



**REQUIRED FOOD FACTORS**—Dr. Conrad A. Elvehjem, Lasker Award winner of the University of Wisconsin, watches William Leoschke conduct a feeding experiment with a mink. From differences in diet requirements among animals, scientists can sometimes glean clues to new vitamins, amino acids and other nutrients. Dr. Elvehjem was the first to isolate nicotinic acid as an essential nutrient.

## ARCHAEOLOGY

## Jericho Is Oldest Town

► THE BIBLICAL town of Jericho, with its walls that came tumbling down before the blasts of Joshua's trumpets and the shouts of his men, is now believed to be the oldest town in the world, with a continuous history of at least 6,000 years.

This is revealed by excavations being conducted jointly by the British School of Archaeology in Jerusalem, under the direction of Dr. Kathleen M. Kenyon, and the American Schools of Oriental Research.

The wall brought down so dramatically by Joshua was only one of a long succession of city walls, built one on top of another. Deepest one found dates back at least 6,000 years, if not more, and is built of tremendous undressed stones.

Enclosed by the wall were buildings solidly constructed of plastered mud-brick walls and floors put together with mud mortar of the same consistency. In most cases the bricks were plain slabs of irregular size, but in some walls, long cigar-shaped bricks were used. These bricks were flattened top and bottom and decorated with impressions of the brickmaker's two thumbs in a herringbone pattern.

These houses were erected and the wall was built for defense back in the New Stone

Age before men had learned to make pots.

"It is a revolutionary idea in our knowledge of the development of settled occupation," says Dr. Kenyon in reporting the finds in the British journal *Antiquity* (Sept.), "that the stage of community organization involved in the construction of a town wall was reached before the invention of pottery."

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## PHYSICS

## Dunk It, Jolt It, Radio Still Works

► YOU CAN dunk it in water, throw it around, feed it electricity from power line, dry or storage battery, and it will still bring in the radio messages.

The latest communication receiver in mass production for the Army's Signal Corps for vehicles and fixed installations is that tough and reliable, Emerson Radio and Phonograph Corporation declared in New York.

It operates on various channels. The heat and fungi of the tropics cannot put it out of commission.

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## PHYSICS

## Nuclei and Pi Mesons New Atom Types

► THE EXISTENCE of new types of atoms composed of nuclei and negatively charged pi mesons, mysterious, short-lived particles intimately associated with the forces holding the nucleus of the atom together, has been established by University of Rochester nuclear physicists with the detection of mesic X-rays from carbon and oxygen mesic atoms.

These mesic X-rays, 280 times more powerful than the commonly known electronic X-rays, are emitted when the negative pi meson jumps from one stable orbit to another of the mesic atom.

One result of the mesic X-ray discovery is that, for the first time, it establishes a direct comparison between the electrical and the nuclear forces acting upon pi mesons.

Existence of the X-rays was confirmed by a group headed by Dr. Joseph B. Platt, associate professor of physics, during the course of a long series of complicated high-energy experiments using the university's large 240-million-volt synchrocyclotron. Dr. Platt's co-workers were Dr. Morton Camac, Harry J. Schulte and Austin McGuire.

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## SURGERY

## Skin Flap Feeds More Blood to Failing Hearts

► A WAY to supply more blood to failing hearts was demonstrated by Drs. Charles G. Neumann and Jere W. Lord, Jr., of New York University Post-Graduate Medical School, New York, and Dr. Robert E. Moran, plastic surgeon of Washington, D. C., at the meeting of the American College of Surgeons in New York.

The method makes use of a flap of skin from the abdomen which is shaped into a tube between the chest wall and the heart. This pedicle skin flap, as it is called, is sewed to the heart muscle. The skin flap is designed to carry a new blood supply to a heart that is not getting enough blood because the artery supplying its muscle has been blocked or constricted.

The idea of using a skin flap for this purpose came from Dr. Moran. Several years ago when trying to transplant a skin flap from one person to a close blood relative with the same blood type, he found that the donor, four days after the transplantation, developed shock and anemia. A large volume of the donor's blood, it turned out, was going through the skin graft tube. The amount of blood which this tube could transport suggested that a skin flap might be a successful vehicle for carrying a new blood supply to the heart.

Details of the experiments to develop this operation are reported simultaneously by Drs. Neumann, Lord, Moran and Jerold von Wedel, Peter W. Stone and J. William Hinton of New York in *Science* (Sept. 26).

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