

## METEOROLOGY

# Brace for July Heat

► A JULY hotter-than-normal was forecast by the U. S. Weather Bureau for the eastern half of the United States. In the northeastern quarter of the country thermometer readings are expected to be especially higher than usual.

The Southeast and the region along the Gulf Coast will be excepted from the above normal temperatures in the eastern half of the nation, the Weather Bureau predicted.

Below normal temperatures are expected in the Northern Plains and west of the Continental Divide, with the greatest departures below usual seasonal temperatures in inter-mountain areas. In unspecified areas, temperatures will be near normal, the weathermen predicted.

Precipitation, they forecast, will exceed normal over most of the western half of the country, in the upper Mississippi Valley and in the extreme Southeast. Subnormal amounts are expected in a broad zone extending from the middle Atlantic states southwestward to northern Alabama and Mississippi. Elsewhere near normal rainfall is predicted.

## Sprawl on Ground

► ONE WAY to beat the heat these hot stuffy evenings is to sprawl out on the ground outdoors. The coolest layer of air is close to the ground during a calm night, tests reported in *Nature* (July 2) showed.

A temperature profile of the air from the ground up, made using sensitive thermometers, showed that the temperature dropped sharply for the first two and a half inches, then rose again gradually at higher levels. When not disturbed by

winds, the temperature differences became more pronounced with time.

The findings, although made during the winter, apply to warm weather too. The data throw new light on frost, which strikes California, Arizona and Florida winter crops three to four times a year.

The study contradicts the classical theory of air layers near the ground, which holds that the cooling is a direct consequence of heat loss to the ground by tiny heat currents and direct contact.

The work, reported by J. V. Lake of the University of Reading Horticultural Laboratories in England, supports the view that heat transfer by radiation is the important factor.

## Spring Fever Helps

► IF HOT summer days are rough on you, be thankful you had a good case of spring fever earlier. For without this body "tune-up" for climate change, you really would be suffering.

During the first hot days of the season, the body adds water to the blood stream in an effort to keep cool, Dr. Morton J. Rodman of Rutgers University's College of Pharmacy, Newark, N. J., reported. At first there is not time to add enough red blood cells to establish a normal balance, so the blood is thin. You have spring fever.

In time for summer, however, the balance between blood cells and plasma is achieved, and the blood vessels become enlarged to take on additional moisture. This permits more efficient working of the sweat glands, which is the body's mechanism for getting rid of heat.

Science News Letter, July 16, 1955

## BACTERIOLOGY

# Mysterious Germ Killer

► A MYSTERIOUS substance found normally in the digestive system, in tears and saliva, and in eggs may become a new weapon against disease.

Discovered by the late Sir Alexander Fleming, who also gave the world penicillin, the substance is called lysozyme. It is the subject of intensive research by Dr. Stanley E. Hartsell, a bacteriology professor at Purdue University.

Prof. Hartsell has found that lysozyme, which eats the cell walls of germs, is a good germ-killer. But in combination with certain enzymes, it works even better. With trypsin, for instance, lysozyme destroys every type of bacterium exposed to it so far in the Purdue bacteriological laboratories.

This "synergism" suggests that the team of lysozyme and trypsin could be used to digest parts of bacterial cells. Then these fractions might be used to prepare immune

substances to give the body additional protection against disease.

Another possible use interests medical researchers, who have been following Dr. Hartsell's work. They find with his methods that 400 to 600 units of lysozyme exist in the lower part of the normal human digestive system. But in people with peptic ulcer or ulcerative colitis, two painful and serious conditions, the lysozyme units soar, reaching as high as several million.

Medical men wonder if the destructive habits of lysozyme might contribute in some way to ulceration in humans. This field of study may ultimately lead to anti-lysozyme preparations to bring relief to thousands of sufferers from ulcerative conditions.

Science News Letter, July 16, 1955

*Termites* attack wood fiber.

# Questions

**AERONAUTICS**—What three types of jet planes may be used in the future? p. 37.  
How can noise from jet planes be reduced? p. 39.

**ANIMAL PHYSIOLOGY**—Why are sheep wakeful? p. 36.

**BIOCHEMISTRY**—What is believed to be the function of vitamin E? p. 37.

**ENTOMOLOGY**—How does the chigger cause itching? p. 42.

**MEDICINE**—How much alcohol must be in a person's blood before he is intoxicated? p. 38  
What discovery may lead to better itch remedies? p. 40.

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