MEDICINE

New Type of Deafness And Cure Discovered

DISCOVERY of a new type of deafness with its cause and a method of relieving it has just been announced by Dr. E. M. Josephson of New York.

The deafness is due to spasm of the bone and muscle apparatus of the middle ear and of the eardrum or tympanic membrane. The spasm itself is due to impairment of the circulation in the ear and to reflex irritation from remote points, such as abscessed teeth. Hearing for low tones is especially impaired by this condition which is often found associated with progressive deafness.

Dr. Josephson's discovery was the result of a prolonged study of a large series of cases of this condition. Both the deafness for low tones and the muscle spasm may be relieved by galvanization or treatment with electric current.

"The intact tympanic membrane must be set in vibration by the sound waves in order that they may be transmitted to the middle ear and thence to the inner ear," Dr. Josephson explained in his report in the current issue of *Archives of Otolaryngology.*

"The rigidly retracted drum, with its altered vibrating area, elasticity, and natural frequency does not respond in normal measure to the lower frequencies, and consequently these notes are not transmitted to the inner ear. When the spasm of the accommodative mechanism of the middle ear is relieved, the low tones are again transmitted by the mobile drum."

Science News Letter, March 14, 1931

ENGINEERING

New Welded Pipe Line Carries Water to San Diego

See Front Cover

ON THE front cover of this week's SCIENCE NEWS LETTER the cameraman has caught two electric arc welders tying in an important section of a 19-mile long steel serpent, 40 inches in diameter in some places and 36 inches in others, that will carry water from reservoirs on the Cottonwood and Otay rivers of California to San Diego. This is one of the newer applications of the process of welding which is constantly finding greater use in industry.

The pipe for the new water supply to San Diego comes in 30-foot lengths. A number of these short units are lined up on the surface of the ground and welded together; then the whole section is lowered into the ditch and joined to the end of the completed line. Such a tie-in weld is being made in the photograph. This welding is being done with equipment of the Lincoln Electric Company.

Not only does the size of the pipe line vary, but the thickness of the metal from which it is made changes. A portion of the 40-inch pipe is made of three-sixteenth plate, another part is a quarter of an inch thick and a third section five-sixteenths of an inch through. Sections of the 36-inch pipe are made in same weights and an additional section is three-eighths of an inch thick. These varying thicknesses were found economical because of the changing pressure requirements of the line.

The steel pipe replaces a wood-stave line which had a capacity of 10,000,000 gallons daily. Because of its larger diameter and greater pressure the new line will carry 17,000,000 gallons daily, and in the future booster pumps will raise this figure to 25,000,000 gallons.

Science News Letter, March 14, 1931

ENTOMOLOGY

Bees Travel 40,000 Miles To Make Pound of Honey

A 16-OUNCE jar of honey, no matter how good, is hardly worth a 40,000-mile journey. Yet that is the total distance traveled by many bees to provide the nectar necessary for just that amount of honey, according to C. B. Gooderham, Canadian government apiarist.

Mr. Gooderham has figured it out mathematically. A honey bee weighs approximately only 1/5,000 of a pound, and during the honey flow on each trip she carries approximately half her own weight of nectar. It therefore requires approximately 10,000 flights to gather a pound of nectar. Furthermore, Mr. Gooderham states, nectar loses about half its weight through evaporation.

Taking all this into consideration, as well as the fact that each return flight averages about two miles, it is figured that bees have traveled at least 40,000 miles to provide sixteen ounces of honey.

So it is no wonder that the little honey bee unlucky enough to be born in summer lives but a brief six weeks. Bees born after this summer rush have an average life of seven months.

Science News Letter, March 14, 1931

IN SCIENC

BOTANY

Japanese Chestnut Yields Three Crops a Year

THREE crops a year is the astonishing yield from a local strain of chestnut bushes found in one corner of the island of Kyushu, in Japan.

So reports Dr. R. Kent Beattie of the U. S. Department of Agriculture, who has just returned from a year in Japan, spent in searching the empire from end to end for disease-proof varieties of chestnut. He found many fine varieties, and sent home about 150 bushels of nuts for planting, besides a large quantity of branches of choice orchard trees for grafting.

But on a mountain slope on one island he found the three-crop chestnuts. They grew only as large bushes, not as trees. They produce their three crops in early summer, late summer and late autumn. The last of the three, ripening in November, is seldom a large crop, but is still worth paying attention to.

There is a legend attached to this three-crop tree, Dr. Beattie says. Many years ago, the people say, a Buddhist saint was making a pilgrimage in that part of the island. Weary and very hungry, he stopped at a cottage and asked for food. The old widow who lived there said, "I have nothing but a few chestnuts, but you are welcome to these." The saint ate, and blessed the old woman, saying, "Henceforth your chestnuts will bear three crops every year." And they have never failed.

Science News Letter, March 14, 1931

OCEANOGRAPHY

Drifting Bottle Makes Four-Year Voyage

FOUR years afloat is the record of a bottle tossed overboard by Capt. G. Gellanders of the British steamer "Burmese Prince" on Dec. 8, 1926, and picked up recently among the Bahamas. The paper in the bottle gave the latitude and longitude of its launching, which showed that it had drifted probably about 6,000 miles.

