

names are Master Sergeant J. H. Bishop and Staff Sergeant Olaf Jensen. Working with them were J. F. Cooper and J. R. Kelly of the Goodyear Company, which constructed the balloon bag.

Doing a balloon repair job is one thing when undertaken in a factory on a level work bench and quite something else when made in the midst of acres of fabric sprawled on the ground.

Shortly after midnight, as the inflation was started, the flood lights revealed the 20-foot rip near the equator of the balloon. The repair men measured it quickly, rushed to the nearby gondola house, cut out a suitable patch and came back.

With quick-drying cement so sticky that two pieces of fabric coated with it and once touched together will hold fast, they carefully worked their way around the more than forty feet of edge and overlap. Giant 1,000 watt electric light bulbs nearby provided the heat necessary, for the night was cold.

A single slip in the joining might have produced a wrinkle which could not simply be pulled out smooth. Get-

ting rid of a wrinkle required the application of carbon tetrachloride to dissolve the cement and then a new coating of the rubber cement. Each slip meant valuable minutes slipping by, which cut the time the balloon could be aloft.

While they worked feverishly, yet carefully, thoughts of stresses and strains in the balloon envelope which the patch would develop ran through their heads. The patch was strong enough, for it was heavier material than the fabric at the point of the rip. But its very presence set up stresses at the boundaries that lowered the factor of safety.

Almost impossible to calculate mathematically in exact degree, the factor of safety was lowered roughly by half through the presence of the patch. From 9 or 10 the safety factor was probably lowered to 5 or 6.

Cpts. Anderson and Stevens weighed the ascension pro and con. Pro won, and the flight succeeded. But only because the repair job, made so hurriedly, stood the test.

Science News Letter, November 23, 1935

ed that it was transmissible to human beings, and also that it might be beneficial for treating paresis. The more complete series of experiments conducted by Drs. van Rooyen and Pile confirm these preliminary findings, and emphasize that the use of the monkey parasite may sometimes be much more convenient and practical than that of the human malarial parasite carried by the *Anopheles* mosquito.

Science News Letter, November 23, 1935

ZOOLOGY

Black Wolf of Louisiana Takes His Own Photograph

BLACK wolves taking their own photographs at midnight, in the dark of the moon, in thick woods, down South.

It all sounds very spooky, but it really happened, and was nothing more than the carrying out of a carefully planned, scientifically prepared program.

The black wolves live in the Singer Wildlife Refuge, on the banks of the Mississippi in northern Louisiana. Their photographs were taken by flashlight, with cameras set off by cleverly concealed electrical apparatus. The photographs, published in a new bulletin of the Chicago Academy of Sciences, constitute the first known self-portraits of timber wolves made in their natural habitat.

The pictures were secured by Tappan Gregory, Chicago naturalist, with the collaboration of Robert S. Sturgis of Chicago and Stanley Young of the U. S. Biological Survey, and the assistance of a number of other Biological Survey workers.

To obtain an animal self-photograph, a charge of flashlight powder, with an electric fuse to fire it, is set on a post in a paraffined cardboard box. The wires from the fuse run to a device that closes the circuit when the animal brushes against an invisible fine wire or steps on a buried tread. So well concealed are these mechanisms that they do not show in the resulting photographs, and the animals might easily be a thousand miles from the nearest works of man, so far as visible evidence goes. The air-concussion from the explosion of the flashlight powder is used in another mechanism to snap the shutter of the camera, making the whole process automatic.

Making wolves and other beasts of the forest take their own pictures at night, is not as simple as it sounds, however. Mr. Gregory tells of a score of vexations that beset the man who hunts wolves with a camera. Other animals,

MEDICINE

Monkey Malaria Now Used In Treating General Paresis

MONKEY malaria has been successfully used for treating general paresis, the distressing mental illness which is an end-result of syphilis.

For certain cases, at least, this latest method of relieving an age-old scourge may prove to be better than infecting the patients with strains of human malaria, as has been done so widely and usefully since the chance discovery in 1920 of Prof. Wagner von Jauregg in Vienna.

This new method has been developed by Dr. C. E. van Rooyen, Halley Stewart Research Fellow at the University of Edinburgh, and Dr. G. R. Pile, senior assistant medical officer of the Midlothian and Peebles Asylum. (*British Medical Journal*, Oct. 12, 1935.)

One of the chief advantages is that the monkey infection can in some circumstances be kept much nearer to the doctor's hand than the human, since by suitable treatment a monkey can be kept in an infective condition for at least six months and in a laboratory close to centers of population which may be far distant from sufferers from human malaria. Other advantages are the comparatively

short period of incubation with the monkey infection, the gentle onset of fever with this disease, and the particular ease with which the fever can be terminated with quinine.

