

it has a chance to enter the home. Insulating the walls, another heat trap in the home, or painting them white will also stop heat from entering. Western and southern walls need especial attention since they are exposed to the sun during the hottest part of the day.

### Night Air Can Be Trapped

Opening windows on opposite sides of the home will allow cross currents to remove the warm air. They should be opened as soon as the outside temperature equals the inside one. If windows are left open all night, they should be closed early in the morning to trap the cool night air inside.

Planting trees, grass and shrubbery while keeping the different exposures in mind helps to achieve a natural cooling system. Plants are nature's answer to keeping the

earth cool, and since plants "sweat" too, they provide an outer defense measure in absorbing heat.

Shade trees or plants should protect the western and southern exposures. Deciduous trees, those that shed their leaves in the fall, are preferable to evergreens that might keep sunlight out during the winter.

Vine- and rose-covered trellises and pergolas are another way of shading the home and stopping the heat. If you have a terrace, grass and moss between terrace stones instead of cement will reduce the sun's glare on hot brick or stone.

Homeowners can rarely introduce flowing streams or rippling brooks at will, but some achieve somewhat the same effect with a swimming pool. Hundreds of thousands of family swimming pools are now being built in the United States each year.

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## AGRICULTURE

# Grass-Killing Disease

**A lawn-killing disease that is difficult to control and spreads alarmingly rapidly, threatens to destroy lawns and golf greens throughout the eastern half of the United States.**

► PLANT EXPERTS have identified a fungal disease that threatens to wipe out lawns and golf greens all over the eastern half of the United States.

First observed in 1959, but only identified this year, *Fusarium* blight, an uncontrollable lawn disease, has already caused hundreds of thousands of dollars in damages to several eastern localities.

Even the Merion Kentucky bluegrass on the White House lawn was completely destroyed by the disease last year.

A Massachusetts golf green was completely wiped out in one week's time. In several Long Island communities, one week of mid-80 degree temperatures and fog provided the proper conditions for the *Fusarium* blight to destroy the sodded lawns of several hundred homeowners at a cost of \$8,000 each last year. When the fog cleared, the lawn grass was dead.

Prof. Houston B. Couch, plant pathologist at Pennsylvania State University, College of Agriculture, University Park, believes that the *Fusarium* threat poses a major problem to every golf green and sodded lawn in the eastern United States.

The disease spreads rapidly. It is transmitted by mowing equipment, shoes and the air. The spores of the *Fusarium* fungus, once started, are extremely difficult to check.

Signs of the blight appear only after it is too late to control it. "Haloes" of dead grass around green grass are the final signs of the infection on lawns.

The only thing that can be done is to completely resod the lawn, after fumigating with methyl bromide. The White House lawn was redone this way.

Some hope is provided by the commercially available fungicide, Dithane M-45, only if it is applied in time to halt the

fungus in the invisible early stages of the disease.

The disease seems to thrive best in cooler sections of the country, stated Dr. K. W. Kreitlow, plant pathologist at the Beltsville, Md., station of the U.S. Department of Agriculture.

*Fusarium roseum* is the organism causing the disease, which spreads with "alarming rapidity."

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## ZOOLOGY

### Blood, Not Hump, Lets Camels 'Store' Water

► CONTRARY to popular belief, the camel's ability to "store" water for those long desert trips is not due to the hump on its back.

A recent study by Dr. Kalman Perk of Hebrew University, Rehovoth, Israel, reveals that the camel's secret lies in the unique composition of its blood and the special nature of its body-temperature regulation mechanisms.

The hump, which is made up of fatty tissues, serves as a reserve supply of food, but does not hold the camel's water supply. This has long been known by scientists.

Nor is water stored in the camel's stomach, which is actually a series of separate compartments. The combined capacity of these compartments is little more than a gallon, while the camel can store up to 30 gallons at one filling.

Dr. Perk's studies revealed that the blood of the camel retains water far more effectively than that of other animals for two reasons:

1. Camel's blood has a high concentration of albumin of a particular type that is

effective in retaining water in the bloodstream.

2. The camel's red blood cells can absorb great quantities of water almost instantaneously, and store this water for future use.

The red blood cells of most mammals will burst if large quantities of water are introduced into the bloodstream. However, the camel's blood cells can absorb the water, expanding to even twice their normal volume without any ill effects.

In addition, camels do not perspire until their body temperature reaches 105 degrees Fahrenheit, and thus retain water stored in the body much longer. When they do perspire, they can lose up to 30% or 40% of their body weight without danger. A human, in contrast, will die if he loses much more than 10%.

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## BIOLOGY

### Lichens Found Growing On Galapagos Tortoises

► TORTOISES have lichens. This type of extremely rugged plant, able to grow almost anywhere, rides on the shell of the giant tortoises of the Galapagos Islands, made famous by the evolutionary studies of Charles Darwin.

Following in the footsteps of Darwin, John R. Hendrickson of the University of Hawaii, Honolulu, and William A. Weber of the University of Colorado, Boulder, found the tortoise-bound lichens during an International Galapagos scientific expedition this year. It is believed to be the first discovery of lichens on land animals.

Lichens are curious combinations of fungi and algae that "live together" in what is called "symbiosis." They are found almost anywhere in the world. The fungi cells in the lichen colony secrete an acid which eats away almost everything from rocks to bark.

The algae, one-celled green plants, produce the food for the lichen colony by photosynthesis.

The only area of the shell which can be inhabited by the lichen colony is the upper rear of the male's shell. The slow movement of the tortoise through the bushes and undergrowth scrapes lichens from all other areas of its shell.

The lichens, which can grow in the freezing weather of the arctic region and blazing heat of the tropics, and on everything from rocks to tortoises, cannot grow near a city because of the smoke and "smog" which markedly reduce the lichen population.

A fragment of the outer, horny layer of the shell of the giant land tortoise, *Geochelone elephantopus*, with the attached lichen species, *Physcia picta*, is preserved in the lichen herbarium of the University of Colorado Museum.

The findings were reported in *Science*, 144:1463, 1964.

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The *virus* causing measles is immune to antibiotics and is controllable only by the body's own defenses.