

PHYSIOLOGY

**Pregnancy Not a Cause
Of Mother's Tooth Decay**

PREGNANCY is not a cause of tooth decay, but if the expectant mother's teeth need dental attention, it is perfectly safe for her to have it, in the opinion of Prof. Daniel E. Ziskin, of the Columbia University School of Dental and Oral Surgery.

Even the idea that if the expectant mother's diet does not contain enough tooth-building substances for baby's teeth, her own will suffer is labelled false by Prof. Ziskin.

"The association of tooth decay with pregnancy," Prof. Ziskin said, "is based largely on the supposition that the unborn child, acting in parasite-like fashion, extracts calcium from the teeth of the mother to supply its own needs. This is untrue. Even if through a dietary lack the child absorbs calcium from the mother's body, the bones or other placings of calcium storage are affected, but not the teeth. The fact that in certain diseased conditions the bones may lose large quantities of their calcium leads some to believe that the teeth are also affected. But there is no scientific foundation for this theory."

Science News Letter, April 29, 1939

CHEMISTRY

**Scientists Taste Carrots
Canned Over Century Ago**

EACH DAY hundreds of thousands of housewives throughout the land grab a can opener and warm up tasty carrots for dinner. How would you like to taste carrots canned over 115 years ago? British scientists have recently been doing it in an extensive study of the properties of canned foods carried on historic English expeditions of more than a century ago which sought the famed Northwest Passage.

Canned carrots were carried on the expedition of Capt. Parry which set out in 1819 with the ships Hecla and Griper. To decrease scurvy among officers and crew canned meats and vegetables from the firm of Donkin, Hall and Gamble were carried. With some skepticism the then-new foods were used but the testimony of John Edwards, surgeon of the expedition, praised the canned foods in comparison with the time-honored salted meats and the dried cakes of "portable" soup which previously had been used.

From the Museum of the Royal United Services Institution scientists of the In-

ternational Tin Research and Development Council, headed by Prof. J. C. Drummond, obtained carrots packed for Capt. Parry's third expedition in 1824.

With special apparatus they gingerly opened the cans, analyzed the contained gases chemically and studied the food bacteriologically. The carrots, immediately after opening, looked like fresh cooked carrots which had been allowed to cool. They were bright orange but turned quickly to a dull orange color with a brownish hue. They smelled sweet and to the tongue tasted sweet with a slight metallic flavor from their long contact with the tin can lining.

The modern homemaker accustomed to a variety of foods in cans really owes a debt to exploration and merchant marines of the early 1800's for it was for such use that canned foods first saw their widest service. Nicholas Appert, French chemist, first packed foods with heat in glass bottles and jars about 1800 but it was Bryan Donkin in England in 1810 who adopted Appert's methods to iron containers lined with tin; the primitive equivalent of the modern tin can.

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INVENTION

**Plastic in Fabric Permits
Hemming With Heat**

TEXTILES and fabrics can now be "hemmed" in the factory by a new process which replaces the sewing machine with thermoplastic fibers incorporated in the fabric to seal the edges, two patents granted to A. J. Steinberger and assigned to the Celanese Corporation of America reveal.

The new process takes advantage of the fact that materials such as cellulose acetate plastic soften under the influence of heat and pressure. If fibers made of such a material are woven into the fabric, application of heat and pressure to the edges softens the plastic and spreads it as a binder which is firm when cool, according to the patents, Nos. 2,153,351 and 2,153,352.

Besides serving as a "prefabricated" hem for a textile material, the thermoplastic cellulose acetate can be used in another way to the advantage of the consumer, the patents point out: by running a strip of the special fiber along a seam, and then subjecting it to heat and pressure, a durable bond with the seam is formed. The seam then has the firm characteristics of the plastic fiber, and is prevented from wrinkling or puckering.

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IN SCIENCE

ARCHAEOLOGY

**Photograph Stained Glass
Threatened By War Loss**

TWO Americans are busily photographing Europe's treasures of glowing, fragile stained glass, in a race for time with the uncertainties of war.

Robert and Gertrude Metcalf of Ohio's Dayton Art Institute have taken 7,000 photographs, traveled 7,000 miles by automobile since last summer. Their goal is to make the first complete photograph record of stained glass windows in England, France, Switzerland, and parts of Belgium and Germany.

The primary purpose of the venture is to procure research material for American students. Mr. Metcalf believes the material will lead to fine creative work in the United States. To obtain the complete record he desires is a two-year task, involving 20,000 photographs, including duplicate sets, and additional water color records.

The Metcalfs have designed stained glass windows in various American churches, including the Cathedral of St. John the Divine and St. James Episcopal Church, both in New York.

Mr. Metcalf rates Chartres Cathedral in France as having the world's finest stained glass, for quantity and quality, although he considers many small windows elsewhere individually better.

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PHYSICS

**Magnetic Storms, Sunspots
Studied By U. S. S. R.**

SOVIET astronomers, geophysicists, radio experts, and meteorologists are issuing at ten-day intervals data on the cosmic inconstants, such as magnetic storms, sunspots, conditions of radio transmission, polar lights, and other such phenomena. Reports are published by the Central Geophysical Observatory at Leningrad.

