

MEDICINE

Better Antimalarial Drug

Synthetic chemical, SN 7618, is better than atabrine, much better than quinine. Stops an attack of the disease in 24 hours.

By JANE STAFFORD

► THE WAR SECRET told of the development of two new and powerful drugs against malaria reveals at the same time a triumph of American chemists.

Better than atabrine, much better than quinine is the synthetic chemical SN 7618 they created and sent to the Board for the Coordination of Malarial Studies for testing in April, 1944. This 7618th of the 14,000 substances tested for antimalarial activity turned out a winner.

As a suppressive, for holding the sickness of malaria at bay even though the parasites have invaded the body, SN 7618 needs to be taken only once a week, compared to the daily dose needed when atabrine is used for the same purpose. As a remedy, SN 7618 stops an attack of malaria in 24 hours, while atabrine takes four to six days to bring about recovery.

No yellowing of the skin goes with

taking the white pills of SN 7618. It does not cause stomach and intestinal upsets. Its manufacturing cost is about the same as that of atabrine.

Chemically, this new antimalarial is a member of the 4-aminoquinoline series. German chemists at the I. G. Farbenindustrie plant at Elberfeld had previously, and unknown to American chemists, made 4-aminoquinolines as possible antimalarials and they even had made and patented SN 7618 itself, 7-chloro-4-(4-diethylamino-1-methylbutylamino) quinoline. But they discarded it as no good.

The triumph of American chemists consisted in recognizing its value and, even more, in developing a new method for synthesizing one of the intermediate chemicals needed to create SN 7618. Without this new method, SN 7618 could never have been made on a commercial scale, as it now can be.

Whether SN 7618 will ever be put on

the market seems a little doubtful because other, even better antimalarial chemicals are in the works. One of these, an 8-aminoquinoline, shows promise of being a real cure for vivax malaria. Of three kinds of malaria, this one is most common in the United States and caused most trouble among our forces in the South Pacific.

Atabrine and SN 7618 cure falciparum malaria, a less common but more often fatal kind, actually removing the infection. They do not cure vivax malaria but merely stop each attack of chills and fever. The parasites are still in the body and can cause further attacks, or relapses.

Plasmochin, an 8-aminoquinoline developed in 1930, cures vivax malaria, but the dose for a cure is too close in size to the dose that causes poisoning symptoms. A safer chemical of this type, with a greater "spread" between curative and poisonous doses, has just been developed and tested in patients. For 100 days the patients have gone without relapse of their malaria. If they do not have any relapses during the next 250 days, the scientists will feel sure this latest chemical is the long-sought cure for vivax malaria.

Development of these two new antimalarials, announced in the scientific journal, *Science* (Jan. 4) was only a part of the work carried on in universities, government agencies and commercial firms by scientists whose efforts were coordinated by the Board for the Coordination of Malarial Studies.

Altogether, 14,000 substances were tested. These ranged from fertilizers, plasticizers, Nylon intermediates and rubber accelerators to Chinese herbs, mud from the River Nile, and eggshells suspended in choice whisky. Some, the nylon intermediates, plasticizers and such, were picked from the shelves of organic chemical supply rooms. The odder items were sent by persons who had heard that eggshells in whisky, special muds, roots, herbs and so on, were good medicine for malaria.

The Board's scientists tested them all. It was easier, one member explained, to make the tests and send a scientific report than to write a letter explaining convincingly why the lower leaves of the cotton plant, for example, were not likely to prove a cure for malaria.

Chickens, canaries and ducks by the hundreds of thousands were used to screen the promising from the unpromising chemicals studied. Those which proved effective against the malaria parasites in these birds were then tested for possible poisoning action in mice and

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other animals, including thousands of monkeys obtained through the aid of the National Foundation for Infantile Paralysis.

When a chemical was found both effective and safe in these tests, it was tested in humans. For these last stages in the testing program, conscientious objectors and prisoners at federal and state penitentiaries volunteered.

Possibility of developing a vaccine against malaria was explored but has not shown promise.

