



**NEW LABORATORY EQUIPMENT**—The welder shown here is working on the installation of electrical equipment in the new laboratory of the Research School of Physical Sciences of the Australian National University in Canberra.

## PHYSICS

## Atom Smasher in Australia

➤ AN ATOMIC accelerating machine that may help to reveal what holds together the particles of an atomic nucleus is to be installed at the Research School of Physical Sciences now under construction in Australia near Canberra.

The machine was invented by Prof. Marcus L. E. Oliphant, Australian-born physicist who distinguished himself at Cambridge's Cavendish Laboratory as one of the discoverers of triple-weight hydrogen, believed to be an important ingredient of the H-bomb.

Prof. Oliphant expects the massive instrument, when fully completed in 1955, to accelerate particles to more than 2,000,000,000 electron volts. It also may help scientists learn more about mesons, particles that have been detected in cosmic rays.

Called a cyclo-synchrotron, the machine works like this:

Atomic particles are shot into a steady magnetic field from the center of the machine. The particles travel in near-circular paths between poles of a powerful magnet. Each time the particles go around, they are accelerated twice. That increases their speed and widens their circular paths.

In the final orbit, the particles are speeded further by a small voltage applied while they are held at a constant radius by a strong magnetic pull toward the center of the machine. In such a way, particles may be accelerated to an energy of 2,000,000,000 electron volts, Prof. Oliphant figures.

A part of the Australian National Uni-

versity, the Research School of Physical Sciences itself is as new as the cyclo-synchrotron. The school will be divided into departments of astronomy, geophysics, theoretical physics and nuclear physics. Each department will be headed by experts in their fields. The school also will provide facilities for Australian graduate students who otherwise would have to go overseas for similar research training. Prof. Oliphant will direct the laboratory work.

Science News Letter, July 19, 1952

## BIOPHYSICS

## Radioiodine Slows All Body Processes

➤ RADIOACTIVE IODINE not only destroys thyroid cancers with its deadly rays but also shuts off the supply of thyroid hormone to slow down all body processes.

In the slowed-down, or myxedematous, state, certain tumors accept the radioactive iodine with its lethal rays, when previously they would not do so, Dr. Earl R. Miller, radiologist at the University of California Hospital, San Francisco, reports to the American Cancer Society.

The growth of some other tumors is retarded under the radioiodine treatment, even when there is no evidence that the tumors take up the chemical and its exploding atoms.

Science News Letter, July 19, 1952

## STATISTICS

## Marriages and Divorces Lowest in Decade

➤ BOTH MARRIAGES and divorces in 1951 hit the lowest point in over ten years, the Public Health Service of the Federal Security Agency has reported.

A total of 1,594,900 couples were married last year, a 37% drop from the 1946 all-time peak and 6% less than in 1950. Marriages last year dipped because the number of single persons of marrying age was reduced, due both to the low birth rates during the early 1930's and to the previous high marriage rate level.

An estimated 371,000 divorces were granted in 1951, compared to 385,100 in 1950. Since the 1946 all-time peak, the divorce rate has dropped 44%.

Science News Letter, July 19, 1952

## INVENTION

## Streamlined Seaplane Has Pivoting Step

➤ A PIVOTING step for seaplanes has been invented by Peter R. Crewe, Shanklin, Isle of Wight, England, and assigned to Saunders-Roe, Ltd., Osborne, East Cowes, Isle of Wight. Patent number is 2,601,835.

The invention provides a hull for seaplanes which is generally of streamline form rather than the usual form made for floating on the water. The step is in the bottom of the hull near the center of gravity. It pivots to provide a straight-lined hull when in flight or to make a step which reduces the water drag on the hull during takeoff.

Science News Letter, July 19, 1952

## MARINE BIOLOGY

## One-Celled Creatures Cause Red Menace

➤ THERE IS a "red menace" threatening Chesapeake Bay. This particular menace, however, is not Russian-inspired.

It is due to the sudden appearance of large areas of red-colored, one-celled organisms that are near the borderline between plants and animals, down about the bottom of the evolutionary scale. An individual organism is much too small to be seen with the naked eye, but under favorable conditions, the cell splits in two very rapidly, becoming so abundant in a few hours that the color is visible.

The single-celled organism is plant-like in that it can manufacture its food from the simple substances dissolved in sea water, and animal-like in its power to gobble up other small plants and animals and its ability to swim by means of whip-like appendages extending from the body.

Marine biologists at the Virginia Fisheries Laboratory, Gloucester Point, Va., have identified the microscopic organism responsible for the discoloration of Chesapeake Bay water as *Cochlodinium catenatum*.

Science News Letter, July 19, 1952