

a few minutes before the moon's shadow engulfs an observer. Their cause is not known, and eye-witness descriptions are often conflicting. With two photoelectric eyes, set up 300 feet apart, the two scientists hope to get an accurate timing of the speed of these dark streaks and, perhaps, find out what causes the shadow bands.

The seemingly impossible task of searching for eclipse effects where the sun cannot be seen will be attempted by Drs. G. Van Biesbroeck, A. B. Meinel and Robert Weibrecht of Yerkes Observatory, Williams Bay, Wis. Dr. F. E. Roach of the Naval Ordnance Test Station, Inyokern, Calif., is associated with the endeavor.

At a site along the path where the eclipse would be seen if the sun were above the horizon at that point, they will try to spot the faint zodiacal light. This observation must be attempted before the sun climbs into the sky, since even the relatively faint light of the corona, invisible except during an eclipse, is enough to block out the even fainter glow of the zodiacal light. The part of the zodiacal light that is visible as a faint beam in the west on a moonless night just after twilight is caused by sunlight reflected from meteoric material concentrated within the earth's orbit.

By looking at the horizon before the eclipsed sun rises, the three Yerkes astronomers hope to get the first good picture of the zodiacal light close to the sun.

Improve Distance Measurement

Other important observations to be made on June 30 will aim at giving a much more precise knowledge of actual distances between points in the United States and in Europe. Three different ways of finding long distances, especially across oceans, will be used. They are the Bonsdorff, Lindblad and Gaviola methods, named for the scientists who employed them for the first time. Each requires highly sensitive photographic and photoelectric equipment.

The Bonsdorff method directly photographs the crescents of the sun as the moon passes across it. The Lindblad method, also employing photography, shows the flash, or reversed spectrum, as the moon comes between the sun and the earth. The Gaviola method measures the decreasing light intensity as the moon shuts out the sun.

Because the speed of the moon's shadow

is known and its position can be precisely timed, distances can be computed accurately using these three methods.

Four major and eight minor eclipse observation posts are involved in the mapping program, all under the direction of the Air Force Cambridge Research Center. Co-operating groups include the American Geographical Society, New York; Georgetown University, Washington, D. C.; Ohio State University, Columbus, and the Ernst Norrman Laboratories, Williams Bay, Wis.

Path of the next total eclipse visible in the United States, on Oct. 2, 1959, will start in Gardner, Mass., and cross the Atlantic Ocean to the Sahara Desert. On March 7, 1970, a three-minute eclipse will be visible along part of the East Coast.

Always protect your eyesight. Never look directly at the sun. Even when part of the sun is blotted out, you should use several layers of overexposed photographic film or a piece of smoked glass. Sun glasses, and even welder's goggles, are inadequate protection.

Science News Letter, April 3, 1954

BIOCHEMISTRY

No Alcohol Smell On Drunk's Breath

► WHAT YOU smell on a drunk's breath is not alcohol. It is "mainly the highly aromatic substances used in various alcoholic beverages," two Yale University scientists declare.

Aromatic or alcoholic, if the intoxicated person wants to cut the smell, he may get some help from "properly formulated chlorophyll products," but police who use chemical tests measuring the alcohol content of blood and breath will still be able to spot the inebriate.

The Yale scientists, Leon A. Greenberg and David Lester, report these findings in the *Quarterly Journal of Studies on Alcohol*.

Science News Letter, April 3, 1954

BIOCHEMISTRY

Toad Venom Material Aids Heart Ease Studies

See Front Cover

► THE PHOTOGRAPH on the cover of this week's SCIENCE NEWS LETTER shows a toad, *Bufo marinus*, with its venom gland exuding toxic material that contains a potent vasoconstrictor, serotonin, and cardiotonic steroids, related to digitalis.

Both of these classes of compounds are under biochemical investigation in laboratories of the National Heart Institute of the National Institutes of Health, Bethesda, Md.

This toad allows the biochemist to study the formation of substances ordinarily formed in minute quantities, in a living factory producing relatively huge amounts of the material for the size of the animal.

Science News Letter, April 3, 1954

GENERAL SCIENCE

Modern Medicine Creates Problems in South Africa

► A PRIME example of social problems created by medical advances is South Africa, Dr. Raymond B. Cowles, professor of zoology at the University of California at Los Angeles, reports.

"With vaccination and modern drugs checking such killers as smallpox, cholera and malaria, the population is increasing at a more rapid rate than ever," he pointed out on his return from a seven-month study of the country. "As a result malnutrition and prolonged diseases such as tuberculosis are becoming more widespread.

"A more equitable distribution of the land, much of which is held by the small white population, would not be a long range solution," he said.

"It might alleviate the situation temporarily, but the birth rate of the Negro and Indian populations and lowered death rate would bring the situation right back where it is today in a few years.

"Birth control," he noted, "is the obvious solution, but there are so many factors working against such a program that it seems out of the question."

Science News Letter, April 3, 1954

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