

GENERAL SCIENCE

# Why No Nazi Atomic Bomb

Germany's scientific prestige suffered because of their failure. They did not understand the difference between the atomic pile and the bomb itself.

► GERMANY'S scientific prestige suffered a supreme defeat when during the war German scientists, among them Otto Hahn who discovered uranium fission in December, 1938, failed to make an atomic bomb.

Now, over two years after Hiroshima, the story can be told of just what was happening under Hitler while America was achieving the bomb.

The fact is that the Germans wanted to make an atomic bomb. But they never found out how. They were working on a uranium machine or what we call an atomic pile. They didn't quite succeed in getting a self-sustaining chain reaction in the pile as Americans did in December, 1942, although they nearly did just before American troops reached Haigerloch in April, 1945.

In a colorful story of the U. S. Mission that captured German atomic scientists and apparatus, Prof. Samuel A. Goudsmit of Northwestern University (the book *ALSOS*, Schuman, \$3.50) writes that the German scientists failed to understand the difference between the uranium machine they tried to build and the bomb itself. They thought the pile would be the bomb.

The German scientists did not know about plutonium, the new and heavier fissionable element made from uranium, until after the whole world knew about it with the U. S. announcements after Hiroshima.

Prof. Werner Heisenberg, leading German theoretical physicist whose contributions rank with those of Einstein, was a leader in German atomic research. Prof. Goudsmit tells how Heisenberg openly fought Nazi excesses, defended Einstein's theory of relativity which was to Hitler "Jewish" physics. But Heisenberg's "extreme nationalism led him astray during the war" and he was one of the German scientists taken into custody by the American ALSOS mission when it moved into Germany on the heels of our troops.

Prof. Heisenberg himself, in a paper which appeared in the German journal *Die Naturwissenschaften* a few weeks ago, gives his version of why the atomic bomb was not a German achievement.

"In Germany," he writes, "an attempt was made to solve the problem of the prime mover driven by nuclear energy, with an outlay of perhaps a thousandth part of the American outlay. We have often been asked why Germany made no attempt to produce atomic bombs. The simplest answer that one can give to this question is this: Because the project could not have succeeded under German war conditions."

Heisenberg tells how German industry was stretched to the limit in 1942. More importantly he says "the undertaking could not be initiated against the psychological background of the men responsible for the German war policy." The military leaders would not back anything that did not promise early results.

Prof. Goudsmit in his book blames complacency, deterioration of interest in pure science, and regimentation in the administrative control of science for the German failure. These three German errors are the principal ones that the United States can make in its further development of atomic energy if, Prof. Goudsmit warns, we are not on guard against them.

*Science News Letter, November 1, 1947*

## CHEMISTRY

## Heavy Carbon Atoms Are Separated by New Method

► AN improved method of separating the rare kind of carbon of atomic weight 13 has been devised by Dr. H. London, a young refugee scientist, working in Britain's atomic energy laboratory at Harwell.

Already the amount of this heavier carbon isotope has been increased by a quarter in ordinary carbon monoxide gas. Carbon 13 is valuable because it can be used as a tracer to discover how medical, biological and industrial processes actually operate.

Unlike radioactive carbon 14 made in the atomic pile, carbon 13 does not bombard with radiation the organism in which it is placed and thus can be used for some purposes for which the radioactive carbon is unsuited.

The improved British process consists of distilling carbon monoxide over a large area column into liquid nitrogen as a cooler.

*Science News Letter, November 1, 1947*

*Hybrid forest trees*, that may grow to harvesting size in one-half the time required by ordinary trees, may soon become common; already there is a hybrid pine that at three years of age is twice as large as normal pine.

A deposit of more than 8,000,000 tons of *lignite* has been discovered a few miles east of Toledo, Wash., in the center of the Pacific Northwest's war-time fuel famine area.

## SCIENCE NEWS LETTER

Vol. 52 NOVEMBER 1, 1947 No. 18

The weekly summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N. W., Washington 6, D. C., North 2255. Edited by WATSON DAVIS.

Subscriptions—\$5.00 a year; two years, \$8.00; 15 cents a copy. Back numbers more than six months old, if still available, 25 cents.

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Entered as second class matter at the post office at Washington, D. C., under the Act of March 3, 1879. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5566, and 360 N. Michigan Ave., Chicago, State 4439.

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