

## NUTRITION

## Milk as Sole Life Diet

► IT'S possible to support life from birth to death in old age on an exclusive diet of milk.

White rats lived to ages comparable to 70 and 90 years in humans with no food other than cow's milk, with a few necessary minerals added.

Dr. C. M. McCay of the New York Agricultural Experiment Station gave one group the milk diet and another received rations of cereals, meats, and other normal human foods over a two-year period. There was no apparent difference between the two groups, including length of time lived.

The erroneous idea that milk is food only for the young stems from the observation that young animals change from a milk diet to adult food when they get

their teeth. Actually, says Dr. McCay, "I believe the young stop milk to permit the mother-animal to recover from the long drain upon her body in producing young and to prepare for the next cycle."

Milk is an excellent and nearly complete food at all stages of life, he said. It does lack trace elements, such as manganese, iron, and copper, but these are usually found in the solid food of the adult or can be added to a milk diet. The milk-fed rats in the tests never had any solid foods so never had a chance to chew during their lives.

Dr. McCay concluded from the experiments that "mineralized milk can serve as the sole article of diet from weaning until death in old age."

Science News Letter, September 3, 1949

## ENGINEERING

## Study Corrosion of Pipes

► THE usual cast-iron water pipes seem to resist corrosive action with cold water flowing through them about as well as the more expensive commercial pipes now available, the National Bureau of Standards concludes from a 10-year experiment.

The rapidity with which water pipes corrode, and fail, is important information to the home-owner and the building industry. The replacement of corroded pipe usually is an expensive job, often requiring the rebuilding of walls and flooring.

In the Bureau's investigation, tap water of the Washington system, which has a known analysis, was circulated at constant velocity through a system of eight vertical columns, each made up of 14 specimens of commercial pipe lengths. The specimens consisted of two types of cast iron, three of wrought iron, two of ingot iron and three of open-hearth steel. The amount of inside corrosion was determined by loss of weight and the depth of the pits in the materials.

Every precaution was taken in the investigation to assure reliable results. Except for the metal specimens, the water within the apparatus came in contact only with rubber, glass and stainless steel. Hard rubber rings separated the specimens to prevent metallic contact and galvanic action. The outside of the piping was coated with asphalt varnish to prevent outside corrosion and loss of weight.

Failure of any piping material in actual service usually results from perforation of the wall by pitting. The shallowest pits occurred in the centrifugally cast iron, while the sandcast iron had pits approximately twice as deep. The results of the tests indicate that there is no great difference in the rates of corrosion of most of the wrought iron materials when measured either by loss

of weight or the depth of pitting.

A low-alloy steel had the highest corrosion rate, while a copper-molybdenum ingot iron and a nickel-bearing wrought iron had the lowest rates. Other low-alloy materials such as wrought irons, ingot iron, and ordinary medium carbon steel pipes corroded at intermediate rates. A rough estimate of the minimum life of these bare materials when subject to continuous flow of Washington (D. C.) water would be about 15 years on the basis of the work, the Bureau states.

The tests were made by G. A. Ellinger, L. J. Waldron and S. B. Marzolf of the Bureau staff.

Science News Letter, September 3, 1949

## MEDICINE

## Arc Welder's Light Can Produce a Sore on Mouth

► ATTENTION has been called to a new industrial hazard which produces a sore on the mouth of men coming in contact with arc welder's light by Dr. Sydney Vernon of New Brunswick, N. J.

He suggests that the sore might possibly be a precancerous lesion. His report on two patients appears in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Aug. 27).

One of the patients came in contact with arc welder's light while reading blueprints in a shipyard. His only protection consisted of goggles for the eyes while the welders had hoods protecting their heads. Examination showed a crust on his lower lip which was very pale and thickened. The sore was removed by surgery and the patient recovered without any after-effects.

The other patient had worked on and off in his father's welding shop for some ten years. At one time he had an operation for a "wartlike growth" on the lower lip. He complained of a sore near the same spot when seen by the physician. This was a constant source of irritation and made him bite his lip. The sore dried up with electrolysis but came back, so he was operated on with successful removal of the lesion.

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## CHEMISTRY

## Virginia Hospital Has New Oxygen-Making Plant

► THE largest oxygen manufacturing plant in any hospital and only the second of its kind has just been completed by the Medical College of Virginia at Richmond.

Oxygen generated by the new plant is piped to operating and other rooms where it is needed for patients. Top production is estimated at 500,000 cubic feet of oxygen per month, though the hospital averages only 150,000 to 200,000 cubic feet monthly.

Most hospitals obtain oxygen in cylinders, and large savings are expected from use of the new plant.

Memorial Hospital, Hartford, Conn., was the first hospital to install its own oxygen manufacturing unit.

Science News Letter, September 3, 1949

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