

DENTISTRY

Replacement of Teeth

The use of inert metals for tooth roots has made the transplantation of teeth possible. One such replacement is now in its twelfth year in a human jaw.

► ARTIFICIAL tooth roots of changeless metal can be implanted into human jaws. This technique gives promise of solving one of the most troublesome dental problems.

Attempted for centuries unsuccessfully, the American Dental Association meeting in Atlantic City was told that such tooth replacement is now possible.

Cobalt-chromium alloy screws have been implanted experimentally in a dog and in some humans. One is now in its twelfth year in a human jaw, Drs. A. E. and M. S. Strock, Boston dental scientists, reported.

Success in the transplantation of extracted, fully formed, natural teeth has been limited only by the gradual destruction of the tooth roots, the Boston dentists pointed out. Past attempts to implant metal roots probably failed, they said, because of the reaction of the tissues to the metal. Inert metals which do not react

with tissues were unknown at the time of earlier tests.

The dog that had a cobalt-chromium alloy screw implanted in its upper jaw, where a tooth had been missing, did not have any inflammation or abnormality and was able to eat a regular diet. The screw remained firm and immovable without giving any trouble until the dog died more than two years later. Examination showed that there had been no reaction to the screw by the mouth tissues and that the surrounding teeth were normal.

Some of the screws implanted in human jaws became movable. Microscopic examination showed that a membrane had lined the screws and it became obvious that the implants were being rotated on the membrane. It was decided, however, to keep the screws in and some of the implants now in place have been movable for years.

Science News Letter, November 11, 1950

GENERAL SCIENCE

Ills Show in Fingerprints

► CERTAIN illnesses may leave their mark in the fingerprints of the patients. This is the suggestion made by F. R. Cherrill, chief superintendent-in-charge, Finger Print Branch, New Scotland Yard.

The ridges and the fingerprint patterns they form do not change. They are the same in sickness and in health, from infancy to old age, and even after death. But there are other markings found in the fingerprints of some persons. These are creases which show up in the fingerprint as white lines which cross the paths of the ridges at acute angles.

Examination of a large number of prints of apparently normal persons ranging in age from 16 to 75 years shows that 11% to 12% have these white lines, Inspector Cherrill reported in the British science journal, NATURE (Oct. 7).

The white lines are mostly confined to the middle, ring and little fingers of the left hand.

The white lines can develop even after death. An aged woman, 90 years old, was fingerprinted twice after her death. The first set of prints showed no white lines, the second set taken two days later showed them plainly in the left ring finger and the left little finger.

Inspector Cherrill was led to make his study of the white lines in the fingerprints

of sick persons from his observations of attempts to fingerprint dead bodies. The left hand shows signs of greater or more rapid decomposition than the right.

Since the left hand, he reasoned, is more susceptible to changes after death, perhaps the left hand of a living person might be more susceptible to changes caused by disease. His study of the fingerprints of diseased persons lent support to this idea.

Science News Letter, November 11, 1950

CHEMISTRY

Mica Flakes Are Secret Of "Sandwich" Paint

► MICA flakes are the secret of success of a new, three-decker corrosion-resistant paint developed in Sharon, Pa., by the Westinghouse Transformer Division.

It is primarily for protecting the familiar steel neighborhood transformers which step down the electrical voltage from distribution lines so that the current may be safely used in buildings. Other applications are possible, however, particularly where sea-coast atmosphere makes other paint coatings unsatisfactory.

The mica flakes are used in the middle coating of this triple protective covering, and are embedded in a syrup-like plastic.

They ward off the attacks of moisture and oxygen, principal causes of rust, J. G. Ford, Westinghouse engineer, states. They also increase the heat resistance of the middle coat as much as ten times at high temperatures.

The inner coating of the three-decker paint is a special primer that clings tightly to the steel surface and seals it from contact with the air. The second coat with its pigment of mica flakes, is then applied and allowed to dry. The third coat is applied to give the transformer a pleasing appearance and to shut out ultraviolet radiation from the sun. All three coats are necessary. Each layer adds to the strength and resistance of the others.

Science News Letter, November 11, 1950

INVENTION

Nobelist Fermi Awarded Patent on Atomic Device

► NOBELIST Enrico Fermi, the scientist who directed the building of the world's first chain-reacting pile, has been granted a patent on one of his atomic devices, the Atomic Energy Commission announced in Washington.

The neutron velocity selector, as it is called, measures the speed of neutrons as they leave an atomic pile or a particle accelerator. The government owns the patent, No. 2,524,379, awarded to Dr. Fermi, a University of Chicago physicist. It is held by the AEC, which will grant non-exclusive, royalty-free licenses for its use.

Science News Letter, November 11, 1950



PAINT SANDWICH—Still bright and shiny after 1,000 hours of continuous exposure to corrosive salt water spray is the distribution transformer tank at left, which is coated with a new three-decker paint. The tank at right, coated with a standard finish, quickly fell victim to the salt water attack.