

## BIOCHEMISTRY

**Radioactive Morphine Gives Addiction Clue**

► THE FIRST human studies with radioactive morphine have given University of California scientists a clue that may have some significance in addiction to the drug.

They found that the only addict studied eliminated the drug faster than normal people. This suggests, they said, the need for further studies to find out if addicts characteristically handle morphine faster.

The scientists also found that the drug is broken up in the body and eliminated more rapidly by normal people than had been suspected.

Morphine with built-in radioactive carbon was used. Each dose contained less radioactivity than everyone receives daily from cosmic radiation, but enough to follow through the body with sensitive counter devices. The doses given were therapeutic doses, about as much as a doctor gives in normal practice to relieve pain.

Soon after administration, part of the radioactivity began to appear in the breath, reaching a peak in one hour and declining to a low level after six hours. Six hours is about the time the physiological effect of the dose wears off.

Elimination of the radioactivity-containing segment of the morphine molecule indicated that the body starts breaking up the drug molecules soon after intake. Most of it is eliminated within 24 hours.

The object of the study is to learn just where and how morphine acts in the body. With better knowledge, the scientists hope to develop drugs that will do the same job as morphine without causing addiction.

The research was done in the School of Medicine, San Francisco, and the Radiation Laboratory, Berkeley, by Drs. H. W. Elliott, T. K. Adler, H. H. Anderson, B. M. Tolbert and Henry Rappoport.

Science News Letter, May 29, 1954

## GEOLOGY

**Use Helicopters To Map Greenland**

► USING HELICOPTERS to get an accurate geologic map of northwest Greenland saved about four-fifths of the cost of mapping by walking over the area, Dr. William E. Davies of the U. S. Geological Survey reports in *Science* (May 14).

Thirty to 60 square miles per day can be surveyed by helicopter, field work in Greenland during the summer of 1953 showed. And the "whirly-birds" can operate when ground fog is so thick that a landbound geologist would be lost.

To complete a geologic map of the region near Thule, the desired areas were surveyed from 1,500 feet or so. For more detail, the helicopters then flew at altitudes of 10 to 200 feet and speeds of 10 to 40 miles an hour. Landings to get samples were made whenever necessary.

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**ELECTRONIC TEMPERATURE TAKING**—Sgt. Thomas L. Early, Rimersburg, Pa., a patient at Walter Reed Army Hospital, having his temperature taken with new electronic clinical thermometer.

## MEDICINE

**Take Temperature Fast**

► FUTURE HOSPITAL patients may not have to strain their lips to keep them tightly closed over a slippery glass tube for three to five minutes while their temperatures are taken.

Nurses will be relieved of the arm-tiring job of shaking down the mercury column. There will be no more squinting to read the elusive column of figures that tell the degree of temperature. Thermometer breakage, a costly item in hospitals, will also be a thing of the past.

All this for the not too distant future in hospitals and homes because an Army dentist, Col. George T. Perkins, now stationed at Walter Reed Army Medical Center, Washington, has invented a new electronic thermometer.

The new thermometer gives an accurate reading in five to seven seconds.

It works through a tiny carboloy thermistor at the end of a stainless steel probe, or sensing advice. This is the part that goes in the patient's mouth. The probe is connected by a flexible transmission cord to a mercury cell battery in a plastic handpiece small enough to fit in the palm of the hand.

On the handpiece is a meter that registers degrees of temperature in black figures below the body's "normal" of 98.6 degrees Fahrenheit and in red above this normal. The thermistor resists heat and translates this resistance in terms of degrees on the meter.

Tests in one Army hospital showed the new thermometer takes daily ward temperatures in a fortieth the time normally needed.

The new thermometer, first change in clinical thermometers since the mercury column type was introduced in 1867, is being manufactured by the Burlington Instrument Company, Burlington, Iowa. The company expects to have the thermometer on the market in 60 to 90 days. The first ones, for hospital use, will cost about \$75. A home model, now being worked on, will be scaled down to cost considerably less, perhaps \$25.

Because of the small size of the sensing device, or probe, scientists will for the first time have an accurate thermometer for taking temperatures of small animals.

Science News Letter, May 29, 1954

## INVENTION

**Patent Chemical to Waterproof Leather**

► WATERPROOF LEATHER shoes soon may outmode rubber overshoes. A way has been found to waterproof leather with a siloxane—a chemical famous for its water-repellent nature. The chemical can be swabbed on the leather. It will not clog the pores. Toivo A. Kauppi of Midland, Mich., assigned patent No. 2,678,893 to Dow Corning Corporation.

Science News Letter, May 29, 1954