

PUBLIC HEALTH

# Winged Threat to China

## Mosquito Carrying Deadly Malaria Is Real Threat To Burma Road; Lend-Lease Aid in Form of Medicines

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IN THE steaming valleys of Yunnan, Chinese province on the Burma border, a 16-man Lend-Lease mission of American public health specialists, equipped with pills, Paris green, kerosene and spray pumps, are fighting to protect China's lifeline from an aerial foe more effective than Japanese bombs.

That foe is malaria, killer of millions, thief of energy that cripples more millions, making them unable to carry on the vital job of building a new Burma road of steel rails for swift transportation of supplies to beleaguered China.

The Medical Commission to China was appointed in August by Surgeon General Thomas Parran of the United States Public Health Service at the request of the Chinese government, with the approval of the State Department. The responsibility of the commission is to control malaria and to supervise sanitation and medical care among 250,000 Chinese workers who are building a railroad near the Burma highway.

### Only Open Road In

The Burma highway is China's only open road to the outside world. Despite the recent accomplishments of American traffic experts under the leadership of Mr. David Arnstein, that one slender line is not enough to keep supplies flowing inland to China's armies.

The new railroad is being rushed to completion to relieve this congestion. It will begin in Lashio, starting point of the Burma highway, and will continue through Yunnan Province by a different route, rejoining the Burma road at Kunming.

Yunnan is a land of desolate hills and steaming valleys, with few towns or villages. Hundreds of miles of the lonely new right-of-way run through one of the world's most heavily infested "malaria" areas. Along the way 250,000 workers will live in "railroad camps," where safe drinking water, sanitary facilities and medical services must be provided.

And every day the commission must fight malaria.

More than any other disease malaria sabotages vital engineering projects in tropical areas. The Panama Canal might never have been completed had not American physicians, engineers and sanitarians been able to protect the workmen from malaria and yellow fever, another mosquito-borne disease. Malaria saps energy and slows up work. It takes the laborer off the job for days at a time. Malaria, in its virulent form, often causes death. Even with China's teeming population to draw from, it takes time to replace good workers. And China hopes to complete the new railroad in 15 months. It is the commission's job to see that no time is lost to malaria.

### Two Effective Methods

There are two effective methods of fighting malaria. One is to fight the mosquito; the other is to give the 250,000 patients the drugs that will fight malaria in their bodies. The two effective drugs are quinine and atabrine.

The Chinese government is providing physicians, nurses, sanitary engineers and 800 laborers to assist us. The expenses of the commission, including more than a million dollars worth of medical and other supplies, will be provided by the United States under the terms of the Lend-Lease Act. Supplies and equipment will be procured by China Defense Supplies, Inc., and will be shipped to the site of operation.

At the start of operations about the first of November, the commission has on hand 10 million tablets of quinine, two million tablets of atabrine and an ample supply of Paris green, kerosene, spray pumps, and other anti-mosquito supplies. It will not be as difficult for us to get quinine as it is now to get it in the United States, since quinine will come to us direct from Java. Atabrine will come from the United States. Later, probably by mid-winter, we will get 25 million more tablets of quinine and two million more of atabrine.

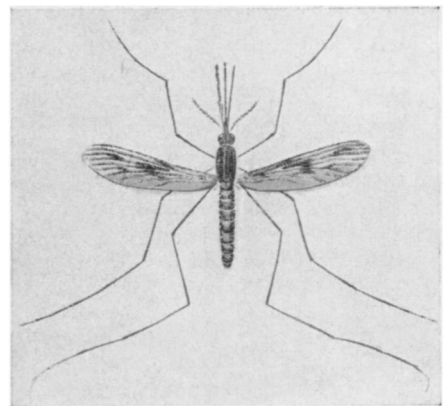
In the district where the commission

will be working malaria is carried by the *Anopheles minimus*, a mosquito with a flight range of only one-half mile. The American malaria mosquito is another of the *Anopheles* family — *Anopheles quadrimaculatus*—whose flight range is one mile. So in Yunnan we shall have to fight the mosquito in a smaller area surrounding the railroad workers than would be the case in this country.

### Workers Will Move

As construction progresses, the mass of workers and our base of operations will move forward, too. For this reason, it will not be necessary to undertake extensive drainage of mosquito breeding places. Drainage is a more permanent method of mosquito control than we shall need. Instead, we shall spray water courses and pools where *Anopheles minimus* breeds with Paris green or with pyricide 20 diluted with kerosene. Adult mosquitoes will be killed in living quarters with pyrethrum sprays. Mosquito-control work will require at least 50 tons of Paris green, 200 gallons of pyricide 20, and 4,000 gallons of kerosene.