Parasites of the malaria type occur commonly in the blood of monkeys, but are more or less harmless so long as they are confined to the species of monkey which is accustomed to the particular strain concerned. Not until a few years ago was it discovered that heavy infection of a malarial kind could be produced by inoculating the common Indian monkey with the parasite from another species. The strain of this parasite that has been maintained for some two years at the London School of Hygiene and Tropical Medicine was used by Drs. van Rooyen and Pile for their new attack on paresis.

This strain has been much in demand for experimental researches, and has been transmitted, via blood sent by mail, to a number of centers in Europe, and to New York, successfully withstanding the period of twelve days involved in the last instance. Early experiments with this strain of the monkey parasite show-



BIG BAD WOLF

from wandering pigs to over-inquisitive raccoons and bait-stealing skunks, often fire the flash, wasting all the work of a night's set-up. The apparatus itself may "go haywire" due to moisture, corrosion, or mechanical accidents.

But patience, and everlasting willingness to try it again every time something goes wrong, in the end bring their reward, in the shape of first-class pictures of the Big Bad Wolf.

Science News Letter, November 23, 1935

PUBLIC HEALTH

Increase in Malaria Deaths; Millions of Cases Estimated

**Any Community Can Now Rid Itself of This Disease
Yet It Has Been Allowed to Spread Despite Drainage**

DEATHS from malaria are increasing to an alarming extent in the United States. The seriousness of the situation is pointed out by officers of the Metropolitan Life Insurance Company, who refer to "the rising menace of malaria." (*Statistical Bulletin*, Oct., 1935). According to their estimates, at least 900,000 persons are suffering from this preventable disease at the present time.

This estimate is far too low, in the opinion of Dr. L. L. Williams of the U. S. Public Health Service, who is in charge of the service's malaria investigations. Dr. Williams estimates that there were two million cases of malaria in 16 southern states during 1934. He thinks the number of cases has dropped off a little since the 1934 peak, but the 1935

figures will not be available until the end of the year.

The number of cases is not known exactly, but is calculated from the deaths reported. Some authorities estimate 200 cases for every death, but Dr. Williams believes 500 to 1,000 cases for each death is more nearly accurate. Malaria accounted for 4,520 deaths in the United States during 1934, latest year for which figures are available.

The deaths and untold suffering caused by this disease can be prevented. On this point the editor of the *Statistical Bulletin* states:

"It is an indisputable fact that any community can now rid itself of every trace of this disease if it so desires. All that is necessary is the application of

the principles laid down by General Gorgas in his work in Cuba and the Panama Canal Zone more than 30 years ago."

The general impoverishment of the people since the depression has been blamed by some for the alarming increase of malaria in the South. The feeling is that people have been too poor to buy quinine or other anti-malaria remedies. On the other hand, it is pointed out that most of these states have had considerable CWA and FERA assistance for their drainage programs and this should have helped to offset the unfavorable effects of the depression.

Dr. Williams explains, however, that malaria rises and falls in curves which reach peaks of high malaria prevalence every seven years. In 1934 the biggest peak in 25 years was reached, Dr. Williams thinks.

"Malaria is not a static thing," he said. "It ebbs and flows like the tides."

When the curve goes up, malaria also spreads geographically, cases and outbreaks occurring in the regions that usually have none at all.

In 1934, for instance, there were small epidemics in New Jersey, Ohio and Michigan. In addition, more people in malarial regions have the disease, they are sicker and the number of small epidemics increases. It is from observations of these conditions as well as from death rates that the U. S. Public Health Service officials make their estimates of the amount of malaria in the country.

A drop in malaria, beginning about now, is expected by Dr. Williams because he figures it is time for the curve to start its natural downward course and also because of the tremendous amount of drainage work done under the WPA. Twenty thousand miles of main outlet ditch have already been completed and about that much more will be dug before the program is over.

Most of the malaria cases in the country are in southern Virginia, South Carolina, North Carolina, Georgia, Florida, Alabama, Mississippi, the western half of Tennessee, the western tip of Kentucky, the southern tip of Illinois, southwestern Missouri, Arkansas, the southeastern quarter of Oklahoma, Louisiana, the eastern third of Texas, and the Rio Grande valley of New Mexico. In addition, there is always a little malaria in San Joaquin Valley, Cal., and the Willamette Valley, Ore. These last two malaria centers, however, do not give health authorities much concern as the disease is neither very severe there nor does it spread from there to other regions.

Science News Letter, November 23, 1935