

DENTISTRY

Teeth Brushing after Meals Is Best Rule

➤ **TOOTH** decay can be cut 50% or 60% by brushing the teeth immediately after eating. Studies showing this are reported by Dr. L. S. Fosdick, professor of chemistry at Northwestern University Dental School, to the *JOURNAL OF THE AMERICAN DENTAL ASSOCIATION* (Feb.).

The favorable results were obtained with a neutral, unmedicated tooth paste containing dicalcium phosphate as the abrasive, or rubbing, agent. Since the results were good with this dentifrice, it is possible, Dr. Fosdick states, the type of dentifrice and abrasive are not important. A positive statement on this, however, must await results from studies now being made with two other types of dentifrices. One of these other two contains soap and calcium carbonate. The other has an antiseptic in it.

The studies were made on 946 persons, including liberal arts students at Drake University, Simpson College, Emory University, dental students at the University of Louisville, Emory and Northwestern Universities and medical students at the University of Louisville.

The 523 in the experimental group were each told to brush their teeth within 10 minutes after eating food or sweets, and when brushing was impossible to rinse the mouth thoroughly with water. They were also instructed to use an accepted method of brushing and to rinse the dentifrice from the mouth with water immediately after brushing.

Examination of the teeth of this group, and of the 423 who followed their usual dental hygiene methods and served as controls, was done by means of mouth mirrors, explorers, dental floss and air syringe, and X-rays were taken of all teeth. These examinations were repeated at the end of the first and second years during which the experiment ran.

The results bear out and materially strengthen the generally accepted theory of the tooth decay process, Dr. Fosdick points out. This is that decay is started by acid decalcifying the enamel surface under an organic coating or plaque. The acids come from fermentable sugars by the action of enzymes.

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PSYCHOLOGY

People Are Test-Happy; Tests Not Patent Medicine

➤ **THE** American people are test-happy. Lots of people think that tests are a patent medicine that will cure all of their ills, from the job they just lost to the last fight with the girl friend.

This complaint comes from Dr. Joseph V. Hanna, New York University psychologist.

To make matters worse, the psychologists realize that it is partly their own fault. Some psychologists are themselves a little test-happy. Others do not take enough time explaining what a test can and can not do.

The psychologists are not willing to take all the blame. They think popular magazines are equally guilty. Most of these magazines accentuate the positive. They often make the test seem foolproof because it makes people want to read about it.

The public comes in for its share of scolding too. Have you ever heard a person say that it does not really matter if he is not successful because he has such a high I. Q. that he does not have to prove himself with hard work? Such people love to take tests because it makes them feel good to get high scores.

Others use tests as an excuse. They say that there is no point in trying. They get such low scores that they probably would not succeed even if they did try.

Dr. Hanna, in a recent report to the National Vocational Guidance Association, "takes some comfort in the belief that a large number of these clients are the abnormally frustrated individuals."

The public should get all of the facts about a test—both good and bad, Dr. Hanna urges. Both the public and the psychologists should use common sense about the meaning of a score on a test—even a good test.

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PSYCHOLOGY-POPULATION

Neurotic Rats Not Prolific; Clue to Population Control?

➤ **IF** you give a rat a neurosis, you won't have to build a better rat trap. Dr. John B. Calhoun, formerly of the Johns Hopkins University School of Hygiene and Public Health now at the Roscoe B. Jackson Memorial Laboratory of Bar Harbor, Me., has determined special patterns and behaviors developed by a controlled colony of Norway rats.

Rats which were able to get at their source of food easily and which were born at times when they did not have to compete with too many other young rats soon climbed to the top of the social heap.

Rats who had to pass a lot of other rats to get to their food—even though they ate enough—had trouble adjusting to the colony's social life. And if they had to compete too much with other rats, they went down in the social scale. Both these conditions produced neuroses and the neuroses evidently had a bad effect on the number of young produced and whether they were able to live to maturity.

