

• SCIENCE SHORTS •

A miscellany of happenings and information in various fields the world over

Beer is probably the oldest *beverage* known to man.

The *Columbia Icefield* lies on the hydrographic apex of North America, with its outlet glaciers draining eventually into three oceans.

Elisha Otis installed the world's first passenger *elevator* in a New York store in 1857.

The Columbia Icefield, center of the largest known accumulation of *ice* in the Rocky mountains, covers an area of nearly 150 square miles, of which fully 50 square miles are more than 8,500 feet above sea level.

The optical microscope was the first instrument used in the art of *metallography*.

Chemicals and *bacteria* can be removed from polluted water, by passing it through a bed of wicker reeds, rendering it safe for drinking.

By using an electrically charged plate to remove a thin layer from *papyrus* which is so charred as to be unreadable the writing can be made visible.

The mean *radius* of the earth has been valued at 6,378.169 kilometers (3,963.203 miles), a measurement accurate within eight meters one way or the other.

Three-fourths of all families in the United States were covered by voluntary health insurance in 1963.

Beryllium, employed because of its lightness and strength, is used in a mirror of extreme dimensional accuracy which is a vital component in the star-tracking device of an orbiting astronomical observation platform.

The Tower of Trumpets in Medias, Rumania is a leaning *tower* dating from 1450.

Venezuela has the highest per capita production of *electric power* in Latin America.

The *oral cavity*, like other organ systems, is influenced by variations in a person's psychological state.

Canada's Lake Louise, like all glacier-fed lakes, derives its beautiful emerald *color* from tiny particles of glacial silt held in suspension, causing refraction of the light's rays as they fall on the lake's surface.

Explosive-formed *domes* could provide one-piece ends for the fuel cells of Titan missiles, replacing the eight welded pieces presently in use.

The people of Angoram, New Guinea, have perfect *teeth*, but the people in surrounding villages suffer from normal dental decay.

There are more than 500 annual days, weeks and months of special *observance* listed every year, ranging from National Procrastination week, to the fourth of July.

A fine grain, high-resolution *film* with extended red sensitivity and unusual contrast characteristics is important in solar flare photography for development of a radiation warning system for the Apollo spacecraft.

A machine has been developed to extract edible *protein* from tropical leaves.

The first group of unattended *elevators* was installed in the Atlantic Refining Building in Dallas in 1950.

By 1975 the number of *persons* earning less than \$3,000 is expected to decrease by 10%.

A high-resolution, infrared scanning *camera*, carried on the Nimbus satellite, produced the first night-time picture of cloud cover.

Sixteen *supernovae* and 10 comets were discovered during 1965.

Jupiter, the largest planet of our solar system, radiates two and a half times as much *heat* as it receives from the sun.

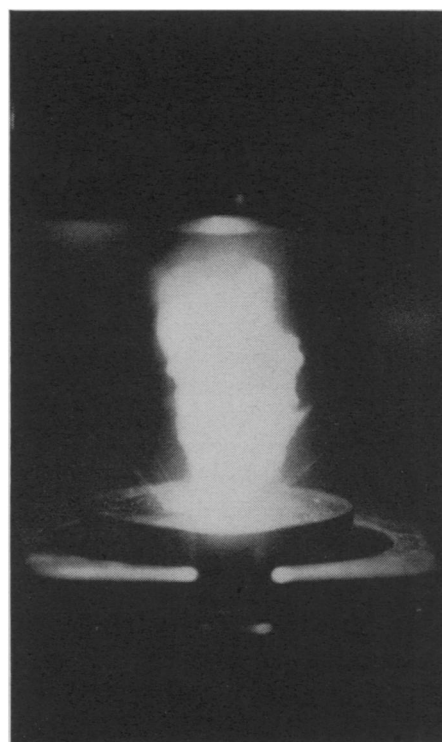
The first *escalator* in public use was introduced at the Paris Exposition in 1900.

The first regular product trial of *Picturephone* telephone service on a customer's premises is now underway.

A *bell tower* built in 1573 in St. Moritz, Switzerland, has been leaning for at least 165 years, probably as the result of an earthquake.

Well preserved Babylonian *tablets* prove that as far back as 8,000 years ago, monarchs drank beer through golden "straws" from kegs placed beside the throne.

• Science News, 89:272 April 16, 1966



Western Electric

LASER FLAME—A technique for piercing diamond dies with a laser beam for fine wire drawing has been developed in the first known application of the *laser* for mass production purposes.

Nature Note

Walking Sticks

► THE THREE-INCH TWIG seemed to twitch, then jerk, then slowly move itself forward among the other twigs on the tree. Awkwardly it stretched its thin, knobby legs, took a few steps then stood still, pointed in an angular position as if growing from the branch.

