

ORDNANCE

V-2 Rocket Test

Radar tracks the flight of the gigantic weapon on its mission into the stratosphere during experiments at White Sands Proving Grounds, New Mexico.

By WATSON DAVIS

See Front Cover

► TO SEE a gigantic rocket go flaming into the stratosphere, farther than man has ever before hurled his might, makes one resolved that there should never again be a war such as the Germans waged upon London with sisters of the V-2 we saw launched upon the shining deserts at White Sands, New Mexico. The official U. S. Army photograph on the front cover of this SCIENCE NEWS LETTER was made approximately 100 yards from the rocket as it rose from the launching platform.

Suppose instead of peaceful scientific instruments there had been an atomic bomb in that rocket's nose.

The target of that V-2, and the two dozen to follow at weekly intervals, is the peaceful, almost airless stratosphere above us. The aim is to discover more about rocket flight than the Nazis in their destructive hurry had time to find out.

Jules Verne, and even the late Robert H. Goddard, rocket pioneer though he was, would have marvelled.

Radar tracked the swift flight just as our counter-rocket defenders hope they can spot one coming at us. A telescope any astronomer would be proud to own, 16-inch in size, watched the meteorite flung upward from the earth.

Two-thirds the way up to its world record altitude of 75 miles, the rocket yawed and twisted like a tin can in flight because the guiding fins had no air to work on.

Of most interest to the Army's ballistics experts was the path followed, the trajectory. They will compare the actual flight with the computed paths. These studies are the stuff that rocket progress is made from.

Almost too brief is the visit of the V-2 to the stratosphere if it is to make useful observations on cosmic rays. Or even the sun's spectrum unimpeded by the ozone layer that protects us from intense sun radiation here on the surface. Rocket experts are already wondering whether for scientific purposes they can

add a small boosting jet to the V-2 monster that would keep it at peak height a short time while instruments recorded precious information.

Closest approach of the record height reached in the firing of the V-2 was the approximate 50 miles reached by V-2 rockets traveling from the continent to London during the war. The previous U. S. record was 43 miles made by the American-made rocket "Wac Corporal" in tests at White Sands last October. The Germans in their experiments do not seem to have tried for ultimate altitude.

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MEDICINE

New Anti-Malaria Drug To Be Available

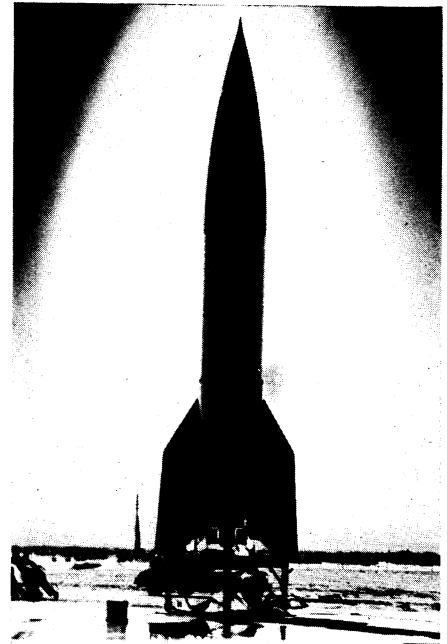
► A NEW anti-malaria drug will be in the drugstores of America probably by midsummer. The drug has been named aralen. It is one of the 14,000 substances tested for antimalarial activity by American scientists during the war. At that time it went under the name of SN 7618.

Better than atabrine and much better than quinine, was the verdict of scientists who tested the drug for the Board for the Coordination of Malarial Studies.

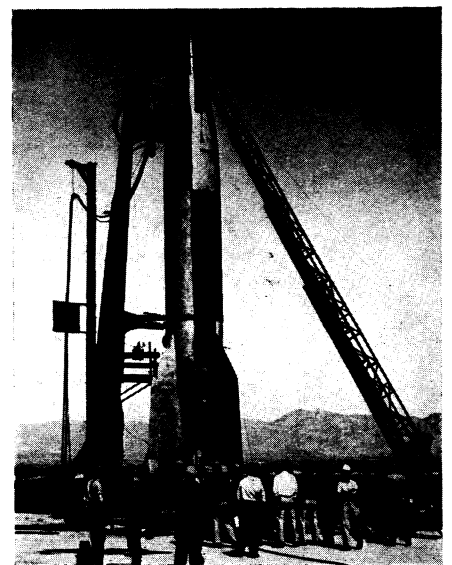
No yellowing of the skin goes with taking the white pills of SN 7618, or aralen. It does not cause stomach and gastrointestinal upsets. As a suppressive of malaria, it need be taken only once a week, compared to the daily dose needed when atabrine is used for the same purpose. As a remedy, the new drug stops an attack of malaria in 24 hours, while atabrine takes four to six days to bring about recovery.

