

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.

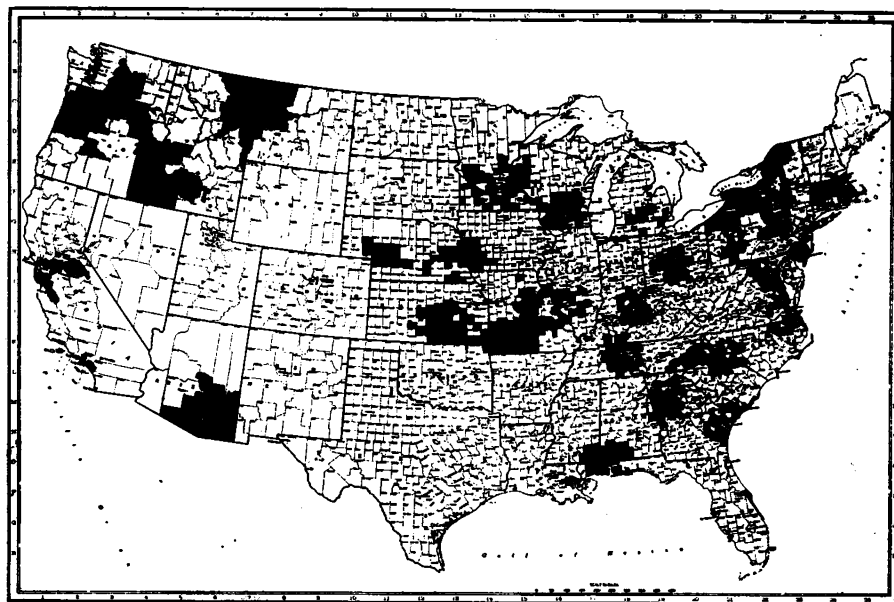
The best of other chemicals previously used in attempts to dissolve bladder and kidney stones is only about a third as effective as *calcisol*. Used in the proper concentration, between one and three per cent, and with its acid-alkaline reaction adjusted to that of blood, *calcisol* is not toxic and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

motion was reported, probably a preliminary motion of the magma.

Between the tilt and tremor calculations, scientists can usually let the world know sometime ahead of an eruption that the big mountain will be active soon.

Mauna Loa's last eruption was in April, 1949. In 1933 and 1940 there were eruptions from the summit crater spilling lava southwest. Both times, they were followed in two years by summit eruptions which spilled lava toward the northeast.

EDUCATION

Gifted Children Neglected

► THE gifted boys and girls in our schools form a minority group which is too much neglected. This is the judgment of the Educational Policies Commission, expressed in a report on "Education of the Gifted," issued in Washington.

"The country can ill afford to permit a continuation of such waste in its present proportions," the report states.

Gifted boys and girls who are in the top 10% in brightness should be prepared to go to college. The highly gifted, of whom there are only about one to each hundred in high school classes, should expect to continue their higher education beyond college graduation, the Commission believes.

At present, they report, only about one-half the gifted even go to college. This is

partly because the parents cannot afford to send their bright children through high school and on to college. In many cases it is because parents do not realize just how brilliant their children are or do not appreciate the value of college education for them.

Schools and colleges have the responsibility, the Commission points out, to educate the American people to appreciate their stake in fostering the recognition, education, and utilization of human talent.

Children with outstanding talent should be spotted early in their school career and be given plenty of opportunity to develop their gifts.

Science News Letter, June 17, 1950

partly because the parents cannot afford to send their bright children through high school and on to college. In many cases it is because parents do not realize just how brilliant their children are or do not appreciate the value of college education for them.

Schools and colleges have the responsibility, the Commission points out, to educate the American people to appreciate their stake in fostering the recognition, education, and utilization of human talent.

Children with outstanding talent should be spotted early in their school career and be given plenty of opportunity to develop their gifts.

Science News Letter, June 17, 1950

BOTANY-CHEMISTRY

Flowering Dogwood Blooms Last Six Days Longer

► FLOWERING dogwood that blooms four to six days longer is possible through the use of a spray containing a growth-regulator.

Another similar spray will keep the cherry blossoms on the Japanese cherry trees at the Tidal Basin in Washington from four to ten days longer, Drs. Horace V. Wester of the Department of Interior and Paul C. Marth of the Department of Agriculture report in the journal, *SCIENCE* (June 2).

They have tested different concentrations of alpha-naphthalene-acetic acid and par-chlorophenoxyacetic acid on the flowering dogwood. These same chemicals as well as beta-naphthaoxyacetic acid in varying concentrations were tried on the cherry blossoms.

These same three growth-regulating chemicals were used on the following plants which did not show a definite reduction in rate of petal fall: azalea, aronia, American and Asiatic crab apples, flowering almond, flowering quince, redbud, bridal wreath spirea, lilac, star magnolia and saucer magnolia.

Science News Letter, June 17, 1950

FORESTRY

Forest Fire Area in 1949 Equals that of Five States

► U. S. FOREST fires last year burned over more square miles than the combined land areas of Massachusetts, Connecticut, Rhode Island, New Jersey, Delaware and the District of Columbia.

For every nine fires in 1948, there were 10 in 1949, Lyle F. Watts, chief of the U. S. Forest Service revealed in Washington. But they were not as damaging as those the year before. Some 15,397,419 acres were burned over in 1949, as compared to 16,556,780 acres charred in 1948.

Nor were there as many fires (a total of 193,774) as the pre-war average of 210,000 forest fires a year.

The chief forester said last year's dry spells in many parts of the country and severe lightning in the West were conducive to fires. But improved smoke-eater equipment and methods, such as faster transport to the fire lines by airplanes and helicopters, kept down the spread of blazes in protected areas.

Most of 1949's fires, however, (some 83%) were on forest lands unprotected by either federal or state fire fighting agencies. The Southeast took a major share of the damage. In the 11 states that lie south of Virginia, nearly 12,000,000 unprotected acres were burned.

Science News Letter, June 17, 1950



BROOKLYN BRAIN—The central brain of the new Brooklyn-Battery Tunnel's electric system controls ventilation according to carbon monoxide concentration. Carbon monoxide detector readings are continuously relayed to the control board, and flow of vehicles is regulated accordingly.