

deficiency in eyesight and none of the persons mentioned having any difficulty in their work because of their lesser capacity to see. Many were surprised to learn they had such a handicap.

Dr. Valdeavellano's studies are believed to be the first made on the effect of high altitude on permanent residents although a number have been made in persons suffering from acute lack of oxygen in connection with aviation health problems.

The field of vision was reduced in a few of the mountain dwellers and practically all of them had enlarged blood vessels in the eyes.

Color discrimination was apparently not affected, since the percentage of Andean inhabitants with deficient color vision was about the same as in Lima. "After-images" (visual impressions lasting after the actual image has disappeared) were delayed in appearing and lasted longer in more than half of those examined.

Although some investigators have found an elevated tension, or pressure, within the eye during research on effects

of altitude, the tension in these Peruvian residents of mountainous areas was within normal limits.

### Worms Invade Eyes

➤ SEEING worms before the eyes is a reality and not an alcoholic or other hallucination for patients with the tropical disease, onchocercosis.

The worms are in the eyes and seeing them is one symptom peculiar to the disease, Dr. M. Puig Solanes reported.

Onchocercosis is an infection caused by one of the species of threadlike worms known as filariae. It occurs only in Mexico and Guatemala in the Western Hemisphere, and in two-thirds of the cases the worms invade the eyes.

The worms look like black or colored threads moving about in the visual field, the patients say. The eye specialist can see them, too, when he looks through the electric ophthalmoscope to examine the eyes.

There is no specific treatment for the eye manifestations, Dr. Puig Solanes said.

*Science News Letter, January 17, 1948*

#### MEDICINE

## Navy Doctors Join Safari

They will go along with the University of California African Expedition to study native tropical diseases and protect other scientists.

➤ MICROSCOPES will supplement rifles on the new sort of safari expected to be undertaken soon by Naval medical scientists. When contract negotiations now pending are completed the scientists will accompany the University of California African Expedition, which proposes to turn the light of scientific research on the darkest continent.

The Navy medical group, latest planning to join the African Expedition, will have a two-fold duty. First, it will provide medical service to the top paleontological and anthropological scientists who, under the sponsorship of the University of California, will cover most of Africa this year seeking traces of primitive man and apes.

Second, the Navy, already well-known for its research in tropical diseases, will study such native diseases as African sleeping sickness, Bilharzia or snail fever, plague, scrub typhus, yellow fever and malaria. There are also a host of parasites in human beings concerning

which the Navy scientists are exceedingly curious, such as the particular form of hookworm in Mozambique, Portuguese East Africa.

To pursue their studies of these diseases, the Navy medical group will have to trap and shoot animals which are disease carriers. Among these are the rodents which are known carriers of bubonic plague; the zebras which are attacked by ticks and may carry relapsing fever; the deer, gazelles, eland, and possibly lions, tigers and leopards thought to be reservoirs of African sleeping sickness; and a large group of insect-eaters such as the shrew which may be a carrier of plague and malaria.

Most of these animals have not been used in research by American medical scientists before because animals which are potential disease carriers are not allowed to be imported. If they should escape captivity they might introduce a whole new series of diseases into the United States.

There are particular regulations against the fruit bat, a known malaria carrier, which if once established here would destroy citrus fruits. This fruit bat, however, is highly regarded by medical scientists as a good laboratory animal because it is easily raised in captivity. It may be that certain phases of the malaria cycle, not yet entirely understood, could be worked out through study of it.

The leader of the Navy group, Comdr. Julius M. Amberson, USNR (MC), says his party will not take restricted game such as the gorilla, elephant or giraffe unless necessary. They are more interested in small game concerning which there is less scientific knowledge.

All information discovered will be made available to research and public health authorities in Africa, and their respective governments.

Among the more interesting sections to be visited by the medical scientists are the Nubian desert, which has not been studied by a scientific group for over 100 years, the Sudan proper and the great central lake regions of Africa.

Assisting Comdr. Amberson will be Dr. Ernst Schwarz, zoologist and an authority on African mammals; Comdr. Trenton Ruebusch, University of Virginia parasitologist; and Capt. Harry Hoogstaal, former Army medical officer and entomologist from Chicago's Field Museum.

*Science News Letter, January 17, 1948*

#### AGRICULTURE

### Spent Brewery Hops Form Good Mulch for Plants

➤ WASTE hops from breweries can be used to protect valuable plants from weather, weeds and fire.