Aralen is now being manufactured in commercial batches regularly, Dr. J. B. Rice of the Winthrop Chemical Co. reports. His company expects to have the drug available commercially within one or two months. The cost will probably be about the same as that of atabrine, Dr. Rice states, although no cost data are available yet.

Aralen, a member of the 4-aminoquinoline series of chemicals, had been made



DESTRUCTIVE! — Close-up of a V-2 rocket ready for flight tests at New Mexico. When fired, it carried approximately 5 tons of alcohol and liquid oxygen fuel as a part of the total weight of approximately 14 tons. Official U. S. Army photographs.



CONTROL V-2—Final adjustments are made on the delicate instruments used to control the flight of the V-2 prior to the tests at White Sands, New Mexico.

by German chemists at the I. G. Farben-industrie plant at Elberfeld and had been patented. This was not known to American scientists at the time they started their search for new antimalarial drugs when the war cut off the supply of quinine from the Dutch East Indies.

The Germans, however, discarded the chemical as no good, while American scientists, once they tested it, recognized its value. The German method of synthesis, moreover, was too complicated to be practical for commercial production of

the chemical. This bottle-neck was overcome by Prof. Charles C. Price and Dr. Royston M. Roberts, of the University of Illinois, who developed an original and simple method of synthesis.

Clinical tests of the drug's value were made with the 20 pounds of it which chemists at the University of Illinois worked 24 hours a day, in three shifts, for three weeks to produce. This laboratory-made product was enough for 30,000 doses.

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sulfone in a way they hoped would make it more effective in penetrating the waxy outer covering of moth cocoons. The result was DDT. Since tuberculosis germs, though very different from moths, also have a waxy outer covering, Dr. Burger and Dr. Graef thought it worth trying to make a chemical with something of DDT's wax-penetrating power. So they also started with a sulfone, choosing the one that is the parent chemical of promin.

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Magnesium alloy its to be used in *lawn-mowers*, it is reported; it will make the mechanism lighter but will not decrease the number of cuttings in a season.

ENGINEERING

Better Television Images

Reproduction from negative films with rising shoulder characteristics may produce superior pictures, actual tests have confirmed.

► TELEVISION reproduction from negative films may provide superior television images, Emery Meschter of the du Pont Company told the Society of Motion Picture Engineers in New York.

Features of performance in television to be expected from both negatives and prints as image sources, he said, are predicted from average characteristics of elements of the television system. He described a dynamic test procedure for the investigation of the over-all reproduction curve involving film and television.

Actual tests, he asserted, confirm the theoretical prediction that a negative film with a rising shoulder characteristic may provide superior television images.

The system of color television developed by the Columbia Broadcasting System was described at the same meeting by Bernard Erde of that company. These color television pictures had their origin in color film and color slides, he stated.

He described in particular the film scanning mechanism and associated optical, electrical, and mechanical equipment constituting the color film and slide pickup portion of the system. He emphasized the various interdependent functions of constant film drive, optical and electronic film motion compensation, heat and color filtering, and film and color phasing.

Calibration of Lens

An absolute and physically sound method for the photometric calibration of lens apertures was described by Allen E. Murray of Bausch and Lomb Optical Company. It was developed in the Scien-

tific Bureau of that company.

Essentially, he said, the method consists in comparing the total flux from a depolished opal glass aperture with the flux through a given lens at a definite stop opening when focussed on the opal glass aperture. An integrating sphere is used to collect the flux in the two cases and readings are made proportional to the flux with two matched barrier photocells.

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MEDICINE

Search for TB Cure Turns To Chemical Cousin of DDT

► THE SEARCH for a chemical cure for tuberculosis has turned to a compound that is a sort of cousin of DDT, Dr. Albert Burger and Dr. Edith Graef, of the University of Virginia, told members of the Virginia Academy of Science meeting at Richmond.

The latest compound they have made is related not only to DDT but to promin, a chemical hailed a few years ago as a possible remedy for tuberculosis. Unlike promin, the new compound contains no sulfur.

It stops tuberculosis germs in the test tube, but, as Dr. Burger pointed out, a great many other chemicals do that. How effective it may be against the germs in the human body is not yet known. Next step, he said, will be to try it on guinea pigs and if it continues to show promise, trials in humans will be considered.

The lead for the present compound came from the Swiss experimenters who, searching for a better moth-proofing chemical, changed the structure of a

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