

## MEDICINE

# Tropics Don't "Thin" Blood

Veterans need not fear "tropical anemia" as result of service in the Pacific. Blood values are generally the same everywhere.

► G. I.'S RETURNING from the Pacific can banish one disease fear from their minds, that of "tropical anemia" or "thinning" of the blood.

This condition does not occur in the tropics, Dr. Christopher J. Hamre, chairman of the zoology department of the University of Hawaii, said. Existence of "tropical anemia" has been disproved by many scientific studies all over the world, the zoologist said.

Dr. Hamre, who has made extensive blood value studies in Honolulu and compared them with other studies, said that blood values are generally the same everywhere. Furthermore, no blood value differences are apparent on racial lines.

"If a man is in good health, has no disease such as malaria, and has had proper food, he need not worry that the tropics have 'thinned' his blood," Dr. Hamre said.

The zoologist's study shows that there are no significant differences in blood values of men in latitudes ranging from Boston to Bombay and Manila. Determination of these blood values was made by measuring hemoglobin and red blood cell content, the two best yardsticks of blood quality.

Explaining the discomfort from cold

which many persons feel on returning to the mainland, Dr. Hamre said this is caused by other factors, to which the body becomes accustomed without difficulty over a period of time.

Dr. Hamre cited the following examples of comparable blood values as measured by hemoglobin and red blood cell content:

Hemoglobin count (grams per 100 cubic centimeters of blood): Honolulu, 15.10; Kansas City, 15.83; New Orleans, 15.87; Boston, 15.06; Manila, 14.11; Bombay, 15.37; Buenos Aires, 14.80.

Number of red blood cells per cubic millimeter: Honolulu, 5,080,000; Boston, 5,350,000; Manila, 5,200,000; Bombay, 5,110,000; New Orleans, 5,260,000.

The differences in these figures are not in any instance significant, Dr. Hamre said.

In his Honolulu study, Dr. Hamre tested the blood of 137 young men who had lived in the Islands for from two years to all their life. Persons of Caucasian, Oriental, and mixed descent were used as subjects.

Dr. Hamre added that no differences in blood values were found on racial lines in either his study or the studies made in other regions of the world.

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that are immune to penicillin but which streptomycin will attack are the causes of such diseases as typhoid fever, dysentery, undulant fever, tularemia, whooping cough and plague.

It is not strictly correct, Dr. Waksman pointed out, to refer to either streptomycin or penicillin as germicides. They do not kill the germs outright but simply prevent them from growing and multiplying. The germs, unable to grow, gradually die. A new term has had to be coined to designate substances of this kind; they were christened "antibiotics" in the New Jersey Experiment Station laboratories, where much of the pioneer work in their investigation and use has been carried out. Some antibiotics are also germicides, but not all of them.

Penicillin's origin in a soil-inhabiting fungus or mold, *Penicillium*, is already well-known. But antibiotics do not all come from molds. One of the first to be discovered, gramicidin, comes from a species of soil bacteria. Streptomycin was found in a peculiar organism known as *Streptomyces griseus*, which is neither a bacterium nor a mold, but occupies a more or less intermediate position between these classes of lower plants, resembling bacteria in some respects, molds in others.

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## PLANT PHYSIOLOGY

## Vacuum Treatment Keeps Plants Fresh Longer

► A VACUUM treatment for certain cut flowers and plants which keeps them fresh and unwilted much longer than usual is announced by Dr. C. L. Hamner, R. F. Carlson and H. B. Tukey, of the New York Agricultural Experiment Station and Cornell University in Geneva, N. Y. (*Science*, Sept. 28).

Vacuum-treated narcissus flowers with six-inch stems were fresh and in excellent condition after six hours of exposure to direct sunlight at a temperature of 80 degrees Fahrenheit. Untreated flowers were badly wilted after 30 minutes and after five hours their petals were dry and crisp.

The treated flowers after the sunlight exposure were brought into a warm room with a temperature of 80 degrees Fahrenheit and left on a laboratory table overnight. The next morning, 21 hours after the vacuum treatment, they were showing signs of wilting, and by five p.m., 30 hours after treatment, they were all badly wilted.

Lilac branches placed in water immediately after treatment stayed fresh for

## BIOCHEMISTRY

# Streptomycin's History

New drug that may become partner of penicillin is the result of a five-year search with many failures along the way.

► STREPTOMYCIN, newest weapon in the germ-fighter's armory, was no lucky chance discovery, Dr. Selman A. Waksman, bacteriologist at the New Jersey Agricultural Experiment Station, declared in an address in New York. He and his associates put in five years of hard work searching for it, and had to reject, as failures, several other compounds that at first seemed quite promising.

Dr. Waksman told the story of the search for streptomycin as guest of Watson Davis, director of Science Service, on

"Adventures in Science," heard over the network of the Columbia Broadcasting System.

Streptomycin, now undergoing its first careful clinical tests, is not intended or expected to be a rival or replacement for penicillin. If it proves of value in the treatment of human ills it will rather act as a partner or complement to the well-known mold-made medicine, Dr. Waksman explained. This is because it will attack certain germs on which penicillin has little or no effect. In the class of germs

five days, whereas untreated branches in water began to wilt within two days and were badly wilted in three.

Good results were also obtained with tomato plants, trillium flowers and some kinds of roses.

