

## MEDICINE

# Stomach Cancer Detection

Cytological diagnosis is now being applied to the detection of cancer of the stomach. The method has proved accurate in 60% of the cases examined so far.

► THE possibility that deaths from stomach cancer may be reduced considerably with further development of a diagnostic test now in the experimental stage was visualized in a report made to the meeting of the California Medical Association in San Diego.

The test is an application of the cytological diagnosis technique, which has been used recently with increasing success in detecting cancer of the lung and of the cervix. This report was made by University of California Medical School physicians who have pioneered much of the application of this technique.

The significance of the test lies in the promise that it can be used successfully in detecting stomach cancer in the early stages. Stomach cancer is one of the most difficult forms of the disease to detect. It is easily confused with ulcers and other stomach disorders. Even in the late stages, it is sometimes impossible to detect it by X-rays, the most reliable test now in general use.

By the time it can be demonstrated that cancer is present, it is often too late to treat the ailment successfully. Because stomach cancers usually are so far advanced, before surgery is attempted, doctors are able to cure only about 25% of patients at the present time.

Although the cytological test for stomach cancer is not yet ready for general use, the University of California physicians foresee the possibility that it may be used in the future as one of the many aids of the physician in attempting to determine the stomach disorders in his patients. One of its advantages is its simplicity.

In cytological diagnosis, fluid samples are taken from suspected areas, stained, and examined under a microscope. Where cancer exists, cancer cells may be expected to be present in the fluids. Sputum, for instance, contains cancer cells when cancer is present in the lungs. Trained technicians can tell the difference between normal and cancer cells.

Cytological diagnosis for cervical and lung cancer is now accurate in 90% of cases examined at the University of California Medical School, and this is a superior record.

It was tried first several years ago. Fluid samples were taken from the stomach and examined in the usual way. Scientists over the country have been successful in about 60% of cases, which compares favorably with any other stomach cancer test.

Last year, the San Francisco scientists began work on a method of improving the

test. One difficulty had been caused by a heavy coating of mucus overlying the stomach wall, a coating which is particularly heavy over cancer areas. This prevented the obtaining of samples directly from surface of the stomach wall.

A solution containing papain, a digestive enzyme obtained from the tropical fruit, papaya, was tried in an effort to dissolve this mucus. The effort was successful, and it permits doctors now to obtain more suitable fluid samples directly from the stom-

ach wall.

Since this development, it has been possible to try the new technique on only four patients later proven to have cancer of the stomach. In all four cases, however, cancer was diagnosed by the test.

This is too few cases to determine just how efficient the new technique will be. However, the scientists said that on the basis of success in the case of lung and cervical cancer, similar results may be expected.

Training of technicians to apply the new technique is sponsored by the American Cancer Society. Upon the experience and training of the technicians depends the reliability of this test. The research was sponsored largely by the U. S. Public Health Service.

The physicians reporting the new development were Drs. Herbert F. Traut, Milton Rosenthal, Richard Skahen, Morris E. Dailey and Chu Hui Chang.

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## NUCLEAR PHYSICS

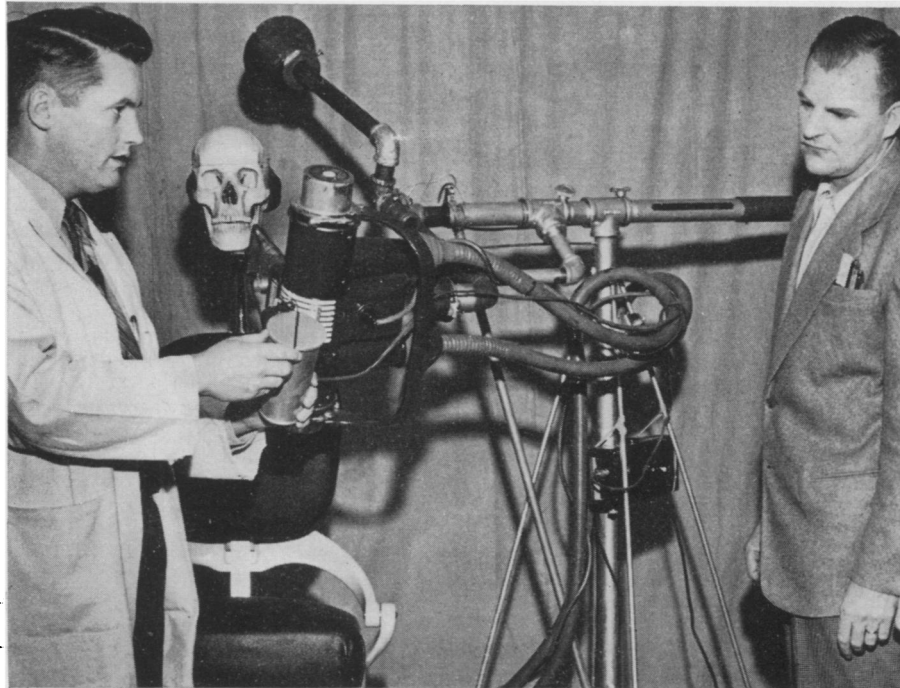
# Dineutron Found

► THE double-weight neutron, for some time considered a possibility among atomic particles, actually exists.

In experiments at the Los Alamos Scientific Laboratory, where atomic bomb work is being done, definite evidence has been

obtained for the dineutron, a particle of neutral electrical charge that is double the weight of the ordinary neutron, trigger of the fission atomic bomb.

Tritons, hearts of hydrogen isotope three, were flung at other tritons by an electro-



**TWO IN ONE**—A new type of X-ray machine that can take all the upper or lower teeth on one film is explained by Dr. Robert J. Nelson to John Kumpula at the University of Washington School of Dentistry. With the patient in a fixed position in the dental chair, the machine moves and the chair revolves slowly in making the X-ray picture. Heretofore 18 pictures were required for a full X-ray and one-half hour, as compared to 10 minutes with "panographic radiography," was required for taking them.