DENTISTRY

Chlorophyll Tooth Paste May Be Decay Preventive

➤ A GREEN tooth paste containing chlorophyll, the green coloring matter of plants, was reported as a possible preventive of tooth decay.

Tests showing a drop in the number of *Lactobacillus acidophilus* organisms following the use of this paste were reported by Dr. Gustav W. Rapp of Loyola University, Chicago College of Dental Surgery, at the meeting of the International Association for Dental Research.

Dr. Rapp's report did not show whether the subjects of the experiment had more or less caries after using the tooth paste.

The chlorophyll tooth paste was used by 50 persons. Another tooth paste followed by a chlorophyll mouth wash was used by another 30 persons. They also had a drop in Lactobacillus count. A third group of 15 persons, used as a control, followed their normal tooth cleaning procedures, with less change in the bacterial count.

Dental authorities usually consider it necessary to have tests of tooth decay activity on several hundred persons, with controls on several hundred more, matched according to age, sex, race, diet, living conditions, X-ray studies and other factors, in order to evaluate any suggested anti-caries remedy or procedure.

The number of *Lactobacillus acidophilus* organisms in a person's saliva is sometimes taken as a sign of caries activity, and it is on this that Dr. Rapp's studies were based.

Science News Letter, July 2, 1949

NUCLEAR PHYSICS

Atomic Power Plants Need Instrument Development

➤ SPECIAL instruments that can be used in areas of intense radiation and high temperatures must be developed before atomic power plants can be widely used, the American Society of Mechanical Engineers was told in San Francisco by David Cochran and C. A. Hansen, Jr., General Electric engineers at the Knolls Atomic Power Laboratory.

As yet there are no demonstrated solutions to the unusual problems of applying instruments in an atomic power plant, they declared. The biggest obstacle to development of instruments for operating and maintaining an atomic power plant is lack of instrument testing facilities. These, however, will probably soon be available.

Only a few places exist in the country where the effect of radiation on materials and devices may be studied, or where liquid metal cooling systems are available for instrument testing. And nowhere, they stated, is there a combination of radiation and high temperature liquid metal such as will exist in the atomic power plant.

Instruments are needed for control and safety of plant operation, for observing the condition and behavior of the plant, and for monitoring radiation leakage to assure protection of operating personnel. They must have extreme reliability, remote maintenance, resistance to neutron and gamma radiation, absolute leak tightness and long service.

Maintenance by remote control is necessary, they continued, since it is not possible to perform direct inspection and maintenance work on the detecting devices within the radioactive zone. When a failure occurs it may be necessary to remove and replace the instrument by means of remotely operated equipment, they said. Where the detecting elements are very difficult to remove, standby detecting elements must be installed at the time the plant is built.

Science News Letter, July 2, 1949

CHEMISTRY

Gelsoy from Soybean Is Good as Gel And as Glue

➤ THE Far-East soybean, already one of America's top-notch crops producing oil, meal, food, feeds and fodder, is now yielding a tight-sticking glue, dubbed Gelsoy, which is also a valuable food product, it was revealed at the Northern Regional Research Laboratory of the U. S. Department of Agriculture in Peoria, Ill.

It is said to be the first vegetable protein gel. As a glue, it could be used on envelopes which could not be "steamed" open. The heat of the steam will simply make the envelope flap stick tighter. Gelsoy glue will stick to tin, glass and other surfaces, so may play a big part in sticking labels on preserved foods in cans, jars and pottery containers. Many other uses are possible.

As a food, because of its bland taste and its whipping and gelling properties, many uses are possible. It is a nutritious substance, about half soybean protein and half carbohydrate, that has many of the qualities of egg white. It can be whipped into frothy meringues for pies, is useful in cookie and cake fillings, and may find its way into ice creams, candies, prepared cold meats, soups and other foods.