In addition to studying the possibilities of controlling rat populations, Dr. Calhoun raised questions of application of his findings to the human population.

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IN SCIENCE

METEOROLOGY

Ground Hog's Forecast as Accurate as Tossed Coin

➤ **WHETHER** the groundhog saw his shadow on Feb. 2 or not will not make much difference in the weather of the next six weeks anyway.

The groundhog is just about as good a long-range weather prophet as a coin tosser—and just about as bad, too. He guesses right about 50% of the time; and any of us could prophesy weather as well as that by flipping a coin.

But then, the groundhog never asked for the job. He had it wished on him by early colonists who brought over a superstition about the hedgehog seeing his shadow on Candlemas day, and the absence of European hedgehogs in America thrust the burden on the groundhog.

Like many another harmless animal, the groundhog is called out of his proper name. He does live in a burrow in the ground, but he is no hog, nor any kin to one. Like that other miscalled mammal, the guinea pig, he is more nearly related to the rabbits, which he resembles in his ceaseless nibbling at grass and other herbage. Under another alias, he is the woodchuck, that mythical manipulator of problematical quantities of timber. A third name, and really one more dignified and becoming to the animal, is marmot; but it is much less used.

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GENERAL SCIENCE

Agreement to Facilitate Exchange of Materials

➤ **GETTING** educational motion pictures, radio program platters, and other teaching materials across national boundaries will be easier in the future when an international agreement sponsored by UNESCO finally goes into effect.

Already 16 nations have signed the agreement, but it will not go into effect until at least 10 of them have passed the necessary legislation to modify their own customs restrictions which in many cases means days of delay and the filling out of many forms and papers.

The United States National Commission for UNESCO in Washington, D. C., explained that Congress would have to approve the agreement. Ways in which to get better exchange of educational, scientific, and cultural materials among the various nations will be considered at a meeting to be held in Geneva in March.

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E FIELDS

MEDICINE

Inhalations Stop Expected Migraine Headache

► MIGRAINE headaches can be stopped before they start by inhalations of a mixture of carbon dioxide and oxygen.

Results of trial of this simple measure in 15 patients are reported by Drs. Robert M. Marcussen and Harold G. Wolff of New York in the ARCHIVES OF NEUROLOGY AND PSYCHIATRY (Jan.), medical journal published in Chicago, Ill., by the American Medical Association.

The treatment was given by having the patients lie down and inhale the gas mixture through a face mask for three periods of five minutes each.

The visual disturbances which come before the headache in typical migraine attacks were cleared completely by the carbon dioxide-oxygen inhalations and the expected headache did not develop. One patient had extreme sleepiness and nausea as a pre-headache symptom. While inhaling the gas mixture she became alert, her nausea disappeared faster than usual, and headache did not develop.

Once the headache has developed, the "results were unpredictable," so that patients cannot count on getting relief if they start the inhalations after that stage in the attack, though some of them may.

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ENGINEERING

New Rectifier to Promote Electric Locomotive Use

► WIDER use of electrical locomotives on railroads was predicted by Westinghouse engineers at the meeting of the American Institute of Electrical Engineers. A new rectifier, to change alternating electric current to direct current, will be responsible.

With this rectifier type motive power unit, a high voltage trolley wire can be used, thus making it possible to supply, economically, large blocks of power over long distances for heavy concentration of traffic.

The rectifier unit was described as having all the advantages of the high voltage alternating-current (A-C) trolley system with the simplicity and flexibility of voltage control plus the advantage of the direct-current (D-C) traction motor. Furthermore, it has the ability to develop high accelerating horsepower at high speed even more economically than is possible with the A-C series of motor motive power unit.

The Westinghouse engineers who described the new rectifier unit were L. J. Hibbard, C. E. Whittaker and E. W. Ames,

all of the company's plant at East Pittsburgh, Pa. Laboratory and practical tests are now being correlated and analyzed and preliminary results only are now available, they stated.

