

GENERAL SCIENCE

A-Bomb Suspect Now

By WATSON DAVIS

► THE SUGGESTION is made in scientific circles that in accord with security rules the A-bomb should be suspended on account of association in its origin with Dr. J. Robert Oppenheimer.

It has long been a joke in government offices that some expert cannot read a letter or report that he has just written because it is classified "secret" and he does not have the proper clearance.

It is not a joke in the Oppenheimer case. For "Oppy," as he is known among his colleagues, probably knows more atomic "secrets" than anyone else in the world.

The tragicomedy being enacted to beat McCarthy to a foul punch justifies the fears that many atomic scientists had in 1946. With the war emergency presumably over, they rushed back to the unsupervised and unrestricted quiet of colleges and laboratories. Some cut loose completely. Others returned to the AEC's atomic research only

when the H-bomb major push began in 1950, but with reluctance and a high sense of national duty.

The scientists did not relish the heavy and sometimes quite unintelligent hand of the military. They sensed the danger of liberals being red-baited.

Oppenheimer could have had, but did not wish, major responsibility in the continuing atomic energy program after the war. He did serve in advisory capacities, from a sense of public service. The essentially political attacks being made upon him now are sorry thanks for his service to the nation.

The attack upon Oppenheimer will not make the staffing of the atomic energy program any easier. If the atomic program for defense and industry is to continue successfully, there must be continuous research of the sort that Oppenheimer did. The innovators and the pioneers will not desire the risk of personal attack on the basis of unevaluated FBI files.

Science News Letter, April 24, 1954

GENERAL SCIENCE

Cobalt Bomb Possible

► THE COBALT bomb is a fact, but it is a suicide weapon that will not be used unless mad men wish to poison the earth and the living things upon it.

For years the possibility of filling the atmosphere with the practical equivalent of deadly radium has been understood in atomic circles. It is not likely that a cobalt bomb will ever be test fired, unless we do go absolutely mad. The risk would be too great.

Its effects can not be aimed and its radiation would be wafted upon every breeze and last for generations. But radioactive cobalt isotope 60 is an extremely useful chemical element that will probably do more good in the world than harm. For it is a relatively cheap and very intense source of gamma rays useful in treating cancer, irradiating industrial products, X-raying materials, etc.

Ordinary metallic cobalt, an element between iron and nickel in the chemical scheme of things, is transmuted into radioactive cobalt when bombarded by neutrons. These atomic particles, neutrons, come from the controlled fissioning of plutonium and uranium in an atomic reactor or pile.

In the cobalt bomb they would come from the explosion of the A-bomb around which would be wrapped a shell of cobalt metal, to be pulverized into poison metal in the blast.

Ordinary cobalt is cobalt isotope 59. Under bombardment, a neutron sticks to the heart of the atom and converts it into cobalt 60. This is radioactive and an intense emitter of gamma or X-radiation.

The radioactivity persists for a long time. After 5.3 years half of the amount of cobalt changes into an isotope of ordinary nickel, with the gamma rays produced in the transformation.

Cobalt 60 has debased the value of radium. For a few thousand dollars, more radiation can be obtained with cobalt 60 than would be available from the world's present supply of radium. Hospitals can have effective sources of radiation for treating cancer and other uses.

Debris or waste from atomic reactors might be used as a weapon because it gives off radiation. However, it would be more dangerous and inconvenient to deliver than the cobalt that is made poisonous by atomic explosion.

For war use, radioactive cobalt has many of the disadvantages of poison gas and bacteriological warfare. Once it is let loose, it may come back and murder those who started it.

While discussion of the cobalt bomb is an aftermath of the H-bomb revelations, production of radioactive cobalt would be most efficient in the smaller A-bombs. This is because there are more neutrons in the explosion of fission bombs of equivalent power than in fusion or H-bombs. The cobalt could be put into either kind of bomb, however.

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The Civil Aeronautics Board has reported that it has more than 40 applications for *helicopter* operations on file, representing nearly every major city in the country.

• RADIO

Saturday, May 1, 1954, 3:15-3:30 p.m. EDT
"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Mr. Roger Waindle, president of the American Society of Tool Engineers, holding an exhibition in Philadelphia that week, will discuss "Machines for Our Civilization."

MEDICINE

Drug May Become Lifesaver in Burns

► DISCOVERY OF a drug that may prove lifesaving for severely burned persons was announced by Steven E. Jordan of the University of Wisconsin Medical School at the meetings of the Federation of American Societies for Experimental Biology in Atlantic City, N. J.

In laboratory experiments with white rats, the drug will save up to 100% of animals in shock from severe burns. Of animals equally badly burned and shocked but not getting the drug, only 35% to 45% survived.

The drug is commonly called piperazine. Its full chemical name is 1-ethanesulfonyl-4-ethyl-piperazine hydrochloride. Its safety is shown by the fact that the amount required to save the animal's life is only one-half the amount that would kill the animal.

The piperazine drug has not yet been tried in human patients suffering from burn shock, although simple piperazine has been used in treating gout and patients with too much uric acid in their blood.

Earlier studies showed the drug would help dogs survive shock due to loss of blood.

Collaborating with Mr. Jordan in the research were Allan G. Wheeler, William O. Foye and Dr. O. Sidney Orth.

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HOME ECONOMICS

Baby Takes Housework Equal to Two Adults

► IT TAKES almost as much time for a homemaker to care for a child under one year of age as to do the work for two adults. When the child reaches 10 years of age, he is no more time-consuming than any other adult in the family.

This was learned in a study of how New York State homemakers use their time.

Prof. Jean Warren of Cornell's College of Home Economics found that employed homemakers get more help from family members. The family was willing for the homemaker to earn outside the home and to do some of the work at home to make it possible for her to earn.

According to the report, women spend an average of 15 minutes preparing breakfast, and from 15 to 30 minutes on lunches and suppers. Almost every family reporting had one heartier meal each day, taking from 40 minutes to an hour or more to prepare.

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