Used as a mulch on the famed plants of the Arnold Arboretum of Harvard University, the spent hops were found to be a better protecting material than leaves, hay or straw which are commonly used. These mulches may be set on fire by a carelessly discarded cigarette. The waste hops, even when dried out, do not blaze up, and a flame will quickly go out unless exposed to other material.

Many mulches have been tried to protect the plants for the Arnold collection from this hazard. Some of the materials include wood shavings mixed with horse manure, ground coconut hulls, vermiculite, buckwheat hulls, ground banana stalks, peat moss and glass fibers. But the beer byproduct is the best one yet found.

For parks and other large, open areas where plants need to be protected, the spent hops may solve an important problem, but in your own garden, you will probably want to continue using leaves

or straw. The hops have a disagreeable odor which gradually disappears in large open areas, but might be less attractive in a small, compact home garden.

*Science News Letter, January 17, 1948*

## PLANT PATHOLOGY

## Test for Plant Diseases

**A brilliant red color develops when certain virus-infected leaves are treated with an alkaline solution. May also prove useful as tool for study.**

► A QUICK chemical test for some virus diseases of plants has been developed by Dr. R. C. Lindner, plant pathologist of the State College of Washington, at the Tree Fruit Branch Experiment Station at Wenatchee.

The test depends on a brilliant red coloration that develops when certain virus-infected peach or sweet cherry leaves are treated with an alkaline solution.

The test should be of great aid in establishing virus-free sources of plant material for propagation purposes, Dr. Lindner points out in his report to the journal, *Science* (Jan. 2).

It should give material aid in diagnosing some cases where symptoms are few and not typical, and might also be useful as a tool for study.

Ring spot, mottle leaf, rasp leaf, rusty mottle, twisted leaf and little cherry diseases of sweet cherry trees and cherry rusty mottle, western X-disease and little peach diseases of peach trees have been detected by the test.

Virus diseases of apples, apricots, raspberries, strawberries and blueberries can probably also be detected by the test.

To make the test, a disk is punched out of the middle of a leaf with an ordinary paper punch. The leaf disk is put in a test tube with a solution of sodium hydroxide, copper sulfate and sodium citrate. The tube is heated in a boiling water bath for five to 10 minutes, allowed to cool for 10 minutes and then shaken thoroughly. Normal leaves give a blue-green color, those from plants infected with certain viruses give a red color of varying intensities. The differences can be detected by the eye alone, but for accurate work, they are measured in a photoelectric colorimeter.

The chemical that gives the color has not yet been identified but is believed to be a tannin.

Girdling is the only factor known at

present to interfere with the test. Leaves from a girdled branch of virus-free trees give a red color like that of virus-infected leaves.

*Science News Letter, January 17, 1948*

## TECHNOLOGY

## New Machine Washes Eggs Quickly without Injury

► THE 500-bird poultry farmer, or the big poultry man, need no longer wash his eggs by hand. A new machine developed in Ithaca, N. Y., under the direction of Prof. Forrest B. Wright of Cornell University, will do the job five times as fast and without any injury to the eggs.

In the new machine, which in ap-

pearance resembles a horizontal cylinder some three feet long, the eggs are passed in a continuous stream and are flushed for 22 seconds in hot water at a temperature of from 165 to 170 degrees Fahrenheit. The water is supplied through a perforated pipe which extends out over revolving, abrasive-coated, cloth disks. The hot water softens the dirt; the scouring action of the disks removes it. The debris is carried away with the waste water.

The eggs are held against the pressure of the disks by two plastic rollers. These rollers also spin the eggs, causing them to turn on their short axes so that the ends of the eggs are cleaned as well as the rest.

The exposure of the eggs to the hot water for the short interval of 22 seconds has no effect on the matter inside the shell. After washing, the eggs are rolled over toweling to remove moisture, then quickly dried in a blast of hot air.

Dirty eggs washed in cold water will not keep as well as unwashed eggs, but those washed in this machine will keep in storage better than dirty eggs cleaned by any other method tested by the college. The machine removes very little of the natural "bloom" from the egg shells, and it can handle thin-shelled eggs without breakage.

*Science News Letter, January 17, 1948*



**EGG WASHER**—Without damaging even thin-shelled eggs, this new machine can clean a continuous stream of eggs. Hot water, supplied through a perforated pipe, softens the dirt, the scouring action of the cloth disks removes it and the debris is carried away with the waste water.