

DENTISTRY

Teeth X-Ray by Toothpick

Wooden applicator stick, with radioactive material for its "head," suggested to replace bulky X-ray equipment now used to get pictures of teeth.

► WHEN DENTISTS take X-ray pictures of teeth in the future, they may do it without an X-ray machine.

A wooden applicator stick, something like a long toothpick, with some radioactive material rounded on the end of it like a match head, will be held against the jaw or tooth, either inside or outside the mouth. This will produce a picture on an X-ray film packet held in the appropriate position.

Successful experiments using radioactive cesium for the X-ray source in taking such pictures of teeth in a skull are reported by Drs. Harry D. Spangenberg Jr. and M. L. Pool of Ohio State University, to the *Journal of the American Dental Association* (Dec.).

Ordinarily, they explain, X-rays are produced with a vacuum X-ray tube and a high voltage power supply. But the nuclei of certain atoms are also a source of X-rays. Without any vacuum tube and without any high voltage, these nuclei "of their own volition" cause emission of X-rays of intensity directly proportional to the number of nuclei present.

The small intensities produced by radioactive cesium used for their experiments with a skull are not effective for practical use in taking X-ray pictures of teeth in a living head. But Drs. Spangenberg and Pool declare it is "a distinct possibility" that other radioactive X-ray emitters will be discovered which can produce an X-ray beam of sufficient intensity and proper wavelength "to make possible its clinical use as a source of X-ray radiations."

The radioactive X-ray emitters are so small they may be placed in many parts of the body, thus making it possible both to obtain clearer photographs than might be obtained by the usual X-rays and to obtain photographs of portions of the body heretofore considered inaccessible for X-ray detection.

The light weight of the equipment and elimination of an electrical generator or bulky transformer are other advantages. Shielding equipment, a time exposure device and the small radioactive X-ray source are all that is needed.

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NIGHT INTRUDER—Newest addition to the U. S. Air Force is the twin-jet night bomber, B-57, adapted from the basic design of the Royal Air Force Canberra. It is the first night intruder bomber that has been purchased by the Air Force.

• RADIO

Saturday, Dec. 19, 1953, 3:15-3:30 p.m. EST
"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. A. P. Black, head, department of chemistry, University of Florida, Gainesville, Fla., and past president, American Water Works Association, will discuss "America's Cheapest Raw Material—Water."

MEDICINE

Antibody Level Key To 'Flu Prevention

► KEY TO prevention of an influenza epidemic is the level of anti-influenza antibodies in the blood of the population, Dr. G. O. Broun of St. Louis University School of Medicine, St. Louis, Mo., reported at the meeting of the American Medical Association in St. Louis.

If the level of these 'flu-fighting antibodies gets low, as shown by tests of pools of blood samples from the population, it could be used as a signal for vaccinating against influenza. Which vaccine to use could also be told by such tests which would show the type of influenza to use in a vaccine. If antibodies to Type B were scanty, that type should be in the vaccine. If antibodies to another type were scanty, that type would be needed in a protective vaccine.

For two and a half years, Dr. Broun examined pools of blood serum collected each week from the population in this area. Following an epidemic of Influenza Type B in 1952, antibodies to this type increased in the serum pools. Following an epidemic of Type A prime in 1953, antibodies to this type were found in increased numbers.

More important for prevention, Dr. Broun said, the serum pools showed decreases of the antibodies to each type of influenza in the months immediately before the epidemic.

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ANIMAL NUTRITION

Mysterious L-Factor Helps Eggs Hatch

► A MYSTERIOUS L-factor investigated by a graduate student at Texas A. and M. College may save poultrymen millions of dollars each year by increasing the number of hatchable chicken eggs.

Bobby L. Reid has discovered that the factor found in water-soluble liver concentrates and fish solubles exerts a strong influence on the number of hatchable eggs a hen lays.

Diets without L-factor reduced hatchability to 25% or less of normal, while the factor added to the diets increased hatchability to 10% more than normal.

It has been estimated that poultrymen lose \$35,000,000 each year by setting eggs that do not hatch. Normally only 68 out of every 100 eggs hatch. If L-factor can be isolated and produced, it would reduce this loss significantly.

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