In America for about a decade similar cosmic data have been gathered and issued by radio and bulletins by Science Service in cooperation with the institutions making the observations.

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E FIELDS

ZOOLOGY

Bulb-Eating Mice Use Runways Made By Moles

IF YOU have a mole in your garden and your choicest bulbs get eaten, that is not to be taken as evidence that the mole ate the bulbs, declare zoologists of the U. S. Department of Agriculture. With the exception of a single Pacific Coast species, moles in this country are not vegetarians; they feed on underground insects and grubs.

What happens is that wild mice, especially the short-tailed pine mice, make use of the mole's runways, as infantrymen and machine-gunners make use of trenches and approaches dug not by themselves but by the engineers. These wild mice are vegetarians, and the real bulb-eating culprits.

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PHYSICS

Missing Element No. 43 Made in Atom Smasher

THE giant cyclotron "atom smasher" at Berkeley, Calif., has become a mine in which has been discovered, or manufactured, one of the missing elements of the chemical periodic table.

The element is number 43, closely related to manganese, molybdenum, ruthenium, and especially rhodium, to which it is a lighter homologue. Prof. E. Segrè, who might be called the inventor of number 43 rather than its discoverer, made it by bombarding molybdenum with deuterons or with neutrons.

At least five radioactive isotopes of atomic number 43 have been recognized among the products of the bombardment, and some of them have a half-life long enough to allow investigation of the chemical behavior of the element.

Prof. Segrè was one of the associates of Prof. Enrico Fermi of Rome, the Nobelist in physics who is now at Columbia University. Now Prof. Segrè also has come to America to continue his scientific research, working with Prof. E. O. Lawrence at the University of California.

In Rome, the Fermi group pioneered

in discovering new elements by creating them by transmutation from other elements. Prof. Fermi found evidence for the existence of artificially radioactive elements beyond uranium, number 92, which was considered the periodic table outpost, although the more recent splitting of the uranium atom may deprive the world of the reality of these extra-heavy, but fleeting, chemical elements.

The new element 43 has been given a baptism of investigation, despite its transitory existence. For the first time an X-ray spectral line of such a new element, synthesized artificially, has been directly observed.

Chemistry books may list element 43 discovered in 1925 in Germany, but the reality of "masurium", as the supposed number 43 of those days was called, was not considered substantiated by others. Prof. Segrè considers elements 61, 87 and 89 still among the missing in the famous Mendelèeff table. With the ability of scientists to create the element they are looking for, these may soon be created beyond any doubt and thus added to the list.

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CHEMISTRY

War Would Bring Setback To Our Chemical Industry

ALTHOUGH the chemical industry is commonly associated in the public mind with its wartime applications, a war now can only bring a serious setback to the chemical industry, declares Edgar M. Queeny, president of Monsanto Chemical Company, in a message to stockholders.

"In the long pull' there could be no benefit to our company from war," Mr. Queeny said. "All our normal progress would cease. Our organization would be disrupted.

"We hope that war will be averted so that our organization may continue its efforts in permanently constructive fields."

There would be no repetition of the chemical boom which occurred during the World War, said Mr. Queeny, discussing the impact of a war on modern chemical industry.

The World War caught America without adequate chemical industries, he pointed out, and led to a tremendous spurt in chemical manufacturing which is not likely to be repeated. If war comes now the German chemical industry would not have industrial America at its mercy as it did in 1914-18.

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ENGINEERING

Elektro, Newest Robot, Ready For World Fair

NEWEST in an honorable family line that includes Televox, one of the first modern mechanical men, Elektro, the Westinghouse Electric and Manufacturing Company's robot, was pronounced ready and fit to begin display of his 26 tricks at the New York World's Fair, which opens April 30.

Brother of Willie Vocalite, who answers to spoken commands, and is now at the San Francisco fair, Elektro is actually made to do his stuff by varying light signals, which are set off for reasons of convenience and instruction by commands spoken through a microphone.

It takes 900 parts, including 48 relays, to make this seven-foot, 260-pound giant do his stuff. He can even speak 77 words—but 75 of them are on a record while the other two also have a "canned source" and are spoken in response only to definite signals—the flashing of red and green lights.

Elektro will walk, count up to 10 on his fingers, and smoke cigarettes by the dozen for the amusement of Fair visitors, Westinghouse engineers said. To make him do these tricks, the engineers have built into him many of the automatic and electrical devices now seeing regular duty in industry.

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ABRONAUTICS

Graduate School Offers Rotary Wing Aircraft Study

A NEW graduate curriculum with seven courses and other work leading to an advanced degree will be offered by the New York University College of Engineering in autogiros, helicopters and other types of rotary wing aircraft.

A graduate fellowship in honor of Juan de la Cierva, late inventor of the autogiro, will also be available for award to an outstanding American citizen with the requisite training. The single exception to the citizenship rule, Dean Thorn-dike Saville of the engineering college said, is de la Cierva's son, Juan, who is Spanish.

Among the students enrolled in the program, it is expected, will be an officer with autogiro experience detailed by Maj. Gen. Henry H. Arnold, chief of the Air Corps.

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