New knowledge of the malaria parasites themselves and their biochemical requirements has been gained and has aided and probably will further aid the search for chemical cures and preventives of malaria.

Science News Letter, January 12, 1946

Books of the Week

ARGENTINA'S AGRICULTURAL EXPORTS DURING WORLD WAR II—Pavel P. Egoreff—*Stanford Univ. Press*, 52 p., charts, 50 cents. War-peace pamphlet No. 8.

CAMBRIAN HISTORY OF THE GRAND CANYON REGION—Edwin D. McKee and Charles E. Resser—*Carnegie Institution*, 232 p., charts and illus., \$2.50 paper, \$3 cloth. Carnegie Institution of Washington publication 563.

THE FUCHSIA BOOK—Alfred Stettler, Ed., *American Fuchsia Society*, 68 p., illus., \$1.50. A collection of articles on the growing of Fuchsias.

THE HEATING OF STEEL—M. H. Mawhinney—*Reinhold*, 265 p., charts and illus., \$4.75. A practical discussion of those features of heating methods and of furnace tools which are important in obtaining the best results from the heating of steel.

HOUSEHOLD MECHANICS—Earl L. Bedell and Ernest G. Gardner—*Int. Textbook*, 241 p., \$2.75. Second ed. Tells everything to know about the thousand and one "fixit" tasks necessary in maintaining a home.

INSIDE THE VACUUM TUBE—John F. Rider—*John R. Rider Publisher*, 407 p., charts and illus., \$4.50. An easy-to-understand presentation of the theory and operation of the basic types tubes.

MEDICAL EDUCATION IN THE UNITED STATES AND CANADA—*American Medical Assn.*, 80 p., tables, 50 cents. Forty-fifth

annual report by the Council on Medical Education and Hospitals.

MINIMUM DESIGN LOADS IN BUILDINGS AND OTHER STRUCTURES—National Bureau of Standards—*American Standards Assn.*, 26 p., charts, 50 cents. Recommended basic building code requirements that are being developed by technical committees under the procedure of the American Standards Assn.

PATHOLOGY IN SURGERY—N. Chandler Foote—*Lippincott*, 511 p., illus., \$10. A textbook; covers the close relationship between the pathologist and the surgeon in the operating room, the surgical ward, and the pathologist's laboratory.

THE SIXTEEN SOVIET REPUBLICS—*Information Bulletin, Embassy of USSR*, 32 p., illus., free. Natural resources, agriculture, population, etc., of each republic.

WOODWORKING FOR EVERYBODY—John Shea and Paul Wenger—*Int. Textbook*, 187 p., illus., \$2.75. An informal, non-technical book on how to make things with wood and how to finish wood.

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OPTICS

Rotascope Makes Objects Appear to Stand Still

► WHIRLING airplane propellers appear to stand still when viewed through a new optical instrument developed by scientists of the General Electric Company. It is known as a Rotascope, and is said to be an optical system for untwisting the light of rotating objects before recorded by the human eye.

It is claimed to be the first instrument of its kind which allows a continuous viewing of a rotating object at any particular point in its path of travel. While it eliminates the rotary component of a whirling object's motion, it does not eliminate any flutter or vibration of the moving part. In this is its primary value—by its use scientists are able to make a thorough study of the rotating parts of machinery.

Science News Letter, January 12, 1946

The mango was brought to the western hemisphere, probably from the East Indies, by Portuguese navigators who planted it in Brazil 250 years ago.

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- PSYCHOLOGY OF SEEING
Herman F. Brandt..... \$3.75
- FIRST ENCOUNTER
John Dos Passos..... \$2.00
- ENCYCLOPEDIA OF RELIGION
Vergilius Ferm, ed..... \$10.00
- LEGEND OF A MUSICAL CITY
Max Graf..... \$3.00
- 20TH CENTURY SOCIOLOGY
Georges Gurvitch..... \$6.00
- 20TH CENTURY PSYCHOLOGY
Philip L. Harriman..... \$5.00
- MANAGEMENT OF THE MIND
Milton Harrington..... \$3.00
- SOLDIER OF LIBERTY:
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