

## MEDICINE-ENGINEERING

# Chemical Stone Eradicator

A cheap chemical dissolves bladder and kidney stones and is also used as a boiler scaler. It is injected through a rubber tube into bladder or kidney.

► A CHEAP chemical used as a boiler scaler and in rubber, plastic and other industries may be the medicine of the future for patients with bladder and kidney stones.

So new it has so far only been used on 12 patients, it is already giving good results in dissolving even the highly insoluble calcium oxalate stones.

For his research leading to the first use of this chemical on patients, Dr. Robert F. Gehres of Sacramento, Calif., won second prize in the annual essay contest of the American Urological Association meeting in Washington.

At the same meeting, Dr. Benjamin S. Abeshouse of Baltimore reported independent experiments with the same chemical which he learned about from a green soap manufacturer.

The chemical is the tetra sodium salt of ethylene diamine tetra acetic acid. Dr. Gehres calls it *calcisol* for short, and Dr. Abeshouse calls it by the trade name, *Versene*, under which the Bersworth Chemical Company of Framingham, Mass., sells it. Bersworth also markets another form of the chemical, under the tradename *Calcisol*, for use as an oil additive. But this is not the *calcisol* Dr. Gehres uses.

The chemical was mentioned in German scientific reports in 1937 under the name of *Trilone B*. Dr. Gehres working in 1947 at the J. Bentley-Squier Urological Clinic of Presbyterian Hospital-Columbia University, New York, was at first only able to get it through the Eastman Kodak Company who sold it under its long chemical name and at a high price. Later, he saw in a chemical journal an advertisement for it to be used as a boiler scaler at a low cost.

*Calcisol*, or *Versene*, is only a first step toward chemical conquest of kidney and bladder stones, Dr. Gehres said. At present it must be used as an irrigating fluid injected through a rubber tube into bladder or kidney. Dr. Gehres hopes through further research and perhaps chemical modification of the compound to develop one which can either be injected into the patient's veins or taken by mouth.

In the first two patients on whom Dr. Gehres used it, the chemical failed because it was not possible to get the chemical into contact with the stone. In the third patient, the stone was reduced one-fourth of an inch in diameter in the first two days of use of *calcisol*.

In two patients the stones were completely dissolved, one after 24 hours of continuous irrigation and the other after three days of intermittent irrigation.

Another patient for whom it was used

was very sick with a stone in his only kidney. The other had been removed some years before because of tuberculosis. He could not be operated on. He got intermittent irrigations with *calcisol* for a month during which time the stone was 50% dissolved and his kidney returned to normal function.

## SEISMOLOGY

# Mauna Loa Outburst Seen

► MAUNA Loa's present out-pouring of lava, and more lava flows from this volcano than from any other in the world, was predicted over a year ago by Dr. T. A. Jaggar. Dr. Jaggar, of the University of Hawaii, is the foremost authority on Mauna Loa and other Hawaiian volcanoes.

Unlike the eruption of Vesuvius and other famous volcanoes, the fumings of a Hawaiian volcano are usually not disastrous. Although they are spectacular and violent, they are usually not accompanied by the dangerous showers of ash, stones and hot mud that make most erupting volcanoes very hazardous. Mauna Loa is the biggest mountain in the world in total volume.

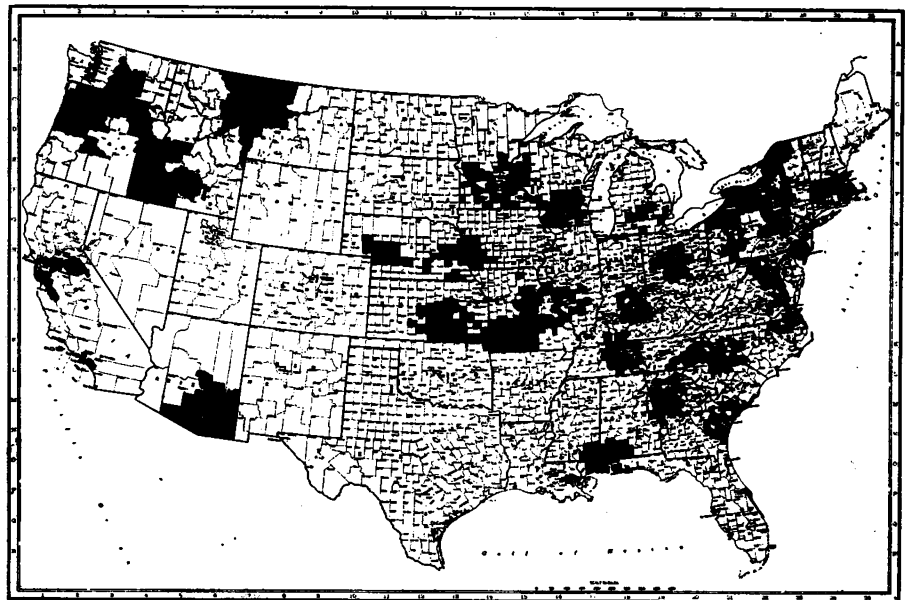
The best of other chemicals previously used in attempts to dissolve bladder and kidney stones is only about a third as effective as *calcisol*. Used in the proper concentration, between one and three per cent, and with its acid-alkaline reaction adjusted to that of blood, *calcisol* is not toxic and not irrigating.

Dr. Abeshouse has not yet tried the chemical on patients. He thinks it owes parts of its effect on insoluble stones to its action in dissolving the protein material which forms a matrix for the calcium and other alkaline earth metals in the stones. But Dr. Gehres thinks the effect is entirely due to its action on the calcium.

Science News Letter, June 17, 1950

To predict eruptions, scientists use two different methods. One is a tilt measurement, made with a plumb bob suspended over a calibrated scale. When a sharp tilt is noted toward the center, it means that the volcano is falling away a bit. But when a tilt is noted outward, pressure is rising in the crater and an eruption may be forthcoming.

Seismographs which register earthquakes also tip off most eruptions of the crater. Relatively large numbers of small shocks around Mauna Loa are recorded most of the time. When these become more intense, it generally indicates that lava soon may pour forth again. On May 30 an earthquake



**BLOOD CENTERS**—By June 18, 1950, there will be 33 regional centers in the Red Cross Regional Blood Program serving 1,800 hospitals and 100 clinics in 38 states. Donors in approximately 1,388 communities are being reached through these regional centers and attached mobile units. Blood collected averages about 55,000 pints per month as of now.