As to diesel electric locomotives they said: "The price of electrical energy has been relatively stable, whereas the long term trend of liquid fuel prices has been upward. Where economic conditions justify the electrification of a dieselized railroad, the diesel electric locomotives can be transformed into rectifier locomotives by removing the diesel engines and their appurtenances and applying pantographs, transformers, auxiliaries and rectifier equipment."

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INVENTION

Soybean Vegetable Gel Used in Food Preparation

► WIDER use of soybean as a food is promised with a vegetable gel patented recently which contains the protein contents of the bean in gelling constituents from which foods containing meat or puddings may be prepared easily and simply.

The patent issued covers both the vegetable gel and the process by which it is obtained. Its number is 2,495,706. Recipients were Letta I. De Voss and Arthur C. Beckel, of Peoria, and Paul A. Belter, Pekin, Ill. Rights are assigned to the U. S. Department of Agriculture and the gel may be made by the government in any part of the world without the payment of royalties.

In general, the process involves providing an alcohol-extracted proteinaceous soybean residue free of alcohol-soluble matter. Water is used to extract a sufficient quantity of this residue. Fibrous, insoluble soybean material is removed, then the mixture is spray-dried to a solid, powdery material.

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AERONAUTICS

3,500-Mile-per-Hour Wind Tunnel at Princeton

► A UNIQUE 3,500-mile-an-hour supersonic tunnel is in operation at Princeton University.

Described as a Variable Density "Blow-Down" type, it utilizes a storage tank in which air is compressed by the use of relatively low horsepower over a period of hours. Once the air has been compressed, it can be discharged at high velocity through a supersonic nozzle.

With test-times ranging from one to 15 minutes, this new tunnel uses two 100-horsepower compressors. It is relatively low in initial cost in comparison with the more common continuous flow type tunnel. It is approximately 45 feet long, with the settling-chamber and working sections occupying some 20 feet.

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GENERAL SCIENCE

Remarriage of Science And Philosophy Asked

► HOW to remarry science and philosophy, divorced since the 18th century, is the problem posed to college students in an essay contest announced by the Institute for the Unity of Science, of which Prof. Philipp G. Frank of Harvard is president. Prizes totalling \$500 are offered, for entries during this year.

"Science and philosophy were not distinguished sharply in antiquity," Dr. Frank explained. "Subsequently, philosophy came to be regarded as a special branch of knowledge, separated by more or less explicitly formulated boundaries from the various special sciences. The consequences of this separation have been far-reaching and the essays are expected to clarify the issues involved in it."

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MEDICINE

Long Rest in Bed Advised For Some Heart Victims

► REST in bed for "many weeks," contrary to the current tendency to get patients up early, will be prescribed for patients with certain forms of heart disease, if physicians follow the findings of a group of heart specialists at Beth Israel Hospital and Harvard Medical School in Boston, Mass.

The group, Drs. Herrman L. Blumgart, Paul M. Zoll, A. Stone Freedberg and D. Rourke Gilligan, report their researches in the first issue of CIRCULATION (Jan.), new Journal of the American Heart Association.

The patients for whom they advise the longer rest in bed are those who have suffered acute myocardial infarction. This is a condition in which an area of the heart muscle is put out of commission, sometimes because one of the arteries supplying it with blood has become blocked. Nature's method of compensating for this is the development of connections between arteries so that the heart muscle continues to get a supply of blood and can go on functioning as a pump.

These connections between arteries develop slowly, the Boston group has found. It takes time before they are able to supply the blood needed. Reducing the work of the heart is consequently advised, to give time for the development of the new connections between arteries.

The longer period of rest in bed and reduced activity is also advised, on the basis of the Boston group's research, for patients who suddenly develop another kind of heart disease, angina pectoris, or who suddenly begin having more frequent or more severe attacks of angina.

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