in vitro and possibly *in vivo*. It is, therefore, logical to consider the blast fungus as one with a higher level of specialization than a mere facultative saprophyte.

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A VERSATILE RESEARCH REACTOR WITH A NEW TYPE OF CORE

THE TRIGA, an American multi-purpose research reactor has been specially designed for research laboratories and academic institutions. It can be used for research and training, as well as for isotope production, and its makers, General Dynamics, claim that it is accident-proof.

The fuel elements consist of a solid mixture of uranium of 20% enrichment and zirconium-hydride moderators. Zirconium hydride is a remarkable substance because it has as much hydrogen per unit volume as water and at the same time has metallic properties.

The core is at the bottom of a well 20′ deep and 6′ in diameter. Shielding is provided by about 16′ of water above the core, which gives sufficient protection from radiation and allows the removal of specimens while the reactor is operating. The water also allows the visual observation of the core and control rods during operation and provides a large volume of irradiation space.

Two safety rods and one regulating rod are used to control the power level and shut off the reactor. The driving mechanism for them is located on a steel grating at ground level.

A graphite reflector about 1′ thick is provided on all sides and the bottom of the core. It is sealed in a welded aluminium can to prevent water from entering the graphite. Six inches of graphite are also included in the top end of the fuel elements to provide a top reflector directly over the core.

Because of the inherent safety of the reactor, there is no need for an air-tight containment building.

TRIGA produces radio-isotopes of 62 of the first 82 elements and is particularly useful for making short-lived isotopes. There are many uses for these isotopes as in medicine where they can replace those with longer lives. For example, the 25-minute iodine-131 to lower the effective dose received by the patient for an equivalent amount of treatment. In industry, short-lived isotopes are valuable in process control.

Radiochemical work, including hot atom chemistry, can also be carried out with TRIGA.

According to the makers, TRIGA is capable of supporting a broad programme of teaching and research, including such subjects as reactor engineering, the study of isotope production and application, instrumentation through the use of isotopes, in addition to its wide range of medical and industrial applications. (*Atoms for Peace Digest*, Aug. 22, 1958.)

CHROMIUM "BULLETS" FOR CANCER

TINY "bullets" of radioactive chromium metal to fight against cancer are now available to medical science as a result of U.S. Bureau of Mines research in metallurgy.

The "bullets" are actually small metal cylinders, a tenth of an inch long and only a thirtieth of an inch in diameter, cut from strands of high-purity chromium wire. The wire is produced at the North-west Electro-development Laboratory of the Bureau of Mines in Albany, Oreg., with techniques developed by Bureau metallurgists.

Exposed to neutrons, some of the atoms in the chromium cylinder change to the radioactive isotope chromium 51. Tests indicated that chromium 51 offers many advantages over previously used radioactive "bullets" made from radiogold, radiocobalt or radiotantalum. Radiochromium is eminently suitable for permanent implantations in tissue for the treatment of cancer. The "bullet" can either be shot into the cancerous tissue by an "implantation gun", or they are sown into the malignant area.—*SASLO Science News Selections*—285.