Science News Letter, March 14, 1931

E FIELDS

PHOTOGRAPHY

Memorial for Movie Pioneer Who Disappeared Strangely

A PIONEER inventor of motion pictures is being recognized by a memorial fund being raised in London.

He is Louis Aimé Augustin Le Prince, a Frenchman who lived five years in the United States and nineteen years in Leeds, where a memorial tablet now decorates the site of his workshop.

The scientific magazine, *Nature,* evaluates his work by saying that it seems now to be quite satisfactorily settled that "Le Prince was actually the first to make cinematograph pictures and to show them by methods and apparatus strictly comparable with those in common use today." His 1886 American patent application and his 1888 British patent claim covered punched holes in film fitting on the pins of guide rollers. He took and showed pictures at 12 and 20 per second in 1888.

But he entered a train for Paris on Sept. 16, 1890, only to disappear completely and mysteriously with all his papers and baggage.

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PSYCHOLOGY

Study of Individuals Urged To Solve Social Problems

THE SOLUTION of social, political, and economic problems lies not in the adjustment of the individual to existing systems, but in substituting the point of view that such systems are merely part of the behavior of individual human beings. This is the thought expressed by Dr. Floyd H. Allport, of the School of Citizenship and Public Affairs, Syracuse University, in a report to the Psychological Corporation of New York.

Dr. Allport describes some of the ways in which the social psychologist is attacking social problems from this viewpoint.

"Attitude studies are being devised to measure prejudices against races and nationalistic feelings," he explains. "There is evidence of a 'race-name' prejudice as contrasted with a direct racial prejudice, in which the common illusion of a group as over above an individual plays an important part. . . . Studies have been made of the behavior of motorists in response to traffic signals.

"With reference to public opinion, voting, and similar questions, certain experiments have suggested that the average or group opinion may not improve after discussion, but the average individual opinion does improve. Political discussions, in other words, may be a way of producing more enlightened individuals, but not necessarily a more enlightened group opinion."

Voting is influenced, Dr. Allport declares, by many psychological factors, one of them being a "condition of pluralistic ignorance regarding the views of others." It is also affected by the belief in such fallacies as thinking of the group as though it were an individual, leading to such fictions as the "group mind" and the "moral standard of the community."

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ZOOLOGY

"Scarface" Bluffed To Lose Yellowstone Racket

SCARFACE, grizzly chief of the bears at the Old Faithful feeding grounds, known to thousands of Yellowstone visitors, has been deposed by a younger bear, who now reigns in his stead.

For many years Scarface, a great thousand-pound bear, ruled the Old Faithful area, and other bears gave him right of way. He was named by Ranger Naturalist Phillip Martindale, who relates the story, because of his torn face and the loss of both ears, mementoes of his fights for supremacy.

One night when Scarface appeared three other bears were feeding. One was a large silvertip or grizzly. Before Scarface came within a hundred feet of the feeding platform this new bear swaggered forward. Scarface also started swaggering in characteristic fighting manner, but he circled away and kept his distance until the newcomer chased him completely out.

Then the victor proclaimed his power in true bear fashion. Going to the nearest tree, he reared himself on his hind legs and measured his full length against it. He now was master.

And Scarface no longer eats with the other bears.

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PHYSICS

Cambridge Will Study Magnetism in Intense Cold

A NEW laboratory for the study of magnetic forces at low temperatures is to be added to the University of Cambridge as the gift of the Royal Society of London.

The use of the most intense magnetic forces is planned by Dr. Peter Kapitza, of Cavendish Laboratory, who for some years has been a leader in magnetic research. Magnetic phenomena are most simple at very low temperatures when the complications due to the motion of the atoms and molecules are largely avoided.

The strongest electro-magnets in the world have already been built by Dr. Kapitza in the course of his work, by passing enormous currents through specially designed coils. Seventy thousand amperes have been used in some of his experiments for about a fiftieth of a second.

The planned laboratory will bring England back once more into the center of low temperature research, begun in 1893 by Sir James Dewar. His invention of the Dewar vacuum flask has proved of fundamental importance in the investigation of intensely cold bodies. Liquid hydrogen was first made by Dewar in 1898 in the famous Royal Institution and solid hydrogen in 1899.

Since then liquid helium has been made in Holland, Germany and Canada. Developments in this field are expected in the United States in the near future.

Science News Letter, March 14, 1931

PALEONTOLOGY

Ape Fossils Found Far North in Holland

FOSSIL remains of an extinct species of monkey have been found in Holland, Dr. J. J. A. Bernsen recently reported to the Royal Academy of Holland. The bones were in fragmentary condition, but well enough preserved to show that the animal was similar to the macacques now found around Gibraltar, though somewhat larger. The Gibraltar macacques are Europe's only surviving representatives of the ape-monkey tribe.

The discovery of monkey fossils so far north is taken as an indication of a mild climate in that part of Europe in the ages when they lived there; for apes and monkeys cannot endure cold.

Science News Letter, March 14, 1931