



Pacific Northwest Laboratory

EARLY DETECTION TECHNIQUE — Here a probe is used to “see” into a tooth to detect early cavities without the use of X-rays. The method is devised to enable the researcher to look inside a solid object without exposing a person to radiation. The research, initiated at Pacific Northwest Laboratory which is operated by Battelle Memorial Institute, is under Atomic Energy Commission sponsorship.

DENTISTRY

Ultrasonics Detect Cavities

Ultrasonics may be used to enable dentists to get a clearer picture of a person's tooth

► **DENTISTS** may soon be able to “see” into teeth to detect early cavities without the use of X-rays.

In some cases the new ultrasonic technique can be used in conjunction with X-rays to give the physician or dentist a clearer “picture” of the tooth or bone being studied. The method has the advantage, moreover, of doing some of the things that ionizing radiation does without exposing a person to its dangers.

The ultrasonic waves are transmitted into the tooth or bone, where they echo or bounce back. The echoes are picked up on an oscilloscope, creating a picture, similar to that of an X-ray, of the various densities of the bone, tooth or tissue.

The idea of applying ultrasonics to biomedical uses came out of work in the field of nondestructive testing techniques in nuclear energy research. For nearly 20 years new testing methods

have been systematically applied to medical needs. Now, under a research program sponsored by the U.S. Public Health Service, scientists and engineers at Battelle-Northwest are exploring the present uses of ultrasonics as well as possible new ones in the future.

Used to measure bone density, ultrasonics might assist in determining if a patient has benign or malignant tumors composed of bone tissue.

Ward Spear, manager of Battelle's Process Instrumentation Unit, Richland, Wash., for PHS will supervise the initial one-year research.



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PALEONTOLOGY

Stone Age Mouse Hints Plants Were on Desert

► **THE JAWBONE** of a Stone Age mouse found about 500 yards west of the Nile River near the Egyptian-Sudanese border has indicated that there may have been “dense vegetation” in the presently hot, dry area of the world.

The Nile periodically floods its banks, but the mouse, a Paleolithic rodent called *Nesokia indica*, is believed to have inhabited only areas where the ground was wet 12 months a year.

This may mean that there used to be a stable water table that was relatively unaffected by the Nile's seasonal fluctuations, Peter Robinson of the University of Colorado Museum, Boulder, said.

Such stability “would imply dense vegetation near the river, with concomitant increase in the fauna dependent on it,” he said.

Mr. Robinson reported his finding in *Science*, 154:264, 196.

Such an area would have been important to a human population, Mr. Robinson said.

It might have allowed “a permanent campsite or campsites near an abundant food supply,” he believes.

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