

ORTHOPEDICS

Complete New Leg Brace

➤ A LEG BRACE prefabricated in parts which can be rapidly assembled and tailored to meet each patient's needs was demonstrated by Army medical scientists at the American Academy of Orthopaedic Surgeons meeting in Chicago.

The brace is of aluminum, which makes it 60% lighter in weight than steel braces. The prefabricated parts are now in mass production. Their ease of assembly means all types of brace fabricators can put the brace together and its cost will be within the means of those with limited funds for appliances.

Four advantages of the brace's "two-pivot" knee-joint are: 1. the free knee-joint, which approximates the sliding motion of the normal knee; 2. a joint in which the two pivot areas are controlled by a simple automatic lock mechanism; 3. a joint in which the two pivot areas are activated by a spring mechanism, which assists, or duplicates, the extension apparatus of the normal knee; 4. a joint to be used with the stiff or

contracted knee, the two pivot areas being controlled by a centrally placed screw mechanism, which the orthopedic physician can adjust to exert a gradual, physiological corrective force on the knee deformity.

Additional advantages appear in the brace's ankle-joint, placed at ankle-height and allowing for interchangeability from shoe to shoe; and in the drop-foot mechanism, where a torsion spring is concealed in the ankle section of the brace to assist the polio patient in lifting the paralyzed foot in walking.

Completion of the new leg brace was made possible through the cooperative efforts of Army doctors and technicians, together with suggestions and requirements from the office of the Chief Medical Director of the Veterans Administration. Metallurgists of the Aluminum Company of America, as well as other technical groups, readily offered assistance because of their keen interest in the subject.

Science News Letter, January 29, 1949

ASTRONOMY

Historic Telescope Moved

➤ A SMALL, 10-inch telescope which has been used at Mount Wilson Observatory to study the Milky Way for more than three decades is being taken to South Africa by University of Michigan astronomers to finish its job.

The refractor telescope, installed at Mount Wilson in 1914, has been used to locate emission B (or Be) stars and planetary nebulae in our own galaxy, the Milky Way. About three-fourths of the Milky Way has been surveyed with the instrument at Mount Wilson, and the remaining fourth of the galaxy cannot be seen from there.

A University of Michigan graduate student, Karl G. Henize, will use the telescope at the University's Lamont-Hussey Observatory at Bloemfontein, South Africa, to study the rest of the Milky Way. The project, under the direction of Director Leo Goldberg of the University of Michigan Observatory, is expected to require approximately three years.

Be stars and planetary nebulae have been compared with an 80-year-old man on a football team who takes the ball and runs for a touchdown when no one can stop him. This would be as hard for a sports writer to account for as the changes that take place in planetary nebulae and Be stars are for astronomers to explain.

In the mystery of these objects in the Milky Way may be found the answers to important problems in physics, including the origin of high velocities and a possible relationship to nuclear physics, astronomers believe.

Planetary nebulae and Be stars are identified by the hydrogen lines in their spectra. Although similar to novae, their outbursts are believed to be less violent.

Science News Letter, January 29, 1949

PUBLIC HEALTH

\$3,000,000,000 Water Bill Needed To Fight Pollution

➤ A \$3,000,000,000 water bill is shaping up for federal, state and local governments.

This huge sum is needed to keep the nation's water clean, Maj. Gen. Philip B. Fleming, federal works administrator, told the New York State Sewage Works Association in New York.

To fight water pollution, Gen. Fleming said that 80,000 miles of new sewer lines and 12,000 new treatment plants are needed.

"New York state alone needs sewage works that would cost more than \$1,000,000,000," the federal official said.

Science News Letter, January 29, 1949

ENGINEERING

New York City Water Supply 50% Greater in Five Years

➤ THE never-ending problem of supplying New York City with adequate water will be partly solved by 1954 when works on the upper Delaware river are completed, the American Society of Civil Engineers was told by Roger W. Armstrong, con-

sulting engineer of the city's Board of Water Supply. A 50% increase in the city supply is expected.

Three impounding reservoirs on Catskill mountain streams are included in the project. One is on the East Branch of the Delaware river; the others are on Neversink river and Rondout creek. The project includes also a pressure tunnel aqueduct from the Rondout reservoir to New York City, with 25-mile and five-mile aqueduct tunnels bringing the water to the Rondout reservoir from the Neversink and Delaware respectively.

The total cost of this undertaking is expected to reach some \$440,000,000. When planned, two decades ago, it was to be completed by 1939, and cost \$273,000,000. Legal obstacles, plus material shortages, are responsible for the longer period required.

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ZOOLOGY

Do You Leave Bread Crusts? Rats Are Particular, Too

➤ HUMANS who leave the hard dry crusts of bread, eating only the soft center part, have their counterpart in rats, it appears from research reported in the journal, SCIENCE (Jan. 21), Drs. Anton J. Carlson and Frederick Hoelzel of the University of Chicago.

Rats often eat only the germ part of whole kernels of corn. Sometimes they also eat the white starchy part. But they leave the "flint-like yellow part of the separated kernels and separated skin," the Chicago scientists observed.

When the corn kernels were soaked in water for 25 to 48 hours, the rats ate all but the skin. These and further observations led the scientists to conclude that "the acceptance of food by rats, like the acceptance of food by man, is influenced more or less by the texture of the food."

Science News Letter, January 29, 1949

Science Service Radio

➤ LISTEN in to a discussion on "Magnetism at Work" on "Adventures in Science" over the Columbia Broadcasting System at 3:15 p.m. EST, Saturday, Feb. 5. Dr. Gustaf W. Elmen, internationally famous scientist and expert on magnetic materials, inventor of Permalloy and Perminvar, physicist at the Naval Ordnance Laboratory, White Oak, Md., and Edward Gaugler, physicist at the Naval Ordnance Laboratory, will be guests of Watson Davis, director of Science Service. They will tell the uses of magnetism in industrial research and will describe the way in which American physicists connected with the Navy were able to duplicate and simplify the production of a magnetic alloy made by the Germans.

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