This is the walking stick, so beautifully camouflaged it seems truly a part of the oak or wild cherry tree on which it rests. By day this insect may not even move at all. It stays in a cataleptic pose until night falls, when it is safe from enemies and can eat its fill of nearby leaves.

Walking sticks, members of the Phasmidae family of the order Orthoptera, have smooth slender bodies. In the tropics they are equipped with knobs, spines and flaky appendages to blend in better with thorny vegetation. Some of the Asiatic stick insects, such as *Palophus titan*, are the longest of living insects measuring 12 inches.

After two summer months of eating leaves, the walking sticks are full-sized. In late summer, each female lays as many as a hundred eggs, dropping them to the ground where they remain all winter. They look like seeds with hard, shiny black coats with a white stripe around the edges.

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Current U.S. Patents

A jet belt carrying individuals into the air enables man to travel a mile or so in less than two minutes

► ONE OF MAN'S oldest dreams—flying free through the air as birds do—was brought closer to reality for the ordinary citizen as well as military personnel with the development of a jet belt patented by the U.S. Patent Office.

Personal jet belts could be one solution for the traffic-jammed commuter. Without doubt, however, they have important military and space exploration applications.

Previous flying belts have used rocket propulsion. Now the turbojet principle has been adapted for personal flying, providing much longer times in the air and, therefore, a much longer soaring range.

The new jet belt is believed capable of keeping a man in the air for several minutes during which time he could travel a mile or so. Exact performance figures are classified.

Using a turbojet for propulsion provides a much higher degree of control than can be attained with rockets. The jet belts are under development at Textron's Bell Aerosystems Company in Buffalo, N.Y.

The Defense Department's Advanced Research Projects Agency and the U.S. Army awarded Bell a contract for \$1,999,060 to build and demonstrate the jet belts, patented by Wendell F. Moore and John K. Hulbert. The engineers assigned rights to patent 3,243,144 to Bell Aerospace Corporation.

The rocket belt previously built by Bell engineers is known to operate for 21 seconds, carrying a man as far as 860 feet. The improved propulsion and control achieved using a turbojet engine would allow flying many times longer, covering a much greater distance.

The jet thrust is directed over the flying man's shoulders, giving a high degree of control. The turbojet, fuel and control equipment are strapped on the back in somewhat the same way as a back parachute.

Personal flying belts have been dubbed "Buck Rogers" because they look like the device used by this comic strip character.



General Electric

MESSAGES BY LASER—Dr. Kiyo Tomiyasu (left) and James R. Whitten demonstrate the pulsed laser communication system which has the potential for beaming messages over millions of miles.

Laser Communication System

A communication system using the intense light beam of a laser to transmit information from a satellite, especially when normal radio communications are blacked out during reentry, and to send and receive information in other ways earned patent 3,243,592.

Kiyo Tomiyasu of Scotia, N.Y., and James R. Whitten of Ballston Lake, N.Y., assigned rights to General Electric Company, Schenectady, N.Y. Their system is especially designed to transmit and receive digital information at an extremely high rate of speed each time the laser light is pulsed.

The inventors state that their laser

communication method applies not only to line of sight transmission, as from ship to shore, but also to reflected communications, as from clouds, transmission through a plasma, as from a satellite, and communication through an air-to-water interface, as between airplane and submarine.

See Front Cover

For those who literally want to walk on water, Loyd Joseph Livaudais of Memphis, Tenn., has devised a "water runner" that he hopes to have on the market by this summer.

Mr. Livaudais says his device, covered in patent 3,242,898, is 13 feet long, 56 inches wide and will weigh slightly less than 90 pounds when produced. So far only a prototype model, seen on this week's front cover, has been tested. The water runner is propelled by the same motion a person makes when walking.

He said the main purpose of the device is to fill the gap between the row boat and the power boat. The rudders on both ends make it easily maneuverable and when improved it will be possible to operate it in reverse with the feet. (Cover photograph by Loyd J. Livaudais.)

Other Interesting Patents

A fusion reactor that uses colliding masses of plasma to achieve the fusion reaction was awarded patent 3,243,348, Siegfried Hansen and Giusto Fonda Bonardi of Los Angeles, Calif., assigned rights to Litton Systems, Inc., Beverly Hills, Calif.

Dr. Vannevar Bush, now of Belmont, Mass., was granted patent 3,242,870 for the hydraulic pump or motor he developed for Stewart-Warner Corporation, Chicago, Ill., to which patent rights were assigned.

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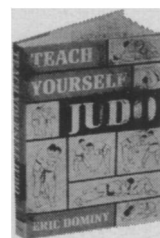
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