Every person employed on the railroad project and in the commission's work will be given anti-malarial drugs. The preventive dosage is based upon the best medical opinion in the United States with reference to tropical diseases. Either a five-grain quinine tablet is given every day, or two tablets, each containing one-tenth gram of atabrine, are given twice a week. These drugs attack the malaria



THE VILLAIN

This is a malaria-carrying mosquito.

**WATCHFUL**

*These Chinese children are being examined to see whether they have enlarged spleens which are a sign of malaria infection.*

parasites in the blood stream and prevent them from living out their life cycle, in the course of which the victim would suffer an attack of "chills and fever."

Providing good sanitation and medical care for the workers will also be supervised by the commission. The Burma-Yunnan Railway is responsible for medical service, but this work will be under the direction of an experienced medical officer, Dr. Fred P. Manget, who is a member of the commission. Dr. Manget has spent 32 years of his life in China as superintendent of an American mission hospital.

**Women Do Heavy Work, Too**

According to Mr. C. Y. Tu, managing director and chief engineer of the railroad, the commission's patient population will include both men and women. In China, both sexes are doing the same kinds of heavy work and we shall probably have as many women patients as men.

Dr. Marshall Balfour, chief of the Rockefeller Foundation's Far Eastern Division, will act as consultant and adviser to the Medical Commission. His headquarters are at Manila, and from there he will join us.

Besides Dr. Balfour, Dr. Manget and myself, the members of the commission include: Dr. T. H. Tomlinson, U. S.

Public Health Service, in charge of malaria control; Dr. Paul Stephenson, formerly of Peiping Union Medical College, in charge of public health and sanitation; Dr. Gordon Smith and Dr. W. L. Jellison, Public Health Service; Mr. H. A. Johnson, Public Health Service; Mr. Frank W. Fisk, University of California; Mr. D. E. Wright, Rockefeller Foundation; Mr. F. W. Thomas and Mr. E. R. Lacy, Tennessee Valley Authority; Mr. L. B. Hall, Georgia State Department of Health; and Mr. Arthur B. Morrill, Detroit, Mich., Water Board. The clerical staff, Mr. Carl Gohman and Mr. Joseph Pastorski, is also from the Public Health Service.

It is expected that the Medical Commission to China will be on the job for at least a year. By December, we expect to be fighting malaria along the Burma-Yunnan Railway.

*Science News Letter, November 8, 1941*

**MEDICINE****Chemicals From Germs Better Than Sulfa Drugs**

**T**WO NEW bacterial substances may prove beneficial in treating sinus infection, mastoid infections, empyema, boils, infected wounds, and other localized bacterial infections, Dr. W. Barry Wood, Jr., associate in medicine and as-

sociate physician at the Johns Hopkins Hospital of Baltimore, reported.

Speaking at the annual meeting of the Eighth District branch of the Medical Society of the State of New York, Dr. Wood discussed the clinical use of the sulfonamide group of drugs and pointed out that these two new substances have certain theoretical advantages over sulfanilamide and its derivatives.

"These drugs, use of which is only in the experimental stage, kill gram-positive bacteria and will do so in the presence of pus," he asserted. The action of sulfanilamide and its derivatives, on the other hand, is greatly inhibited by the presence of pus.

"These substances, both of which are products of other bacteria, may be of benefit particularly in treating bacterial infections encountered in surgery."

The substances are gramicidin, developed by Dr. Rene Dubos of the Rockefeller Institute and penicillin, discovered in England. Experiments with these substances are now being carried out both in this country and in England.

*Science News Letter, November 8, 1941*

**MEDICINE****Pyorrhea May Come From Thyroid Gland Disorder**

**T**HYROID gland disorder, especially deficient thyroid action, may be the cause of some cases of pyorrhea, Dr. Rowe Smith, of Texarkana, Ark.-Tex., stated at the meeting of the American Dental Association in Houston.

Secondary anemia was also a factor in a number of patients he studied.

Pyorrhea is curable and preventable, Dr. Samuel Charles Miller, of New York, asserted at the same meeting.

Causes of the condition both in the mouth and elsewhere in the body should be sought and corrected, both dentists emphasized, pointing out that attention to the mouth alone may have been responsible for many failures in pyorrhea treatment in the past.

*Science News Letter, November 8, 1941*

**● RADIO**

*Thursday, November 13, 3:45 p.m., EST*

On "Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Frank B. Jewett, president of the National Academy of Sciences, will discuss the relation of industry to fundamental research.

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