



NOBEL WINNERS—Prof. Wolfgang Pauli, left, was awarded the 1945 physics award for theoretical studies on atomic structure and Prof. Otto Hahn, right, the 1944 chemistry award for his fission of the uranium atom. (See SNL, Dec. 1)

CHEMISTRY

Synthetic Fuel Methods

American fuel chemists have uncovered a German manufacturing process; valuable information obtained to assist our industry.

► AMERICAN fuel chemists, members of a government technical mission to Germany, uncovered German synthetic fuel manufacturing methods and brought back to this country information of value on how the Nazis kept fighting equipment in operation with little natural oil available. The methods are applicable in this country.

A preliminary report on the findings of the American chemists was given by Dr. W. C. Schroeder of the U. S. Bureau of Mines, before the meeting of the American Society of Mechanical Engineers in New York. Full reports will be available later when other members of the mission have completed summaries of their findings. They will contain, Dr. Schroeder stated, "the best ideas generated through the years of research that the Germans spent on the synthetic oil industry."

The group of scientists went to Europe in March, 1945, about three months before V-E day, and remained to study synthetic oil plants in Germany as rapidly as they were seized by the Allies. Most of them had been knocked out by

the Allied air forces but the debris was carefully studied.

"The examination was a tiring job of climbing over bricks, rubble, tanks and destroyed stairways," Dr. Schroeder declares.

Additional information was obtained from scientists of France, Belgium and the Netherlands who were in a position to know something of the German methods.

Allied bombing raids put the Nazi fuel oil and petrol plants practically out of business, Dr. Schroeder explained, forcing others underground.

"Toward the end of the war, the demand for oil became so great that the Germans were frantic to increase production by any means," he said, "and 10 Meiler plants were ordered constructed. They were to be finished within a few weeks. The Allied advance was so rapid, however, that only four operated and these for less than a month. A fifth was ready but was never operated."

Some of the plants in Germany were of "tremendous size," and blending form-

ulas, the amount of tetraethyl lead to be used in aviation gasoline or additives for lubricating oil were all specified in Berlin, he stated. In this way, "the make-up of the finished product was known only to a limited number high in the Nazi inner circle," he stressed.

"German synthetic production reached a peak of somewhat over 350,000 metric tons per month in 1944," Dr. Schroeder stated. "About the middle of that year, bombings became severe and production dropped rapidly. During bad weather, which forced reductions in bombing operations, production again picked up until the last month of 1944. Bombing again increased in intensity, and toward the end of the war synthetic production became practically insignificant."

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PLANT PATHOLOGY

Graft Method Fails; Tomatoes Are Poisonous

► ONE BEST-LAID plan of scientists to outwit a crop-ruining plant disease has gone agley because of uncooperative behavior on the part of one of the plants involved.

Tomato roots are often attacked by a parasitic worm known as a nematode, which produces a deformity called root knot and causes heavy losses in yield. A disreputable botanical second cousin of the tomato, the foul-smelling, poisonous jimsonweed, is immune to nematode attacks.

It occurred to a cooperating group of scientists, of the U. S. Department of Agriculture and the Alabama Agricultural Experiment Station, to try grafting tomato plants on these immune jimsonweed roots. The grafts "took" all right, and the plants bore tomatoes—but the tomatoes contained poison formed in the weed roots that fed them. Tomato-eating rabbits, caught in the act in the experimental plots, had become so intoxicated that they bumped into plant stalks and even against the legs of their pursuers.

The scientists haven't quite given up. It was noticed that some of the tomatoes from the grafted plants contained less of the jimsonweed poison than others. It may be that a tomato strain can be found that will not accept the poison from the jimsonweed roots, or that a less-poisonous variety of jimsonweed will turn up. But unless and until that happens, nematode root knot will have to be fought along other lines.

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