from two to 24 inches in diameter, with magnifications from 20 times to 1,200 times, through different color filters.

If the magnification is high enough so the telescopic image of Venus has six times the moon's diameter as seen with the naked eye, he found that most illusions do not affect the observer appreciably.

Applying this rule, the lowest power that can be safely used for studying the dusky markings on Venus is about 350 times, even when the planet is nearest.

Dr. Dollfus summarized his decade's observations of Venus in the French journal, *L' Astronomie* (Nov., 1955), according to *Sky and Telescope* (June).

Science News Letter, July 21, 1956

GEOPHYSICS

First European Measures Show Earth's Heat High

➤ A HUNGARIAN SCIENTIST reports from behind the Iron Curtain that the first measurements made of deep-lying virgin rock in Europe show a high value for earth's heat.

The temperature may be as much as 140 degrees Fahrenheit 3,300 feet below the surface in the Carpathian Basin, Dr. T. Boldizsar of Dept. II for Mining Machines, Technical University, Sopron, Hungary, reports. This is the distance to which it is planned to sink four shafts for a mine in the Liassic coal basin of South Transdanubia.

Such high temperatures affect mining operations "rather unfavorably," Dr. Boldizsar states in *Nature* (July 7).

Measurements taken in shafts are more direct and reliable than those taken in boreholes, he reports.

Science News Letter, July 21, 1956

MEDICINE

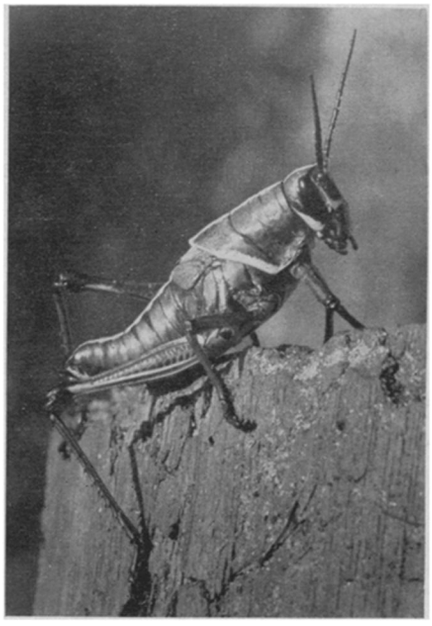
Veterans Administration Launches Disease Attack

➤ THE VETERANS ADMINISTRATION is launching a broad attack on the "unknown" in man's major diseases, concentrated in four particular areas.

Most of the increased medical research program will be conducted on mental, nervous and brain diseases (neuropsychiatric); heart and artery diseases (cardiovascular); cancer and leukemia, and problems of aging (geriatrics). The $10,000,000 being poured into the stepped-up research was appropriated by Congress for use starting July 1.

The VA also will expand its research program in tuberculosis, in the fungus diseases resembling tuberculosis, and in the infectious diseases.

Science News Letter, July 21, 1956



GRASSHOPPER—This eastern lubber grasshopper,* Romalea microptera *(Beauv.) occurs in southeastern United States, especially the Gulf States from New Orleans eastward. This specimen is a nearly mature female nymph. Body length of mature grasshoppers is two to three inches.

PUBLIC HEALTH

Greeks Knew Value Of the Long Walk

➤ THE GREEKS believed long walks are a good tonic for healthy living, according to Dr. Arthur Patch McKinlay, emeritus professor of Latin at the University of California at Los Angeles.

Walking was described by the Greek writer, Pliny the Elder, as one of the "Medicines of the Will," he reports, explaining, "you have to have will power enough to take them."

Pliny was not writing as an expert but was merely passing on to his readers the findings of prominent Greek physicians, one of whom was Hippocrates.

Hippocrates mentions walking 40 times in one chapter on digestive diseases. He prescribes brisk walks, short walks, early morning walks, after-dinner walks, night walks.

Early morning walks were recommended for emotional disturbances. Morning and evening walks for over-sensitive persons. Brisk strolls to reduce hallucinations, reduce weight, and to keep the figure trim.

Dr. McKinlay regularly takes a walk of from three to five miles daily. Still hale and hearty at 85, he has decided the Greeks were right when they described walking as one of the best forms of exercise in the world.

Science News Letter, July 21, 1956