The value of Gelsoy as a gelling agent for food products and as an adhesive is a discovery credited to Mrs. Letta I. DeVoss, a scientific aide in the laboratory. Laboratory scientists had derived the new substance from the soybean, and Mrs. DeVoss started cooking a batch to test its whipping qualities. When it reached a temperature of about 190 degrees Fahrenheit it formed a jelly-like mass. For this discovery, she was given a Superior Service Award by Secretary Charles F. Brannan for the Department of Agriculture.

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IN SCIEN

BIOCHEMISTRY

Influenza Virus Made Radioactive

➤ A WAY to make influenza virus radioactive is announced by two Canadian scientists in the journal NATURE (June 18).

Their idea, apparently, was not to make the 'flu virus any deadlier, but, instead, to learn more about the mechanism of its synthesis, or growth, in the cells of the body.

They injected influenza virus into the fertile hen's eggs and then three hours later injected a solution containing radioactive phosphorus. In one of the experiments the radioactive solution injected into each egg registered 57,000 counts per minute on a Geiger-Müller counter.

After about 48 hours the virus which had been growing in the eggs was harvested and purified. Geiger-Müller counts and other tests showed that the virus had taken the radioactive phosphorus into its structure just as it would have taken up ordinary phosphorus.

The scientists reporting this are Drs. A. F. Graham and Laurella McClelland of the University of Toronto.

Science News Letter, July 2, 1949

ASTRONOMY

Giant Atomic Explosion Noted on Near Star

➤ ANOTHER violent atomic explosion has been observed on the earth's second nearest star neighbor.

The star, known as L-726-8, was announced by its discoverer, Dr. W. J. Luyten of the University of Minnesota only last April. At that time it was reported that photographic plates had revealed a flare-up on the star on Dec. 8, when it suddenly became much brighter, only to die down to normal in a few minutes.

Another flare-up has now been found, this one on the last day of 1948. One photo plate showed that it was 10 times its normal brightness. Another plate, made six minutes later, showed the star to have dropped to six times normal brightness. Within 20 or 30 minutes, it was back to its normal brightness.

These star flare-ups are caused by tremendous atomic explosions, many times more violent than any man-made atomic bomb.

Even at the height of such a flare, the recently-discovered star is not visible to the naked eye.

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CE FIELDS

MEDICINE

Anti-Airsickness Drug May Make Pilots Sleepy

➤ COMMERCIAL airline pilots are being "advised" by the Civil Aeronautics Administration that the new anti-airsickness drug, dramamine, may make them sleepy.

If an occasional passenger gets drowsy it won't hurt, but for the pilot to have this reaction might be dangerous, the CAA points out. Tests were made on 22 CAA employees, who did not know whether the capsules they took each morning contained dramamine or milk sugar or a sleeping medicine. In two-thirds of the cases where dramamine was taken, mild side reactions were noted.

Not all persons who take this new medicine for motion sickness get drowsy. It is not a sedative, but an anti-histamine drug originally developed for treatment of allergies. Other anti-histamine drugs taken by hayfever, asthma and hives patients have caused sleepiness in an occasional, sensitive person. Slight dizziness, chills and detached sensations, loss of balance and difficulty of focusing eyes also occur occasionally, the CAA found.

Science News Letter, July 2, 1949

ENGINEERING

Selector Sorts Out Vast Amount of Information

➤ THE "rapid selector," newest of the famed postwar "electronic brain" machines, has been unveiled at the U. S. Department of Agriculture, with a promise of shorter hours in the library for researchers.

Information to be coded for the selector is put on 35-millimeter motion picture film; contents of some half-million conventional library cards can be put on a single reel. When you want all the information on a certain subject which is on some of the cards, you place a master key card in the machine. Photoelectric "eyes" of the machine pick the material you want and the machine photographs it for you.

The selector can scan the film at a rate of more than 60,000 subjects a minute. Some 10,000,000 different subjects can be coded in the selector potentially.

Information to be stored in the selector is microfilmed and coded by the use of black and white squares. It is the pattern of squares which catches the "eye" of the photoelectric cell. Photographing of the selected information is done by using high-speed photoflash techniques, including a repeating flashlamp.

