

MEDICINE

Cortisone Cure Lasting

► **SOME** stay well for months now even after the stopping of the cortisone treatment that amazingly remedied their crippling rheumatism.

This hopeful news in the scientific battle against arthritis was given to the National Academy of Sciences in Washington by Dr. Philip S. Hench of the Mayo Clinic, cortisone's co-discoverer.

One patient has been well for 14 months after the wonder drug injections were stopped. Several more have gone months without the pains and crippling returning.

When cortisone, one of the adrenal gland hormones, first showed its power, doctors feared its use would have to be continued to keep the patients well.

Why the improvement lasts in some patients and not in others is a mystery. Whether the well-being will continue indefinitely cannot be answered.

There are prospects of ever-increasing supplies and lower costs of both cortisone and ACTH, the pituitary gland hormone that stimulates the body to produce its own cortisone.

Better ways of using cortisone and ACTH have been learned in the past year since cortisone was first announced. Big doses at first to get the best effect at once with smaller doses, sometimes only three times a week instead of daily, are now advised.

Reports of side-effects, ranging from masculinization of women to diabetes, have scared many physicians and patients. Such fears are unfounded, it now appears. The side-effects have not been so bad and few patients have experienced any. Reducing the salt intake slightly, giving potassium chloride by mouth and in one case intermittent doses of a female hormone have overcome the side-effects, Dr. Hench reported at the meeting of the National Academy of Sciences.

Cortisone is "a fireman, not a carpenter," Dr. Hench pointed out, and cannot be expected to overcome tissue damage in arthritic joints or rheumatic hearts. But given early in acute rheumatic fever, followed by penicillin, it can prevent the heart damage from this disease, Dr. Hench hopes.

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MEDICINE

T. B. Patients Exercise

► **STRENUOUS** exercise after having three or four ribs removed may sound like a drastic procedure but it is speeding tuberculosis patients to recovery.

"Resistive exercises," meaning exercises done against force such as weights or pulleys, is the name of this new form of treatment developed for tuberculosis patients by Mrs. Florence S. Linduff, physical therapist of the Veterans Administration.

In a group of 66 patients started on these exercises as soon as possible after the rib removal operation, 71% had sputums free of TB germs one year after the operation. In a similar group of 80 patients who did not have the exercise treatment, only 55.4% were "sputum negative" one year following the rib operation.

The rib-removing operation is done to collapse the affected lung for the rest needed for recovery from tuberculosis. When a number of ribs are removed there is a tendency to deformity, such as spinal curvature. The resistive exercises were started with the object of preventing or correcting these deformities. Mrs. Linduff instituted them in the VA program after seeing them used on a small scale in Army hospitals during the war.

The exercises, however, turned out to have benefits beyond preventing deformity. Patients doing them improved in every way.

The exercises were demonstrated by Drs. James D. Murphy, B. B. Bagby, Jr., and

Frank P. Iiasi and Mrs. Ila J. Arhein, physical therapist, from the VA hospital at Oteen, N.C., at the National Tuberculosis Association meeting.

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AERONAUTICS

Wings of Bomber Change Position in Flight

► **ABILITY** to fly from combat area fields marks a new powerful light bomber for the U. S. Air Force, built to ease the path of advancing troops. It has now made its maiden flight in Baltimore, Md. at the airport of the Glenn L. Martin Company, its builder, and is ready for further tests.

Its ability to make a quick take-off with a short run is due to wings whose position can be changed while the plane is in flight. The leading edges of its wings can be raised or lowered to change the angle of attack.

A nose-up position for the plane is not necessary for take-off. Instead, the angle at which the wing meets the air is adjusted by the pilot so that the required amount of lift is obtained while the fuselage remains practically horizontal.

Performance data for the new plane, the Air Force XB-51, are still secret. It is a jet-propelled craft, powered by three General Electric J-47 engines. Two of the engines are mounted on the lower front sides of

the fuselage, the third is carried internally in the rear of the fuselage. Wings are of the thin, swept-back type.

This speedy bomber was developed specifically to work with ground troops by destroying enemy installations ahead of an advancing army, particularly those within 100 or 200 miles. It is a two-man plane, pilot and navigator. Its possible high speed is indicated by the fact that it is equipped with "ejection" type seats.

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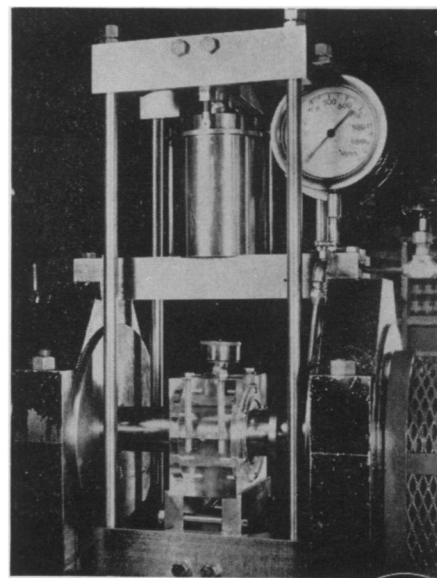
On This Week's Cover

► **DERBY'S** Woolly opossum strikes an unconventional pose as shown on this week's cover. Its normally pink ears turn a rose color when it is annoyed or gets excited. This little animal comes from Peru and Ecuador northward to Central America.

The opossum is a mammal which belongs to the subclass marsupials. They bear their young alive in a very immature state, the development being continued in the abdominal pouch. A specially developed structure connects the windpipe with the nasal cavity in the new-born animal and makes it possible for the mother to force milk through the teat and into the esophagus without interrupting its breathing.

Small, nocturnal animals, they feed on insects, birds and fruit. The best known species of the type-genus is *Didelphys virginiana* and is very common in the United States (See SNL, May 13, p. 293).

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TRANSPARENT RESEARCH—A transparent plastic bearing for lubrication studies enables engineers to see and photograph the behavior of oils and greases in bearings under different loads and speeds. Bright red dye is mixed with the lubricant so that the lines of the flow can be followed.