

GENERAL SCIENCE

Urge Arms Race Halt

Only a very brief time is left before both Russia and the United States have intercontinental missiles armed with H-bomb warheads, so the arms race should be halted now.

► INTERCONTINENTAL MISSILES armed with H-bomb warheads will be a "fact" within months, not years, Dr. Eugene Rabinowitch of the University of Illinois predicts.

Therefore, he says, "only a very brief" time remains in which to halt the present race toward "mutual atomic destruction." To freeze the arms race, even temporarily, Dr. Rabinowitch urges an agreement between the United States and Russia to stop further thermonuclear tests.

These tests are needed to adapt H-bombs for use as missile warheads and to perfect long-range missiles, but could be detected by a "properly equipped international control body" if held in violation of the agreement.

Writing in the *Bulletin of the Atomic Scientists* (May) for its tenth anniversary symposium on "Science and the Affairs of Man," Dr. Rabinowitch stresses the need for "urgent examination" of possible U.S. action immediately, before intercontinental missiles carrying hydrogen bombs are a reality.

Only after the Russians acquired large stocks of atomic and thermonuclear bombs, Dr. Rabinowitch points out, did they realize that their weapons were more of a threat to the U.S. than American A- and H-bombs were to the Soviet Union.

Although previously Russia had called for abolition of atomic weapons, the Soviet abandonment of this position is based on anticipation of the fate of Detroit and Pittsburgh in a future war.

The new position, Dr. Rabinowitch states, should be a cause for concern, not satisfaction, in the United States.

Leisurely negotiations to halt thermonuclear tests, such as were carried out in the United Nations from 1945 to 1948 on atomic energy control, will not work, Dr. Rabinowitch warns. Ten years ago, U.S. negotiators proceeded as if plenty of time were available before the American monopoly in atomic weapons was lost.

Now, Dr. Rabinowitch concludes, "We have only a very brief span of time—measurable in months rather than years—before technical development will make intercontinental ballistic missiles with thermonuclear heads an irrevocable fact."

Major nations are now irrevocably committed to making atomic weapons the mainstay of their military power, and of using them as such in full-scale war. This is the consensus of opinion among other contributors to the same issue.

Two military experts and three scientists agree that atomic weapons have changed

the face of war and that strategy for the future must be designed to avert a world war in which there could be no victors.

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MEDICINE

Radioactive Cholesterol Aids Cancer Surgery

► CHOLESTEROL, fatty substance best known in connection with heart and artery disease, has been given radioactivity to make it an aid to cancer surgery.

The radioactive form is being used by University of Chicago doctors to tell how successful they have been in removing adrenal and pituitary glands to check certain cancers of the breast and prostate gland.

Ordinary cholesterol, the scientists found, is the principal starting material for production of certain adrenal hormones of the

cortisone group and for progesterone, a hormone important in normal pregnancy. The pituitary gland regulates production of these hormones by other glands, which is why it sometimes is removed.

In the Chicago experiments cholesterol is tagged with radioactive carbon or with radioactive hydrogen. It is then fed to or injected into the patients. If the operation to remove the pituitary or the one to remove the adrenals was incomplete, leaving bits of gland tissue still in the body, the patient will continue to synthesize the hormones.

Since the hormones are being made partly from radioactive cholesterol, their production can be detected by the radioactivity of the hormones excreted via the kidneys. When the operation is complete, the patient's urine does not contain a trace of radioactive hormone.

The Chicago studies have been made possible by the use of special type of radiation-detector called a liquid scintillation counter, which measures accurately the very weak radiations of radio-carbon and radio-hydrogen. The Chicago instrument, rugged and reliable, was developed at Los Alamos and at the University's Institute for Nuclear Studies.

The scientists doing the work, announced by the American Cancer Society, are Drs. George V. LeRoy, M. Edward Davis and David Ruml.

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MAN-MADE DIAMONDS—About 50,000,000 diamond particles are included in this plaque recently presented to the Smithsonian Institution by the General Electric Company, which is now operating a pilot plant for industrial diamond production at its Carboloy division in Detroit. Shown at the ceremonies are, left to right, Dr. C. Guy Suits, G. E. vice-president and director of research, Dr. Leonard Carmichael, Secretary of the Smithsonian, and J. S. Gillespie, manager of Carboloy's diamond project.