Scientific literature and any other material containing vast amounts of information which need to be stored compactly yet available for use are expected to be put into rapid selector machines. It is estimated that the new machine could scan in 15 minutes all the entries in Chemical Abstracts, a standard guide to chemical research, which have appeared in the past 30 years.

The first rapid selector is now being tested in the Department of Agriculture library under the direction of Department Librarian Ralph R. Shaw. Mr. Shaw supervised development of the machine which was done by Engineering Research Associates of Minneapolis, under an appropriation of more than $75,000 from the Department of Commerce's Office of Technical Services. Principles from which the machine was developed are credited to Dr. Vannevar Bush, president of the Carnegie Institution of Washington.

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MEDICINE

New Muscle-Relaxing Drug Helps in Mental Patients

➤ MYANESIN, also called tolserol, a relatively new muscle-relaxing drug, now shows promise of helping in treatment of mental patients and alcoholics.

Preliminary trials of the drug in 63 patients are reported by Dr. Louis S. Schlan of Maneno, Ill., State Hospital and Dr. Klaus R. Unna of the University of Illinois College of Medicine in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (June 25).

Its greatest benefits, apparently, will come in treatment of prolonged alcoholic intoxication and of anxiety states in mental patients.

The eight alcoholics, each with "shakes" after prolonged bouts, were able to lift a coffee cup in one hand without spilling within 30 to 60 minutes after taking the medicine. Before taking it they could not raise the cup to their lips without spilling even when using both hands.

Besides the physical "shakes," their severe jittery feelings, or anxiety in psychiatric terms, were promptly relieved and the patients reported feeling comfortable though they still had such "hangover" effects as headache and stomach distress. They also said they got relief faster than with other sedatives and felt "wide awake" and closer to "normal."

The mental patients with anxiety were calmed without being put to sleep. They were able to sleep normally though previously their disturbed mental state had kept them awake.

The drug, the doctors state, is the only one they have seen "which allays anxiety without clouding consciousness. As such it promises to be helpful as an adjunct to psychotherapy."

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ASTRONOMY

Second Moon Discovered For Planet Neptune

➤ A NEW moon has been added to the 29 known moons in the solar system.

A second satellite to Neptune was confirmed by Dr. Gerard P. Kuiper, University of Chicago astronomer, who announced the possible discovery of the moon May 1 at McDonald Observatory, which is jointly operated by the University of Texas and the University of Chicago.

Discovery of the satellite, which is 250,000 times fainter than the faintest star visible with the naked eye, was announced by Dr. Kuiper at the summer meeting of the American Astronomical Society in Ottawa.

Five million miles from Neptune and 3,000,000,000 miles from earth, the second satellite was established as a second moon to the planet Neptune from studies of photographic plates taken May 29 on the 82-inch reflecting telescope at McDonald Observatory.

The satellite, Dr. Kuiper announced, is only 200 miles in diameter, 15 times smaller and 250 times fainter than the first satellite to Neptune, Triton, which was discovered in 1846. Its magnitude of 19½ degrees makes it the faintest moon observed to date, so faint that it probably cannot even be seen through the 200-inch reflecting telescope.

Dr. Kuiper, who discovered a fifth moon to the planet Uranus in March, 1948, estimated that the new moon, moving in nearly the same plane as Neptune, requires two years to complete its cycle. Earth's moon completes its orbit in one month.

Science News Letter, July 2, 1949

PSYCHOLOGY

Psychologists' Must Reading: Comic Strips

➤ WITH comic strip characters invading psychological tests, daily reading of the comics has become a line of duty activity for members of the staff of the Menninger Foundation in Topeka, Kans.

The comic strip characters got into the Rorschach tests, a report from the Foundation explains. In these tests patients are given cards with standardized blobs of color or black spots on white, like ink blots. From the patient's interpretation of what these blots look like to him the psychologists get important clues to the patient's personality and illness.

Witches on broomsticks, dancing fairies, and various animals used to be among the responses given. Now the patients say the blots look like various comic strip characters.

"The result," says the report, "is that psychologists have a perfect excuse for reading the daily comic strips."

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