The treatment consists essentially in placing the plants or flowers in water in a drier. Air is pumped out and is replaced in the plants and flower stems by water.

Best results, in general, were obtained with plant materials having large leaves and stems and large inferior ovaries capable of serving as reservoirs.

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## AERONAUTICS

## Model Plane Used As Antiaircraft Target

► A RADIO-controlled oversized model airplane, carrying no pilot or crew, is used by the Army as a target for anti-aircraft gunnery practice, it is now revealed. The 12-foot wingspan plane, powered with an eight-horse-power engine, cuts capers in the sky by radio control which finally stops the engine, opens a parachute and lowers the target safely to the earth.

When wanted for use, the small plane, with its engine wide open, is catapulted like a stone from a slingshot into the air, to be maneuvered by the radio apparatus into steep climbs and deep banks, travelling at about 125 miles an hour. When the gunnery practice is over, a switch is thrown on the remote control apparatus, causing a hatch on the top-side of the target plane to open, releasing a parachute by means of which the plane slowly descends.

The radio control is by ultra-high frequency carrier which is generated and modulated by five different audio frequencies. Of these five frequencies, four are selected by the stick on the control box on the ground and are used to effect guiding of the plane. The fifth holds the parachute in place for the eventual landing.

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## CONSERVATION

## Forest Conservation as an International Plan

► FOREST conservation and expansion under a plan for international collaboration is recommended in a recent report to the United Nations Interim Commission on Food and Agriculture by that body's technical committee on forestry and primary forest products, according to

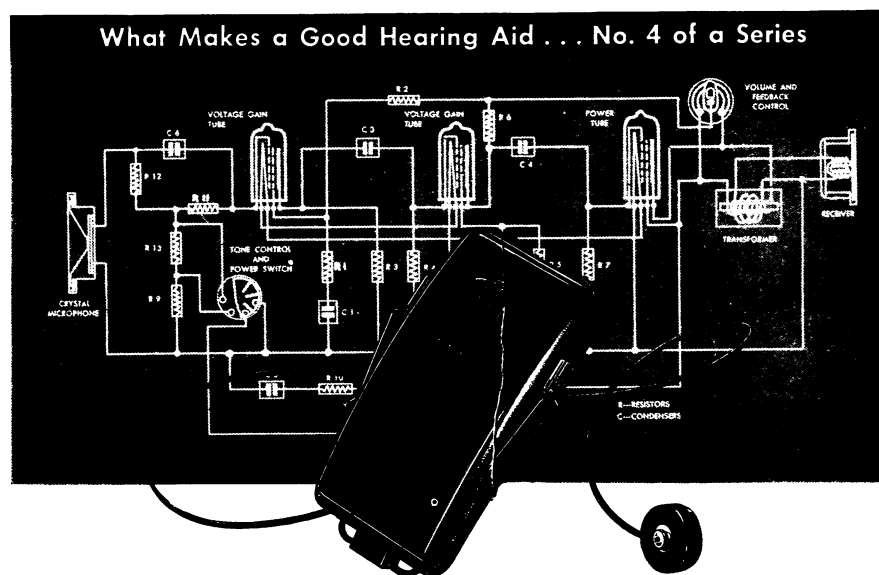
Lyle F. Watts, a member of the committee and chief of the U. S. Forest Service. Forest conservation is a critical world problem, and must be solved if the world's supply of wood is maintained, the report states, despite constantly shrinking supply and heavy demands.

"The world is confronted," says the report, "with the inescapable fact that the forests—sole source of wood—are steadily diminishing. . . . Today the world stands on the threshold of developments in the use of wood that may be as revolutionary as the invention of the steam engine or the introduction of technology to the farm."

The technical forestry committee making the report is headed by Dr. Henry S. Graves, former chief of the U. S. Forest Service and dean emeritus of the Yale School of Forestry. On it are representatives of Great Britain, Canada, Soviet Union, France, Norway, Brazil, Czechoslovakia, and China.

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Newly born *young whales* are astonishingly large in comparison with their mothers; a blue whale at birth is from 23 to 26 feet in length, approximately one-quarter the length of an adult.



## STABILIZED FEEDBACK CIRCUIT

● A well-designed hearing aid should utilize a Stabilized Feedback Circuit, which has improved the quality of sound reproduction in long distance telephony and radio. Application of this principle to hearing aids should provide these performance advantages:—

1. **Improved frequency response**—Stabilized Feedback helps to give uniform, or "flat" amplification, to deliver more of the tones and overtones that lend color and definition to sound.
2. **More powerful amplification**—A higher level of amplification can be obtained without objectionable overload. More cases of hearing loss can be corrected.
3. **Reduced distortion**
4. **Reduced internal noise**

5. **Quieter control operation**

6. **Longer electron tube life**—Stabilized Feedback compensates for changes in tube characteristics due to aging.

7. **Longer battery life**—Performance is maintained, as battery voltage declines—down to 1.0 volt and even less for the "A" battery; down to half the rated voltage of the "B" battery.

*THE WESTERN ELECTRIC was the first hearing aid that successfully utilized the Stabilized Feedback Circuit, which was introduced originally by Bell Telephone Laboratories. And the new Western Electric Model 63 provides the latest application of Stabilized Feedback in a hearing aid of advanced design.*

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