PHYSICS

Report H-Power Harnessed

The possibility that H-power has been controlled may bring the world a new source of power: fuel from the oceans' deuterium or heavy hydrogen.

➤ IF BRITISH scientists have succeeded in harnessing the power of an H-bomb, as reports indicate, mankind is on the road to limitless power. But it will still be years before a successful H-power reactor can be built.

What appears to have happened is that British scientists have produced temperatures of a few million degrees, and with these have produced fusion reaction. To do so, the British scientists have used a toroidal, or doughnut-shaped, gas-filled circular glass tube nicknamed Zeta.

Earlier this year, Sir John Cockcroft, director of British atomic research, said Zeta was to be used "to heat isotopes of hydrogen to temperatures in the region of 100,000,000 degrees Centigrade at which the nuclei fused to form heavier nuclei, releasing energy in the process."

Recently Sir George Thomson, British Nobel prize-winner, predicted that within 15 years a practical fusion power reactor will be built.

When this happens, man will be in a position to use sea water for fuel. For the oceans contain heavy hydrogen or deuterium.

In fission, or A-power reactions, nuclear power is produced by splitting the heavy atomic nuclei of uranium or thorium.

In fusion, thermonuclear power is produced by fusing light nuclei of such elements as heavy hydrogen or tritium. Heavy hydrogen is present, in even ordinary water, in quantities of approximately one part in 6,000 parts.

Thus, observed Lewis L. Strauss, chairman of the U. S. Atomic Energy Commission, if deuterium becomes the element that is used in producing thermonuclear power, the sea is the biggest deuterium mine in the world. Mr. Strauss has also said that "It has been estimated that there is enough deuterium in the sea to supply about 1,000 times the present power needs of the world for the next 1,000,000 years."

Still another advantage of H-power over A-power for doing man's work is the fact that the dangers from radioactive wastes and contamination are greatly reduced as there are fewer radioactive poisons present.

Science News Letter, November 2, 1957

GENERAL SCIENCE

Nobelists' Ages Vary

➤ NOBELISTS in physics are much younger than Nobelists in medical sciences. Not only that, but the trend is for honored medical scientists to be older while the great award in physics is being given to younger men now than it was formerly. (See p. 275.)

This is revealed by a study of the 164 scientists who have received the Nobel Prize between 1901, when it was first awarded, and 1950. The study is reported in *Behavioral Science* (Oct.) by Drs. Erik Manniche of the Washington Public Opinion Laboratory, Seattle, and Gertrude Falk of the University of Washington School of Medicine.

Seven physicists, they found, had won the Nobel Prize by the age of 35. Only one medical scientist and one chemist had won it by that age.

At the other end of the scale, ten medical scientists received the Nobel Prize after the age of 65. Only two chemists and one physicist were honored so late in life.

Perhaps even more striking is the age at which the Nobelists did the work for which they received the prize. Only one Nobelist in medicine, F. G. Banting, who discovered the insulin treatment for diabetes, had done his prize work by the age of 30. Yet by that age 30% of the physicists and 10% of the chemists had published their prize-winning research. Both W. L. Bragg in physics and T. W. Richards in chemistry did their prize work at the age of 23.

After the age of 50, 12% of the medical scientists did their prize-winning work. Only seven percent of the chemists and only four percent of physicists did their work so late in life.

The median age for Nobelists in medicine in the period 1901-1925 was 38. In the period 1926-1950, the median had increased to 43. For the physicists, the trend was in the opposite direction. In 1901-1925 the median age for physicists was 34.5, but by the period 1926-1950 it had dropped to 32.

Science News Letter, November 2, 1957

The Lincoln's tunnel's new third tube carrying traffic into New York City, has a *ventilation* system powerful enough to completely change the air every minute and a half.

● RADIO

November 9-23, 1957

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network will not be broadcast November 9-23, inclusive, due to scheduled football games.

"Adventures in Science" will resume at its regular time Saturday, November 30. Check your local CBS station.