

MEDICINE

Electrode Spots Heartburn

Heartburn may be caused by increased acid in the esophagus shows a tiny electrode—even in cases where X-rays have failed to diagnose the disorder.

A SEVERE, chronic form of heartburn, which sometimes mimics heart disease and ulcers, is being diagnosed by a tiny electrode introduced into the esophagus.

The research is being done by Drs. Steward G. Tuttle and Morton I. Grossman of the Los Angeles Veterans Administration Center and the University of California, Los Angeles, Medical Center.

The electrode is passed via the nasal passage into the esophagus to a point just above where the esophagus joins the stomach. The sensitive electrode detects minute changes in the acid balance in the esophagus. Pressures in the esophagus are recorded simultaneously.

Episodes of heartburn have been correlated directly with increases in esophageal acidity. These begin with a slight increase in acidity and diminish as acidity decreases.

Thus heartburn appears to be associated with regurgitation. No correlation between heartburn and pressure changes in the esophagus was observed.

In additional studies with patients with severe, chronic heartburn, known as esophagitis, tiny amounts of hydrochloric (stomach) acid were dripped into the esophagus. In such patients heartburn was immedi-

ately produced. In patients without esophagitis the acid-drip procedure produced no heartburn. Apparently a sensitivity of the esophagus, perhaps induced by frequent regurgitation, is involved in esophagitis, the investigators said.

The two procedures have proved valuable in diagnosing the disorder in cases in which X-ray studies and clinical observations had not established its presence. Some of these cases had symptoms of angina pectoris and peptic ulcer, which were ruled out with the aid of the new procedures.

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AGRICULTURE

Strontium-90 Builds Up In Lowland Fields

THE GROUND concentration of strontium-90 fallout from nuclear explosions may be ten times higher at the base of slopes, where sediment from water runoff accumulates, than on hilltop areas.

This buildup of strontium-90 in lowland fields was indicated by U. S. Department of Agriculture tests of rainfall and runoff samples at LaCrosse, Wis., and Tifton, Ga.

Soil samples taken from the plow layer

of test plots at LaCrosse showed 45 micro-microcuries of strontium-90. Samples from Tifton 16 micro-microcuries per kilogram of soil. A micro-microcurie is one-millionth of a millionth of a curie.

The concentration of strontium-90 in the soil carried by runoff water was about ten times higher—450 and 140 micro-microcuries at these two places, respectively—than the strontium-90 in the soil samples.

Present levels of radioactivity are still below the levels from naturally occurring radioisotopes in soil.

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GEOLOGY

Agadir Earthquake at Tip Of Familiar Seismic Area

THE EARTHQUAKE that razed most of the Moroccan seaport of Agadir March 1 had its epicenter just west of the city. Sizeable earth shocks in the past are not listed in the records for that area.

The earthquake was at the tip of the southwestern end of the Alpidic earthquake belt, associated with the Alps. The earthquakes of Italy, Greece and Turkey are in this shock-prone area.

The U. S. Coast and Geodetic Survey, Washington, D. C., determined the epicenter of the quake to have been at 9 degrees west longitude and 30 degrees north latitude, slightly west of the devastated city.

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PSYCHIATRY

"Hopeless" Patients Helped With LSD-25

MENTAL PATIENTS formerly considered hopeless are now able to fight their illness with the aid of the drug LSD-25, two psychiatrists said.

Drs. Arthur L. Chandler and Mortimer A. Hartman of the Psychiatric Institute of Beverly Hills, Calif., reported on the use of the drug, lysergic acid diethylamide, in 110 patients. Their report appears in the March issue of Archives of General Psychiatry.

With LSD-25 as an aid, it has been possible to "reach" and work with patients who are otherwise unresponsive to psychotherapy. Several patients had had as much as six years of previous analytic therapy with no success. After 20 to 40 LSD-25 sessions, they were either discharged as markedly improved or appeared to be well on their way to the resolution of their basic problems, the psychiatrists report.

A total of 88 showed improvement ranging from "slight" to "outstanding" after an average of six sessions with the drug. The group that showed the most progress were the manic-depressives, those who are alternately highly elated and deeply depressed.

An encouraging result, they explained, is the promising progress of those with addictions. Most of these patients were alcoholic problems, but seven of these also had a recent history of drug addiction. The fact that this group did as well as it did suggests the possibility that LSD-25 may be a valuable therapeutic aid in work with this most difficult group, they point out.

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THERMOELECTRIC GENERATOR—The Russian thermoelectric generator converts heat from a kerosene lamp into electricity for radios in remote Asian areas. The generator is examined by J. Donald Rauth (right) and Dr. Mostafa E. Talaat (left), both of The Martin Company, Baltimore, Md., that used similar principles in conjunction with a radioisotope heat source.