NUCLEAR PHYSICS

# Hindrance to H-Bomb

**The nation's top nuclear physicists are at work at universities rather than on H-bomb. This will be a serious drawback in development of the bomb.**

By DR. R. E. LAPP

➤ HARDLY any of the nation's top nuclear physicists are working on the H-bomb. This is a fact which might well slow down development of the new weapon. During the war, the employee roster of the Manhattan District—which developed the A-bomb—read like a Who's Who of the world's best brains in physics. Now you will find those brains scattered all over the country, most of them being applied to basic research in nuclear physics and cosmic rays.

At the University of Chicago, Cornell, M. I. T., Columbia, California Institute of Technology and the University of California are these men who made the A-bomb possible. Most of them would express great reluctance at the prospect of working for the Atomic Energy Commission on another bomb.

Some of the top men of the old Manhattan District who are not connected with the H-bomb project are Enrico Fermi, now at the University of Chicago; two Nobel prize winners, Arthur Compton and Harold Urey; Hans Bethe and Philip Morrison, now both at Cornell; Jerrold Zacharias, now head of M. I. T.'s Institute of Nuclear Physics, and John Archibald Wheeler, at Princeton.

Thus, it may well turn out that the H-bomb development—at least in this country—will be a lengthy one. It would be surprising indeed, if the true super-bomb, one with the punch of one million tons of T.N.T., were developed in a few years.

Meanwhile, the military men are looking over possible targets for the H-bomb. Since one with a million-ton punch would scorch an area of from 200 to 400 square miles, it would not be economically feasible to use it on a target smaller than this.

Science News Letter, February 25, 1950

MEDICINE

# Ivy Shots Disappoint

➤ NINETY cadets at the U. S. Military Academy, West Point, N. Y., and their physician, Dr. Robert J. Hoagland, chief of the medical service at the station hospital, have found that "shots" intended to protect against poison ivy are not worth taking.

The anti-poison ivy shots were given to three groups of men. Two of the groups spent the summer at Camp Buckner, an area that abounds in poison ivy and in which cadets get ivy poisoning each year. The 33 cadets in the first group all had had ivy poisoning the previous summer and had been under Dr. Hoagland's care. Of these, 21 received inoculations during April and 12 were used as controls. Of the controls, 83.4% developed ivy poisoning, and so did 66.6% of those who got the inoculations.

Half of the second group of 36, all of whom were inoculated, also got poisoning.

So did almost a fourth, 24%, of the third group who were inoculated before spending the summer on leave, on duty at West Point, at Camp Buckner and on various trips.

Although there was a difference between the inoculated and the untreated men in the first group, Dr. Hoagland stresses the fact that over half the inoculated were affected by poison ivy.

"A physician should be able to extend far better prospects to a patient receiving painful inoculations," he states in THE NEW ENGLAND MEDICAL JOURNAL (Jan. 26).

Previously favorable reports on inoculations against poison ivy are based, in his opinion, on too few persons in the control group or the fact that the inoculated persons were not exposed enough to the poison ivy plant. On this point he cites the work of another group of physicians who, "encouraged by apparently 100% successful inoculation of 40 boys, proceeded to hand six of them poison ivy leaves which were held for only 30 seconds." Ivy poisoning promptly developed in five of the six and was so severe they had to go to the hospital. The only one unaffected was the only boy who had not had ivy poisoning before.

Science News Letter, February 18, 1950

ASTRONOMY

## Sun Spot Area Causes Short Wave Radio Blackout

See Front Cover

➤ A GIANT sun spot area, biggest of the year, caused serious disruption of short wave radio communication Feb. 20-22.

An unusual number of spots were visible on the sun, as is illustrated on the front cover of this week's SCIENCE NEWS LETTER. The large group of seven spots in the upper right hand corner of the sun is the area causing major disturbances of short wave radio communication.

The giant sun spot area first appeared on the northeast limb of the sun on Feb. 13. It traveled toward the center meridian and crossed it about midnight Sunday, Feb. 19.

When the sun spot group appeared there was an outburst of "solar noise," energy that the sun is radiating to us. Scientists hear this radiation with equipment that operates on very high frequencies, such as those used for FM, television and radar.

Another outburst of major solar noise occurred on Feb. 14 and 15, and still other bursts as the giant area traveled across the sun. These bursts were very intense, the major solar noise on Feb. 14 having lasted over half an hour. This is an unusually long period for a major burst to last.

Science News Letter, February 25, 1950

ENGINEERING

## New Steel-Making Process Gives Open-Hearth Quality

➤ THE new so-called turbo-hearth process for making steel is capable of making open hearth-quality steel in 12 minutes without using external fuel. The American Institute of Mining and Metallurgical Engineers was told this in New York by C. E. Sims, Battelle Memorial Institute, Columbus, Ohio, and F. L. Toy of the Carnegie-Illinois steel company.

This fast steel-making process is largely a development made at the Battelle Institute with the support of Carnegie-Illinois. The researchers first made 32 1,000-pound heats of steel in a laboratory experiment at Battelle. Then commercial scale heats were made at Carnegie-Illinois in a 30-ton vessel loaned by Jones & Laughlin Steel Corporation.

In this process the steel is made without external fuel. The heat is provided from chemical reaction by burning the impurities in liquid iron with a blast of air. In the turbo-hearth the air is applied from the side, at the surface of the hot metal charge.

The development is considered especially important because it provides a steel-making method that is fast yet flexible. Oxygen can be added to the air if increased reaction speed is desired.

The vessel in which the process is carried out is the turbo-hearth. It is a partly closed chamber, shaped somewhat like a giant coffee-maker, built of heavy steel sections and lined with basic brick that can stand temperatures ranging higher than 3,000 degrees Fahrenheit.

Science News Letter, February 25, 1950